

PART 1 – GENERAL (GEN)**GEN 0.****GEN 0.1 PREFACE****1. NAME OF PUBLISHING AUTHORITY**

Pursuant to Air Services Regulation 4.12, the Aeronautical Information Publication (AIP) Australia is published by the Aeronautical Information Service (AIS), Airservices Australia.

2. APPLICABLE ICAO DOCUMENTS

2.1 AIP Australia is prepared in accordance with the Standards and Recommended Practices (SARPS) of the following ICAO documents:

Facilitation – Annex 9
Aerodromes – Annex 14
Aeronautical Information Services – Annex 15
Aeronautical Information Services Manual
(Doc 8126-AN/872)
Aeronautical Charts – Annex 4
Aeronautical Chart Manual (Doc 8697-AN/889/2)

3. INTEGRATED AIP AUSTRALIA – DOCUMENTS INVOLVED

3.1 The elements of the Integrated Aeronautical Information Package include:

- a. Integrated AIP Australia and related amendment service;
- b. AIP Supplements;
- c. AIC;
- d. NOTAM and pre-flight information bulletins (PIB); and
- e. checklists and lists of valid NOTAM.

3.2 Integrated AIP Australia is provided through the medium of the following documents and charts:

- AIP Book
- En Route Supplement Australia (ERSA)
- Departures and Approach Procedures (East and West) - (DAP EAST & DAP WEST)
- AIP Supplement (SUP)
- NOTAM

- Aeronautical Information Circular (AIC)
- Terminal Area Chart (TAC)
- En Route Chart (High and Low) – (ERC-H & ERC-L)
- Planning Chart Australia (PCA)
- Visual Navigation Chart (VNC)
- Visual Terminal Chart (VTC)
- Designated Airspace Handbook – (DAH)

3.3 The primary document in the Integrated AIP Australia is the AIP Book which is supplemented by the other documents and charts.

4. LAY OUT

4.1 The AIP follows the requirements and layout recommended by the International Civil Aviation Organization (ICAO) and, in general, is structured to accord with ICAO Annex 15, Appendix 1 and Doc 8126-AN/872. However, to facilitate usage, the information has been laid out as described in the following paragraphs.

4.2 Long Term Reference Information

4.2.1 Long Term Reference Information is contained, generally, in the AIP Book and is addressed in three major parts - General (GEN), En Route (ENR), and Aerodromes (AD). Where operational or planning information is liable to change at short notice or is designed specifically for use in the air, such information is contained in the documents which are supplementary to the AIP Book. Where required, the AIP Book will refer the reader to the appropriate AIP documentation.

4.3 Short Term and Operational Reference Information

4.3.1 Short Term Reference Information, or information used principally for airborne operations, is contained in the documents which are supplementary to the AIP Book.

4.4 The AIP documents and charts identified at *para 3.2* are designed to stand alone to enable users to access information relevant to their operation. Users are responsible for ensuring that their respective publications are kept up to date.

- 4.5 The rules of the air and ATC procedures are, to the extent practicable, incorporated into the main text of the AIP Book in plain language. Where the subject matter of AIP is related to regulations and orders, the relevant Civil Aviation Regulations (CARs), Civil Aviation Orders (CAOs), Air Services Regulations (ASRs) and Air Navigation Regulations (ANRs) may be cited.
- 4.6 Throughout the AIP the term “should” implies that all users are encouraged to conform with the applicable procedure. The verbs “must” and “shall” are synonymous and mean that the applicable procedure is mandatory and supported by regulations or orders. The word “must” is preferred over “shall” and is used almost exclusively throughout the AIP Book.

5. LANGUAGE

- 5.1 AIP Australia is published only in the English language.

6. PROCUREMENT AND DISTRIBUTION

- 6.1 The AIP, its amendment service, charts, CAO, CAR and other Australian aviation publications are available from CanPrint Communications, AIP Shop and authorised distributors - details of which can be obtained from the CanPrint Communications, AIP Shop, Canberra.
- 6.2 The AIP suite is available online via the Airservices website: www.airservicesaustralia.com/aip/aip.asp

7. ORDERING PUBLICATIONS AND AMENDMENT SERVICES

- 7.1 Publications and amendment services can be obtained through the following methods:
- a. **Phone:** +61 2 6268 5500 (international orders only)
 - b. **Online:** www.aipshop.canprint.com.au
 - c. **Personal Purchase:** the location of reseller outlets in each state and territory can be obtained from the website identified above.
 - d. **Email:** info@aipshop.canprint.com.au
- 7.2 **Credit Card Facilities**
- 7.2.1 Visa, Mastercard and AMEX facilities are accepted by CanPrint Communications, AIP Shop for all purchases.

7.3 Subscriber Change of Address

7.3.1 All subscribers to Aircservices Australia aeronautical documentation must advise any change of address for postal purposes to CanPrint Communications, AIP Shop, by any of the means identified at *para 7.1*.

Note: Mail returned "Address Unknown" suspends the address record of the subscriber, and no further mail will be forwarded until advice is received of an address change.

7.3.2 Under CASR 11.070, all licence/authorisation holders are also required to advise CASA in writing of any change of address for the issue of notices. Details can be provided by email, online (found on CASA's change of details website page) or to written address:

a. **Mail:** CLARC, CASA
GPO Box 2005
Canberra ACT 2601

b. **Email:** clarc@casa.gov.au

c. **Online:**

https://www.casa.gov.au/licences-and-certification/standard-page/changing-your-details?WCMS%3ASTANDARD%3A%3Apc=PC_91496

d. **Phone:** 131 757
+61 2 6217 1111(international)

e. **Fax:** 1300 737 187

8. AMENDMENTS

8.1 Amendments to:

- Aeronautical Information Publication (AIP Book);
- Departure and Approach Procedures (DAP); and
- En Route Supplement Australia (ERSA);

with check lists of all current effective pages of the document, are normally issued quarterly and always align with an ICAO AIRAC effective date.

8.2 Amendments to:

- Designated Airspace Handbook (DAH); and
- Maps and Charts (other than WAC);

are normally issued twice a year around May and November.

8.3 If there are no amendments required at the established regular interval, then no amendment document is issued.

- 8.4 Significant changes are identified by a vertical black line (revision bar), and deletions have a “D” added to the vertical line. Amendments to a Table of Contents or the Index are not identified by a revision bar. New or revised information published in DAP charts will be advised above the chart margin.
- 8.5 Amendments to DAH and ERSA are issued as a separate complete booklet.

Note: The DAH is published on the Airservices website only.

- 8.6 The originating authority of material to be issued as part of the AIP must ensure that it is thoroughly checked and coordinated with other services or organisations before it is submitted to AIS. This ensures that all necessary information has been included and is correct in detail before distribution.

9. RELEVANT DOCUMENTS AND CHARTS

- 9.1 To ensure compliance with *CAR 233.(1)(h)*, a pilot in command must have access during flight to appropriate documents and charts selected from the following:

- a. **VFR:** ERC, WAC, VNC, VTC and ERSA for the route being flown.
- b. **IFR:** ERC, IAL charts and ERSA for the route being flown, and also for the departure, destination and alternate airfields to be used. In addition, where visual navigation is required, the pilot in command must have access to appropriate WAC, VNC or VTC.

10. QUERIES ABOUT DOCUMENTATION

- 10.1 Queries on the technical content of publications, and/or operational matters, should be referred to CASA (Flying Operations Branch). The CASA Office telephone number is 131 757 (local call - Australia wide, except from mobile phone).
- 10.2 Matters of a purely editorial nature should be referred to:

Online: www.airservicesaustralia.com/aip/ccard

Email: docs.amend@airservicesaustralia.com

Mail:

Business Reply Post
PERMIT No 1986 – CIVIC SQUARE
Airservices Australia
Aeronautical Information Service
GPO Box 367
CANBERRA ACT 2601
AUSTRALIA
AFTN: YSHOYOYX

10.3

Problems

Non-delivery of documents or problems with amendment services should be referred direct to CanPrint Communications, AIP Shop:

Phone: 1300 306 630
(local call – Australia wide, except from mobile phone)
+61 2 6293 8381 (international customers only)

Email: info@aipshop.canprint.com.au

GEN 0.2 RECORD OF AMENDMENTS

No	Date of AMDT	Date Inserted	Inserted by (Init.)	No	Date of AMDT	Date Inserted	Inserted by (Init.)
89				112			
90				113			
91				114			
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GEN 0.3 RECORD OF AIP SUPPLEMENTS

1. Australian AIP Supplements are promulgated under an Airservices Head Office (H) identifier, and given a number which is sequential for the year of distribution. For example, the fifth AIP Supplement (SUP) issued in the year 2003 is identified as H5/03. SUPs which are required to be issued with the 28 days Aeronautical Information Regulation and Control (AIRAC) notice are identified further by “AIRAC” being printed above the identifying number.
2. A Record of Supplements is published as a “Summary” of all current SUP/AIC for each monthly AIRAC date and published on the Airservices website.

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GEN 0.4 CHECKLIST OF AIP PAGES

AMENDMENT LIST 105 - EFFECTIVE 05 NOV 2020

Pages annotated with the change bars are new pages for this edition.

Sect - Page	Date	Sect - Page	Date
COVER PAGE		GEN	
Page 1 & 2	05 NOV 2020	1.3 - 5 & 6	21 MAY 2020
GEN		1.3 - 7 & 8	05 NOV 2020
0.1 - 1 & 2	21 MAY 2020	1.3 - 9 & 10	21 MAY 2020
0.1 - 3 & 4	21 MAY 2020	1.3 - 11 & 12	05 NOV 2020
0.1 - 5 & 6	21 MAY 2020	1.3 - 13 & 14	21 MAY 2020
0.2 - 1 & 2	10 NOV 2016	1.3 - 15 & 16	21 MAY 2020
0.3 - 1 & 2	02 MAR 2017	1.3 - 17 & 18	27 FEB 2020
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0.6 - 5 & 6	05 NOV 2020	1.3 - 31 & 32	27 FEB 2020
0.6 - 7 & 8	05 NOV 2020	1.4 - 1 & 2	21 MAY 2020
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0.6 - 11 & 12	05 NOV 2020	1.4 - 5 & 6	13 AUG 2020
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0.6 - 15 & 16	05 NOV 2020	1.5 - 3 & 4	28 FEB 2019
1.1 - 1 & 2	05 NOV 2020	1.5 - 5 & 6	28 FEB 2019
1.1 - 3 & 4	21 MAY 2020	1.5 - 7 & 8	28 FEB 2019
1.1 - 5 & 6	27 FEB 2020	1.5 - 9 & 10	08 NOV 2018
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1.2 - 11 & 12	13 AUG 2020	1.5 - 21 & 22	05 NOV 2020
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1.2 - 17 & 18	05 NOV 2020	1.6 - 5 & 6	13 AUG 2020
1.2 - 19 & 20	13 AUG 2020	1.6 - 7 & 8	13 AUG 2020
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2.2 - 9 & 10	27 FEB 2020	3.3 - 7 & 8	13 AUG 2020
2.2 - 11 & 12	27 FEB 2020	3.3 - 9 & 10	13 AUG 2020
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2.2 - 15 & 16	21 MAY 2020	3.3 - 13 & 14	05 NOV 2020
2.2 - 17 & 18	27 FEB 2020	3.4 - 1 & 2	28 FEB 2019
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2.2 - 45 & 46	05 NOV 2020	3.4 - 29 & 30	13 AUG 2020
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2.2 - 49 & 50	05 NOV 2020	3.4 - 33 & 34	13 AUG 2020
2.2 - 51 & 52	27 FEB 2020	3.4 - 35 & 36	13 AUG 2020
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3.4 - 75 & 76	13 AUG 2020	3.5 - 57 & 58	05 NOV 2020
3.4 - 77 & 78	13 AUG 2020	3.5 - 59 & 60	05 NOV 2020
3.4 - 79 & 80	13 AUG 2020	3.5 - 61 & 62	05 NOV 2020
3.4 - 81 & 82	13 AUG 2020	3.5 - 63 & 64	05 NOV 2020
3.4 - 83 & 84	13 AUG 2020	3.5 - 65 & 66	05 NOV 2020
3.4 - 85 & 86	13 AUG 2020	3.5 - 67 & 68	05 NOV 2020
3.4 - 87 & 88	13 AUG 2020	3.5 - 69 & 70	05 NOV 2020
3.4 - 89 & 90	13 AUG 2020	3.5 - 71 & 72	05 NOV 2020
3.4 - 91 & 92	13 AUG 2020	3.6 - 1 & 2	15 AUG 2019
3.4 - 93 & 94	13 AUG 2020	3.6 - 3 & 4	15 AUG 2019
3.4 - 95 & 96	13 AUG 2020	3.6 - 5 & 6	15 AUG 2019
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3.4 - 101 & 102	13 AUG 2020	4.1 - 3 & 4	27 FEB 2020
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3.5 - 7 & 8	05 NOV 2020	ENR	
3.5 - 9 & 10	05 NOV 2020	0.6 - 1 & 2	05 NOV 2020
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3.5 - 13 & 14	05 NOV 2020	0.6 - 5 & 6	05 NOV 2020
3.5 - 15 & 16	05 NOV 2020	0.6 - 7 & 8	05 NOV 2020
3.5 - 17 & 18	05 NOV 2020	0.6 - 9 & 10	05 NOV 2020
3.5 - 19 & 20	05 NOV 2020	0.6 - 11 & 12	05 NOV 2020
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3.5 - 29 & 30	05 NOV 2020	1.1 - 9 & 10	15 AUG 2019
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3.5 - 33 & 34	05 NOV 2020	1.1 - 13 & 14	15 AUG 2019
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3.5 - 37 & 38	05 NOV 2020	1.1 - 17 & 18	05 NOV 2020
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3.5 - 43 & 44	05 NOV 2020	1.1 - 23 & 24	05 NOV 2020
3.5 - 45 & 46	05 NOV 2020	1.1 - 25 & 26	05 NOV 2020
3.5 - 47 & 48	05 NOV 2020	1.1 - 27 & 28	05 NOV 2020
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1.1 - 43 & 44	05 NOV 2020	1.2 - 5 & 6	10 NOV 2016
1.1 - 45 & 46	05 NOV 2020	1.2 - 7 & 8	10 NOV 2016
1.1 - 47 & 48	05 NOV 2020	1.2 - 9 & 10	10 NOV 2016
1.1 - 49 & 50	21 MAY 2020	1.3 - 1 & 2	09 NOV 2017
1.1 - 51 & 52	13 AUG 2020	1.4 - 1 & 2	13 AUG 2020
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1.1 - 57 & 58	05 NOV 2020	1.4 - 7 & 8	28 FEB 2019
1.1 - 59 & 60	05 NOV 2020	1.4 - 9 & 10	09 NOV 2017
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1.1 - 71 & 72	05 NOV 2020	1.5 - 1 & 2	28 FEB 2019
1.1 - 73 & 74	05 NOV 2020	1.5 - 3 & 4	21 MAY 2020
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1.1 - 77 & 78	05 NOV 2020	1.5 - 7 & 8	24 MAY 2018
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1.1 - 81 & 82	05 NOV 2020	1.5 - 11 & 12	28 FEB 2019
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1.1 - 93 & 94	05 NOV 2020	1.5 - 23 & 24	10 NOV 2016
1.1 - 95 & 96	05 NOV 2020	1.5 - 25 & 26	16 AUG 2018
1.1 - 97 & 98	05 NOV 2020	1.5 - 27 & 28	16 AUG 2018
1.1 - 99 & 100	05 NOV 2020	1.5 - 29 & 30	08 NOV 2018
1.1 - 101 & 102	05 NOV 2020	1.5 - 31 & 32	16 AUG 2018
1.1 - 103 & 104	05 NOV 2020	1.5 - 33 & 34	16 AUG 2018
1.1 - 105 & 106	05 NOV 2020	1.5 - 35 & 36	16 AUG 2018
1.1 - 107 & 108	05 NOV 2020	1.5 - 37 & 38	05 NOV 2020
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1.5 - 51 & 52	16 AUG 2018	1.14 - 3 & 4	25 MAY 2017
1.6 - 1 & 2	10 NOV 2016	1.14 - 5 & 6	25 MAY 2017
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1.6 - 5 & 6	21 MAY 2020	1.14 - 9 & 10	25 MAY 2017
1.6 - 7 & 8	09 NOV 2017	1.14 - 11 & 12	25 MAY 2017
1.6 - 9 & 10	09 NOV 2017	2.1 - 1 & 2	10 NOV 2016
1.7 - 1 & 2	09 NOV 2017	2.2 - 1 & 2	05 NOV 2020
1.7 - 3 & 4	09 NOV 2017	2.2 - 3 & 4	05 NOV 2020
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1.7 - 7 & 8	16 AUG 2018	2.2 - 7 & 8	05 NOV 2020
1.7 - 9 & 10	27 FEB 2020	2.2 - 9 & 10	05 NOV 2020
1.8 - 1 & 2	10 NOV 2016	3.1 - 1 & 2	21 MAY 2020
1.9 - 1 & 2	05 NOV 2020	3.2 - 1 & 2	10 NOV 2016
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1.9 - 5 & 6	27 FEB 2020	3.4 - 1 & 2	10 NOV 2016
1.10 - 1 & 2	08 NOV 2018	3.5 - 1 & 2	10 NOV 2016
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1.10 - 7 & 8	07 NOV 2019	4.2 - 1 & 2	10 NOV 2016
1.10 - 9 & 10	15 AUG 2019	4.3 - 1 & 2	05 NOV 2020
1.10 - 11 & 12	27 FEB 2020	4.4 - 1 & 2	05 NOV 2020
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1.10 - 23 & 24	05 NOV 2020	5.5 - 1 & 2	05 NOV 2020
1.10 - 25 & 26	05 NOV 2020	5.5 - 3 & 4	05 NOV 2020
1.10 - 27 & 28	05 NOV 2020	5.5 - 5 & 6	05 NOV 2020
1.10 - 29 & 30	05 NOV 2020	5.5 - 7 & 8	05 NOV 2020
1.10 - 31 & 32	05 NOV 2020	5.5 - 9 & 10	05 NOV 2020
1.10 - 33 & 34	05 NOV 2020	5.6 - 1 & 2	10 NOV 2016
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1.11 - 1 & 2	25 MAY 2017	0.6 - 1 & 2	05 NOV 2020
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GEN 0.5 LIST OF HAND AMENDMENTS

1. As a matter of principle, this document does not normally require handwritten amendment. Nevertheless, to alleviate printing costs, minor editorial changes are notified on this page, but will not be actioned as formal amendments until they can be accommodated with a significant change to the relevant section(s). **Inclusion of manuscript amendments is, therefore, at the AIP holder's discretion.**
2. Current minor amendments are: NIL

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GEN 1. NATIONAL REGULATIONS AND REQUIREMENTS**GEN 1.1 DESIGNATED AUTHORITIES****1. DESIGNATED AUTHORITIES****1.1 Department of Infrastructure, Transport, Regional Development and Communications (Department of Infrastructure)****a. Facilitation and aviation policy:**

Assistant Secretary
Aviation Industry Policy Branch
Aviation and Airports Division
Department of Infrastructure, Transport, Regional
Development and Communications
GPO Box 594
CANBERRA ACT 2601 AUSTRALIA
PH: 61 2 6274 7611
Email: internationalaviation@infrastructure.gov.au

b. Aircraft noise operating restrictions:

Assistant Secretary - Airspace Policy and International
Programs
Aviation and Airports Division
Department of Infrastructure, Transport, Regional
Development and Communications
GPO Box 594
CANBERRA ACT 2601 AUSTRALIA
PH: 61 2 6274 7892
Fax: 61 2 6274 7804
Email: aircraftpermits@infrastructure.gov.au

1.2 Aviation and Maritime Security

a. First Assistant Secretary
Aviation and Maritime Security Division
Department of Home Affairs
GPO Box 25
BELCONNEN ACT 2616 AUSTRALIA
PH: 61 2 6274 6520
Fax: 61 2 6264 4493
Email: richard.feakes@homeaffairs.gov.au

- b. Aviation and Maritime Security Division
Transport Security Coordination Team
PH: 1300 791 581 (Option 0)
61 2 5127 8995 (outside Australia)
Email: transport.security@homeaffairs.gov.au
- c. Aviation and Maritime Security Division
Guidance Centre
PH: 1300 791 581 (Option 1)
Email: guidancecentre@homeaffairs.gov.au
- d. Aviation and Maritime Security Division
National Regulatory Assessment
(re: for submitting Transport Security Plans)
GPO Box 1966
CANBERRA ACT 2601 AUSTRALIA
Email: national.coordinator@homeaffairs.gov.au

1.3 **Civil Aviation Safety Authority**

- a. *Head Office:*
Civil Aviation Safety Authority
GPO Box 2005
CANBERRA ACT 2601 AUSTRALIA
PH: 131 757 (within Australia)
61 2 6217 1449 (from overseas)
Web: www.casa.gov.au
- b. *International Operations:*
International Operations
GPO Box 2005
CANBERRA ACT 2601 AUSTRALIA
PH: 61 7 3144 7400
Fax: 61 7 3144 7555
Email: international_ops@casa.gov.au
Web: www.casa.gov.au/standard-page/foreign-air-transport-air-operators-certificate
or
www.casa.gov.au/standard-page/non-scheduled-flight-permission

1.4 Air Traffic Services

Chief Executive Officer - Airservices Australia
Alan Woods Building
25 Constitution Ave
CANBERRA CITY ACT 2601, or
PO Box 367
CANBERRA ACT 2601
PH: 61 2 6268 4111
Fax: 61 2 6268 5693

1.5 Australian Border Force

Director – Traveller Policy Section
Australian Border Force
PO Box 25
BELCONNEN ACT 2616
PH: 61 2 6264 1208
Email: travellerpolicy@abf.gov.au

1.6 Department of Agriculture, Water and the Environment (DAWE) – Biosecurity

Director – Conveyances and Ports Section
Department of Agriculture, Water and the Environment (DAWE)
GPO Box 858
CANBERRA ACT 2601
PH: 61 2 6272 3901
Email: arrivals@awe.gov.au
Web: www.agriculture.gov.au/biosecurity/avm/aircraft

1.7 Department of Health – Human Biosecurity

Director - Border Health Section
Health Emergency Management Branch
Office of Health Protection
Department of Health
GPO Box 9848
CANBERRA ACT 2601
PH: 1800 020 103
(after hours emergency number 61 2 6289 3030)
Email: humanbiosecurity@health.gov.au
Web: www.health.gov.au/humanbiosecurity

1.8 Aircraft Accident Investigation

Australian Transport Safety Bureau (ATSB)
PO Box 967
Civic Square
CANBERRA ACT 2608
PH: 1800 011 034
61 2 6230 4408
Fax: 61 2 6274 6434
Email: atsbinfo@atsb.gov.au
Web: www.atsb.gov.au

1.9 Meteorology

The Director
Bureau of Meteorology
700 Collins St
DOCKLANDS VIC 3001
or
GPO Box 1289
MELBOURNE VIC 3001
PH: 61 3 9669 4000
Fax: 61 3 9669 4699
Web: www.bom.gov.au

1.10 Search and Rescue

- a. Australian Maritime Safety Authority (AMSA)
GPO Box 2181
CANBERRA ACT 2601
Email enquiries: www.amsa.gov.au/about/contact-us
Web: www.amsa.gov.au
- b. For Search and Rescue General Enquiries:
PH: 1800 627 484
61 2 6279 5000
- c. For the Australian Joint Rescue Coordination Centre (JRCC):
PH: 1800 815 257
61 2 6230 6899

1.11 Department of Defence

- a. Chief of Air Force
Department of Defence
Building R1, Russell Offices
RUSSELL ACT 2600

- b. Chief of Joint Operations
HQ Joint Operations Command
Department of Defence
PO Box 7928
CANBERRA BC ACT 2610
- c. Diplomatic Clearance Authorisation Cell
PH: 61 2 6128 4819
Email enquiries: foreignaircraft.requests@defence.gov.au
or dipa.hqac@defence.gov.au

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GEN 1.2 ENTRY, TRANSIT AND DEPARTURE OF AIRCRAFT**1. ENTRY, TRANSIT AND DEPARTURE OF INTERNATIONAL FLIGHTS****1.1 Preamble**

1.1.1 All flights into, from, or over Australian territory, and landings in such territory must be carried out in accordance with the legislation of Australia regarding civil aviation.

1.1.2 In accordance with *Section 10* of the *Air Navigation Act 1920*, aircraft arriving in or departing from any part of Australian territory must land at and depart from airports designated for that purpose.

1.1.3 The international airports designated under *Section 9* of the *Air Navigation Act 1920* for entry and departure are shown in *GEN 1.2 section 2*. and *GEN 1.3 section 8*.

1.1.4 Aircraft which are completely cleared by the Australian Border Force (ABF) at a designated international airport are permitted to land at other airports within Australian territory. Nevertheless, when such aircraft depart from Australian territory, they can only do so from a designated international airport.

1.1.5 Aircraft that are not fully cleared by Department of Agriculture, Water and the Environment (DAWE) - Biosecurity and formally released from biosecurity control, at their first airport of call, continue subject to biosecurity control and restrictions for their movements to other locations, until released.

1.2 Scheduled International Commercial Services by Foreign Aircraft of Contracting States to the Chicago Convention

1.2.1 **International Airline Licence:** An international airline of a country other than Australia must not operate a scheduled international air service over or into Australian territory except in accordance with an International Airline Licence.

1.2.2 The requirement to hold an International Airline Licence does not apply to the following categories of scheduled international air services:

- a. scheduled international air services that fly over Australian territory but do not land in Australian territory;
- b. scheduled international air services that land in Australian territory but do not set down or take on passengers or cargo for reward or hire;

- c. scheduled international air services operated in accordance with an agreement, between an international airline and the holder of an International Airline Licence, which the Secretary of the Department of Infrastructure has approved in writing.
- 1.2.3 An International Airline Licence shall not be granted to an international airline of a country other than Australia unless that country and Australia are parties to an agreement or arrangement under which the scheduled international air services of that other country may be operated over or into Australian territory.
- 1.2.4 Applicants for an International Airline Licence may obtain a copy of Guidance Notes for Applicants at:
www.infrastructure.gov.au/aviation/international/ial/index.aspx
- 1.2.5 All holders of International Airline Licences are required to notify the Secretary of the Department of Infrastructure in an approved form of any new or changed international (scheduled) air service.
- 1.2.6 **Lodging of timetables:** The requirements for lodging of timetables by international airlines are set out in *Air Navigation Regulations 2016, Section 29*. This is available on the Federal Register of Legislation at: www.legislation.gov.au
- 1.2.7 An application for approval of a timetable must be lodged with the Secretary not less than 35 days before the date from which the airline proposes to operate the service in accordance with the timetable, or within such shorter period as the Secretary allows.
- 1.2.8 Should an airline wish to lodge an application in less than the 35 day period, it should provide its reasons for wanting to do so. For practical purposes, lodgement “with the Secretary” means lodgement with the Assistant Secretary of Aviation Industry Policy, Department of Infrastructure, at the address shown in *GEN 1.1*.
- 1.2.9 Further information on timetable applications is available on the Department of Infrastructure’s website:
www.infrastructure.gov.au/aviation/international/ial/index.aspx
- 1.2.10 **Australian Foreign Air Transport Air Operator’s Certificate (FATAOC):** In addition to an Australian International Airline Licence, an operator of a proposed scheduled service to Australia is required to hold an FATAOC issued by CASA.

1.2.11 Application forms for FATAOC are available from CASA International Operations (see contact details in *GEN 1.1*)

1.3 **Summary of Documents to be presented by Pilot in Command or Authorised Agent**

Note: All required documents must be furnished in English, and originals and all copies must be completely legible. Names should be shown in block letters, and with regard to names of passengers, initials at least are to be inserted. Documents must be fully and accurately completed.

1.3.1 **At First Airport of Call in Australia**

a. Impending Arrival Report

The aircraft operator must report the impending arrival of the aircraft to the Department of Home Affairs, regardless of whether or not the aircraft is carrying cargo. If the aircraft is carrying cargo, the Impending Arrival Report must be lodged electronically in the Integrated Cargo System (ICS):

(i) not more than 10 days before the estimated time of arrival of the aircraft, and:

(1) not later than three hours before the estimated time of arrival of the aircraft if the flight from the airport is likely to take not less than three hours; or

(2) one hour if the flight from the airport is likely to take less than three hours.

If the aircraft is not carrying cargo, the Impending Arrival Report may be lodged either electronically in the ICS, or by document (Form B364) within the above time frames.

See: www.abf.gov.au/help-and-support/forms

b. Actual Arrival Report

The aircraft operator must report the particulars of the arrival of the aircraft and the time of arrival to the Department of Home Affairs. Where an aircraft is carrying cargo, the Actual Arrival Report (AAR) must be lodged electronically in the ICS within three hours of the arrival of the aircraft or before the certificate of clearance is issued, whichever occurs first.

If the aircraft is not carrying cargo, the AAR may be lodged electronically in the ICS, or by document (Form B358), providing the reporter satisfies an Evidence of Identity and the form is signed in the manner specified on the form.

The AAR in ICS is made in place of a General Declaration. However, some countries still require General Declarations for arriving aircraft. ABF Officers will stamp the General Declaration on departure of the aircraft in these circumstances.

Note: ABF officers may still require a General Declaration be produced as part of general mandatory disclosures.

c. List of Stores (e.g. narcotic drugs, beer, wine, spirits and tobacco products)

The aircraft operator must report the particulars of the aircraft stores and of any prohibited goods contained in those stores at the time of arrival to Department of Home Affairs. See *GEN 1.4 para 1.2* for more information.

d. Cargo Report

The cargo report is used to report the particulars of all cargo (including mail, in-transit and transshipment cargo) on board an aircraft. The carrier is required to report the full detail of cargo, including any cargo carried on behalf of another cargo reporter to the Department of Home Affairs and the details of the depot operator who will first receive the cargo after it has been unloaded from the aircraft at a place in Australia. See *GEN 1.4 para 1.1* for more information.

e. Crew Declaration – Aircrew1 copy each

Each individual crew member must complete a copy of Crew Declaration (Form B465).

1.3.2 At Airports other than First Airport of Call in Australia

The requirements for the following reports are the same as those outlined in *para 1.3.1*.

- a. Impending Arrival Report;
- b. Actual Arrival Report;
- c. List of Stores (e.g. narcotic drugs, beer, wine, spirits and tobacco products).

Further, at stops other than the first airport of call, the pilot in command or authorised agent will present the copy of the Certificate of Clearance signed and stamped by the ABF Officer prior to departure from the previous stop.

If the aircraft is due to arrive at its first airport of call since its last departure airport outside Australia, the pilot or authorised agent must report to the Department of Home Affairs, in accordance with this section, particulars of all goods:

- a. The pilot in command or the authorised agent has arranged to be carried on the aircraft on the flight; and
- b. that are intended to be unloaded from the aircraft at an airport in Australia (whether the first airport or any subsequent airport on the same flight).

1.3.3 **At First Airport of Departure from Australia**

a. **Export Permits (where required)**

Note: One copy of each manifest must be initialled by the pilot in command or authorised agent.

- b. **List of Stores (e.g. narcotic drugs, beer, wine, spirits and tobacco products)** – See *GEN 1.4 section 1.2*.
- c. **Departure Report** – The departure report is a prerequisite that must be satisfied before a certificate of clearance can be granted by the Department of Home Affairs.
See *GEN 1.4 section 1.5*.
- d. **Outwards Manifest (electronic, lodged in the ICS)** – The outwards manifest is used to notify the Department of Home Affairs of all goods that were loaded on board the aircraft.
See *GEN 1.4 section 1.5*.

If a departing aircraft is not carrying any export cargo, a manifest must still be lodged. This manifest states that no cargo was loaded and is called a 'Nil Manifest'.

- e. **Certificate of Clearance** – The pilot of an aircraft must not depart from any airport without receiving a signed and stamped Certificate of Clearance in respect to the aircraft from an ABF Officer.

1.4 **Non-Scheduled International Commercial Services by Foreign Aircraft of Contracting States to the Chicago Convention**

- 1.4.1 **Definition of Non-scheduled Services.** Non-scheduled service, in relation to an aircraft that possesses the nationality of a Contracting State, means a flight by that aircraft over or into Australian territory other than under the authority of an International Airline Licence.

- 1.4.2 Where an aircraft makes a commercial non-scheduled flight into or out of Australian territory, it must have prior permission from the Department of Infrastructure and CASA.

Some categories of non-scheduled flights have standing Department of Infrastructure approvals. See *para 1.6*.

- 1.4.3 Department of Infrastructure international freight and charter policy guidelines, and permission for flights, may be obtained from the Aviation and Airports Division at the address shown in *GEN 1.1* or at: www.infrastructure.gov.au/aviation/international/guidelines.aspx. When applying for permission for flights, applicants must advise the Department of Infrastructure of permission for slot allocation from Airport Coordination Australia (see *ENR 1.9 section 2*.)

An application form (Form 094) for CASA permission for non-scheduled flights can be obtained from the address in *GEN 1.1*.

- 1.4.4 At the same time that permission is sought from Department of Infrastructure and CASA, an aircraft operator, through the designated representative, must obtain and agree to the conditions of use (including aircraft charges) or similar policies as applied by each airport owner or operator. Airport Owners and Operators are listed in *ERSA FAC*.

- 1.4.5 Applications for permission should be accompanied by the prescribed fees. Details of application fees under Part 5, Division 3 of the *Air Services Act 1995* may be obtained from Airservices at the addresses shown at *GEN 1.1*.

1.5 **Non-Scheduled International Commercial Services by Australian Aircraft**

- 1.5.1 Department of Infrastructure permission must be sought as per the requirements of *para 1.4* or via standing approvals outlined in *para 1.6*.

- 1.5.2 CASA permission is required under *Section 26* of the *Civil Aviation Act 1988*. Operators should apply to CASA.

Note: Separate CASA permission is not required if the operator's Air Operator Certificate is specifically endorsed to authorise such international flights.

1.5.3 At the same time that permission is sought from Department of Infrastructure and CASA, an aircraft operator, through the designated representative, must obtain and agree to the conditions of use (including aircraft charges) or similar policies as applied by each aerodrome owner or operator. Aerodrome owners and operators are listed in *ERSA FAC*.

1.6 **Non-Scheduled International Commercial Services by Australian Aircraft and Foreign Aircraft of Non-Contracting States and Contracting States, which do not Require Prior Approval from the Department of Infrastructure**

1.6.1 A delegate of the Secretary of the Department of Infrastructure pursuant to subsection 15A(3) of the *Air Navigation Act 1920* has determined that permission is not required in respect of the following categories charter flights:

Note: "charter flight" means a non-scheduled flight by an aircraft which takes on or discharges passengers, cargo or mail for carriage for reward in Australian territory.

- a. A single charter flight which does not form part of a program, subject to the following condition;
 - (i) while the Biosecurity (Human Biosecurity Emergency) (Human Coronavirus with Pandemic Potential) Declaration 2020 remains in force, this exemption does not apply to a charter flight conducted by an aircraft that is carrying one or more passengers and has a seating capacity exceeding 80 persons
- b. programs of passenger charter flights by aircraft with a maximum seating capacity of 10 or fewer seats;
- c. programs of five or less passenger charter flights with aircraft having a maximum seating capacity of 40;
- d. programs of two or less passenger charter flights with aircraft having a maximum seating capacity of 80;
- e. own-use charter flights, whether or not forming part of a program, where there is a single charterer;

- f. charter flights for carriage of homogenous cargo - a charter flight, whether or not forming part of a program, where there is a single charterer, and the dominant purpose of the flight is the transport of cargo. The cargo must not consist of or include a consignment consolidated by a freight forwarder. The cargo is homogenous. Examples of homogenous cargo include cargo consisting of electronic equipment; cargo consisting of meat of any number of kinds; cargo consisting of animals (including livestock) of any number of species.

1.6.2 Operators of any flight included in one of the categories above are required under subsection 15A(7) of the *Air Navigation Act 1920*, within 14 days after the end of the flight, to give a written notice setting out details in relation to the flight and the passengers, cargo and mail. This notice is to be provided to the Assistant Secretary, Aviation Industry Policy, Aviation and Airports Division, Department of Infrastructure, Transport, Regional Development and Communications at the address in *GEN 1.1*. The required details are:

- a. the name and address of the charterer;
- b. the name and address of the charter operator;
- c. the type and capacity of the aircraft;
- d. whether the flight was a single charter flight or part of a program of charter flights;
- e. if the aircraft carried cargo, the type of cargo;
- f. the following particulars of the flight:
 - (i) the place where the flight began;
 - (ii) the place where the flight ended;
 - (iii) any intermediate stopping places, specifying at which places passengers, cargo or mail were taken on or discharged;
 - (iv) the dates of departure from, and arrival at, the places mentioned in the preceding subparagraphs;
- g. whether the flight was a “charter flight for carriage of homogenous cargo” and whether the flight was an “own-use charter flight”.

- 1.6.3 Operators may provide details of more than one flight in a single notification provided that the Department of Infrastructure receives notification of all flights within 14 days after the end of each individual flight. If Australian authorities find that charter flights coming within the above categories are being repeated in close proximity, operators may be required to submit applications for assessment of any further flights.
- 1.6.4 All operators should note the separate requirements for transport security plan approval and aircraft noise certification.
- 1.6.5 At the same time that permission is sought from Department of Infrastructure and CASA, an aircraft operator, through the designated representative, must obtain and agree to the conditions of use (including aircraft charges) or similar policies as applied by each aerodrome owner or operator. Aerodrome owners and operators are listed in *ERSA FAC*.
- 1.7 **International Flights by Foreign Aircraft not Possessing Nationality of Contracting State to the Chicago Convention**
 - 1.7.1 For international flights over or into Australian territory where the carrier is registered in a State which is not a party to the Chicago Convention, the operator must obtain prior permission from the Department of Infrastructure, Transport, Regional Development and Communications, and CASA through diplomatic channels. All such requests must be in writing.
- 1.8 **Flights by Foreign State Aircraft**
 - 1.8.1 **Aircraft Diplomatic Clearance Application**

Diplomatic clearance is required for foreign state aircraft to enter and operate in Australian territory, including the airspace above Australian offshore islands. Applications for foreign state aircraft to conduct flying operations within Australian territory should be submitted at least five working days before the proposed date of entry into Australian airspace.

At least two weeks' notice is required if military services are requested (such as parking at a Royal Australian Air Force base). A separate application should be submitted for each aircraft, or formation of aircraft. The Department of Foreign Affairs web pages provide aircraft diplomatic clearance application forms and instructions, at:
<https://www.dfat.gov.au/about-us/foreign-embassies/protocol/Pages/diplomatic-clearances-aircraft-and-ships>.

-
- 1.8.2 Applications are submitted by completing the application form and emailing it to: foreignaircraft.requests@defence.gov.au and dipa.hqac@defence.gov.au. Diplomatic clearance applicants will be required to provide the following information:
- Requesting Country;
 - Point of Contact details;
 - Purpose of the flight;
 - Aircraft Operator (if civil registered, the address and nationality);
 - Aircraft Type;
 - Aircraft Registration Mark;
 - Aircraft Callsign;
 - Itinerary (including previous and next destinations);
 - Flight Routes;
 - Aircraft Captain Details;
 - Crew and Passenger Numbers;
 - VIP Details (if applicable);
 - Weapons Details;
 - Dangerous Cargo Details;
 - Ground Handling Details (for aircraft landing at Defence Establishments); and
 - Ground Handling Agent (for aircraft landing at Civilian Airfields).
- 1.8.3 In the event of any changes to the flight details, the request must be updated and be resent as soon as possible to: foreignaircraft.requests@defence.gov.au and dipa.hqac@defence.gov.au.
- 1.8.4 Any questions relating to diplomatic clearances should be addressed to the Diplomatic Clearance Authorisation Cell on +61 2 6128 4819 or foreignaircraft.requests@defence.gov.au and dipa.hqac@defence.gov.au.
- 1.8.5 **Compliance**
- Foreign State aircraft operating under diplomatic clearance are required to comply with applicable aerodrome procedures and air traffic control directions.

- 1.8.5.1 Diplomatic clearance does not exempt the requesting government's responsibility to meet other Australian Government requirements such as customs, biosecurity and immigration or the requirement for permission to carry or import munitions or implements of war. It is the responsibility of the foreign government to ensure all necessary paperwork and/or clearances from Australian Government agencies are arranged prior to arrival.
- 1.8.5.2 A regulation 136 permission from the Australian Civil Aviation Safety Authority (CASA) is also required. In certain circumstances, diplomatic clearance may only be issued subject to the aircraft, cargo and passengers undertaking additional checks and searches. Failure to comply with any conditions on a diplomatic clearance, or with other government agencies' procedures, could result in penalties and affect issuance of future diplomatic clearances.
- 1.8.6 **Foreign Military Aircraft Participating in Exercises within Australia**
- Foreign State aircraft visiting Australia for a combined exercise are required to seek diplomatic clearance and CASA permission for their transit to and from their operating location. All exercise flights are covered under the exercise arrangements. However, any transits from their deployed location to another location outside the exercise schedule will require approval. Certain military aircraft will require permission to import from the Department of Home Affairs. Export permission from the Department of Defence may also be required.
- 1.8.7 **Alternate Routes and In-flight Emergencies**
- Approval will not be issued for alternate or diversion airfield requests inside Australia. Aircraft diverting in response to an in-flight emergency or poor weather do not require diplomatic approval and should select the nearest appropriate airfield. Notification of any emergency diversions should be sent to the Diplomatic Clearance Cell at the earliest opportunity thereafter landing (foreignaircraft.requests@defence.gov.au).
- 1.9 **International Private Flights**
- 1.9.1 A private flight means a flight by an aircraft carrying passengers or cargo whose costs are met by the owner and/or operator of the aircraft.

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- 1.9.2 *Section 14 of the Air Navigation Act 1920* allows an aircraft that possesses the nationality of a Contracting State undertaking a private flight to enter or leave Australia or fly in transit across Australia without the requirement of obtaining prior permission.
- 1.9.3 No specific operational assessment is required for such flights, but pilots are advised of the following:
- a. in addition to the requirements of *CAR 139 (Documents to be carried in Australian aircraft)*, a journey log book must be carried which details particulars of the aircraft, its crew and of each journey.
 - b. the rules and regulations pertaining to the flight and manoeuvring of aircraft must comply with the following:
 - (i) Australian rules, where applicable;
 - (ii) ICAO rules, when operating over the high seas; and
 - (iii) foreign State rules, where applicable, while flying over a foreign State's territory.
 - c. Also note the provisions of *para 1.16* in relation to aircraft noise certification.
- 1.9.4 The pilot in command must assume and exercise responsibility for the operation and safety of the aircraft from the moment that the doors of the aircraft are closed until the moment when it comes to rest at the end of the flight and the engines used as primary propulsion units are shut down.
- 1.9.5 If an emergency endangers the safety of the aircraft or persons on board and requires action in violation of the law of a foreign State, the pilot in command must:
- a. as soon as practicable, tell the foreign State authority responsible for that law; and
 - b. if required by the authority, give a written report of the violation to the authority; and
 - c. send a copy of the report to CASA.
- 1.9.6 The pilot in command must assume and exercise responsibility to tell the nearest appropriate State authority, by the quickest means possible, of any accident involving the aircraft that has resulted in:
- a. death or serious injury to any person; or
 - b. substantial damage to the aircraft or any property.

- 1.9.7 The pilot in command may not operate at an aerodrome using lower operating minima than those established for the aerodrome by the responsible authority, without approval from the responsible authority. The pilot in command may not utilise operating minima lower than 200FT above ground level without approval from CASA.
- 1.9.8 Before a flight, the pilot in command must ensure that the aircraft is carrying the following:
- a. an accessible first aid kit;
 - b. current and suitable charts for the route of the proposed flight and for all routes along that route to which it is reasonable to expect the flight may be diverted;
 - c. procedures for pilots in command of intercepted aircraft, as described in *Annex 2* to the *Chicago Convention*;
- 1.9.9 Before departure from Australian territory, the pilot in command must ensure that:
- a. the certificate of airworthiness for the aircraft will remain valid while the aircraft is outside Australian territory; and
 - b. either:
 - (i) the maintenance release for the aircraft will not expire while the aircraft is outside Australian territory; or
 - (ii) before the maintenance release expires, an authorised person will issue a maintenance release; and
 - c. if the pilot in command is not the registered operator of the aircraft - arrangements are in place with the registered operator for the pilot in command to be notified about any urgent maintenance or operational requirements while the aircraft is outside Australian territory.

Note: Urgent maintenance or operational requirements include, for example, Airworthiness Directives.

1.10 **Aviation Security**

- 1.10.1 Aviation security incidents must be reported to the Department of Home Affairs Aviation and Maritime Security Division - Transport Security Coordination Team (see *GEN 1.1*).
- 1.10.2 Under the *Aviation Transport Security Act 2004*, aviation security incidents are defined as:

- a. a threat of unlawful interference with aviation; or
- b. an unlawful interference with aviation.

1.11 Aviation Security: Transport Security Program (TSP)

- 1.11.1 The *Aviation Transport Security Act 2004* (Division 2 of Part 2) requires that all operators of a prescribed air service operating within, to, or from Australia have a TSP approved by the Department of Home Affairs.

Note: A prescribed air service is defined in regulation 1.06 of the Aviation Transport Security Regulations 2005.

- 1.11.2 A TSP essentially contains security risk information about the relevant aviation industry segment as it applies to the operations of a prescribed air service. It articulates the security measures and procedures that will be implemented by the operator to prevent unlawful interference.
- 1.11.3 TSP remain subject for up to a 60 day consideration period for approval. Therefore, operators of prescribed air services are advised to submit a TSP as soon as practical so that the intended commencement of air services is not affected. TSP must meet all requirements set out in *Section 16* of the *Aviation Transport Security Act 2004* and *Part 2 Division 2.3* of the *Aviation Transport Security Regulations 2005*.
- 1.11.4 International recognition of approved aviation security plans of other nations is not available.
- 1.11.5 Guidance for the production and lodgement of a TSP for assessment is available on the Department of Home Affairs website at: www.homeaffairs.gov.au/about-us/our-portfolios/transport-security/air-cargo-and-aviation/aviation
- 1.11.6 TSP submissions are to be lodged via email to: national.coordinator@homeaffairs.gov.au
- 1.11.7 For operators of prescribed air service not based in Australia, it is also advisable that they provide a proof of their legal entity status in their country of registration as part of their submission.
- 1.11.8 Enquiries around regulatory requirements or submissions under development should be directed to the Guidance Centre within the Aviation and Maritime Security Division, Department of Home Affairs (see *GEN 1.1*).
- 1.11.9 Enquiries around whether a TSP is required are to include:

- a. whether an application has been made or approved for “Flights by Foreign State Aircraft” – see *para 1.8*.
- b. if an application has not been made or approved then the following information is required:
 - (i) the legal entity name of the aircraft operator;
 - (ii) the name and address of the aircraft operator;
 - (iii) the name and address of any engaged or intended ground handling agent;
 - (iv) the type and capacity of the aircraft;
 - (v) whether the flight is a single charter or part of scheduled or unscheduled program of flights and the period in which it is intended to operate;
 - (vi) the nature of the aircraft operations (purpose of flight) including if the aircraft is carrying cargo, the type cargo;
 - (vii) the place/places where the flight/flights will originate; (both external to Australia and within Australia);
 - (viii) any intermediate stopping places specifying at which places passengers or cargo (including mail) were taken on board or discharged;
 - (ix) the intended date of commencement of the service/ flight; and
 - (x) details of any wet or dry lease arrangements.

1.12 **Carriage of Munitions of War and Implements of War**

- 1.12.1 In accordance with *Section 19(2)* of the *Air Navigation Act 1920*, munitions of war or implements of war must not be carried by an aircraft in or over Australian territory, or by an Australian aircraft outside Australian territory, except with the permission in writing of the delegate of the Minister for Infrastructure, Transport and Regional Development.
- 1.12.2 Applications for transportation of munitions of war by State aircraft of a country other than Australia in Australian territory, or by an Australian aircraft outside Australian territory should be lodged with the Chief of Air Force or Chief of Joint Operations, Department of Defence (see *GEN 1.1*).

1.12.3 Applications for carriage of munitions of war or implements of war in all other circumstances should be lodged with the Secretary of the Department of Infrastructure, through the Assistant Secretary Aviation Industry Policy, Aviation and Airports Division (see *GEN 1.1*).

1.12.4 Certain firearms and weapons will require permission to import from the Department of Home Affairs. Export permission from the Department of Defence may also be required.

1.13 **Foreign Clearances - Australian Aircraft**

1.13.1 Australian aircraft operators are responsible for obtaining foreign clearances when necessary for overflights of, or landings in, the territory of another State.

1.13.2 For guidance on this process, contact the Diplomatic Clearance Officer, Department of Defence via email at: foreignaircraft.requests@defence.gov.au and dipa.hqac@defence.gov.au

1.13.3 Pilots are advised that their flight plans will not be considered by some countries unless documentation of onward foreign clearance is produced.

1.14 **Aircraft on International Flights to Comply with Laws**

1.14.1 The owner, operator, hirer, pilot in command and any other pilot of any aircraft granted a licence, permission or approval that enters or departs Australian territory must comply with the provisions of all applicable laws of the Commonwealth or of a State or Territory. This includes laws relating to entry and departure or clearance of passengers, crew and/or cargo, immigration, passports, customs and biosecurity. See *Section 16* of the *Air Navigation Act 1920* for more information.

1.15 **Section 22 of the Civil Aviation Act 1988**

1.15.1 *Section 22* of the *Civil Aviation Act 1988* gives effect in Australian law to the provisions of *Article 3* of the *Chicago Convention*. This prohibits the use of force against civil aircraft and provides for the regulation of civil aircraft flying over the territory of foreign countries without authorisation or for any purpose that is inconsistent with the aims of the *Chicago Convention*.

- 1.15.2 Aircraft under Australian jurisdiction shall not be flown over the territory of a foreign country without authorisation or for a purpose that is prejudicial to the security, public order or safety of air navigation in that country. If an aircraft is being flown in these circumstances, the pilot in command must comply with an order to land or any other instruction that is given by an authorised official of the foreign country.
- 1.15.3 The pilot in command who is found guilty of an offence under *Section 22* shall be subject to severe penalties such as imprisonment. Ancillary offenders (for example, the operator) may be prosecuted under the *Crimes Act 1914*.
- 1.15.4 Nothing in this legislation relieves obligations which any other law, including the law of a foreign country, might impose. An Australian aircraft which is flying with proper authorisation over the territory of a foreign country is required to obey a direction legally given by the aviation authorities of the country concerned, just as a foreign aircraft flying over Australian territory is required to obey a lawful direction which may be given by the relevant Australian authorities.
- 1.16 **Aircraft Noise Operating Restrictions**
 - 1.16.1 Under the *Air Navigation (Aircraft Noise) Regulations 2018*, international and domestic aircraft operating in Australia are required to be certified as compliant with the relevant ICAO *Annex 16* noise standards. Subsonic jets must be certified as Chapter 3, Chapter 4 or Chapter 14. Aircraft with Chapter 2 noise certification are not permitted to operate.
 - 1.16.2 Large, Marginally noise Compliant Chapter 3 (MCC3) jet aircraft are prohibited from operating at: Sydney, Melbourne, Brisbane, Perth, Adelaide, Hobart, Canberra, Darwin, Cairns, Gold Coast, Williamtown, Essendon and Avalon airports. For a full list of potentially affected aircraft types contact the Assistant Secretary, Airspace Policy and International Programs Branch (see *GEN 1.1*).
 - 1.16.3 Operators of MCC3 aircraft who want to operate at these airports must apply to the Department of Infrastructure for a (noise) permission to operate.
 - 1.16.4 Aircraft owners and pilots requiring information about aircraft noise operating restrictions or the *Air Navigation (Aircraft Noise) Regulations 2018* should contact the Assistant Secretary of the Airspace Policy and International Programs Branch.

IMPORTANT - International operators must also contact CASA to apply for a safety permission to operate in Australian Territory. Contact details available online:

www.casa.gov.au/aircraft/foreign-operators

1.17 **Air Carriers' Liability and Insurance**

1.17.1 Australia's carriers' liability and insurance arrangements are outlined in the *Civil Aviation (Carriers' Liability) Act 1959* (the CACL Act). The Act gives the force of law to a number of passenger liability frameworks, including those arising under the 'Warsaw System', the Montreal Convention, and a separate system of liability for domestic travel.

1.17.2 Commercial passenger transport operations are required to maintain appropriate insurance arrangements in accordance with the requirements of the Act and the operator's licence(s).

1.18 **Australian Operational Documents Available to Pilots Licensed by another State Proposing to Visit Australia**

1.18.1 For pilots licensed by another State proposing to come to Australia, Airservices Australia has available the following documents which relate to the proposed flight. These are available on a payment basis:

a. **IFR Flight Documents** Australian AIP Book; En Route, Planning and Terminal Charts; Departure and Approach Procedures and ERSA.

b. **VFR Flight Documents** Australian AIP Book; En Route, Planning and Visual Terminal Charts, and ERSA.

1.18.2 A login using a valid Aviation Reference Number is required to order AIP products. The documents are ordered through www.aipshop.canprint.com.au

2. DESIGNATED INTERNATIONAL AIRPORTS - AUSTRALIA

Note: Operations by aircraft at all of the airports listed in the following section are limited to the pavement strength shown against the aerodrome in AIP ERSA. Prior application must be made to the airport operator for a pavement concession where this is necessary.

2.1 Major International Airports

- 2.1.1 “Major International Airport” means an airport of entry and departure for international air traffic where there is an ongoing border agency presence to conduct all formalities incident to Customs, Immigration and Biosecurity clearance.

Airport	Clearances Available
Adelaide	Customs, immigration and biosecurity.
Brisbane	Customs, immigration and biosecurity.
Cairns	Customs, immigration and biosecurity.
Darwin	Customs, immigration and biosecurity.
Melbourne	Customs, immigration and biosecurity.
Perth	Customs, immigration and biosecurity.
Sydney	Customs, immigration and biosecurity.

Note: Reasonable notification required for non-scheduled traffic. Mandatory biosecurity reporting requirements apply to all non-scheduled flights landing in Australian Territory.

2.2 Restricted Use International Airports

- 2.2.1 “Restricted Use International Airport” means an airport of entry and departure at which the formalities incident to Customs, immigration, and biosecurity and similar procedures are made available on a restricted basis, to coincide with flights with prior approval only.

- 2.2.2 Restricted Use International Airports are:

- a. Avalon
- b. Brisbane West Wellcamp

*Note: A First Port of Entry for biosecurity for overseas freighter aircraft **only** and goods carried on a freighter aircraft, except live horses. All other aircraft require prior DAWE - Biosecurity approval to land.*

- c. Broome
- d. Canberra
- e. Coffs Harbour

Note: Coffs Harbour is not determined as a first point of entry for overseas aircraft - requires prior DAWE - Biosecurity approval to land.

- f. Gold Coast

Note: Although not categorised as a major international airport, Gold Coast Airport has an ongoing border agency presence to conduct customs, immigration and biosecurity clearances.

- g. Hobart
- h. Learmonth

Note: Learmonth is a determined first point of entry for biosecurity for overseas aircraft, but goods are not permitted to be unloaded - requires prior DAWE - Biosecurity approval.

- i. Lord Howe Island
- j. Port Hedland
- k. Sunshine Coast
- l. Townsville
- m. Williamtown

- 2.2.3 The airline or its agent/representatives may be responsible for covering additional expenses relating to the positioning of resources from another border agency base to a Restricted Use International Airport.

2.3 **Alternate Airports to International Airports**

- 2.3.1 “Alternate Airport” means an airport specified in the flight plan to which a flight may proceed when it becomes inadvisable to land at the airport of intended landing (see also *GEN 1.3 para 6.*).
- 2.3.2 The Airline or its agent/representatives may be responsible for covering additional expenses relating to the positioning of resources from another border agency base to an Alternate Airport.
- 2.3.3 The following designated airports have customs, immigration and biosecurity clearances available if reasonable notification of diversion is given:

- a. Canberra
- b. Gold Coast
- c. Port Hedland
- d. Townsville - may be nominated as an international alternate for wide bodied aircraft subject to the following conditions:
 - Use of the military apron will be subject to the requirements of the RAAF.
 - Taxiway “K” maybe used when the military apron is not available.

2.3.4 In the event of emergency/distress, an aircraft engaged in an international flight may land at the following alternate airports:

- a. Alice Springs
- b. Avalon
- c. Busselton Margaret River
- d. Coffs Harbour
- e. Geraldton
- f. Kalgoorlie
- g. Launceston
- h. Learmonth
- i. Rockhampton
- j. Tindal

When safe to do so, the aircraft is then required to proceed directly on to a designated international airport where customs, immigration and biosecurity clearances can be completed. Further information is at *GEN 1.3 Section 6*.

2.4 **International Non-Scheduled Flight Airports**

2.4.1 An “International Non-scheduled Flight Airport” is an airport where approval may be granted, for international non-scheduled flights only, if the prescribed notice is provided in advance. No other international operations are permitted.

Horn Island	Customs, immigration and biosecurity clearances are available if reasonable prior notice is given.
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2.5 **External Territory International Airport**

- 2.5.1 “External Territory International Airport” means an airport of entry and departure for international air traffic located upon an Australian External Territory, where all formalities incident to Immigration, Biosecurity and Territory Customs, and similar procedures are available.
- 2.5.2 Australian external territory international airports are as follows:
- a. Christmas Island
 - b. Cocos (Keeling) Islands
 - c. Norfolk Island
- 2.5.3 At these airports, customs, immigration and biosecurity clearance services are provided to coincide with approved flights only.

GEN 1.3 ENTRY, TRANSIT AND DEPARTURE OF PASSENGERS AND CREW

1. INTRODUCTION

- 1.1 Australia has strict requirements for the entry and departure of aircraft engaged in international flights with two stages of examination of passengers:
 - a. biosecurity processing.
 - b. customs and immigration processing.
- 1.2 Standard procedures have been designed to facilitate the clearance of passengers through the two stages of examination.

2. BIOSECURITY REQUIREMENTS

2.1 General

- 2.1.1 Australia is free from many diseases, pests and weeds which cause serious damage in other parts of the world. Air crew and passengers are required to comply with legislative requirements under the *Biosecurity Act 2015*.
- 2.1.2 Detailed information about the biosecurity requirements for overseas aircraft can be found on the Department of Agriculture, Water and the Environment website at:
<https://www.agriculture.gov.au/biosecurity/avm/aircraft/guidelines-operators>

2.2 Disinsection

- 2.2.1 All aircraft are required to meet Australia's disinsection requirements. The operator of an overseas aircraft will make arrangements for the disinsection of the aircraft in a manner, and within a time, approved by the Director of Human Biosecurity.
- 2.2.2 The following disinsection options are available to airline operators to meet Australia's cabin and hold disinsection requirements:

Method	Cabin Chemicals	Hold Chemicals
Residual	2% permethrin	2% permethrin
Pre-embarkation	Pre-flight - 2% permethrin	1 shot - 2% permethrin and 2% d-phenothrin
Pre-flight and Top of Descent	Pre-flight - 2% permethrin and Top of Descent - 2% d-phenothrin	1 shot - 2% permethrin and 2% d-phenothrin
On arrival	2% d-phenothrin	1 shot - 2% permethrin and 2% d-phenothrin

2.2.3 The Residual and Pre-embarkation methods can only be used when an Approved Arrangement with the DAWE or a Compliance Agreement with the Ministry for Primary Industries, New Zealand (MPI) has been administered.

2.2.4 The '*Schedule of aircraft disinsection procedures for flights into Australia and New Zealand*' has been prepared in cooperation between the DAWE and the MPI. Further information is available at: www.agriculture.gov.au/biosecurity/avm/aircraft/disinsection

2.3 **Pre-arrival Reporting (PAR) Requirements**

2.3.1 Prior to arrival at a first point of entry in Australia, the operator of an international aircraft is required to advise the DAWE - Biosecurity of the following:

- a. Details of any person on board the aircraft who has, or had signs or symptoms of a listed human disease during the flight (see *section 2.4*);
- b. Details of any person on board the aircraft who died during the flight;
- c. If there are animals or plants (or both) in the cabin of the aircraft;
- d. If any animal in the cabin of the aircraft died during the flight - that fact; and
- e. If the aircraft is an incoming aircraft and the prescribed disinsection measures for the aircraft have not been taken, or will not have been taken, before the aircraft arrives at its first landing place in Australian territory.

Note: The report may be delivered through an airline authorised representative at the arrival airport. However it remains the liability of the aircraft operator to ensure any such reports are delivered to a biosecurity officer.

2.3.2 The operator, or commander of the aircraft on a non-scheduled flight must report the following additional information without exception:

- a. Information identifying the aircraft;
- b. The intended first landing place of the aircraft in Australian territory;
- c. The estimated day and time of arrival of the aircraft;
- d. The name and contact details of:
 - (i) the operator of the aircraft; and
 - (ii) if the operator is not the owner of the aircraft - the owner of the aircraft
- e. Details about any animals or plants in the cabin of the aircraft.

Note: The report may be delivered through an airline authorised representative at the arrival airport. However it remains the liability of the aircraft operator to ensure any such reports are delivered to a biosecurity officer.

2.3.3 The pre-arrival report must be given:

- a. at the earlier of:
 - (i) as close to the top of descent as is operationally practicable before the aircraft is estimated to arrive at its first landing place in Australian territory; and
 - (ii) 30 minutes before the aircraft is estimated to come to a standstill after arriving at its first landing place in Australian territory; or
- b. at the time specified by a biosecurity official.

Note: The commander of an aircraft on a non-scheduled flight may provide the additional information to the DAWE - Biosecurity prior to the departure of the aircraft from the last port before entering Australian territory.

2.3.4 The pre-arrival report must be made to biosecurity officers located at the intended first landing place (or at the department office responsible for biosecurity clearances at the intended first landing place) either orally or in writing (including electronically).

- 2.3.5 After this information is reported, if the Commander becomes aware the information is incomplete or incorrect they will provide additional information or correct the information as soon as practicable.

2.4 **III Passengers or Death On Board**

- 2.4.1 Any traveller showing signs of a listed Human Disease or a serious illness and needing medical assistance must be reported to a biosecurity officer in a pre-arrival report (see *section 2.3*). Airlines/Commanders are required to report any changes to this status that occur after submitting the pre-arrival report.

- 2.4.2 The operator of the aircraft is responsible for requesting medical or ambulance services.

- 2.4.3 Any of the following are considered possible signs or symptoms of a Listed Human Disease (LHD) or reportable illness:

- a. fever or suspected fever;
- b. jaundice;
- c. a new rash;
- d. unusual bleeding;
- e. a new coughing illness; and
- f. any illness that required prompt medical assistance.

- 2.4.4 If there is any doubt whether an ill traveller needs to be reported, the commander should contact a biosecurity officer. Commanders do not need to report travellers whose illness is a result of:

- a. drug or alcohol use;
- b. an injury or a pre-existing physical condition; or
- c. motion sickness.
- d. Commanders are not required to report a traveler who has a pre-arranged medical transfer prior to boarding the flight.

- 2.4.5 The operator of an aircraft is legally responsible for ensuring the DAWE - Biosecurity is notified. Failure to report ill travellers, as per *para 2.4.3* or death on board an aircraft is an offence under the *Biosecurity Act 2015* and can lead to the application of additional reporting requirements, fines or civil penalties.

- 2.4.6 Any contaminants on the aircraft from dead or sick people must be cleaned or disinfected in accordance with post-event disinfection procedures for aircraft, as outlined in the World Health Organization 2009 Guide to Hygiene and Sanitation in Aviation, third edition.
- 2.4.7 For ill passengers that are in transit through Australia the requirements are the same as for those entering Australia. Passengers in transit are not permitted to leave the transit area other than for actual boarding of their outward flight. If the time between arrival and departure allows, and if it is determined to be advisable, the person may either be isolated in a biosecurity facility (i.e. an airport health room) or be allowed restricted access to airport facilities and wait areas as advised by biosecurity officers.

2.5 **Pratique**

- 2.5.1 Pratique is the granting of permission to disembark and unload baggage and cargo based on the absence of disease in the passengers and crew. Aircraft entering Australia operate under a system of (automatic) positive pratique. Under this system permission to disembark and unload cargo and baggage is automatically granted, unless any of the following applies:
- a. the prescribed disinsection measures for the aircraft have not been undertaken;
 - b. the aircraft has reported an individual as having, or having had, signs or symptoms of a listed human disease, or an individual has died during the flight;
 - c. a human biosecurity official or a biosecurity official believes an individual on the flight is displaying signs or symptoms of a listed human disease, has been exposed to a listed human disease; or has died during the flight; or
 - d. a pre-arrival report consistent with *para 2.3* was not provided.
- Any aircraft not entering under (automatic) positive pratique, will be met on arrival by a biosecurity officer. All passengers and crew must remain on board until pratique is granted by this officer. When the biosecurity officer is satisfied that there are no further biosecurity issues, the officer will verbally grant pratique and advise that disembarkation and the unloading of baggage and other goods may commence.

2.6 **Biosecurity Waste**

- 2.6.1 All cabin, galley and hold biosecurity waste on board the aircraft must only be collected, transported, stored and/or treated by either a service provider that has entered into an approved arrangement with the DAWE - Biosecurity or under the supervision of the DAWE - Biosecurity on a fee for service basis.
- 2.6.2 Biosecurity waste may include refuse and sweepings from areas of the aircraft, any unconsumed and partly consumed foods, any non-washable items, other waste or materials that may have come in contact with biosecurity waste, animal or plant waste or materials used to pack or stabilise imported goods.
- 2.6.3 Unmanaged waste, non-compliant handling of waste or inadvertent contamination detected on an aircraft may result in action being required to be taken by the aircraft operator. This can result in delays to the servicing and turn-around of the aircraft.
- 2.6.4 The operator/commander of an aircraft arriving in Australian territory must ensure that waste has been removed from the aircraft before the aircraft is moved further within Australian territory, unless prior approval has been given by the DAWE - Biosecurity.

2.7 **Biosecurity In-flight Announcement**

- 2.7.1 Prior to arrival in Australia (at top of descent), operator/commander of all international aircraft must provide, to all travelling passengers and crew, the approved in-flight announcement in audio or video format which outlines Australia's biosecurity requirements. If the audio message cannot be played, commanders must ensure that their crew make a verbal in-flight announcement prior to arrival in Australia.
- 2.7.2 The delivery of the announcement is a legal requirement under Australian law. The audio or video announcement is available in a number of formats and languages on the DAWE website at: <https://www.agriculture.gov.au/biosecurity/avm/aircraft/guidelines-operators/passenger-video>.
The approved announcement must not be edited.

2.8 **Required Vaccination and Health Documents**

- 2.8.1 All persons (passengers and crew) arriving in Australia must have the following documents ready for examination by a biosecurity officer and an ABF Officer when requested:

- a. An Incoming Passenger Card
- b. A valid International Certificate of Vaccination or Prophylaxis against yellow fever (if in the last six days a person has visited a yellow fever declared country for overnight or longer). A valid certificate is consistent with the requirements in Annex 6 of the *International Health Regulations (2005)*. A list of yellow fever declared countries can be found in the Australian *Biosecurity (Entry Requirements) Determination 2016*.

Note: If the person does not have a valid certificate, entry into Australia will be permitted after assessment by a biosecurity officer.

- 2.8.2 Passenger and crew will pass from the aircraft to the ABF Entry Control Point where the vaccination certificates will be assessed.
- 2.8.3 Australia has no vaccination requirements for departure. However, travellers will have to satisfy the requirements of countries to, or through which, they travel.

2.9 **Biosecurity screening of baggage**

- 2.9.1 Biosecurity screening of the baggage of passengers and crew, where required, normally occurs at the airport at which passengers and crew disembark the aircraft.
- 2.9.2 The baggage of passengers and crew disembarking at a particular airport will be unloaded from the aircraft and collected by passengers and crew after they have passed the Entry Control Point.
- 2.9.3 The baggage of passengers and crew requiring biosecurity screening will be screened by x-ray, detector dog or manual inspection. Screening of baggage by x-ray and/or detector dog may result in subsequent manual inspection.
- 2.9.4 After any required biosecurity screening of passenger and crew baggage has been completed and after any biosecurity risk goods and/or non-compliance have been addressed, the passengers and crew will remove their baggage from the secondary examination area.

2.10 **Conditionally Non-prohibited Goods**

- 2.10.1 The following goods must not be imported into Australia unless the relevant import conditions have been met as outlined in the DAWE - Biosecurity Import Conditions Database (BICON), available online <https://bicon.agriculture.gov.au/BiconWeb4.0>:

- a. all animals (including, but not limited to, mammals, birds, reptiles, amphibians and insects) and animal products;
- b. cultures of micro-organisms capable of causing human disease and goods of biological origin and other infectious agents;
- c. foodstuffs of animal origin, including meat, poultry, sausages, eggs, cheese and milk;
- d. plants and plant products (e.g. wooden articles, flowers, seeds, fruit and vegetables);
- e. fungi;
- f. human remains, fluids and tissues;
- g. bioremedial agents and fertilizers.

Note: Any goods brought or imported into Australia not meeting import conditions may be treated, exported or forfeited to the Commonwealth for disposal.

2.10.2 *Biosecurity (First Point of Entry) Determinations* detail the first points of entry into Australia through which aircraft and goods may enter Australia. The determination may designate locations within the first point of entry, called biosecurity entry points, where specific classes of goods must be unloaded.

2.10.3 A list of first points of entry is available on the DAWE - Biosecurity website at:
<https://www.agriculture.gov.au/import/before/sending/airports>.

3. IMMIGRATION/EMIGRATION REQUIREMENTS

3.1 General

3.1.1 Information in this section is based on the *Migration Act 1958*, the *Migration Regulations 1994* and the *Customs Act 1901*.

3.1.2 Airline operators should ensure that their staff are fully aware of Australia's immigration and customs requirements. The Travel Information Manual (TIM) and the online Timaticweb (www.timaticweb.com/) provides a regularly updated, ready-reference for information on Australia's requirements. The master, owner, agent, charterer and operator of a vessel on which a non-citizen is brought into Australia are guilty of an offence against *Section 229(1)* of the *Migration Act 1958* unless the non-citizen when entering Australia:

- a. is in possession of evidence of a visa that is in effect and that permits them to travel to Australia;
 - b. is deemed to be a person having a prescribed status and holds a special purpose visa;
 - c. is a transit passenger who meets certain criteria;
 - d. is eligible for a special category visa; or
 - e. is entering by sea and has a maritime crew visa.
- 3.1.3 A person who is guilty of an offence against *Section 229(1)* of the *Migration Act* is liable, upon conviction, to a fine not exceeding AU\$10,000 for each non-citizen who is brought to Australia. In lieu of prosecution, airlines may pay a penalty of AU\$5,000.
- 3.2 **Advance Passenger Processing and Reporting of Passengers and Crew**
- 3.2.1 Airlines flying into Australia who provide a 'regular international passenger air service' are required to report all inbound passengers and crew, including all transit passengers, to Home Affairs through the electronic Advance Passenger Processing (APP) system. The information is collected at check-in through the APP system and transmitted to Australia for use by border agencies prior to the arrival of the aircraft. Airlines seeking detailed information concerning the legislative and system requirements can contact Home Affairs at: appwebsite@abf.gov.au.
- 3.2.2 Airlines flying into Australia who do not provide a 'regular international passenger air service', as defined under the *Migration Act 1958* are required to report all inbound passengers and crew, including all transit passengers, to the ABF through form 2A and 2B for passengers and form 3 and 3B for crew.
- 3.3 **Inwards Clearance – Passports or Other Travel Document**
- 3.3.1 All persons seeking to enter Australia, whether for a visit or temporary or permanent residence, must identify themselves. In the case of non-citizens, they must hold or be eligible for a visa. Passports are the most common and preferred type of travel document for identification purposes. A valid passport is required for travel to Australia from all overseas destinations.

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- 3.3.2 Some countries still issue family group passports which may cover, for example, a husband and/or wife and children. For entry control purposes, Australia accepts dependants on such passports only when accompanied by the principal holder.
- 3.3.3 Passports are not required for holders of the following:
- a. Certificates of Identity, Documents of Identity or Australian Migration Status ImmiCards issued by Australian authorities.
 - b. Documents of Identity, issued by a country other than Australia. (Documents must have a photograph of the bearer and re-entry authority to the country of issue).
 - c. Laissez-passer (travelling on duty), issued by the United Nations.
 - d. Military identity documents and movement orders issued to members of:
 - (i) armed forces that have a Status of Forces Agreement with Australia (France, Papua New Guinea, Republic of the Philippines, Singapore, USA, Malaysia and New Zealand)
 - (ii) Asia-Pacific armed forces (Brunei, Fiji, Malaysia, Thailand and Tonga); or
 - (iii) Commonwealth forces of Antigua, Bahamas, Barbados, Belize, Canada, Grenada, Jamaica, Mauritius, New Zealand, Papua New Guinea, Saint Lucia, Saint Vincent and the Grenadines, Solomon Islands, St Christopher and Nevis, Tuvalu, and the United Kingdom of Great Britain and Northern Ireland.
 - (iv) More information is available at:
www.abf.gov.au/entering-and-leaving-australia/crossing-the-border/military-personnel
 - e. Certificates for air crew members, travelling on duty as operational or positioning crew:
 - (i) operational crew must carry a current identity document issued by the airline by which the crew member is employed ("Airline ID card") and a valid passport; and

- (ii) positioning crew not listed as crew members must carry a valid passport and a letter from their employer certifying air crew status and setting out the purpose of the persons' travel to Australia and the arrangements for them to leave Australia.
- f. Documents issued to stateless persons as follows:
 - (i) Certificate of Identity, provided it holds proof to re-enter the country of residence; or
 - (ii) Titre de Voyage issued to persons recognised as refugees under the 1951 Convention Relating to the Status of Refugees.
- 3.3.4 Domestic passengers who are only travelling on domestic sectors of international flights within Australia must carry acceptable forms of photo-identification.
- 3.4 **Visa Requirements**
- 3.4.1 With the exception of New Zealand passport holders, all non-citizens are required to have a visa for travel to Australia.
- 3.4.2 Carriers are required to ensure non-citizen passengers travelling to Australia hold, or are eligible to hold, a valid visa. Persons in possession of expired visas should not be carried to Australia. Visas for travel to Australia may be for either single or multiple journeys within the validity of the visa. Visas facilitate travel, but do not guarantee entry. Visitors who fail to satisfy border checks can be refused entry to Australia.
- 3.4.3 The majority of visas granted will not be evidenced by a stick-in visa label as visa labels ceased to be issued from 1 September 2015. Existence of a visa should be verified by airlines at check-in via the APP system.
- 3.4.4 There are two types of visas: temporary and permanent.
- 3.4.5 **Electronic Travel Authorities (ETA)** are temporary visas for short term stays for tourism or business visitor activities.
- 3.4.6 Where capable, airlines may apply for ETA for tourist or short term business travel to bearers of passports issued by the following countries:

Andorra	Greece	Malta	Sweden
Austria	Hong Kong	Monaco	Switzerland
Belgium	Iceland	Netherlands	Taiwan
Brunei	Ireland	Norway	United Kingdom (British Citizens and British Nationals Overseas)
Canada	Italy	Portugal	
Denmark	Japan	San Marino	
Finland	Liechtenstein	Singapore	
France	Luxembourg	South Korea	USA
Germany	Malaysia	Spain	Vatican City

- 3.4.7 Further information regarding these visas and the visa application process can be found at www.eta.homeaffairs.gov.au including authenticating Taiwanese passports.
- 3.4.8 **Special Purpose Visas (SPV)** are a class of temporary visa taken to have been granted by operation of law to certain persons or classes of persons.
- 3.4.9 SPV holders are not required to complete an application form provided they belong to any of the following classes of persons:
- Members of the armed forces of France, Papua New Guinea, Republic of the Philippines, Singapore, USA, Malaysia and New Zealand under the Status of Forces Agreement (SOFA) travelling on duty (movement orders issued from an official source of the relevant country) and holding military identity documents;
 - Members of Asia Pacific armed forces (Brunei, Fiji, Malaysia, Thailand or Tonga) travelling on duty and holding military identity documents and movement orders;
 - Members of the following Commonwealth armed forces travelling on duty (movement orders issued from an official source of the relevant country) and holding military identity documents (Antigua, Bahamas, Barbados, Belize, Canada, Grenada, Jamaica, Mauritius, New Zealand, Papua New Guinea, Saint Lucia, Saint Vincent and the Grenadines, Solomon Islands, St Christopher and Nevis, Tuvalu, and the United Kingdom of Great Britain and Northern Ireland);

- d. Members of the civilian component of SOFA provided they hold passports and certificates stating that the person is a member of the civilian component of the armed forces of the relevant country;
- e. Dependents of SOFA, Asia Pacific and Commonwealth armed forces listed above provided they hold a passport and either movement orders or certificates stating they are a spouse or a dependent of a member of the armed forces, or the civilian component of the armed forces of the relevant country, and are accompanying or joining that member;
- f. Airline crew members travelling as passengers in the course of employment, who will be departing Australia as crew of an aircraft ("positioning crew"), provided they are in possession of a letter from the employer regarding aircrew status, purpose of travel and arrangements for departure from Australia within five days ("Certificate of Status"). This SPV arrangement is not for air crew seeking to work specifically on domestic sectors or to perform other duties in Australia. An appropriate visa should be applied for in these cases; and
- g. Transit passengers (not applicable to stateless persons and refugees) who are direct transit passengers arriving and departing by aircraft are taken to hold a SPV provided they:
 - (i) will be continuing their journey to a third country by the same or a connecting aircraft within eight hours of arrival in Australia;
 - (ii) do not leave the airport transit lounge except to continue their journey;
Note: If a person in this class seeks to leave the transit lounge, i.e. seek immigration clearance, the SPV will cease.
 - (iii) are in possession of confirmed onward reservations and hold correct documentation for entry to their destination; and
 - (iv) be a citizen of the following countries:

Andorra	Greece	Netherlands	Slovakia
Argentina	Hungary	New Zealand	Slovenia
Austria	Iceland	Norway	Solomon Islands
Belgium	Indonesia	Oman	South Korea
Brunei	Ireland	Palau	Spain
Canada	Italy	Papua New Guinea	Sweden
Chile	Japan	Philippines	Switzerland
Croatia	Kiribati	Poland	Thailand
Cyprus	Latvia	Portugal	Tonga
Czech Republic	Liechtenstein	Qatar	Tuvalu
Denmark	Lithuania	Republic of Bulgaria	United Arab Emirates
Estonia	Luxembourg	Republic of South Africa	United Kingdom (including its colonies)
Federated States of Micronesia	Malaysia	Republic of Marshall Islands	United States of America
Fiji	Malta	Romania	Uruguay
Finland	Mexico	Samoa	Vanuatu
France	Monaco	San Marino	Vatican
Germany	Nauru	Singapore	

- (v) are a resident of Hong Kong holding Hong Kong Special Administrative Region (HKSAR) passports or British National Overseas (BNO) passports;
- (vi) are a resident of Taiwan holding a passport issued by the Authorities of Taiwan (other than passports purported to be official or diplomatic passports);
- (vii) are official passport holders from India;
- (viii) are diplomatic passport holders, excluding holders of:
 - Arab Non-National Passports; and
 - diplomatic passports from the following countries:

Afghanistan	Iran	Madagascar	Sierra Leone
Algeria	Iraq	Morocco	Somalia
Angola	Jordan	Pakistan	Sudan
Bahrain	Kuwait	Republic of Yemen	Syria
Comoros	Lebanon	Russian Federation	Tunisia
Democratic People's Republic of Korea	Libya	Saudi Arabia	Zimbabwe
Egypt	Mauritania		

(ix) are members of the Royal family or guests of the Australian Government and accompanying immediate family members;

(x) are official guests of the Australian Government and accompanying members of their immediate family.

3.4.10 **Special Category Visa (SCV).** A New Zealand citizen, who holds and produces a valid New Zealand Passport to an officer or authorised system and answers the health and character questions either on the Incoming Passenger Card or via the SmartGate, may be eligible to be granted the SCV at the border.

3.4.11 **Merchant Seaman.** The visa regulations for merchant seamen if they arrive in Australia by air are the same as for holders of normal passports.

3.5 **Returning Non-citizen Permanent Residents of Australia**

3.5.1 Non–Australian citizens who are permanent residents of Australia wishing to travel overseas after their initial residence visa has expired must hold an authority to return to Australia in their national passport. This may take the form of a “Resident Return” visa.

- 3.5.2 Permanent residents who hold an “Authority to Return” or “Return Endorsement” which are in the form of a wet stamp in their passport are not recorded electronically in Departmental systems. Airlines will need to confirm with the Department whether holders of these wet stamps are returning to Australia within three years of their most recent departure. These wet stamps are also acceptable in expired or cancelled passports or other travel documents provided the holder also has a valid national passport.

3.6 **Incoming Passenger Cards**

- 3.6.1 Incoming Passenger cards are required to be completed by all passengers except for:

- a. airline crew members who are on duty; and
- b. direct transit passengers described in *sub-para 3.4.9g*.

- 3.6.2 Supplies of Incoming Passenger Cards should be maintained on aircraft and issued to passengers in ample time for completion before arrival at the immigration clearance airport in Australia. If passengers cannot complete their own cards because of age or physical infirmity, the cards must be completed by the accompanying parent, guardian or attendant.

- 3.6.3 Incoming Passenger Cards are available in English and a number of foreign languages. All written fields on incoming passenger cards must be completed in the English language.

3.7 **Examination of Crew and Passengers**

- 3.7.1 Immigration examination of passengers is generally done at the point of final disembarkation in Australia, except when special arrangements to the contrary have been made.

- 3.7.2 For the purposes of examination, the following documents must be ready for presentation to the ABF Officer:

a. **Aircraft Crew**

- (i) For operational flight crew, a valid passport and a certificate of status from their employer in the form of an airline ID card.
- (ii) Positioning crew not listed as crew members must carry a valid passport and a letter from their employer certifying air crew status and setting out the purpose of the persons’ travel to Australia and the date for them to leave Australia.

- (iii) A completed Form B465 Crew Declaration, which can be accessed via: www.abf.gov.au/help-and-support/forms

b. Passengers

- (i) In the case of Australian citizens, valid Australian passports, or other valid documents of identity having the characteristics of passports, and Incoming Passenger Cards.
- (ii) In the case of New Zealand citizens, valid New Zealand passports and Incoming Passenger Cards.
- (iii) In the case of all other persons, valid national passports, or other acceptable documents listed in *para 3.4.2*, with visa as required for entry into Australia, and Incoming Passenger Cards.

3.8 Outwards Clearance – Documentation

- 3.8.1 APP reporting of passengers and crew.** Airlines flying from Australia who provide a 'regular international passenger air service' are required to report all departing passengers and crew, including all transit passengers, to the Department of Home Affairs through the electronic APP system. The information is collected at check-in through the APP system and transmitted to Australia for use by border agencies prior to the departure of the aircraft. Airlines seeking detailed information concerning the legislative and system requirements can contact the Department of Home Affairs at: travellerpolicy@homeaffairs.gov.au, or the ABF at: appwebsite@abf.gov.au

4. CUSTOMS REQUIREMENTS

4.1 Inward Clearance – Documentation

The pilot in command (or authorised agent) of an aircraft landing at a designated international airport which is the first airport of call in Australia shall furnish the following documents to the Department of Home Affairs (see *GEN 1.2 para 1.3*):

- a. Impending Arrival Report, lodged in the ICS electronically;
- b. Actual Arrival Report;
- c. Cargo Report;
- d. Crew Declaration;

e. List of Stores.

4.2 **Examination of Crew and Passengers – Arrivals**

4.2.1 Complete ABF examination of the baggage of passengers and crew members is normally made at the airport where the passengers and crew members finally disembark from the aircraft.

4.2.2 Baggage of all persons (including crew) destined for that airport will be unloaded and brought into the baggage examination area of the terminal building for examination. Crew baggage will be separated from passenger baggage. Cargo will be unloaded for immediate delivery to a licensed Department of Home Affairs operated depot.

4.2.3 ABF Officers may maintain surveillance over the unloading of all baggage and cargo and ensure that it is taken directly to the baggage examination area and depot respectively. An officer may also check goods owned by, or in possession of, the crew against the List of Stores and Crew Declaration. See *GEN 1.2 para 1.3*.

4.2.4 Passengers and crew, after disembarking, must proceed to the Entry Control Point for completion of Customs, Immigration and Biosecurity requirements.

4.2.5 All persons entering Australia who are in possession of AUD\$10,000 or more in Australian currency, or equivalent foreign currency, must complete a Cross-Border Movement-Physical Currency reporting form. Reporting forms for this purpose are available from air and sea ports or from the Australian Transaction Reports and Analysis Centre (AUSTRAC). There is no limit to the amount of currency that can be brought into Australia, but failure to declare the currency may result in seizure and prosecution.

Note: If an ABF Officer or police officer asks, you must report traveller's cheques, money orders, cheques, or other bearer negotiable instruments of any amount.

4.2.6 After the examination of crew and passenger baggage has been completed and customs duty and tax (if any) paid, the persons concerned will be authorised to remove their baggage from the secondary examination area.

4.3 Outward Clearance – Documentation

4.3.1 The pilot in command (or authorised agent) of an aircraft departing from a designated international airport, which is the first airport of departure from Australia, shall furnish the following documents to the ABF Officer (see *GEN 1.2 para 1.3*):

- a. Export Permits (when required);
- b. Departure Report;
- c. Outward Manifest.

4.3.2 When aircraft landing in Australia are in transit, the pilot in command or authorised agent will present documents for inward clearance. The ABF Officer will, where requested, sign and stamp the General Declaration presented on arrival in Australia and return it to the pilot in command. A certificate of clearance will be provided to the pilot upon completion of all reporting formalities and permits the aircraft to depart the airport.

4.4 Examination of Crew and Passengers – Departures

4.4.1 All persons leaving Australia who are in possession of AUD\$10,000 or more in Australian currency, or equivalent foreign currency, must complete a Cross-Border Movement-Physical Currency reporting form. Reporting forms for this purpose are available from air and sea ports or from AUSTRAC. There is no limit to the amount of currency that can be taken out of Australia, but failure to declare the currency may result in seizure and prosecution.

4.4.2 The baggage of outward passengers may be subject to Customs examination.

4.4.3 Passengers departing Australia are required to, subject to exemptions, pay the Passenger Movement Charge whether ticketed or not. See *GEN 4.1*

4.4.4 Information for visitors can be found at:

www.abf.gov.au/entering-and-leaving-australia/crossing-the-border/at-the-border

5. TRANSIT PASSENGERS – CLEARANCE REQUIREMENTS AND PROCEDURES WITHIN AUSTRALIA

5.1 Immigration Requirements

5.1.1 Passengers who are in direct transit on through-flights will not be required to complete Incoming Passenger Cards. This concession applies irrespective of whether the passengers are transiting on the same or different aircraft.

5.1.2 Direct transit passengers will need to hold an appropriate visa unless they meet requirements in *para 3.4.9*, in which case they will be taken to hold a special purpose visa.

5.1.3 Passengers disembarking in Australia (i.e. leaving the transit area) from such a through-flight must present passports/travel documents, visas, Incoming Passenger Cards and airline tickets evidencing confirmed onward booking to a third country.

5.1.4 Where international passengers leave the transit area and transfer to another international flight at the same airport, Incoming Passenger Cards, passport/travel documents and visas (unless within the exempt categories are required to be presented.

5.1.5 A “through-flight” in this context is as defined in *Chapter 1 - Definitions and Applicability, of ICAO Annex 9 (Facilitation)* to the Convention on International Civil Aviation:

“Through-Flight. A particular operation of aircraft, identified by the operator by the use throughout of the same symbol from point of origin via any intermediate points to point of destination.”

5.1.6 The “through-flight” definition implies a single operator and does not prevent the use of more than one aircraft for a through-flight. The recording of dual flight numbers, when applicable, should satisfy, for local purposes, the requirements of the definition in so far as retention of “the same symbol” from point of origin to point of destination is concerned.

5.2 Customs and Biosecurity Requirements

5.2.1 Transit passengers (either proceeding on the same aircraft or another aircraft) are not required to make a customs or biosecurity declaration provided they do not pass through a customs control point.

- 5.2.2 Personal hand baggage covers only normal personal requisites needed by the passenger for the period of the stopover. Such baggage, however, is liable to inspection.
- 5.2.3 Passengers having other articles may be required, at the discretion of an ABF or biosecurity officer, to make a customs declaration.
- 5.3 **Requirements for the airline representative**
- 5.3.1 **Passenger and Crew Manifests.** The airline representative should hand over the following manifests to an ABF officer:
 - a. a manifest of travellers and crew in transit who are joining the flight, having departed from other ports in Australia;
 - b. a manifest of travellers in transit who have arrived on an international flight and are connecting with another international flight;
 - c. a flight interruption manifest or manifest of travellers/crew who have been offloaded onto alternative international flights rather than not departing. This will assist in reconciling traveller movements post processing.
- 5.3.2 **Coordinating Traveller/Crew Processing.** The ABF officer and airline representative should coordinate passenger/crew processing by separating the passenger and crew groups of:
 - a. international traveller/crew transiting Australia;
 - b. international traveller/crew originating from port of departure;
 - c. international traveller/crew originating from another port in Australia;
 - d. domestic travellers;
 - e. unlawful non-citizens, including removees.
- 5.3.3 **Cancelled or Aborted Flights Departing Australia.** Following the decision to cancel or abort a flight, an airline representative must advise an ABF officer.
- 6. **LANDINGS AT DESIGNATED ALTERNATE AIRPORTS OR ELSEWHERE THAN AT DESIGNATED INTERNATIONAL AIRPORTS WITHIN AUSTRALIA**
- 6.1 **General**
- 6.1.1 Landings elsewhere than at major international, restricted use international, and international non-scheduled flight airports may be divided into two categories:

- a. landings at designated alternate airports to international airports; and
- b. landings elsewhere than at a designated alternate airport which are made as a result of an emergency.

6.1.2 Under the requirements of the *Customs Act 1901* and the *Migration Act 1958*, an aircraft engaged on an international flight which has landed elsewhere than at a designated international airport is required to proceed directly to a designated international airport where Customs and Immigration clearances can be completed. Biosecurity clearance is normally undertaken at the airport of entry.

6.1.3 Where safe to do so, it is preferable that crew and passengers remain on board the aircraft so they do not have to undergo security clearance when the flight resumes to the original airport of destination. The pilot may disembark to perform the necessary safety inspections. An airline representative may board with the relevant documents.

6.1.4 For charter aircraft and other flights arriving at alternate airports or non-international airports see *para 7.3*.

6.2 **Designated Alternate Airports to International Airports**

6.2.1 A list of the designated Australian alternate airports (see also *GEN 1.2 para 2.3*).

6.2.2 General procedures effective for when a landing is to be made by an international aircraft at a designated alternate airport are as follows:

- a. **Biosecurity.** Biosecurity officers of the DAWE are not stationed permanently at the airport, and the airport is serviced for international arrivals under a request for service arrangement.
- b. **Customs and immigration.** ABF Officers of the Department of Home Affairs are not stationed permanently at the airport. The relevant District Office or a Local Area Command in the ABF will be established and be responsible for coordinating the border agency response. It will establish ongoing communication with the airport, airline, biosecurity officers and police if required

- 6.2.3 The Airline or its agent/representatives may be responsible for covering additional expenses relating to the positioning of resources from another border agency base to an Alternate Airport.
- 6.2.4 Additional or varied procedures are in place at the alternate airports outlined in the following table:

Airport	Additional or Varied Biosecurity, Customs and Immigration Procedures
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Alice Springs	An officer of the Northern Territory police (ABF representative) will exercise surveillance over the aircraft while it is at the airport.
Gold Coast	Biosecurity and ABF officers are stationed at Gold Coast Airport and will be available to grant overnight or full clearances, as required, provided reasonable advance notice of the diversion is given by Airservices Australia.
Kalgoorlie	An officer of the West Australian police (ABF representative) will have the responsibility to exercise surveillance over the aircraft while it is at the airport.
Learmonth	Goods must not be landed at this airport unless an application has been made under <i>Section 146</i> of the <i>Biosecurity Act 2015</i> and approval granted. An officer of the West Australian police (ABF representative) will have the responsibility to exercise surveillance over the aircraft while it is at the airport.
Port Hedland	Biosecurity and ABF officers are stationed at Port Hedland but not at the Airport.

Tindal	<p>Goods must not be landed at this airport unless an application has been made under <i>Section 146</i> of the <i>Biosecurity Act 2015</i> and approval granted.</p> <p>Aircraft other than jet fighter aircraft must not be landed at this airport unless an application has been made under <i>Section 239</i> of the <i>Biosecurity Act 2015</i> and approval granted.</p> <p>An airline representative/RAAF personnel may board with the relevant documents.</p>
Townsville	<p>Biosecurity and ABF officers are stationed at Townsville but not at the Airport.</p>

6.3 **Landing made other than at a Designated Alternate Airport**

If a landing is made other than at a designated international or international alternate airport, the pilot in command or the next senior crew member available shall report the landing as soon as practicable to the Network Coordination Centre (NCC) in Airservices Australia. This notification may be made through aeronautical channels (or by other means if this method of communication is not available).

6.3.1 Procedures for such landings are outlined below.

6.3.2 The relevant District Office or a Local Area Command in the ABF will be established and be responsible for coordinating the border agency response. It will establish ongoing communication with the airport, airline, biosecurity officers and police if required.

6.3.3 The pilot in command is responsible for ensuring the following:

- a. If pratique has not been granted to the aircraft at any previous landing in Australian territory, contact between passengers, crew and other persons is avoided.
- b. Cargo, stores, baggage and mail, if required to be removed from the aircraft for safety reasons, must be deposited in a nearby area and remain there pending completion of the necessary formalities. Mail must be disposed of as is required pursuant to *para 7.4.4 of ICAO Annex 9 (Fourteenth Edition)*.

- c. Any foodstuffs of overseas origin, or any plant material, are not removed from the aircraft except where local food is unobtainable. All food refuse (including peelings, cores, and stones of fruit) must be collected by the aircraft operator and returned to the galley refuse container. The contents of the galley refuse container should not be removed from the aircraft except for hygiene reasons, in which case they must be disposed of, as directed by a biosecurity official.

6.3.4 Notwithstanding the provisions set out above, the pilot in command, while awaiting the instructions of the District Office or Local Area Command, or if unable to get in touch with such authorities, may take such emergency measures as deemed necessary for the health and safety of the passengers and crew. This may include the securing of suitable accommodation and the avoiding or minimising of loss or destruction to the aircraft itself and its load.

7. CHARTER FLIGHTS – GUIDELINES FOR CLEARANCE

7.1 General

7.1.1 The Department of Home Affairs coordinates the activities of Government border agencies involved in passenger processing for charter flights through the National Passenger Processing Committee (NPPC).

7.2 Arrival/Departure at International Airports

7.2.1 Charter flights will be treated as normal commercial flights when they arrive or depart from designated major international airports (see *GEN 1.2 para 2.1*) and the Gold Coast International Airport.

7.3 Arrival/Departure at Non–International Airports, and Restricted Use International Airports

7.3.1 As there is no full–time border agency presence at non–international airports or at Restricted Use International Airports (other than Gold Coast), aircraft operators are required to obtain prior approval from the NPPC for flights into and out of these airports. Aircraft operators should comply with the following procedures to enable timely consideration by border agencies for approval and clearances:

- a. **Submit Application.** The Application process can be found at: www.abf.gov.au/entering-and-leaving-australia/aircraft-requirements. Give at least 10 business day's notification to the following address prior to the arrival of the charter:

The Chairman

National Passenger Processing Committee

Department of Home Affairs

PH: 61 2 6246 1210

Email: nppc@abf.gov.au

The application should include itinerary, aircraft type, and estimated number of passengers/crew.

- b. **Provide an Advance Passenger Information.** If the charter operator does not hold an International Air Licence, air operators should deliver, email or fax a listing of passengers and crew to the ABF office at the first port of call at least four working days prior to the arrival of the charter. This listing should include family and given names, date of birth, gender, nationality and passport numbers. If the charter operator holds an International Air License the operator should provide passenger and crew data through the APP system at check-in. For more information, contact Home Affairs at: appwebsite@abf.gov.au. For departures, deliver, email or fax similar Advance Passenger Information data to the ABF office at the last port of call at least one working day prior to the departure of the charter.
- c. **Remit Passenger Movement Charge (PMC).** Collect AUD\$60 PMC from all liable passengers and remit to the Department of Home Affairs in accordance with the conditions contained within the PMC Arrangement. See *GEN 4.1 para 2*.
- d. **Pay Other Costs.** Pay any border agency clearance costs which may be applicable and which fall outside those covered by PMC. This will vary from charter to charter and will be dependent on airport location and arrival/departure time, e.g. officer travel, accommodation, overtime and potential airport infrastructure changes which may be necessary to provide a secure processing environment. Separate accounts will be submitted by the Department of Home Affairs after completion of the charter operation.

7.4 Processing of the Application

- 7.4.1 As soon as practicable, but normally within five working days after receipt of the application, the Department of Home Affairs will formally notify the air operator of the NPPC decision and any conditions, as well as an estimation of the border agency costs.
- 7.4.2 The appropriate regional ABF office will then contact the charter operator to discuss processing arrangements.

8. DESIGNATED INTERNATIONAL AIRPORTS – AUSTRALIAN EXTERNAL TERRITORIES – ENTRY AND DEPARTURE REQUIREMENTS AND PROCEDURES

8.1 Biosecurity Requirements for External Territories

- 8.1.1 The *Biosecurity Act 2015* extends to the external Territories of Christmas Island, Cocos (Keeling) Islands and Norfolk Island.
- 8.1.2 All aircraft (including aircraft from Australia) arriving at Christmas Island, Cocos (Keeling) Islands and Norfolk Island are required to meet the first point of entry, disinfection, pre-arrival reporting, mandatory passenger announcement and practical requirements outlined in the *Biosecurity Act 2015* and subordinate legislation, including the *Biosecurity Regulations 2016* and the *Biosecurity (Human Health) Regulation 2016*. See *para 2.1.2* for more information.
- 8.1.3 Christmas Island, Cocos (Keeling) Islands and Norfolk Island each have their own goods determination which outlines the import conditions for goods that are to be brought or imported into these external Territories, including:
- a. Biosecurity (Prohibited and Conditionally Non-prohibited Goods – Norfolk Island) Determination 2016
 - b. Biosecurity (Conditionally Non-prohibited Goods – Christmas Island) Determination 2016
 - c. Biosecurity (Conditionally Non-prohibited Goods – Cocos (Keeling) Islands) Determination 2016.

These determinations can be found on the Federal Register of Legislative Instruments website: www.legislation.gov.au

8.2 External Territory International Airports

- 8.2.1 The following is a list of the designated Australian External Territory International Airports (see also *GEN 1.2*):
- a. Christmas Island
 - b. Cocos (Keeling) Islands

- c. Norfolk Island.

Note: Operations by aircraft at the above airports are limited to the pavement strengths shown against these airports in AIP ERSA. Prior application must be made for a pavement concession when this is necessary.

- 8.2.2 Aircraft operators should use the contact details listed in ERSA FAC to obtain specific information and/or obtain copies of appropriate documents for these airports.

8.3 **Territory of Christmas Island**

8.3.1 **Summary of Documents to be Presented by Pilot or Authorised Agent**

a. **On Arrival:**

General Declaration (showing names of crew)	2 copies
Passenger Manifest	2 copies
Cargo Manifest	2 copies
Customs Clearance (from last airport)	2 copies

b. **On Departure:**

General Declaration (showing names of crew)	1 copy
Cargo Manifest	1 copy
Customs Clearance	1 copy

8.3.2 **Immigration Requirements – Christmas Island**

- a. Normal Australian immigration procedures apply when entry is made from outside Australia. All non-citizens must hold visas prior to arrival at Christmas Island when entering from outside Australia.
- b. No passports or visas are required when arriving on Christmas Island from the Australian mainland or Tasmania; however, some form of government-issued identification must be produced for clearance through Customs/Immigration; e.g. Medicare Card or Driver Licence.

8.3.3 **Customs Requirements – Christmas Island**

- a. **Inwards.** Each passenger must declare all prohibited imports.
- b. **Outwards.** Each passenger must declare all prohibited exports.

8.3.4 **Passenger Movement Charge – Christmas Island**

- a. **Inwards.** Passengers travelling to Christmas Island (from Australia) and depart Christmas Island for another country are required to pay the Passenger Movement Charge whether ticketed or not subject to valid exemptions.
- b. **Outwards.** Passengers departing from an Indian Ocean Territory other than mainland Australia are required to pay the Passenger Movement Charge whether ticketed or not subject to valid exemptions.

8.4 **Territory of Cocos (Keeling) Islands**

8.4.1 **Immigration Requirements – Cocos (Keeling) Islands**

- a. Normal Australian immigration procedures apply when entry is made from outside Australia. All non-citizens must hold visas prior to arrival at Cocos (Keeling) Islands when entering from outside Australia.
- b. No passports or visas are required when arriving on Cocos (Keeling) Islands from the Australian mainland or Tasmania; however, some form of identification must be produced for clearance through Customs/Immigration in Perth (e.g. Medicare Card) unless intending to depart Cocos (Keeling) Islands for a foreign country.
- c. There are no statutory restrictions on visits to Cocos (Keeling) Islands. It is preferred that accommodation is confirmed prior to departure.

8.4.2 **Customs Requirements – Cocos (Keeling) Islands**

- a. **Inwards.** Passengers must complete an Incoming Passenger Card for both Customs and Immigration purposes. The card includes a Customs declaration, which includes a requirement to declare all prohibited imports.
- b. **Outwards.** Each passenger must declare all prohibited exports.

8.4.3 **Passenger Movement Charge – Cocos (Keeling) Islands**

- a. **Inwards.** Passengers travelling to Cocos (Keeling) Islands (from Australia) and who intend to depart from there for a country other than Australia are required to, subject to valid exemptions, pay the Passenger Movement Charge whether ticketed or not.

- b. **Outwards.** Passengers departing for other than mainland Australia are required to pay the Passenger Movement Charge whether ticketed or not, subject to exemptions.

8.5 **Territory of Norfolk Island**

8.5.1 **Summary of Documents to be Presented by Pilot or Authorised Agent**

- a. **On Arrival**
 - General Declaration (showing names of crew) 2 copies
 - Passenger Manifest 2 copies
 - Cargo Manifest 2 copies
 - Customs Clearance (from last airport) 2 copies
- b. **On Departure**
 - General Declaration (showing names of crew) 1 copy
 - Cargo Manifest 1 copy
 - Customs Clearance 1 copy

8.5.2 **Immigration Requirements - Norfolk Island**

- a. Normal Australian immigration procedures apply when entry is made from outside Australia. All non-citizens must hold visas prior to arrival at Norfolk Island when entering from outside Australia.
- b. No passports or visas are required when arriving on Norfolk Island from the Australian mainland or Tasmania; however, some form of government issued identification must be produced for clearance through Customs/Immigration, e.g. Medicare Card or Driver Licence.
- c. Flights from an overseas location to Norfolk Island via mainland Australia (including Tasmania) must complete immigration clearance when the aircraft arrives in mainland Australia.
- d. Airlines flying from an overseas location should not provide boarding passes to a passenger all the way through to Norfolk Island if the flight first arrives in mainland Australia. Passengers should collect bags and check-in at the airport to travel to Norfolk Island.

8.5.3 **Customs Requirements - Norfolk Island**

- a. Inwards. Each passenger must declare all prohibited imports.
- b. Outwards. Each passenger must declare all prohibited exports.

8.5.4 Passenger Movement Charge - Norfolk Island

- a. **Inwards.** Passengers travelling to Norfolk Island (from Australia) and depart Norfolk Island for another country are required to pay the Passenger Movement Charge whether ticketed or not, subject to valid exemptions.
- b. **Outwards.** Passengers departing from a Pacific Ocean Territory other than mainland Australia are required to pay the Passenger Movement Charge whether ticketed or not subject to valid exemptions.

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GEN 1.4 ENTRY, TRANSIT AND DEPARTURE OF CARGO**1. CUSTOMS REQUIREMENTS CONCERNING CARGO AND OTHER ARTICLES****1.1 Cargo Report**

1.1.1 The cargo report is used to report the particulars of all goods (including mail, in-transit and transshipment cargo) that a cargo reporter has arranged to be carried on board regardless of whether the goods will be offloaded in Australia.

1.1.2 The carrier (airline) is required, as the first cargo reporter, to report the full detail of cargo for which they are directly responsible to the Department of Home Affairs. They are also required to notify the Department of Home Affairs of any cargo carried on behalf of another cargo reporter and the details of the depot operator who will first receive the cargo after it has been unloaded from the aircraft at a place in Australia.

1.1.3 The cargo report must be lodged electronically in the Integrated Cargo System (ICS) at least two hours prior to the estimated time of arrival of the aircraft.

1.1.4 When a cargo report is submitted showing the cargo has a discharge port as an Australian port, but the destination port is not an Australian port, the ICS recognises that ultimately the cargo is destined for a place outside Australia. The ICS assigns the cargo report transshipment status and will automatically generate a Transshipment Number. A Transshipment Number is a valid Customs Authority Number for the purposes of export and must be quoted in the export manifest.

1.2 List of Stores (e.g. narcotic drugs, beer, wine, spirits and tobacco products)

1.2.1 When an aircraft has arrived at an airport in Australia, the operator must report the particulars of the aircraft's stores and of any prohibited goods contained in those stores at the time of arrival to the Department of Home Affairs via Form B367, Stores and Prohibited Goods Report. See:
www.abf.gov.au/form-listing/forms/b367.pdf

1.2.2 The report of aircraft stores and prohibited goods must be made within three hours of the arrival of the aircraft or before the certificate of clearance is issued, whichever happens first.

1.3 Import Declaration for Goods Valued Above AUD\$1,000

- 1.3.1 Import declarations are used to clear goods with a value exceeding AUD\$1,000 from ABF control. Import declarations are communicated to the Department of Home Affairs electronically via the ICS or by lodgement of a completed import declaration form (B650) at an ABF counter.
- 1.3.2 A self-assessed clearance declaration must be made for imported goods arriving by air cargo valued at or below AUD\$1,000.

1.4 Treatment of Diplomatic and Consular Goods

- 1.4.1 All air cargo consignments of diplomatic and consular goods require a cargo report if the goods are valued above AUD\$1,000. An import declaration must be submitted to the Department of Home Affairs (except for diplomatic/consular/mail/pouch/bags, which do not require an import declaration).
- 1.4.2 Most diplomatic and consular goods are exempt from duty and taxes and cost recovery charges provided the goods meet all the Department of Home Affairs and the DAWE - Biosecurity legislative requirements including the *Customs (Prohibited Imports) Regulations 1956* and the *Biosecurity Regulations 2016*.
- 1.4.3 The B615 form and other reporting requirements must be provided to the Department of Home Affairs for the release of privileged imports from customs control.

1.5 Departure Report

- 1.5.1 The departure report is a prerequisite that must be satisfied before a certificate of clearance can be granted by the Department of Home Affairs.
- 1.5.2 A departure report is a statement made by the pilot or owner of the aircraft, or an agent, to the Department of Home Affairs providing information concerning the proposed date and time of departure of the aircraft.
- 1.5.3 The departure report must be lodged electronically in the ICS.
- 1.5.4 For airlines that co-load/codeshare, a Departure Report is required for each flight number even though it is the same aircraft departing.

1.6 Outwards Manifest

- 1.6.1 Air cargo being exported from Australia must be reported in the form of an outward manifest. The outwards manifest must specify all goods that were loaded on board the aircraft.
- 1.6.2 The pilot or owner of the aircraft must provide the outwards manifest electronically in the ICS, not later than three days after the day of departure of the aircraft.
- 1.6.3 If a departing aircraft is not carrying any export cargo, a manifest must still be lodged. This manifest states that no cargo was loaded and is called a 'Nil Manifest'.

1.7 Export Reporting

- 1.7.1 The exporter must lodge an export declaration and obtain a "clear" Export Declaration Number before the cargo may be loaded for export. An export declaration can be communicated by document or electronically through the ICS. An Export Declaration Number is required for the following:
- a. goods requiring a permit (regardless of value);
 - b. goods on which a drawback is to be claimed;
 - c. customable and excisable goods on which duty/excise has not been paid; and
 - d. goods with a value greater than AUD\$2,000, except exempt goods.
- 1.7.2 A Main Manifest Number is supplied by ABF.

1.8 Certificate of Clearance

The pilot of an aircraft must not depart from any airport without receiving an aircraft Certificate of Clearance from an ABF Officer.

2. BIOSECURITY REQUIREMENTS

- 2.1 Australia is free from many diseases, pests and weeds which cause serious damage in other parts of the world. Air crew and passengers are required to comply with legislative requirements under the *Biosecurity Act 2015* to help preserve this.
- 2.2 Imported air cargo of biosecurity interest (such as fruit and vegetables, live plants, seeds, animal, avian and aquatic species or commodities derived from these products) must be reported via the ABF ICS System.

- 2.3 The relevant type of import declaration is required to be lodged for each imported consignment of biosecurity interest prior to release of cargo.
- 2.4 The import conditions for cargo of biosecurity interest are outlined in the DAWE - Biosecurity Import Conditions Database (BICON): <https://bicon.agriculture.gov.au/BiconWeb4.0>
- 2.5 Transport and packaging requirements for live animal, avian and aquatic species are specified in the International Air Transport Association – Live Animal Regulations, available at: www.iata.org/whatwedo/cargo/live-animals/Pages/index.aspx
- 2.6 Importers should note that all biosecurity inspections, permits and entries carry a fee for service charge. More information is available at: www.agriculture.gov.au/fees

3. INTERNATIONAL AIR CARGO SECURITY REQUIREMENTS

- 3.1 The *Aviation Transport Security Act 2004* (ATSA) and the *Aviation Transport Security Regulations 2005* (the Regulations) establish a regulatory framework to safeguard against unlawful interference with aviation and maintain and improve aviation security.

- 3.2 Supply chain security for air cargo is regulated under the ATSA and the Regulations, which require certain air cargo supply chain industry participants to hold and maintain approved security programs. Operating under the Regulated Air Cargo Agent scheme, the Accredited Air Cargo Agent scheme and the Known Consignor scheme, security programs set out the measures and procedures industry participants need to implement to meet their obligations under the ATSA and Regulations.

- 3.3 All outbound international air cargo is required to be examined at piece-level by a Regulated Air Cargo Agent or originate from a Known Consignor. Piece-level examination means that each individual box, carton or other item in a shipment must be examined at a deconsolidated level. To originate from a Known Consignor means goods must be produced, packaged, stored, controlled, transported and handled in a manner that ensures their integrity and protects them from unlawful interference from their point of origin through to loading onto an aircraft.

- 3.4 In order for an item of cargo to be loaded onto an international aircraft, that cargo must be issued with a security declaration from a Known Consignor or Regulated Air Cargo Agent.

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- 3.5 Enquiries around regulatory requirements should be directed to the Transport Security Guidance Centre within the Aviation and Maritime Security Division, Department of Home Affairs (see *GEN 1.1*).

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GEN 1.5 AIRCRAFT INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS**1. RADIO COMMUNICATIONS SYSTEMS**

- 1.1 Aircraft must be equipped with radio communications systems capable of continuous communication according to the flight classification and airspace category. The systems specified in the following table are the minimum required for the particular operation and except where otherwise indicated must be of a type approved by the CASA, properly installed in the aircraft and serviceable on the departure of the flight.

CLASS	AIRSPACE	COM RQMNTS	REMARKS
RPT	Classes A, C, D, E & G	VHF and HF or 2VHF	See <i>paras 1.2 to 1.4, 1.6 & 1.7.</i>
CHTR	Classes A, C, D, E & G	VHF HF	See <i>para 1.2.</i> When VHF does not allow continuous communication with ATS at all stages of flight. See <i>paras 1.3, 1.4, 1.6 & 1.7.</i>
IFR	Classes A, C, D, E & G	VHF HF	See <i>para 1.2.</i> When beyond VHF range of ATS units. See <i>paras 1.3 & 1.6.</i>
NGT VFR	Classes A, C, D, E & G	VHF	See <i>para 1.2.</i>
VFR	Classes A, C, D & E	VHF	See <i>para 1.2.</i>
VFR	Class G – 5,000FT and above	VHF	See <i>para 1.2 and 1.5.</i>

CLASS	AIRSPACE	COM RQMNTS	REMARKS
VFR	Class G – Certified, military and specifically designated non- controlled aerodromes (details listed in ERSA)	VHF	See <i>paras 1.2 & 1.5</i> . <i>Note 1: Currently, there are no specifically designated aerodromes to which this applies.</i> <i>Note 2: CAR 166E allows for use of such aerodromes without serviceable radio subject to compliance with specified procedures (see ENR 1.1 Section 6.2 and CAAP 166-01).</i>
VFR	Class G – below 3,000FT AMSL or 1000FT AGL	VHF	In reduced VMC. See <i>paras 1.2 & 1.5</i> .
GLIDERS	Class G	VHF	Operations at aerodromes served by RPT. See <i>para 1.5</i> .

1.2 VHF communications systems must be capable of communication on all VHF frequencies required to meet the reporting and broadcast requirements of *ENR 1.1 para 6.1*.

1.3 HF communications systems must:

- a. be capable of operation at those frequencies appropriate to the area of operation as specified in the *AIP ERSA*;
- b. have a selectable frequency range that is sufficient to enable continuous communication with ATS units for the planned duration of the flight or while operating within the specified area, taking into account the expected radio propagation conditions during the period of operation; and
- c. be capable of delivering a peak envelope power to the antenna transmission line of at least 100 watts and not greater than 400 watts under standard conditions.

- 1.4 At least one item of the required radio equipment must be capable of maintaining continuous communication with ATS at all stages of flight. The term “all stages of flight” includes ground operations at the aerodromes of departure and arrival, and cruising levels that could be required for any emergency and/or abnormal operation en route.

However, where continuous communication using VHF can be maintained for normal operations, but cannot be guaranteed in the event of emergency and/or abnormal operations en route, SATCOM telephone may be used instead of HF provided the Operator has applied to CASA in writing, and been given specific approval, documenting that all relevant maintenance, operational and logistic aspects have been considered and has or will be implemented, including that:

- a. routes are selected so that the anticipated period beyond VHF coverage, in the event of emergency and/or abnormal operation, does not exceed 30 minutes;
- b. appropriate pre-flight checks have been incorporated in the aircrew check list and forms part of the company's operating procedures;
- c. the system is equipped with an external antenna and operated via a common VHF headset/microphone;
- d. SATCOM telephone transmissions will be recorded by the Cockpit Voice Recorder;
- e. the system is inter-operable with existing NAV systems;
- f. power can be removed from the system;
- g. defect reports will be issued and dispatched as for other COM systems; and
- h. the system has been incorporated in the Minimum Equipment List.

Note: SATCOM telephone contact procedures are described in the AIP at GEN 3.4 paragraph 3.6.1. Additionally, to facilitate ATC initiated calls to aircraft during contingencies, the phone number of the aircraft may be included in Field 18 of the flight plan. Any pre-flight radio check of the SATCOM telephone should be made to the pilot's company to avoid congesting ATC lines.

- 1.5 An Australian Communications and Media Authority approved and licensed hand-held VHF radio may be used by pilots of:
- a. VFR PVT and AWK aeroplanes with a MTOW not exceeding:
 - (1) in the case of an aeroplane other than a seaplane – 600KG;
 - (2) in the case of a seaplane – 650KG;
 - b. gliders; and
 - c. balloons

Additionally, approved hand-held radios may be used by pilots of these aircraft when operating in Class G. Pilots are responsible for ensuring that the equipment is able to be operated without adversely affecting the safety of the aircraft. The location of the antenna must be such that airframe shielding does not prevent two way communication with all aircraft operating on the CTAF. Where the radio is not connected to the aircraft primary power supply, there must be ready access to back-up power.

- 1.6 *Planning Chart Australia (AUS PCA)* shows the areas in which an aircraft, flying at the altitudes indicated, could be expected to maintain continuous VHF communications with an ATS unit.
- 1.7 RPT, CHTR and AWK aircraft are exempt from the requirement to carry HF radio for communication with ATS when:
- a. radio contact can be maintained with an appropriately trained company representative able to communicate by telephone with ATS, and
 - b. the requirements of *ENR 1.1 para 10.1.1* are satisfied.
- 1.8 Private aircraft without radio may be admitted to CTRs for maintenance subject to the approval of the appropriate ATC unit. Pilots must comply with any conditions contained in the approval.

2. RADIO NAVIGATION SYSTEMS

2.1 Subject to *para 2.2*, the following table summarises the navigation aid requirements for aircraft operated under the IFR or at night under the VFR:

KIND OF OPERATION	SYSTEMS		CONDITIONS
	NO	TYPE	
RPT and CHTR	1	GNSS equipment in accordance with: (E)TSO-C129, (E)TSO-C145, (E)TSO-C146 or (E)TSO-C196a, or a later version	If GNSS equipment in accordance with (E)TSO-C129 is used and if an alternate aerodrome must be planned: a. navigation to the alternate aerodrome should be accomplished by use of ground-based navigation aids; and b. the alternate aerodrome should have a suitable approach that uses ground-based navigation aids, or the alternate aerodrome must be suitable for approach in VMC.
	and 1 or 2	ADF or VOR GNSS equipment in accordance with: (E)TSO-C145, (E)TSO-C146 or (E)TSO-C196a, or a later version	
	or 1	Multi-sensor navigation system that includes GNSS and inertial integration	Must be approved by CASA as providing an alternate means of compliance to the requirements of <i>CAO 20.18 para 9D.9</i>

KIND OF OPERATION	SYSTEMS		CONDITIONS
	NO	TYPE	
AWK and PVT	1	GNSS equipment in accordance with: (E)TSO-C129, or a later version	<p>If GNSS equipment in accordance with (E)TSO-C129 is used and if an alternate aerodrome must be planned:</p> <p>a. navigation to the alternate aerodrome should be accomplished by use of ground-based navigation aids; and</p> <p>b. the alternate aerodrome should have a suitable approach that uses ground-based navigation aids, or the alternate aerodrome must be suitable for approach in VMC.</p>
	and 1	ADF or VOR	
	or 1	GNSS equipment in accordance with: TSO/ETSO-C145, TSO/ETSO-C146 or (E)TSO-C196a, or a later version	
	or 1	Multi-sensor navigation system that includes GNSS and inertial integration	Must be approved by CASA as providing an alternate means of compliance to the requirements of <i>CAO 20.18 para 9D.9</i>

KIND OF OPERATION	SYSTEMS		CONDITIONS
	NO	TYPE	
NGT VFR	1	ADF, VOR, or GNSS equipment in accordance with: (E)TSO-C129, (E)TSO-C145, (E)TSO-C146 or (E)TSO-C196a, or a later version	
ILS and localiser	1	75MHz marker beacon receiver	Not required for CAT I operations when serviceable DME or GNSS is fitted and glideslope guidance and accuracy can be checked by reference to DME information provided on the appropriate instrument approach chart.

Note 1: Additional radio navigation equipment may be required to meet the navigation requirements for ENR 1.1 para 4.1 and the alternate requirements of ENR 1.1 para 11.7.3, depending on the navigation aids available and the weather conditions prevailing over the planned route and at the destination.

Note 2: GNSS equipment that complies with the radio navigation aid requirements for IFR or night VFR navigation specified in para 2.1 may be used instead of DME for instrument approaches for which DME is required subject to the following conditions:

- a. the substitute DME reference position can be selected from the data base; and*
- b. the reference position used is annotated on the approach chart*

2.2 The table below summarises navigation air requirements if, despite carrying navigation aids meeting the requirements of CAO 20.18 (as summarised in para 2.1), an IFR aircraft conducts the route or terminal segments of a flight by reference to ground-based navigation aids:

KIND OF OPERATION	SYSTEMS		CONDITIONS
	NO	TYPE	
RPT and CHTR	2 and 1	ADF or VOR DME or GPS	At least one is a type that enables navigation using ground-based navigation aids available on the route.
	or 2 or 1	ADF or VOR ADF or VOR	Applicable only to CHTR, 5,700KG or less MTOW, for operations in controlled airspace - at least one is a type that enables navigation using ground-based navigation aids available on the route. Applicable only to CHTR, 5,700KG or less MTOW, for operations in non-controlled airspace.
AWK and PVT	2 and 1	ADF or VOR DME or GPS	Applicable only to AWK, more than 5,700KG MTOW, for operations in controlled airspace - at least one is a type that enables navigation using the ground-based navigation aids available on the route.
	or 2	ADF or VOR	Applicable only to AWK, 5,700KG or less MTOW, or PVT for operations in controlled airspace - any combination which includes at least 1 ADF or VOR.
	or 1	ADF or VOR	Applicable only to AWK, 5,700KG or less MTOW, or PVT for operations in non-controlled airspace

Note 1: Para 2.2 does not relieve the aircraft from the requirement to carry navigation aids that meet the requirement of CAO 20.18 as summarised in para 2.1.

Note 2: Additional radio navigation equipment may be required to meet the navigation requirements for ENR 1.1 para 4.1 and the alternate requirements for ENR 1.1 para 11.7.3, depending on the navigation aids available and the weather conditions prevailing over the planned route and at the destination.

Note 3: Aircraft may continue to operate with unserviceable DME and GPS equipment in Class G airspace. In controlled airspace, where ATC uses surveillance as the primary means of separating aircraft, operation with unserviceable DME or GPS is permitted if the aircraft is fitted with a serviceable secondary surveillance radar (SSR) transponder or ADS-B OUT such as to enable the aircraft to be, and remain, identified. This does not relieve the aircraft from the requirement for ADF or VOR equipment.

Note 4: In this table, GPS means GNSS equipment certified to TSO-C129, TSO-C145, TSO-C146 or equivalent as determined by CASA.

2.3

Rated Coverages

The following ranges are quoted for planning purposes. Actual ranges obtained may sometimes be less than these due to facility and site variations (see *ERSA*). The localiser ranges are for those installations that have been nominated for position fixing at ranges beyond 25NM:

- a. NDB (published in *ERSA*);
- b. VOR and DME

Aircraft Altitude (FT)	Range (NM)
Below 5,000	60
5,000 to below 10,000	90
10,000 to below 15,000	120
15,000 to below 20,000	150
20,000 and above	180

c. localiser

Aircraft Altitude (FT)	Range (NM)
At 2,000 AGL within $\pm 10^\circ$ of course line	25
Below 5,000	30
5,000 and above	50

d. **GBAS course deviation limitation**

GLS course deviation information is not available outside 23NM from the GBAS site.

3. EMERGENCY LOCATOR TRANSMITTER (ELT)

3.1 International flights must be equipped with ELTs as follows:

- a. When over water, in accordance with the relevant ICAO Standard and Recommended Practices (SARPS) which are:
 - (1) for International Commercial Air Transport, *paras 6.17.1 to 6.17.3 of ICAO Annex 6, Part 1, International Commercial Air Transport – Aeroplanes*;
 - (2) for International General Aviation, *paras 6.12.1 to 6.12.3 of ICAO Annex 6, Part II, International General Aviation – Aeroplanes*; and
 - (3) for Helicopters, *Section II, paras 4.7.1 to 4.7.3 of ICAO Annex 6, Part III International Operations – Helicopters*.
- b. When over land, in accordance with the relevant ICAO Standard and Recommended Practices (SARPS) which are:
 - (1) for International Commercial Air Transport, *paras 6.17.4 to 6.17.6 of ICAO Annex 6, Part 1, International Commercial Air Transport – Aeroplanes*;
 - (2) for International General Aviation, *para 6.12.4 to 6.12.6 of ICAO Annex 6, Part 2, International General Aviation – Aeroplanes*; and
 - (3) for Helicopters, *Section II, para 4.7.4 to 4.7.6 of ICAO Annex 6, Part III International Operations – Helicopters*, as applicable.

For these purposes, the whole of Australia is a designated area.

- 3.2 Australian aircraft (except exempted aircraft) are required to be fitted with or to carry an ELT which meets the requirements of *CAR 252A*. Pilots should monitor 121.5MHz before engine start and after shutdown. Reception of an ELT transmission must be reported to ATS or the RCC immediately. Domestic flights are required to carry survival radio equipment in accordance with *CAO 20.11*.

4. AIRBORNE WEATHER RADAR

- 4.1 IFR RPT and CHTR aircraft which are required to be crewed by two or more pilots must be fitted with an approved airborne weather radar system. Unpressurised turbine engine aircraft with a maximum take-off weight of not greater than 5,700KG and unpressurised piston engine aircraft are exempt from this requirement.

4.2 Serviceability of Airborne Weather Radar

- 4.2.1 An aircraft which is required to be fitted with an airborne weather radar system must not depart if the radar is unserviceable and available forecasts indicate probability of thunderstorms or cloud formations associated with severe turbulence anywhere along the route to be flown, including the route to a planned alternate.
- 4.2.2 An aircraft which is required to be fitted with an airborne weather radar system which becomes unserviceable during a flight may continue that flight so long as the aircraft avoids penetration of any cloud formation likely to be associated with severe turbulence.

5. GROUND PROXIMITY WARNING SYSTEM (GPWS)

- 5.1 A turbine engine aeroplane that:
- a. has a maximum take-off weight of more than 15,000KG, or is carrying 10 or more passengers; and
 - b. is engaged in regular public transport, or charter, operations;
- must not be operated under the Instrument Flight Rules unless it is fitted with:
- (1) an approved GPWS that has a predictive terrain hazard warning function; or
 - (2) if the aeroplane has a maximum take-off weight of 5,700KG or less, but is carrying 10 or more passengers - a TAWS-B+ system.

- 5.2 Subject to the provisions of an approved Minimum Equipment List (MEL) under *para 10 of CAO 20.18*, an aeroplane required to be fitted with a GPWS shall not depart with that equipment unserviceable from an aerodrome where facilities are available to repair or replace the GPWS and in no case shall an aeroplane be operated with its GPWS unserviceable for a period exceeding 24 hours from the time the equipment was determined to be unserviceable.

6. SURVEILLANCE EQUIPMENT

6.1 General requirements and capabilities

- 6.1.1 For flights into or out of Australian territory, or within Australian territory, the requirements for the carriage and use of surveillance equipment – including transponders and ADS-B transmitting equipment – are detailed:

- a. for Australian-registered aircraft — in *CAO 20.18*
- b. for foreign-registered aircraft:
 - (i) engaged in charter operations and aerial work operations — in *CAO 82.1*
 - (ii) engaged in regular public transport operations in other than high capacity aircraft — in *CAO 82.3*
 - (iii) engaged in regular public transport operations in high capacity aircraft — in *CAO 82.5*
 - (iv) engaged in private operations — in instrument *CASA 61/14*.

- 6.1.2 Further advice, including advice about installing equipment, can be found in *Advisory Circular (AC) 91-23* and on the CASA website.

- 6.1.3 **Required transponder or ADS-B capability.** The following table summarises the transponder or ADS-B transmitting equipment (ADS-B OUT) requirements for IFR or VFR operations in various classes of airspace or at specified aerodromes:

Operation	Class of airspace	Required capability
IFR	Any (Classes A, B, C, D, E and G)	ADS-B OUT equipment specified for IFR aircraft (IFR ADS-B OUT)
VFR	Class A – FL 290 and above	IFR ADS-B OUT
IFR or VFR operation at: a) YBBN b) YMML c) YSSY d) YPPH	Class B or C – at certain aerodromes	1. IFR ADS-B OUT; or 2. Mode S transponder
VFR	Class A (below FL 290), B or C	1. IFR ADS-B OUT; or 2. Mode S transponder; or 3. Mode A/C transponder
VFR*	Class E	1. IFR ADS-B OUT; or 2. Mode S transponder; or 3. Mode A/C transponder; or 4. Integrated Traffic Awareness Beacon System (TABS) device
VFR*	Class G — 10,000FT and above	1. IFR ADS-B OUT; or 2. Mode S transponder; or 3. Mode A/C transponder; or 4. Integrated TABS device.

* Required only for VFR aircraft which are fitted with an engine driven electrical system capable of continuously powering a transponder.

- 6.1.4 **Optional transponder or ADS-B capabilities for VFR aircraft.**
While meeting the requirements specified in *para 6.1.3*, aircraft operated to the VFR may also utilise the following ADS-B OUT capabilities:

Operation	Class of airspace	Optional capability
VFR only	Class A – below FL 290, B or C	1. Electronic conspicuity (EC) device – operated concurrently with the aircraft's: <ol style="list-style-type: none"> Mode S transponder (non-ADS-B*); or Mode A/C transponder. 2. A Class B TABS position source connected with a Mode S transponder, thus enabling ADS-B OUT.
VFR only	Class D	1. IFR ADS-B OUT; or <ol style="list-style-type: none"> Mode S transponder (which also may be connected with a Class B TABS position source for ADS-B OUT); or Mode A/C transponder; or Integrated TABS device; or EC device – which may be operated concurrently with an aircraft's: <ol style="list-style-type: none"> Mode S transponder (non-ADS-B*); or Mode A/C transponder.

Operation	Class of airspace	Optional capability
VFR only	Class E	<ol style="list-style-type: none"> 1. EC device – which may be operated concurrently with the aircraft's: <ol style="list-style-type: none"> a. Mode S transponder (non-ADS-B*); or b. Mode A/C transponder. 2. Class B TABS position source connected with an aircraft's Mode S transponder, thus enabling ADS-B OUT.
VFR only	Class G – 10,000FT AMSL and above	<ol style="list-style-type: none"> 1. EC device – which may be operated concurrently with the aircraft's: <ol style="list-style-type: none"> a. Mode S transponder (non-ADS-B*); or b. Mode A/C transponder. 2. Class B TABS position source connected to an aircraft's Mode S transponder, thus enabling ADS-B OUT.
VFR only	Class G – below 10,000FT AMSL	<ol style="list-style-type: none"> 1. IFR ADS-B OUT; or 2. Mode S transponder (which may also be connected with a Class B TABS position source for ADS-B OUT); or 3. Mode A/C transponder; or 4. Integrated TABS device; or 5. EC device – which may be operated concurrently with the aircraft's: <ol style="list-style-type: none"> a. Mode S transponder (non-ADS-B*); or b. Mode A/C transponder.

* Meaning the Mode S transponder is not, at the same time, outputting ADS-B position information.

- 6.1.5 Transponder or ADS-B OUT equipment, whether fitted due to a mandatory requirement or optionally fitted, must be operated continuously during flight unless the pilot is directed or approved otherwise by ATC.
- 6.1.6 Mode S transponders and ADS-B OUT equipment, whether fitted due to a mandatory requirement or optionally fitted, must be set to transmit:
 - a. the aircraft's allocated 24-bit address; and
 - b. the Aircraft Identification as shown in Item 7 of the filed Flight Notification, or, when no flight notification has been filed, the aircraft registration.
- 6.2 **Flight without required transponder or ADS-B equipment (unserviceable or not fitted)**
- 6.2.1 Where an aircraft's required Mode S transponder or ADS-B OUT equipment is unserviceable or not available, paragraphs 9B.8 and 9E.5 of *CAO 20.18* direct that a flight may only take place if:
 - a. the aircraft owner, operator or pilot has written authorisation from CASA; or
 - b. the equipment is unserviceable for a flight, and each of the following applies:
 - (1) the flight takes place within 3 days of the discovery of the unserviceability;
 - (2) at least 1 of the following applies for the flight:
 - (i) flight with unserviceable equipment has been approved by CASA, in writing, subject to such conditions as CASA specifies;
 - (ii) the unserviceability is a permissible unserviceability set out in the minimum equipment list for the aircraft, and any applicable conditions under subregulation 37 (2) of *CAR 1988* have been complied with;
 - (3) ATC clears the flight despite the unserviceability.
- 6.2.2 ATC may allow a flight to proceed without a serviceable transponder (where one is required) on request and in accordance with the following:
 - a. For operation of an aircraft with an operating transponder, but without operating automatic pressure altitude reporting equipment, the request may be made at any time.

- b. For operation of an aircraft with an unserviceable transponder to the airport of ultimate destination, including any intermediate stops, or to proceed to a place where suitable repairs can be made or both, the request may be made at any time.
- c. For operation of an aircraft that is not equipped with a transponder, the request must be made at least one hour before the proposed operation.

6.2.3 Where an IFR aircraft is ADS-B equipped but the equipment has become unserviceable before flight, the pilot in command or aircraft operator must contact Airservices Australia for prior approval of any flight. Any approval agreed by ATC for the flight will be subject to operational conditions.

Note: Airservices Australia contact numbers:

Brisbane FIR: 07 3866 3224^

Melbourne FIR: 03 9235 7420^

6.2.4 Where ADS-B equipment becomes unserviceable in flight, Airservices Australia may approve an IFR flight to continue to destination or to a place where suitable repairs can be made. Approval of such flight is subject to traffic management considerations at the time.

6.2.5 Once an approval is obtained, clearance to operate in controlled airspace may be issued by ATC at the time of flight and is subject to traffic management considerations. Aircraft equipped with ADS-B will be afforded priority. An aircraft operating in controlled airspace without serviceable ADS-B OUT equipment (where this is normally required) can adversely affect ATC's ability to integrate the affected aircraft into the general air traffic flow. This can result in delays, holding or assignment of non-optimal cruising levels or routing. Therefore, pilots in command and aircraft operators considering a flight without required ADS-B OUT equipment should account for the potential impact and plan fuel for the flight accordingly.

6.3 **ADS-B equipment in State Aircraft**

- 6.3.1 State aircraft fitted with non-compliant ADS-B transmitting equipment should set the equipment to output a value of zero for the NUCp, NACp, NIC or SIL. If unable to apply these settings, the ADS-B equipment non-compliance must be detailed in the flight notification. Non-ADS-B equipped state aircraft have equal priority with ADS-B-equipped aircraft.

Note 1: The operation of non-compliant ADS-B equipment can significantly affect and degrade ATS surveillance capability.

Note 2: State aircraft in flight that have not flight planned as above may request operation under the provisions of ENR 1.7 paragraph 3. Cruising Levels - "DUE OPERATIONAL REQUIREMENT".

7. **AIRBORNE COLLISION AVOIDANCE SYSTEM (ACAS) / TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS)**

7.1 **Overview**

- 7.1.1 Aircraft fitted with a serviceable ACAS/TCAS, and with a crew trained in its use, are permitted to operate that system while in Australian airspace.
- 7.1.2 Pilots of transponder-equipped aircraft should ensure their transponder is switched to ON/ALT (Mode C) at all times.

Note: TCAS will neither track or display:

- non-transponder-equipped aircraft;*
- aircraft with an inoperable transponder; or*
- aircraft operating a Mode A transponder.*

7.2 **Use of ACAS/TCAS Indicators**

- 7.2.1 **Traffic Advisory (TA).** In the event of a TA, the pilot should use all available information to prepare for appropriate action if an RA occurs including:

- attempt to establish visual contact; and
- change the flight path only if a collision risk is established visually.

Note: RA collision avoidance manoeuvres will not be provided to an aircraft with TA-only mode selected, e.g. during engine failure or operating in known close proximity to other traffic such as approaches to closely spaced parallel runways.

- 7.2.2 **Resolution Advisory (RA).** In the event of an RA, pilots must:
- a. immediately conform to the RA indication, even if this conflicts with an ATC instruction, unless doing so would jeopardise the safety of the aircraft;
 - b. limit the alterations of the flight path to the minimum extent necessary to comply with the RA; and
 - c. notify ATC, as soon as permitted by workload, of an RA which requires a deviation from the current ATC instruction or clearance.
- 7.3 **Responsibility for Separation**
- 7.3.1 Once an aircraft manoeuvres in response to an RA, ATS is not responsible for providing separation between that aircraft and any other aircraft, airspace, terrain or obstruction.
- 7.3.2 When the conflict is resolved, pilots must:
- a. promptly return to the terms of the latest ATC instruction or clearance and notify ATC of the manoeuvre; or
 - b. comply with an amended ATC clearance or instruction issued.
- 7.3.3 ATC responsibility for separation resumes when separation is re-established after:
- a. the responding aircraft has returned to its assigned level;
 - b. the pilot advises ATC that the TCAS manoeuvre is complete; or
 - c. the responding aircraft has executed an alternate clearance.
- 7.4 The Australian Transport Safety Bureau (ATSB) requires that all TCAS Resolution Advisories are treated as Routine Reportable Matters (*ENR 1.14 sub-para 3.2.1, m* refers)
- 7.5 The ATSB reporting requirements apply to all TCAS-equipped aircraft operating in Australian-administered airspace. The requirements also apply to Australian registered aircraft operating outside Australian-administered airspace.
- 7.6 The above information is required for proactive systems analysis in relation to accident prevention.

7.7 High Vertical Rate (HVR) Encounters

- 7.7.1 A TCAS Resolution Advisory (RA) may result from having a high vertical rate when approaching an assigned altitude or flight level when another aircraft is maintaining, or approaching, an adjacent altitude or flight level.

To avoid RAs in these circumstances, the pilot of the climbing or descending aircraft should, where practicable, reduce the vertical rate to less than 1,500FPM when within the last 1,000FT of the assigned altitude or flight level, unless otherwise directed by ATC.

Note 1: Pilots are not required to modify vertical speed for every level-off. This is not necessary and would introduce a significant increase in pilot workload.

Note 2: Pilots may become aware of the presence of an adjacent aircraft by several means, including:

- a. visual acquisition;*
- b. information provided by ATC; or*
- c. TCAS Traffic Advisory (TA).*

8. AREA NAVIGATION SYSTEMS APPROVAL AND OPERATIONS

- 8.1 The requirements for carriage and use of area navigation systems are contained in *CASR Part 91U, Part 91U Manual of Standards, CAO 20.18* and *CAO 20.91*. Requirements, advice and information on area navigation, PBN and GNSS aspects can also be found on the CASA website at:
www.casa.gov.au/airspace/standard-page/cns-atm-navigation.

- 8.2 Operators of foreign registered aircraft holding an RNP-AR navigation authorisation from their National Aviation Authority must not navigate in accordance with RNP-AR procedures in Australia without specific CASA authorisation.

8.3 Notification of failure or operations outside of tolerance

- 8.3.1 Pilots using area navigation systems for navigation must notify ATC
- a. about navigation equipment failure; or
 - b. of operations of the equipment outside the approved tolerances; or

- c. for inertial systems, if the times between updates, or from departure, exceeding three (3) hours for single units or five (5) hours for multiple units for flights in controlled airspace other than OCA, and five (5) hours for a single unit or 12 hours for multiple units for flights in OCA.

Note: ATC may discontinue applying certain area navigation standards after receipt of the advice.

9. RVSM APPROVAL AND OPERATIONS

- 9.1 RVSM is a published ICAO standard, which allows the use of 1,000FT separation between RVSM-approved aircraft operating from FL290 to FL410 inclusive. In Australia, RVSM is applied in accordance with the ICAO standard. Operators and aircraft must be approved by the State of Registry. Guidance on the approvals process for Australian-registered aircraft is contained in *Civil Aviation Advisory Publication (CAAP) 181A-(0)*.

10. AOC TO BE CARRIED ON BOARD

- 10.1 In accordance with *ICAO Annex 6 Parts I*, an aeroplane conducting an international commercial air transport operation shall carry a certified true copy of the AOC and a copy of the associated Operations Specifications relevant to the aeroplane type, issued in conjunction with the Certificate.
- 10.2 This provision for aeroplanes is outlined in *Annex 6, Part I, Chapter 6, para 6.1.2*.
- 10.3 The provision for helicopters is outlined in *Annex 6 Part III, Section II, Chapter 4, para 4.1.2*.

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GEN 1.6 SUMMARY OF NATIONAL REGULATIONS AND INTERNATIONAL AGREEMENT/CONVENTIONS

1. **KEY CIVIL AVIATION LEGISLATION AND AIR NAVIGATION REGULATIONS IN FORCE IN AUSTRALIA AND ITS TERRITORIES**
 - 1.1 **Legislation by the Parliament of the Commonwealth of Australia**
 - 1.1.1 ***Air Navigation Act 1920 and Air Navigation Regulations 2016.*** Ratification of Chicago Convention and Protocols amending Articles 45, 48, 49 and 61 of Chicago Convention and Air Transit Agreement:
 - a. Control of Foreign Aircraft on Flights in Australia;
 - b. International Airline Licences;
 - c. Carriage of Munitions in Aircraft.
 - 1.1.2 ***Air Services Act 1995 and Air Services Regulations 2019.*** Legislation establishing Airservices Australia.
 - 1.1.3 ***Aviation Transport Security Act 2004 and Aviation Transport Security Regulations 2005.*** Establishes a regulatory framework to safeguard against unlawful interference with aviation.
 - 1.1.4 ***Biosecurity Act 2015.*** Explains how biosecurity threats to plant, animal and human health in Australia and its external territories are managed.
 - 1.1.5 ***Civil Aviation Act 1988.*** An Act establishing the Civil Aviation Safety Authority with regulatory functions relating to the safety of civil aviation and related purposes, including:
 - a. Air Operators Certificates;
 - b. Use of Defence Aerodromes;
 - c. Interference with Navigation Aids.
 - 1.1.6 ***Civil Aviation Regulations.*** Australia's aviation regulations are contained in two instruments: the *Civil Aviation Regulations 1988 (CAR 1988)* and the *Civil Aviation Safety Regulations 1998 (CASR 1998)*. In due course, the regulations contained in *CAR 1988* will be replaced by *CASR 1998*. In the interim, both *CAR 1988* and *CASR 1998* apply.

CAR 1988

- Part 1 Preliminary
- Part 2 Administration and Organisation
- Part 4 Airworthiness Requirements
- Part 4A Maintenance
- Part 4B Defect Reporting
- Part 4C Flight Manuals
- Part 4D Removal of Data Plates and Aircraft Registration Identification Plates
- Part 5 Balloon Flight Crew Licencing
- Part 7 Navigation Logs
- Part 8 Radio Systems for Use in, or in Connection with, Aircraft
- Part 9 Aerodromes
- Part 10 Air Traffic Services and Other Services
- Part 11 Conditions of Flight
- Part 12 Rules of the Air
- Part 13 Signals for the Control of Air Traffic
- Part 14 Air Service Operations
- Part 16 Refusal to Grant, and Suspension and Cancellation of, Licences, Certificates and Authorities
- Part 17 Penal Provisions and Prosecutions
- Part 18 Evidence
- Part 19 Miscellaneous
- Part 20 Transitional

CASR 1998

- Part 1 Preliminary
- Part 11 Regulatory Administration
- Part 13 Enforcement Procedures
- Part 21 Certification and Airworthiness Requirements for Aircraft and Parts
- Part 22 Airworthiness Standards for Sailplanes and Powered Sailplanes
- Part 23 Airworthiness Standards for Aeroplanes in the Normal, Utility, Acrobatic or Commuter Category

Part 25	Airworthiness Standards for Aeroplanes in the Transport Category
Part 26	Airworthiness Standards for Aircraft in the Primary Category or Intermediate Category
Part 27	Airworthiness Standards for Rotorcraft in the Normal Category
Part 29	Airworthiness Standards for Rotorcraft in the Transport Category
Part 31	Airworthiness Standards for Manned Free Balloons
Part 32	Airworthiness Standards for Engines for Very Light Aeroplanes
Part 33	Airworthiness Standards for Aircraft Engines
Part 35	Airworthiness Standards for Aircraft Propellers
Part 39	Airworthiness Directives
Part 42	Continuing Airworthiness Requirement for Aircraft and Aeronautical Products
Part 45	Display of nationality marks, registration marks and aircraft registration identification plates
Part 47	Registration of Aircraft
Part 60	Synthetic Training Devices
Part 61	Flight Crew Licensing
Part 64	Authorisations for Non-Licensed Personnel
Part 65	Air Traffic Services Licensing
Part 66	Continuing Airworthiness
Part 67	Medical
Part 90	Additional Airworthiness Requirements
Part 91	General Operating and Flight Rules
Part 92	Consignment and Carriage of Dangerous Goods
Part 99	Drug and Alcohol Management Plans and Testing
Part 101	Unmanned Aircraft and Rockets
Part 103	Sport and Recreational Aviation Operations
Part 105	Sport and Recreational Parachuting Operations
Part 117	Representations and Surveys
Part 129	Foreign Air Transport Operators - certification and operating requirements
Part 132	Limited category aircraft

Part 137	Aerial Application Operations
Part 138	Aerial Work Operations
Part 139	Aerodromes
Part 141	Recreational, Private and Commercial Pilot Flight Training, other than Certain Integrated Training Courses
Part 142	Integrated and Multi-Crew Pilot Flight Training, Contracted Recurrent Training and Contracted Checking
Part 143	Air Traffic Services Training Providers
Part 145	Continuing Airworthiness - Part 145 Approved Maintenance Organisations
Part 147	Continuing Airworthiness - Maintenance Training Providers
Part 149	Recreational Aviation Administration Organisations
Part 171	Aeronautical Telecommunication Service and Radio Navigation Service Providers
Part 172	Air Traffic Service Providers
Part 173	Instrument Flight Procedure Design
Part 175	Aeronautical Information Management
Part 200	Exemptions
Part 201	Miscellaneous
Part 202	Transitional

1.1.7 ***Damage by Aircraft Act 1999.*** Facilitates the recovery of damages for certain injury, loss, damage or destruction caused by aircraft, or by people, animals or things that are dropped, or that fall, from aircraft that are in flight.

1.1.8 ***Civil Aviation (Carriers' Liability) Act 1959.*** Establishes carriers' liability arrangements as they apply to the carriage of passengers, baggage and cargo. This includes giving effect to the provisions of the 1999 Montreal Convention and the Warsaw Convention as amended by relevant instruments. This Act also establishes carrier's liability for domestic carriage by air.

1.1.9 ***Transport Safety Investigation Act 2003 (TSI Act).*** Provides guidance for the investigation of transport accidents and other matters affecting transport safety in aviation, marine and rail modes of transport.

1.2 Other Relevant Legislation

Air Services Act 1995

Part 4, Division 4 and Part 5, Division 3

Air Navigation Act 1920

Sections 9, 10, 12, 13, 14, 15, 16, 17, 19

Airspace Act 2007

Australian Maritime Safety Authority Act 1990 Section 6

Civil Aviation Act 1988

Sections 22, 23, 23A, 24, 25, 26, 27, 27A/AB/AC/AD/AE/AF, 28, 28A/BA/BB/BC/BD/BE/BF/BG/BH

Civil Aviation Regulation 135, 136, 139

Customs Act 1901

Customs Regulation 2015

Transport Safety Investigation Regulations 2003 (TSI Regulations)

Parts 1, 2 and 5

Convention on International Civil Aviation (Chicago Convention)

International Convention for the Safety of Life at Sea (SOLAS)

International Convention on Maritime Search and Rescue (SAR)

2. SECURITY OF GENERAL AVIATION OPERATIONS

2.1 Introduction

2.1.1 Since late 2001, the Australian Government has circulated warnings concerning the possibility of terrorist attacks against Australian civil aviation interests, including general aviation.

2.1.2 The general security environment in relation to general aviation and charter has not changed in recent years. Nevertheless, general aviation and charter industry personnel are urged to be particularly vigilant and alert to any activities in the industry which may arouse suspicions in regard to possible terrorist actions.

2.2 **Activities Which May Arouse Suspicion**

2.2.1 General aviation operators should be alert to the importance of reporting and/ or resolving any event or activity occurring in their operating environment that appears to be unusual or suspicious.

2.2.2 Examples of suspicious behaviour can include:

- a. unusual enquiries regarding flight training (including the use of, or training in, crop dusters or helicopters);
- b. enquiries concerning aircraft configurations and capabilities;
- c. loading and unloading of unusual or unauthorised cargo;
- d. unusual activity related to the use or acquisition of dangerous chemicals;
- e. watching, observing, photographing, sketching, measuring and note taking;
- f. examining or enquiring about security systems and guarding;
- g. visiting airports and not conducting 'normal' airport business;
- h. avoiding notice around critical airport infrastructure or assets;
- i. being airside (or in other non public areas) without a verifiable excuse [be aware of seemingly convincing cover stories];
- j. enquiring about airport associated work that does not exist;
- k. entering or leaving the airport precinct in an unusual manner;
- l. creating distractions at times critical to aircraft operations;
- m. insisting on urgency in apparent benign conditions;
- n. attempting to circumvent security measures or procedures;
- o. attempting to conceal baggage or avoiding scrutiny of it;
- p. using or carrying innocent items that could mask more sinister items; and
- q. presenting suspect ID (it might be worn or photocopied/ photographed).

2.3 **Actions and Contacts**

2.3.1 All members of the aviation community are reminded to continue to maintain and, if necessary, enhance their vigilance and security arrangements.

2.3.2 Any unusual behaviour that cannot be satisfactorily explained should be reported to:

- a. the National Security Hotline by phone on 1800 123 400;
- b. the local police;

c. the Department of Home Affairs, Aviation and Maritime Security Division by phone on 1300 791 581; or

d. company security officers.

2.3.3 Particular attention should be paid to details such as names and descriptions of suspicious persons, and vessel/vehicle identification markers.

3. AUSTRALIAN SANCTIONS

3.1 Introduction

3.1.1 Australian sanction laws implement United Nations Security Council sanctions regimes and Australian autonomous sanctions regimes.

3.1.2 Contravening an Australian sanction law is a serious criminal offence. Penalties for sanctions offences include up to 10 years imprisonment and substantial fines.

3.1.3 All operators should check the sanctions measures which apply, including before bringing goods into or out of Australia or dealing with persons who are subject to targeted financial sanctions or whose entry into or transit through Australia is prohibited.

3.2 Sanctions Regimes under Australian sanction laws

3.2.1 The sanctions regimes currently implemented under Australian sanction laws are:

Central African Republic	Guinea-Bissau	Mali	Syria
Counter-terrorism	Iran	Myanmar	The Taliban
Crimea and Sevastopol	Iraq	Russia	Ukraine
Democratic People's Republic of Korea (North Korea)	ISIL (Da'esh) and Al-Qaida	Somalia	Yemen
Democratic Republic of the Congo	Lebanon	South Sudan	Zimbabwe
Former Federal Republic of Yugoslavia	Libya	Sudan	

- 3.2.2 For an updated list of individuals and entities that may be subject to targeted financial sanctions and travel bans, which might include nationals and entities from countries other than the ones listed above, please consult the Consolidated List available at: www.dfat.gov.au/international-relations/security/sanctions/Pages/consolidated-list.aspx

3.3 **Further information**

- 3.3.1 The Department of Foreign Affairs and Trade website provides detailed information on the sanctions regimes and the specific restrictions applicable under each regime: www.dfat.gov.au/international-relations/security/sanctions/sanctions-regimes/Pages/sanctions-regimes.aspx
- 3.3.2 The Minister for Foreign Affairs or their delegate may be able to grant a permit authorising an activity that would otherwise contravene an Australian sanction law. The Minister for Home Affairs may be able to grant a visa authorising travel that would otherwise contravene a travel ban. For further information see the website listed above.

4. **AUSTRALIAN AIR CARGO PROHIBITIONS**

4.1 **Introduction**

- 4.1.1 Air cargo prohibitions are a preventive security measure, based on the Government's assessment of the threat and risk environment in certain countries. There is no information to suggest that there is any specific threat for flights to or from Australia.
- 4.1.2 The prohibitions apply equally to air cargo carried on passenger and freighter aircraft.
- 4.2 **Air Cargo Prohibitions under Australian Law**
- 4.2.1 Australia has in place air cargo prohibitions from identified high risk countries - Bangladesh, Yemen, Syria, Egypt, Somalia and Turkey.
- 4.2.2 Airlines are prevented from carrying any air cargo that has originated from, or transited through Syria, Yemen or Somalia.
- 4.2.3 Air cargo that has originated from, or transited through, Egypt is prohibited, except for items that are currently exempt from screening under Australian regulations such as diplomatic bags and smaller items of international mail.

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- 4.2.4 Air cargo that has originated from, or transited through, Bangladesh is prohibited, unless it has undergone security examination at an approved last port of call before travelling to Australia or is otherwise exempt from examination under Australian regulations.
- 4.2.5 Air cargo that has originated from, or transited through, Turkey is prohibited, only if it contains an electromechanical device that weighs over 1 kilogram.
- 4.3 **Further Information**
- 4.3.1 Updates and further information is available at:
www.homeaffairs.gov.au/about-us/our-portfolios/transport-security/air-cargo-and-aviation/air-cargo/

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GEN 1.7 DIFFERENCES FROM ICAO STANDARDS, RECOMMENDED PRACTICES AND PROCEDURES

1. The differences that exist between Australian national aviation regulations and those specified by ICAO as Standards and Recommended Practices (SARPS) are identified on the Airservices Australia website at:
www.airservicesaustralia.com/aip/aip.asp
Read and agree to the Copyright Notice, then click on the current “Differences from ICAO Standards. Recommended Practices and Procedures” link.

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GEN 2. TABLES AND CODES**GEN 2.1 MEASURING SYSTEM, AIRCRAFT MARKINGS, HOLIDAYS****1. UNITS OF MEASUREMENT**

- 1.1 Units of measurement to be used in airways operations and air-ground communications are as follows:

Measurement	Units
Distances used in navigation (generally in excess of 2NM*)	nautical miles and tenths*
Short distances	metres
Altitudes, elevations and heights	feet
Horizontal speed, including wind speed	knots
Vertical speed	feet per minute
Wind direction for runway operations	degrees magnetic
Wind direction except for runway operations	degrees true
Visibility, including runway visual range	kilometres or metres
Altimeter setting	hectopascals
Temperature	degrees celsius
Weight (Mass) Metric	tonnes or kilograms
Time	hours and minutes
<i>*Miles must be read as meaning nautical miles unless otherwise stated. The word "nautical" may be omitted from air-ground communications.</i>	

- 1.1.1 An aircraft which is temporarily unable to use these units must so advise and request the ground station to transmit in units useable by the aircraft.

2. TIME SYSTEM**2.1 Coordinated Universal Time (UTC)**

Is used for civil aviation.

2.2 **Date and time**

Is indicated in a combination of the date and time in a single six figure group. However, a 10 figure group comprising the year, month, date, hours and minutes is used for NOTAM and SUPs. This is reduced to an eight figure group (nil year) for SPFIB.

3. **GEODETTIC REFERENCE DATUM**

3.1 All published geographical coordinates are expressed in term of the World Geodetic System – 1984 (WGS-84). Most geographical coordinates have been surveyed; however, those geographical coordinates that have been mathematically derived are indicated by an asterisk.

3.2 Geographical coordinates published in AIP documents/charts and NOTAM are expressed as degrees, minutes, seconds (if required), and if more precision is required, tenths/hundredths of a second with the cardinal point last; e.g. 3635S 14626E or 050721.2S 0652522.6E.

4. **PUBLIC HOLIDAYS**

4.1 **National**

New Year’s Day	1 January
Australia Day	26 January
Good Friday	Friday before Easter
Easter Monday	Monday after Easter Sunday
Anzac Day	25 April
Queen’s Birthday	According to the published date for the relevant State/Territory
Christmas Day	25 December
Boxing Day	26 December

Note: When New Year’s Day, Australia Day, Christmas Day and Boxing Day falls on a Saturday or Sunday, the next following working day is declared the public holiday. In this case, both the actual day and the following declared public holiday are considered to be public holidays.

4.2 Some services may be affected on public holidays. Operators should check NOTAM and/or contact the relevant aerodrome owner/operator.

4.2.1 Airspace specified as active or not active on public holidays refers only to National holidays as listed in *para 4.1*. Any other holidays affecting activation will be specified by NOTAM.

GEN 2.2 DEFINITIONS AND ABBREVIATIONS

1. DEFINITIONS

Active LAHSO Runway: The runway used during LAHSO for arriving aircraft issued with a hold short instruction.

Airborne Collision Avoidance System (ACAS): An aircraft system based on secondary surveillance radar (SSR) transponder signals which operates independently of ground-based equipment to provide advice to the pilot on potential conflicting aircraft that are equipped with SSR transponders.

ADS-C Agreement: A reporting plan which establishes the conditions of ADS-C data reporting (i.e. data required by the air traffic services unit and frequency of ADS-C reports which have to be agreed to prior to the provision of air traffic services).

Aerodrome: An area of land or water (including any buildings, installations and equipment), the use of which as an aerodrome is authorised under the regulations, being such an area intended for use wholly or partly for the arrival, departure and movement of aircraft. *Civil Aviation Act 1988 (Cth)*.

Aerodrome Beacon: An aeronautical beacon, used to indicate the location of an aerodrome from the air.

Aerodrome Control Service: ATC service for aerodrome traffic.

Aerodrome Control Tower: A unit established to provide ATC service to aerodrome traffic.

Aerodrome Elevation: The elevation of the highest point of the landing area.

Aerodrome Meteorological Minima (Ceiling and Visibility Minima): The minimum heights of cloud base (ceiling) and minimum values of visibility which are prescribed in pursuance of *CAR 257* for the purpose of determining the useability of an aerodrome either for takeoff or landing.

Aerodrome Meteorological Office: An office designated to provide meteorological service for aerodromes serving international air navigation.

Aerodrome Proprietor: Any Owner, Licensee, Authority, Corporation, or any other body which has a legal responsibility for a particular aerodrome.

Aerodrome Reference Point (ARP): The designated geographical location of an aerodrome.

Aerodrome Traffic: All traffic on the manoeuvring area of an aerodrome and all aircraft flying in, entering, or leaving the traffic circuit.

Aerodrome Traffic Circuit: The specified path to be flown by aircraft flying in, entering, or leaving the traffic circuit.

Note: At a controlled aerodrome, an aircraft is in the traffic circuit when it is within the CTR and established on a leg of the circuit.

Aeronautical Beacon: An aeronautical ground light visible at all azimuths, either continuously or intermittently, to designate a particular point on the surface of the earth.

Aeronautical Information Circular (AIC): A notice containing information that does not qualify for the origination of a NOTAM, or for inclusion in the AIP, but which relates to flight safety, air navigation, technical, administrative or legislative matters.

Aeronautical Information Publication (AIP): A publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation.

AIP Supplement (SUP): Temporary changes to the information contained in the AIP which are published by means of special pages.

Aircraft Address: A unique combination of 24 bits available for assignment to an aircraft for the purpose of air-ground communications, navigation and surveillance. Expressed as a six character hexadecimal code.

Aircraft Classification Number (ACN): A number expressing the relative effect of an aircraft on a pavement for a specific standard sub-grade category.

Aircraft Identification: An identification of up to seven (7) alpha-numeric characters used to identify the aircraft in flight notifications and in Mode S transponders/ADS-B transmitters.

Note: The Aircraft Identification entered into the Mode S Transponder, or ADS-B Transmitter, must match the Aircraft Identification entered into Item 7 of the Flight Notification or, when no flight notification has been filed, the aircraft registration. Hyphens or symbols may not be used within the identification.

Aircraft Parking Position Taxiway: A portion of an apron designated as a taxiway and intended to provide access to aircraft parking positions only.

Air-Ground Communications: Two way communications between aircraft and stations on the surface of the earth.

AIRMET Information: Information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en route weather phenomena which may affect the safety of low-level aircraft operations and which was not already included in the forecast issued for low-level flights in the flight information region concerned or sub-area thereof.

Air-Report (AIREP): A report from an aircraft in flight prepared in conformity with requirements for position and operational and/or meteorological reporting.

Airspace Release: A defined volume of airspace normally under the jurisdiction of one controlling authority that is temporarily released, by common agreement, for exclusive use of another.

Airspace Speed Limitation: A speed limit specified for a particular class of airspace.

Air Taxiing: Movement of a helicopter/VTOL above the surface of an aerodrome, normally in ground effect and at a speed normally less than 20KT.

Air Traffic Control Clearance: Authorisation for aircraft to proceed under conditions specified by an ATC unit.

Note: For convenience, the term "Air Traffic Control Clearance" is normally abbreviated to "Clearance" when used in appropriate context.

Air Traffic Control Instructions: Directives issued by ATC for the purpose of requiring a pilot to take a specific action.

Air Traffic Control Service: A service provided for the purpose of:

- a. preventing collisions:
 - (1) between aircraft; and
 - (2) on the manoeuvring area between aircraft and obstructions; and
- b. expediting and maintaining an orderly flow of air traffic.

Air Traffic Control Speed Restriction: An ATC traffic management speed or an ATC-issued speed control instruction.

Air Traffic Service (ATS): A generic term meaning variously, flight information service, alerting service, air traffic advisory service, ATC service (area control service, approach control service, or aerodrome control service).

Air Transit: The airborne movement of a helicopter that is:

- a. for the expeditious transit from one place within an aerodrome to another place within the aerodrome;
- b. at or below 100FT above the surface; and
- c. at speeds greater than those used in air taxiing.

Airways Clearance: A clearance, issued by ATC, to operate in controlled airspace along a designated track or route at a specified level to a specified point or flight planned destination.

Alerted See-and-Avoid: A procedure where flight crew, having been alerted to the existence and approximate location of other traffic in their immediate vicinity, seek to sight and avoid colliding with those known aircraft.

Alerting Post: An agency designated to serve as an intermediary between a person reporting an aircraft in distress and a rescue coordination centre.

Alerting Service: A service provided to notify appropriate organisations regarding aircraft in need of search and rescue aid, and to assist such organisations as required.

Alternate Aerodrome: An aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or to land at the aerodrome of intended landing.

Altimeter Setting: A pressure datum which when set on the sub-scale of a sensitive altimeter causes the altimeter to indicate vertical displacement from that datum. A pressure-type altimeter calibrated in accordance with Standard Atmosphere may be used to indicate altitude, height or flight levels, as follows:

- a. when set to **QNH** or **Area QNH** it will indicate **altitude**;
- b. when set to **Standard Pressure** (1013.2 HPA) it may be used to indicate **flight levels**.

Altimeter Setting Region: Airspace 10,000FT and below where the sub-scale of a pressure sensitive altimeter is set to QNH or Area QNH.

Altitude: The vertical distance of a level, a point or an object, considered as a point, measured from mean sea level.

Approach Control Service: ATC service for arriving or departing flights.

Approach Sequence: The order in which two or more aircraft are cleared to approach to land at the aerodrome.

Apron: A defined area on a land aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers, mail, cargo, fuelling, parking or maintenance.

Apron Service: A traffic regulatory and information service provided to aircraft using the apron area of an aerodrome.

Apron Taxiway: A portion of a taxiway system located on an apron and intended to provide a through taxi route across the apron.

Area Control Service: ATC service for controlled flights in control areas.

Area Navigation: A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground or space-based navigation aids, or within the limits of the capability of self-contained aids, or a combination of these.

Area Navigation Route: An ATS route established for the use of aircraft capable of employing area navigation.

Area Navigation Systems: Navigation systems supporting area navigation.

Area QNH: A forecast altimeter setting which is representative of the QNH of any location within a particular area.

Area VHF: The appropriate FIA VHF channel for a location.

ATS Route: A specified route designed for channelling the flow of traffic as necessary for the provision of air traffic services.

ATS Surveillance Service: Term used to indicate an air traffic service provided directly by means of an ATS surveillance system.

ATS Surveillance System: A generic term meaning variously, ADS-B, PSR, SSR or any comparable ground-based system that enables the identification of aircraft.

Note: A comparable ground-based system is one that has been demonstrated, by comparative assessment or other methodology, to have a level of safety and performance equal to, or better than, monopulse SSR.

Automatic Dependent Surveillance Broadcast (ADS-B): A means by which aircraft, aerodrome vehicles and other objects can automatically transmit or receive data such as identification, position and additional data, as appropriate, in a broadcast mode via a data link.

Automatic Dependent Surveillance - Contract (ADS-C): A means by which the terms of an ADS-C agreement will be exchanged between the ground system and the aircraft, via a data link, specifying under what conditions ADS-C reports would be initiated, and what data would be contained in the reports.

Note: The abbreviated term "ADS contract" is commonly used to refer to ADS event contract, ADS demand contract, ADS periodic contract or an emergency mode.

Automatic En Route Information Service (AERIS): The provision of operational information en route by means of continuous and repetitive broadcasts.

Automatic Terminal Information Service (ATIS): The provision of current, routine information to arriving and departing aircraft by means of continuous and repetitive broadcasts during the hours when the unit responsible for the service is in operation.

Aviation Reference Number (ARN): A unique six-digit number used to identify a client who conducts business with CASA. When CASA receives an application for a new licence, certificate, or other service, an ARN is established and all subsequent transactions for the client are recorded against that ARN. In addition to being a client number, the ARN may also be the licence or certificate number. The ARN should be quoted in all correspondence with CASA or with CanPrint, AIP Shop.

Base Turn (Instrument Approach): A turn executed by the aircraft during the initial approach between the end of the outbound track and the beginning of the intermediate or final approach track. The tracks are not reciprocal.

Note: Base turns may be designated as being made either in level flight or while descending, according to the circumstances of each individual procedure.

Blanket Clearance: A pre-arranged clearance originated for specific activities or events and specified in a letter of agreement.

Blind Transmission: A transmission from one station to another station in circumstances where two way communication cannot be established, but where it is believed that the called station is able to receive the transmission.

Block Level: A section of airspace with specified upper and lower limits on a specific track, in which cleared aircraft are permitted to manoeuvre.

Break-out Procedure(s): Immediate evasive manoeuvres, which are performed on instruction by air traffic control.

Note: In the context of simultaneous parallel operations, break-out procedures are used to direct a threatened aircraft and a deviating aircraft away from each other.

Briefing: The act of giving in advance, specific pre-flight instructions or information to aircrew.

Broadcast: A transmission of information relating to air navigation for which an acknowledgement is not expected.

Ceiling: The height above the ground or water of the base of the lowest layer of cloud below 20,000FT covering more than one-half of the sky.

CENSAR: An automated centralised SARTIME database software package used by ATS to manage SARTIMEs.

Centre: A generic callsign which can include ATC, Advisory, Flight Information and Alerting services, depending on the classification of airspace in which the service is provided.

Certified Aerodrome: A place that is certified as an aerodrome under the Civil Aviation Safety Regulations.

Circling Approach: An extension of an instrument approach procedure which provides for visual circling of the aerodrome prior to landing.

Clearance Limit: The point to which an aircraft is granted an ATC clearance.

Clearance Expiry Time: A time specified by an ATC unit at which a clearance ceases to be valid.

Clearway: A defined rectangular area on the ground or water under the control of the appropriate authority, selected or prepared as a suitable area over which an aeroplane may make a portion of its initial climb to a specified height.

Closely spaced runways: Runways that are parallel or near-parallel and spaced less than 1,525M but not less than 1,035M apart.

Collocated (Navigation) Aids: En route waypoints or navigation aids that are within 600M of each other.

Common Traffic Advisory Frequency (CTAF): A designated frequency on which pilots make positional broadcasts when operating in the vicinity of a non-controlled aerodrome or within a Broadcast Area.

Communicable Diseases: Communicable diseases include cholera, typhus (epidemic), smallpox, yellow fever, plague, and such other diseases as the contracting States shall, from time to time, decide to designate.

Community Service Flight (CSF): A flight that

a. involves:

- (i) the transport of one or more individuals (a patient) to a destination for the purpose of each such individual receiving non-emergency medical treatment or services at the destination; or
- (ii) the transport of a patient from a destination mentioned in *para (i)*. (the treatment destination) to another treatment destination; or
- (iii) the transport of a patient from a treatment destination:
 - (1) back to a place from which the patient departed for a treatment destination; or
 - (2) to a destination at which the patient resides; and

b. is provided to a patient, and any person who accompanies the patient to provide support and assistance, without a charge being made to any of those persons for their carriage; and

- c. medical treatment is not provided on board the aircraft for the flight, other than the administering of medication or in response to an unexpected medical emergency; and
- d. is coordinated, arranged or facilitated by an entity for a charitable purpose or community service purpose.

Company Operations Representative: The representative of an operating agency who is authorised to act in the capacity of liaison officer between ATC and the operating agency in respect of the control of an aircraft of that agency.

Continuous Descent Final Approach (CDFA): A technique, consistent with stabilised approach procedures, for flying the final approach segment of a non-precision instrument approach procedure as a continuous descent, without level-off, from an altitude/height at or above the final approach fix altitude/height to a point approximately 50FT above the landing runway threshold or the point where the flare manoeuvre should begin for the type of aircraft flown.

Control Area (CTA): A controlled airspace extending upwards from a specified limit above the earth.

Controlled Aerodrome: An aerodrome at which ATC service is provided to aerodrome traffic.

Controlled Airspace: Airspace of defined dimensions within which ATC service is provided in accordance with the airspace classification.

Controller: An air traffic controller, operating within an organisation approved under *CASR Part 172* and qualified in accordance with *CASR Part 65*.

Controller Pilot Data Link Communications (CPDLC): A means of communication between controller and pilot using data link for ATC communications.

Controlling Authority: With respect to airspace classifications, this is the Air Traffic Service provider for that area. With respect to PRD, this is the agency nominated to exercise the conditions of entry specified for the area.

Control Zone (CTR): A controlled airspace extending upwards from the surface of the earth to a specified upper limit.

CPDLC message: Information exchanged between an airborne system and its ground counterpart. A CPDLC message consists of a single message element or a combination of message elements conveyed in a single transmission by the initiator.

CPDLC Message Set: A list of standard message elements and free text message elements.

Cruise Climb: An aeroplane cruising technique resulting in a nett increase in altitude as the aeroplane weight decreases.

Cruising Level: A level maintained during a significant portion of a flight.

Danger Area: An airspace of defined dimensions within or over which activities of potential danger to aircraft flying over the area may exist.

Day: The period between the beginning of morning civil twilight (first light) and the end of evening civil twilight (last light).

Dead Reckoning (DR) Navigation: The estimating or determining of position by advancing an earlier known position by the application of direction, time and speed data.

Decision Altitude/Height (DA/H): A specified altitude or height in a 3D instrument approach operation at which a missed approach must be initiated if the required visual reference to continue the approach has not been established.

Note 1: DA is referenced to mean sea level and DH is referenced to the threshold elevation.

Note 2: The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In Category III operations with a decision height the required visual reference is that specified for the particular procedure and operation.

Defined Point After Takeoff (DPATO): The point within the takeoff and initial climb phase before which the helicopter's ability to continue the flight safely, with one engine inoperative, is not assured and a forced landing may be required.

Density Height: An atmospheric density expressed in terms of height which corresponds to that density in the Standard Atmosphere.

Dependent Parallel Approaches: Simultaneous instrument approaches to parallel or near-parallel instrument runways where ATS surveillance system separation minima between aircraft on adjacent extended runway centrelines are prescribed.

Distance Measuring Equipment (DME): Equipment which measures in nautical miles, the slant range of an aircraft from the selected DME ground station.

DME Distance: The slant range from the source of a DME signal to the receiving antenna.

Domestic Flight: A flight between two points within the Australian FIR.

East Coast SSR Coverage: The area of Australia east-coast secondary surveillance radar (SSR) coverage within approximately 200NM of a line Cairns - Brisbane - Sydney - Melbourne - Adelaide.

Elevation: The vertical distance of a point or a level, on or affixed to the surface of the earth, measured from mean sea level.

Emergency Fuel: The term used to describe a situation when the calculated usable fuel predicted to be available upon landing at the nearest aerodrome where a safe landing can be made is less than the fixed fuel reserve for the flight.

Note: The emergency fuel declaration is a distress message.

Emergency Phases:

- a. Uncertainty Phase: A situation wherein uncertainty exists as to the safety of an aircraft and its occupants.
- b. Alert Phase: A situation wherein apprehension exists as to the safety of an aircraft and its occupants.
- c. Distress Phase: A situation wherein there is reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger or require immediate assistance.

Equivalent Single Isolated Wheel Load: The equivalent load that would be imposed on a pavement by a single wheel if any wheel group on an aircraft were replaced by a single wheel using the same tyre pressure.

Essential Radio Navigation Service. A radio navigation service whose disruption has a significant impact on operations in the affected airspace or aerodrome.

Estimate: The time at which it is estimated that an aircraft will be over a position reporting point or over the destination.

Estimated Elapsed Time (EET): The estimated time required to proceed from one significant point to another.

Estimated Off Block Time: The estimated time at which the aircraft will commence movement associated with departure.

Estimated Time of Arrival (ETA): For IFR flights, the time at which it is estimated that the aircraft will arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the aerodrome, the time at which the aircraft will arrive over the aerodrome. For VFR flights, the time at which it is estimated that the aircraft will arrive over the aerodrome.

Expected Approach Time (EAT): The time at which ATC expects that an arriving aircraft, following a delay, will leave the holding fix to complete its approach for a landing.

Note: The holding fix referred to in the EAT is that shown on the instrument approach chart from which the instrument approach is prescribed to commence.

Final Approach: That part of an instrument approach procedure which commences at the specified final approach fix or point, or where such a fix or point is not specified:

- a. at the end of the last procedure turn, base turn or inbound turn of a racetrack procedure, if specified; or
- b. at the point of interception of the last track specified in the approach procedure; and
- c. ends at a point in the vicinity of an aerodrome from which a landing can be made, or a missed approach is initiated.

Final Approach Altitude: The specified altitude at which final approach is commenced.

Final Approach Course: Where the aircraft is established laterally on that part of a GLS approach procedure which commences at the specified initial approach fix and ends at the aerodrome, from which point a landing can be made, or a missed approach is initiated.

Final Approach Fix (FAF): A specified point on a non-precision instrument approach which identifies the commencement of the final segment.

Final Approach Point (FAP): A specified point on the glide path of a precision instrument approach which identifies the commencement of the final segment.

Note: The FAP is co-incident with the FAF of a localiser based non-precision approach.

Final Approach Segment: That segment of an instrument approach procedure in which alignment and descent for landing are accomplished.

Final Approach and Take off Area (FATO): A defined area over which the final phase of the approach manoeuvre to hover or landing is completed and from which the take off manoeuvre is commenced. Where the FATO is to be used by performance Class 1 helicopters, the defined area includes the rejected take off area available.

Final Leg: The path of an aircraft in a straight line immediately preceding the landing (alighting) of the aircraft.

Fix: A geographical position of an aircraft at a specific time determined by visual reference to the surface, or by navigational aids.

Flight File: A file stored on the NAIPS system which contains stored briefings, or a stored flight notification. Flight files are owned by pilots and/or operators, and updated at their request.

Flight Following: The provision of an ongoing Surveillance Information Service (SIS).

Flight Information: Information useful for the safe and efficient conduct of flight, including information on air traffic, meteorological conditions, aerodrome conditions and airways facilities.

Flight Information Area (FIA): An airspace of defined dimensions, excluding controlled airspace, within which flight information and SAR alerting services are provided by an ATS unit.

Note: FIAs may be sub-divided to permit the specified ATS unit to provide its services on a discrete frequency or family of frequencies within particular areas.

Flight Information Region (FIR): An airspace of defined dimensions within which flight information service and SAR alerting service are provided.

Flight Information Service (FIS): A service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights.

Flight Level (FL): A surface of constant atmospheric pressure which is related to a specific pressure datum, 1013.2HPA, and is separated from other such surfaces by specific pressure intervals.

Flight Procedure Authorisation (FPA): Authorisations which allow a pilot holding a Private IFR rating to use additional types of navigation aids as well as night flying, instrument approaches and instrument departures.

Flight Note: Details of the route and timing of a proposed flight provided by the pilot in command of an aircraft, which is other than notification submitted to Airservices Australia, and which is required to be left with a person who could be expected to notify appropriate authorities in the event that the flight becomes overdue.

Flight Notification (within Australian FIR): Specified information provided to ATS units, relative to the intended flight or portion of flight of an aircraft.

Flight Path Monitoring: The use of ATS surveillance systems for the purpose of providing aircraft with information and advice relative to significant deviations from nominal flight path including deviations from the terms of their ATC clearances.

Note: Some applications may require a specific technology e.g. radar, to support the function of flight path monitoring.

Flight Visibility: The visibility forward from the cockpit of an aircraft in flight.

Forecast: A statement of expected meteorological conditions for a specified period, and for a specified area or portion of airspace.

Formation: Two or more aircraft flown in close proximity to each other and operating as a single aircraft with regard to navigation, position reporting and control.

Note: Refer to CAR 163AA for conditions under which formation flight may be undertaken.

Free text message element: Part of a message that does not conform to any standard message element in the PANS-ATM (DOC 4444).

Glide Path (GP): A descent profile determined for vertical guidance during a final approach.

Global Navigation Satellite System (GNSS): A satellite-based radio navigation system that uses signals from orbiting satellites to determine precise position and time.

Note: While the term “GNSS” covers a variety of systems such as GPS, GLONASS, Galileo etc, Australia requires the use of GPS for aviation purposes.

Global Positioning System (GPS): A GNSS constellation operated by the United States Government.

Gross Weight: The weight of the aircraft together with the weight of all persons and goods (including fuel) on board the aircraft at that time.

Ground Based Augmentation System (GBAS): An augmentation system in which the user receives augmentation information directly from a ground-based transmitter.

Ground Based Augmentation System (GBAS) Landing System (GLS): A system for approach and landing operations using a GBAS, as the primary navigational reference.

Ground Based Navigation Aid: Means NDB, VOR, DME.

Ground Taxiing: The movement of a helicopter under its own power and on its undercarriage wheels.

Ground Visibility: The visibility at an aerodrome, as reported by an accredited observer.

Hazardous Conditions: Meteorological conditions which may endanger aircraft or adversely affect their safe operation, particularly those phenomena associated with volcanic ash cloud and thunderstorms - icing, hail and turbulence.

Head of State: Heads of State or of Government, or other selected dignitaries on official visits to Australia (as provided by Department of Prime Minister and Cabinet Ceremonial and Hospitality Branch), or the personal transport of the Governor-General or the Prime Minister.

Heading (HDG): The direction in which the longitudinal axis of an aircraft is pointed, usually expressed in degrees from North (true, magnetic, compass or grid).

Height: The vertical distance of a level, a point or an object considered as a point measured from a specified datum.

Helicopter Access Corridor: A corridor wholly within controlled airspace designed for the exclusive use of helicopters in VMC. The extent and alignment of the corridor is related to and delineated by prominent geographical/topographical features.

Helicopter Landing Site (HLS): A place that is used as an aerodrome for the purposes of the landing and taking-off of helicopters.

Helicopter Lane: A lane, outside controlled airspace, designed for use by helicopters to facilitate traffic flow.

Helicopter Movement Area: The movement area for helicopters is that part of an aerodrome that can safely be used for the hovering, taxiing, takeoff and landing of helicopters and consists of the manoeuvring area and aprons, but excluding those areas reserved for unrestricted use by the general public.

Helicopter Reference Point (HRP): The designated location of a heliport or a landing location.

High Capacity Aircraft: An aircraft that is certified as having a maximum seating capacity exceeding 38 seats or a maximum payload exceeding 4,200KG.

Hold Short Line/Lights: A line marked across a runway, with associated lights, in accordance with the requirements of *AIP AD 1.1*, at which landing aircraft must stop when required during Land and Hold Short Operations (LAHSO).

Holding Bay: A defined area where aircraft can be held, or bypassed, to facilitate efficient surface movement of aircraft.

Holding Fix: A specified location identified by visual or other means in the vicinity of which the position of an aircraft in flight is maintained in accordance with ATC Instructions.

Holding Procedure: A predetermined manoeuvre which keeps an aircraft within a specified airspace whilst awaiting further clearance.

Hospital Aircraft: (see Medical Flight).

Hot Spot: A location on an aerodrome movement area with a history or potential risk of collision or runway incursion, and where heightened attention by pilots/drivers is necessary.

Identification: The situation which exists when the position indication of a particular aircraft is seen on a situation display and positively identified by ATC.

IFR Pick-up: A pilot procedure whereby a flight operating to the IFR in Class G airspace changes to VFR upon entering Class E airspace whilst awaiting an airways clearance.

Independent Parallel Approaches: Simultaneous instrument approaches to parallel or near-parallel instrument runways where ATS surveillance system separation minima between aircraft on adjacent extended runway centrelines are not prescribed.

Independent Parallel Departures: Simultaneous departures in the same direction from parallel or near-parallel instrument runways.

Independent Visual Approach: Visual approach operations to parallel or near-parallel instrument runways where the distance between runway centrelines and use of particular procedures allows a visual approach to one runway independently of approaches occurring on an adjacent parallel or near-parallel runway.

Inertial Navigation/Reference System (INS/IRS): A self-contained navigation system that continually measures the accelerations acting upon the vehicle of which it is part. Suitably integrated, these forces provide velocity and thence position information.

Initial Approach Fix (IAF): The fix at the commencement of an instrument approach.

Initial Approach Segment: That segment of an instrument approach procedure between the initial approach fix and the intermediate approach fix or, where applicable, the final approach fix or point.

Initial Departure Fix (IDF): The terminal fix for the visual segment and the fix where the instrument phase of the PinS departure begins.

Instrument Approach Operations: An approach and landing using instruments for navigation guidance based on an instrument approach procedure. There are two methods for executing instrument approach operations:

- a. a two-dimensional (2D) instrument approach operation, using lateral navigation guidance only; and
- b. a three-dimensional (3D) instrument approach operation, using both lateral and vertical navigation guidance.

Note 1: Lateral and vertical navigation guidance refers to the guidance provided either by:

- a. *ground-based radio navigation aids; or*
- b. *computer-generated navigation data from ground-based, space-based, self-contained navigation aids or a combination of these.*

Note 2: The classification of instrument approach operations is outlined in AIC H26/14.

Instrument Approach Procedure (IAP): A series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en route obstacle clearance criteria apply. Instrument approach procedures are classified as follows:

- a. Non-precision approach (NPA) procedure. An instrument approach procedure designed for 2D instrument approach operations Type A.

Note: Non-precision approach procedures may be flown using a Continuous Descent Final Approach technique (CDFA). CDFA with advisory. VNAV guidance calculated by on-board equipment are considered 3D instrument approach operations. CDFA with manual calculation of the required rate of descent are considered 2D instrument approach operations.

- b. Approach Procedure with Vertical guidance (APV). A Performance Based Navigation (PBN) instrument approach procedure designed for 3D instrument approach operations Type A.
- c. Precision Approach (PA) procedure. An instrument approach procedure based on navigation systems (ILS, MLS, GLS and SBAS CAT I) designed for 3D instrument approach operations Type A or B.

Note: Refer to AIC H26/14 for instrument approach operation types.

Instrument Landing System (ILS): A precision instrument approach system which normally consists of the following electronic components: VHF Localiser, UHF Glideslope, VHF Marker Beacons.

Instrument Runway: One of the following types of runways intended for the operation of aircraft using instrument approach procedures:

- a. Non-precision approach runway. An instrument runway served by visual aids and a non-visual aid providing at least directional guidance adequate for a straight-in approach.
- b. Precision approach runway, CAT I. An instrument runway served by a precision approach procedure and visual aids intended for operations with a decision height not lower than 60M (200FT) and either a visibility not less than 800M, or a RVR not less than 550M.
- c. Precision approach runway, CAT II. An instrument runway served by ILS and visual aids intended for operations with a decision height lower than 60M (200FT), but not lower than 100FT, and a RVR not less than 300M.
- d. Precision approach runway, CAT III. An instrument runway served by ILS to and along the surface of the runway and:
 - (i) for CAT IIIA – intended for operations with a decision height lower than 30M (100FT), or no decision height, and a RVR not less than 175M;
 - (ii) for CAT IIIB – intended for operations with a decision height lower than 15M (50FT), or no decision height, and a RVR less than 175M, but not less than 50M;
 - (iii) for CAT IIIC – intended for operations with no decision height and no RVR limitations.

Integrated Aeronautical Information Package: A package which consists of the following elements: AIP, including amendment service; supplements to the AIP; NOTAM and Preflight Information Bulletins (PIBs); AIC; and checklists and summaries.

Integrity: That quality which relates to the trust which can be placed in the correctness of information supplied by a system. It includes the ability of a system to provide timely warnings to users when the system should not be used for navigation.

Intermediate Approach Segment: That segment of an instrument approach procedure between either the intermediate approach fix and the final approach fix or point, or between the end of the reversal, race track or dead reckoning track procedure and the final approach fix or point, as appropriate.

Intermediate Fix (IF): A fix on an RNAV (or RNP) approach that marks the end of an initial segment and the beginning of the intermediate segment.

In the Vicinity: An aircraft is in the vicinity of a non-controlled aerodrome if it is within a horizontal distance of 10 miles; and within a height above the aerodrome reference point that could result in conflict with operations at the aerodrome.

Land And Hold Short Operations (LAHSO): A procedure involving dependent operations conducted on two intersecting runways whereby aircraft land and depart on one runway while aircraft landing on the other runway hold short of the intersection.

Landing Area: That part of the movement area intended for the landing or takeoff of aircraft.

Land Rescue Unit: A land party equipped to undertake a search for an aircraft within the region of its responsibility.

Level: A generic term relating to the vertical position of an aircraft in flight and meaning variously, height, altitude or flight level.

Localiser (LOC): The component of an ILS which provides azimuth guidance to a runway. It may be used as part of an ILS or independently.

Logon address: A specified code used for data link logon to an ATS unit.

Low Jet Route (LJR): A route, or part of a route, at or below 5,000FT AGL used by MLJ aircraft for low level, high speed operations.

Low Visibility Operation: An operation involving:

- a. an approach with minima less than precision approach category I; or
- b. a takeoff with visibility below 550M.

Low Visibility Procedures: Procedures applied at an aerodrome for protecting aircraft operations during conditions of reduced visibility or low cloud.

Lowest Safe Altitude (LSALT): The lowest altitude which will provide safe terrain clearance at a given place.

Manoeuvring Area: That part of an aerodrome to be used for the takeoff, landing and taxiing of aircraft, excluding aprons.

Marker: An object displayed above ground level in order to indicate an obstacle or delineate a boundary.

Marker Beacon: A type of radio beacon, the emissions of which radiate in a vertical pattern.

Markings: A symbol or group of symbols displayed on the surface of the movement area in order to convey aeronautical information.

Maximum Takeoff Weight (MTOW): The maximum takeoff weight of an aircraft as specified in its Certificate of Airworthiness.

Medical Flight: A flight providing transport of medical patients, personnel, and/or equipment, prioritised as follows:

MEDEVAC: a life critical medical emergency evacuation e.g. An aircraft proceeding to pick up, or carrying, a severely ill patient, or one for whom life support measures are being provided.

HOSP: a medical flight declared by medical authorities e.g. An aircraft transporting or proceeding to pick up medical personnel and/or equipment urgently required for the treatment of a severely ill patient, or returning urgently required medical personnel and/or equipment at the termination of a MEDEVAC flight.

METBRIEF (Automated Meteorological Telephone Briefing): Self help system which delivers meteorological information on the telephone using a computer generated voice, in response to a tone generated telephone request.

Meteorological Information: Meteorological report, analysis, forecast, and any other statement relating to existing or expected meteorological conditions.

Meteorological Office (MO): An office designated to provide meteorological service for air navigation.

Meteorological Warning: A statement or meteorological report of the occurrence or expectation of a deterioration or improvement in meteorological conditions or of any meteorological phenomenon which may seriously affect the safe operation of aircraft.

Military Low Jet (MLJ): Military aircraft operating on LJR

Minimum Crossing Altitude (MCA): The minimum IFR altitude that aircraft may cross the IDF.

Minimum Descent Altitude/Height (MDA/H): A specified altitude or height in a 2D instrument approach operation or circling approach operation below which descent must not be made without the required visual reference.

Note 1: MDA is referenced to Mean Sea Level (MSL) and MDH is referenced to the aerodrome elevation or to the threshold elevation if that is more than 7FT below the aerodrome elevation. A minimum descent height for a circling approach is referenced to the aerodrome elevation.

Note 2: The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In the case of a circling approach the required visual reference is the runway environment.

Minimum Fuel: The term used to describe a situation when an aircraft's fuel supply has reached a state where having committed to land at a specific aerodrome, the pilot calculates that any change to the existing clearance to that aerodrome may result in landing with less than fixed fuel reserve for the flight.

Note: The minimum fuel state is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur.

Minimum Sector Altitude (MSA): The lowest altitude which may be used which will provide a minimum clearance of 1,000FT above all objects located in an area contained within a sector of a circle of 25NM or 10NM radius centred on a significant point, the ARP, or the HRP.

Minimum Vector Altitude: The lowest altitude which a controller may assign to a pilot in accordance with the *Radar Terrain Clearance* chart.

Missed Approach Holding Fix (MAHF): A fix on an RNAV (or RNP) approach that marks the end of the missed approach segment and the point for the missed approach holding (where applicable).

Missed Approach Point (MAPt): That point in an instrument approach procedure at or before which the prescribed missed approach procedure must be initiated in order to ensure that the minimum obstacle clearance is not infringed.

Missed Approach Procedure: The procedure to be followed if the approach cannot be continued.

Missed Approach Turning Fix (MATF): A fix on an RNAV (or RNP) approach that marks a turning point during the missed approach segment.

Movement Area: That part of an aerodrome to be used for the takeoff, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron(s).

MULTICOM: The frequency (126.7MHz) used for broadcasts in the vicinity of a non-controlled aerodrome that does not have a discrete CTAF assigned.

NAIPS: The National Aeronautical Information Processing System, which provides briefings and flight notification functions.

Navigation Specification: A set of aircraft and flight crew requirements needed to support performance based navigation operations within a defined airspace. There are two kinds of navigation specifications:

RNP Specification: A navigation specification based on area navigation that includes the requirement for on board performance monitoring and alerting, designated by the prefix RNP, e.g. RNP4, RNP APCH.

RNAV Specification: A navigation specification based on area navigation that does not include the requirement for on board performance monitoring and alerting, designated by the prefix RNAV, e.g. RNAV 5, RNAV 1.

Note: The Performance-based Navigation Manual (Doc 9613), Volume II, contains detailed guidance on navigation specifications.

Night: The period between the end of evening civil twilight (last light) and the beginning of the following morning civil twilight (first light).

Night Vision Goggles (NVG): A self-contained binocular night vision enhancement device, usually helmet mounted or otherwise worn by a person, that can detect and amplify light in both the visual and near infra-red bands of the electromagnetic spectrum.

Non-Controlled Aerodrome: An aerodrome at which ATC is not operating.

Non-Directional Beacon (NDB): A special radio station, the emissions of which are intended to enable a mobile station to determine its radio bearing or direction with reference to that special radio station.

Normal Operating Zone (NOZ): Airspace of defined dimensions extending to either side of a published instrument approach procedure final approach course or track. Only that half of the normal operating zone adjacent to a No-Transgression Zone (NTZ) is taken into account in independent parallel approaches.

NOTAM: A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

No-Transgression Zone (NTZ): In the context of independent parallel approaches, a corridor of airspace of defined dimensions located centrally between the two extended runway centrelines, where a penetration by an aircraft requires a controller intervention to manoeuvre any threatened aircraft on the adjacent approach.

One Way Route: A route with limitations for use in one direction, depicted on *ERC-H*, *ERC-L* and/or *TAC* charts by an arrow in the direction that can be used without limitation (see *ERSA* for additional details).

Operator: A person, organisation or enterprise engaged in or offering to engage in aircraft operation.

Operations Manual: A manual provided by an operator for the use and guidance of its operations staff, containing instructions as to the conduct of flight operations, including the responsibilities of its operations staff (refer *CAR 215*).

Overshoot Shear: A wind shear occurrence which produces an INITIAL effect of overshooting the desired approach path and/or increasing airspeed.

Parking Area: A specially prepared or selected part of an aerodrome within which aircraft may be parked.

Passive LAHSO Runway: The runway used during LAHSO for arriving and departing aircraft that have the full length available.

Pavement Classification Number (PCN): A number expressing the bearing strength of a pavement for unrestricted operations.

Performance-Based Navigation (PBN). Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

Note: Performance requirements are expressed in navigation specifications (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, availability and functionality needed for the proposed operation in the context of a particular airspace concept.

Performance Class 1 (PC1): PC1 is the class of helicopter performance such that in the event of failure of the critical power-unit the helicopter is able either to land within the rejected takeoff distance available, or to safely continue the flight to an appropriate landing area, depending on when the failure occurs.

Performance Class 2 (PC2): PC2 is the class of helicopter performance such that in the event of critical power-unit failure performance is available to enable the helicopter to safely continue the flight except when the failure occurs early during the takeoff manoeuvre or late in the landing manoeuvre, in which cases a forced landing may be required.

Permissible All-Up-Weight: The weight to which an aircraft is limited by virtue of the physical characteristics of an aerodrome.

Pilot in Command: The pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.

Precision Approach Procedure: An instrument approach procedure utilising lateral and vertical guidance provided by an ILS or GLS.

Precision Runway Monitor (PRM): An ATS surveillance system and associated procedures used for independent parallel approaches to closely spaced runways.

Pre-Departure Clearance (PDC): A means of delivering an unsolicited, text-based airways clearance to eligible aircraft via an ATC data link.

Preferred Runway: A runway nominated by ATC or listed in the AIP as the most suitable for the prevailing wind, surface conditions or noise sensitive areas in the proximity of the aerodrome.

Primary Means Navigation System: A navigation system that, for a given operation or phase of flight, must meet accuracy and integrity requirements, but need not meet full availability and continuity of service requirements. Safety is achieved by either limiting flights to specific time periods, or through appropriate procedural restrictions and operational requirements.

Private IFR: The Private IFR Rating (PIFR) authorises the holder to act as pilot in command of flights under the IFR by day in single pilot aircraft having a MTOW not greater than 5,700KG.

Procedural Service: Term used to indicate that information derived from an ATS surveillance system is not required for the provision of ATS.

Procedure Altitude/Height: A specified altitude/height flown at or above the minimum altitude/height, and established to accommodate a stabilised descent at a prescribed descent gradient/angle in the intermediate/final approach segment.

Prohibited Area: An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited. Designation is appropriate only for reasons of military necessity.

Published Speed: A speed restriction shown on a Standard Instrument Departure (SID), Standard Instrument Arrival (STAR), or other instrument flight procedure.

QNH Altimeter Setting: That pressure setting which, when placed on the pressure setting sub-scale of a sensitive altimeter of an aircraft located at the reference point of an aerodrome, will cause the altimeter to indicate the vertical displacement of the reference point above mean sea level.

Radio Altimeter (RA) Height. An indication of vertical distance between a point on the normal glidepath at DA and the terrain directly beneath this point.

Radio Navigation Service. A service providing guidance information or position data for the efficient and safe operation of aircraft supported by one or more radio navigation aids.

Rapid-Exit Taxiway: A taxiway connected to a runway at an acute angle and designed to allow landing aeroplanes to turn off at high relative speeds.

Receiver Autonomous Integrity Monitoring (RAIM): A system whereby an airborne GNSS receiver/processor autonomously monitors the integrity of the navigation signals from GNSS satellites.

Reduced Vertical Separation Minimum (RVSM): The vertical separation minimum of 1,000FT between FL 290 and FL 410 inclusive.

Reference Datum Height (RDH): The height of the measured ILS glide path at the threshold. It will provide a similar value to Threshold Crossing Height.

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Repetitive Flight Plan: A flight plan referring to a series of frequently recurring, regularly operated individual flights with identical basic features, submitted by an operator for retention and repetitive use by ATS units.

Reporting Point: A specified geographical location in relation to which the position of an aircraft can be reported.

Required Navigation Performance (RNP): A statement of the navigation performance necessary for operation within a defined airspace.

RNP Type: A containment value expressed as a distance in nautical miles from the intended position within which flights would be for at least 95 per cent of the total flying time.

Rescue Coordination Centre (RCC): A unit established for promoting efficient organisation of search and rescue service and for coordinating the conduct of search and rescue operations within a search and rescue region.

Resolution Advisory (RA): An indication given to the flight crew recommending a manoeuvre or a manoeuvre restriction to avoid collision.

Restricted Area: An airspace of defined dimensions above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions.

Note: This designation is used when necessary in the interests of public safety or the protection of the environment.

Route: A way to be taken in flying from a departure to a destination aerodrome, specified in terms of track and distance for each route segment.

Runway (RWY): A defined rectangular area on a land aerodrome prepared for the landing and takeoff of aircraft.

Runway-Holding Position: A designated position intended to protect a runway, an obstacle limitation surface, or an ILS critical/sensitive area at which taxiing aircraft and vehicles must stop and hold, unless otherwise authorised by the aerodrome control tower.

Note: In radiotelephony phraseologies, the expression “holding point” is used to designate the runway-holding position.

Runway Number: The runway identification associated with the runway direction end.

Runway Strip: The defined area, including the runway (and stopway if provided), intended both to reduce the risk of damage to aircraft inadvertently running off the runway and to protect aircraft flying over it during takeoff, landing or missed approach.

Runway Visibility (RV): The distance along a runway over which a person can see and recognise a visibility marker or runway lights.

Note: The term RUNWAY VISIBILITY is used by ATC or ground personnel to report visibility along a runway as determined by a ground observer.

Runway Visual Range (RVR): The range over which the pilot of an aircraft on the centre line of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line. (ICAO)

Note: Within Australia, the term “RUNWAY VISUAL RANGE” or “RVR” is used exclusively in relation to RVR measured by an instrumented system.

SARTIME: The time nominated by a pilot for the initiation of SAR action if a report has not been received by the nominated unit.

SARWATCH: A generic term covering SAR alerting based either on full position reporting procedures, scheduled reporting times (SKEDS), or SARTIME.

Search and Rescue (SAR): The act of finding and returning to safety, aircraft and persons involved in an emergency phase.

Search and Rescue Region (SRR): The specified area within which search and rescue is coordinated by a particular Rescue Coordination Centre.

Segment Minimum Safe Altitude: The lowest altitude at which the minimum obstacle clearance is provided.

Segregated Parallel Operations: Simultaneous operations on parallel or near-parallel instrument runways in which one runway is used exclusively for approaches and the other runway is used exclusively for departures.

Self Contained Navigation Systems: Area navigation systems based on INS, IRS or GNSS.

Significant Point: A specified geographical location used in defining an ATS route or the flight path of an aircraft and for other navigation and ATS purposes.

Note: There are three categories of significant points: ground-based navigation aid, intersection and waypoint. In the context of this definition, intersection is a significant point expressed as radials, bearings and/or distances from ground-based navigation aids.

Significant Weather: Any weather phenomenon which might affect flight visibility or present a hazard to an aircraft.

Simultaneous Opposite Direction Parallel Runway Operations (SODPROPS): A condition whereby arriving aircraft will approach and land on one runway, concurrent with aircraft departures from the parallel runway using the opposite direction to that being used for approach and landing.

Situation Display: An electronic display depicting the position and movement of aircraft and other information as required.

Sole Means Navigation System: A navigation system that, for a given phase of flight, must allow the aircraft to meet all four navigation system performance requirements - accuracy, integrity, availability and continuity of service.

Space Weather Centre (SWXC): A centre designated to monitor and provide advisory information on space weather phenomena expected to affect high-frequency radio communications, communications via satellite, GNSS-based navigation and surveillance systems and/or pose a radiation risk to aircraft occupants.

Note: A space weather centre is designated as global and/or regional.

Special Air-Report (AIREP Special): An AIREP containing the report of special meteorological conditions, i.e. SIGMET phenomenon, or any other MET phenomenon which is likely to affect the safety or efficiency of other aircraft.

Special Authorisation Category I (SA CAT I) Operation: A precision approach CAT I operation with a DH lower than 200FT, but not lower than 150FT; and an RVR not less than 450M.

Special Authorisation Category II (SA CAT II) Operation: A precision approach operation to a runway where some or all of the elements of the precision approach CAT II lighting system are not available, with:

- a. a DH lower than 200FT but not lower than 100FT; and
- b. RVR of not less than 350M.

SSR Code: The number assigned to a particular multiple-pulse reply signal transmitted by a transponder in Mode A or Mode C.

Standard Instrument Arrival (STAR): A designated IFR arrival route linking a significant point, normally on an ATS route, with a point from which a published instrument approach procedure can be commenced.

Note: Australian Standard Instrument Arrival charts are also called Standard Arrival Route charts.

Standard Instrument Departure (SID): A designated IFR departure route linking the aerodrome or a specified runway of the aerodrome with a specified significant point, normally on a designated ATS route, at which the en route phase of a flight commences.

Standard Message Element: Part of a message defined in the PANS-ATM (DOC 4444) in terms of display format, intended use and attributes.

Standard Pressure: The pressure of 1013.2 Hectopascals which, if set upon the pressure sub-scale of a sensitive altimeter, will cause the latter to read zero when at mean sea level in a standard atmosphere.

Standard Pressure Region: Airspace above 10,000FT where the sub-scale of a pressure sensitive altimeter is set to 1013.2HPA.

State Aircraft: An aircraft of any part of the Defence Force (including any aircraft that is commanded by a member of that force in the course of their duties as such a member), and aircraft used in the military, customs, or police services of a foreign country.

Stop-and-Go Landing: A procedure whereby an aircraft lands, comes to a complete stop on the runway and then commences takeoff from that point.

Stopway: A defined rectangular area on the ground at the end of the takeoff run available prepared as a suitable area in which an aircraft can be stopped in the case of an abandoned takeoff.

Supplemental Means Navigation System: A navigation system that must be used in conjunction with a sole means navigation system.

Surveillance Information Service (SIS): An on-request service provided to assist pilots of VFR flights, within ATS surveillance system coverage in Class E and Class G airspace, to avoid other aircraft or to assist in navigation.

Tactical Air Navigation (TACAN): An ultra-high frequency navigation aid which provides a continuous indication of bearing and slant range, in nautical miles, to the selected ground station.

TAF3: An aerodrome forecast (TAF) routinely issued every 3 hours.

Taxiway (TWY): A defined path on a land aerodrome established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another.

Terrain Clearance: The vertical displacement of an aircraft's flightpath from the terrain.

Threshold: The beginning of that portion of the runway usable for landing.

Threshold Crossing Height (TCH): The calculated height of the procedure nominal approach path at the threshold. For ILS or GLS, the TCH will be similar to the Reference Datum Height.

Total Estimated Elapsed Time: For IFR flights, the estimated time required from takeoff to arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or if no navigation aid is associated with the destination aerodrome, to arrive over the destination aerodrome. For VFR flights the estimated time required from takeoff to arrive over the destination aerodrome.

Touch-and-Go Landing: A procedure whereby an aircraft lands and takes off without coming to a stop.

Track: The projection on the earth's surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from North (true, magnetic or grid).

Traffic Advisory (TA): An indication given to the flight crew that a certain intruder is a potential threat.

Transition Altitude: The altitude at or below which the vertical position of an aircraft is controlled by reference to altitudes.

Transition Layer: The airspace between the transition altitude and the transition level.

Transition Level: The lowest flight level available for use above the transition altitude.

Transitional Surface: An inclined plane associated with the runway strip and the approach surfaces.

Transponder: A receiver/transmitter which will generate a reply signal upon proper interrogation; the interrogation and reply being on different frequencies.

Unalerted See-and-Avoid: A procedure where flight crew, who have no specific knowledge of other aircraft in their vicinity, rely solely on their ability to physically sight and avoid colliding with aircraft that may be in their vicinity.

Undershoot Shear: A wind shear occurrence which produces an INITIAL effect of undershooting the desired approach path and/or decreasing air speed.

UNICOM (Universal Communications): UNICOM is a non-ATS communications service provided to enhance the value of information normally available about a non-controlled aerodrome.

Unmanned Free Balloon: A non-power-driven, unmanned, lighter-than-air aircraft in free flight.

Note: Unmanned Free Balloons are classified as small, light, medium and heavy. For further details regarding these classifications and for approvals to operate Unmanned Free Balloons, refer to CASR Subpart 101.E

Unserviceable Area: A portion of the movement area not available for use by aircraft because of the physical condition of the surface, or because of any obstruction on the area.

Vectoring: Provision of navigational guidance to aircraft in the form of specific headings, based on the use of an ATS surveillance system.

VFR Climb and Descent: ATC authorisation for an IFR flight in VMC, in classes D and E airspace, to conduct a visual climb or descent.

VFR-on-Top: ATC authorisation for an IFR flight to operate in VMC, in Class E airspace at any appropriate VFR altitude or flight level.

VHF Omni-directional Radio Range (VOR): A VHF radio navigational aid which provides a continuous indication of bearing from the selected VOR ground station.

Visibility: Visibility for aeronautical purposes is the greater of:

- a. the greatest distance at which a black object of suitable dimensions, situated near the ground, can be seen and recognised when observed against a bright background; or
- b. the greatest distance at which lights in the vicinity of 1,000 candelas can be seen and identified against an unlit background.

Visibility Marker: A dark object of suitable dimensions for use as a reference in evaluating runway visibility.

Visual (ATC usage): Used by ATC to instruct a pilot to see and avoid obstacles while conducting flight below the MVA or MSA/LSALT.

Visual (Pilot usage): Used by a pilot to indicate acceptance of responsibility to see and avoid obstacles while operating below the MVA or MSA/LSALT.

Visual Approach Slope Indicator System (VASIS): A system of lights so arranged as to provide visual information to pilots on approach of their position in relation to the optimum approach slope for a particular runway.

VOLMET: Meteorological information for aircraft in flight.

Data link-VOLMET (D-VOLMET): Provision of current aerodrome routine meteorological reports (METAR) and aerodrome special meteorological reports (SPECI), aerodrome forecasts (TAF), SIGMET, special air-reports not covered by a SIGMET and, where available, AIRMET via data link.

VOLMET broadcast: Provision, as appropriate, of current METAR, SPECI, TAF and SIGMET by means of continuous and repetitive voice broadcasts.

V_{s1g} means the one-g stall speed at which the aeroplane can develop a lift force (normal to the flight path) equal to its weight.

Waypoint: A specified geographical location used to define an area navigation route or the flight path of an aircraft employing area navigation. Waypoints are identified as either:

- a. **Fly-by Waypoint:** A waypoint which requires turn anticipation to allow tangential interception of the next segment of a route or procedure, or
- b. **Flyover Waypoint:** A waypoint at which a turn is initiated in order to join the next segment of a route or procedure.

World Area Forecast Centre (WAFC): A meteorological centre designated to prepare and issue significant weather forecasts and upper-air forecasts in digital form on a global basis direct to States using the aeronautical fixed service internet-based services.

World Area Forecast System (WAFS): A worldwide system by which world area forecast centres provide aeronautical meteorological en route forecasts in uniform standardised formats.

2. GENERAL AND METEOROLOGICAL ABBREVIATIONS

This list covers abbreviations which may be found throughout the AIP and on associated charts, or which are used in NOTAM, AIP Supplements (SUP) and in meteorological messages and documentation.

Abbreviations marked “+” may be used as spoken words in radio telephony. Abbreviations marked “#” may be spoken using the constituent letters rather than the phonetic alphabet.

Abbreviations marked “•” are not included in *ICAO Doc 8400* and must not be used in international NOTAM.

# 2D	Two-dimensional	ACPT	Accept, Accepted
# 3D	Three-dimensional	ACT	Active, Activated, Activity
A/A	Air to Air	AD	Aerodrome
• AAR	Actual Arrival Report	ADDN	Addition, Additional
• AAIS	Automatic Aerodrome Information Service	# ADF	Automatic Direction Finding Equipment
AAL	Above Aerodrome Level	+ ADIZ	Air Defence Identification Zone
ABM	Abeam	ADJ	Adjacent
ABN	Aerodrome Beacon	# ADS-B	Automatic Dependent Surveillance-Broadcast
ABV	Above...		
AC	Altocumulus	# ADS-C	Automatic Dependent Surveillance-Contract
+ ACARS	Aircraft Communication Addressing and Reporting System (pronounced “AY-CARS”)	ADZ	Advise
		• AEP	Aerodrome Emergency Plan
		•+ AERIS	Automatic En Route Information Service
+ ACAS	Airborne Collision Avoidance System	AFIL	Flight notification: - filed in the air, or - indicating the position at which ATS services will first be required
# ACC	Area Control Centre		
• ACD	Airways Clearance Delivery		
ACFT	Aircraft		
ACK	Acknowledge	AFM	Yes, Affirm, Affirmative, That is correct
ACN	Aircraft Classification Number		

•+ AFRU	Aerodrome Frequency Response Unit	ALTN	Alternate, Alternating (light alternates in colour)
AFT	After....	ALTN	Alternate (aerodrome)
• AFZ	Australian Fishing Zone(s)	• ALTRV	Altitude Reservation
A/G	Air-to-Ground	AMD	Amend, Amended
AGA	Aerodromes, Air Routes and Ground Aids	• AMDAR	Aircraft Meteorological Data Relay
# AGL	Above Ground Level	AMDT	Amendment (AIP Amendment)
AGN	Again	• AMSA	Australian Maritime Safety Authority
• AH	After Hours	# AMSL	Above Mean Sea Level
# AIC	Aeronautical Information Circular	• AOC	Air Operator's Certificate
# AIP	Aeronautical Information Publication	AP	Airport
+ AIRAC	Aeronautical Information Regulation and Control	+ APAPI	Abbreviated Precision Approach Path Indicator (pronounced "AY-PAPI")
+ AIREP	Air-Report	APCH	Approach
+ AIRMET	Information concerning weather significant to aircraft operations at or below 10,000FT not contained in a valid GAF	APN	Apron
# AIS	Aeronautical Information Service	APP	Approach Control, Approach Control Office, Approach Control Service
•# ALA	Aircraft Landing Area	APR	April
+ ALERFA	Alert Phase	APRX	Approximate, Approximately
ALS	Approach Lighting System	# APU	Auxiliary Power Unit
ALT	Altitude	APV	Approach Procedure with Vertical guidance
		• AQZ	Area QNH Zone
		• ARN	Aviation Reference Number
		ARNG	Arrange

ARP	Aerodrome Reference Point	ATZ	Aerodrome Traffic Zone
ARR	Arrive, Arrival	AUG	August
AS	Altostratus	AUTH	Authorised, Authorisation
# ASAP	As Soon as Possible		
ASDA	Accelerate-Stop Distance Available	AUTO	Automatic
ASE	Altimetry System Error	AUW	All Up Weight
		AUX	Auxiliary
• A-SMGCS	Advanced Surface Movement Guidance and Control System	• AVM	Abrupt Vertical Manoeuvres (by the MIL)
ASPH	Asphalt	AVBL	Available
# ATA	Actual Time of Arrival	+• AVFAX	Meteorological and NOTAM Facsimile Service
# ATC	Air Traffic Control (in general)	AVG	Average
# ATD	Actual Time of Departure	+ AVGAS	Aviation Gasoline
ATFM	Air Traffic Flow Management	•+ AWIS	Aerodrome Weather Information Service
• ATFMX	Exemption from ATFM measures by ATC	• AWK	Aerial Work
		• AWR	Aerodrome Weather Report
ATM	Air Traffic Management	• AWS	Automatic Weather Station
ATP	At... (time or place)	AWY	Airway
+ ATIS	Automatic Terminal Information Service	AZM	Azimuth
# ATS	Air Traffic Services	B	Blue
• ATSAS	Automatic Thunderstorm Alert Service	+ BARO- VNAV	(to be pronounced “BAA-RO-VEENAV”) Barometric Vertical Navigation
ATTN	Attention	+ BASE	Cloud Base
+ AT-VASIS	Abbreviated “T” Visual Approach Slope Indicator System (pronounced “AY-TEE-VASIS”)	BCFG	Fog Patches
		BCN	Beacon (aeronautical ground light)
		BCST	Broadcast

• BCTA	Base of CTA (used only on charts)	+ CAVOK	Visibility, cloud and present weather better than prescribed values or conditions (pronounced "KAV-OH-KAY")
BDRY	Boundary		
BECMG	Becoming		
BFR	Before		
BKN	Broken (cloud descriptor)	# CB	Cumulonimbus
BL...	Blowing (followed by DU=dust, SA=sand or SN=snow)	CC	Cirrocumulus
		• CCTS	Circuits
		• CDFA	Continuous Descent Final Approach technique
BLDG	Building		
BLW	Below		
• BOF	Briefing Office	• CEN	En Route and Area ATC Unit
BOMB	Bombing	CFM	Confirm, I confirm
BR	Mist	CH	Channel
BRG	Bearing	CHEM	Chemical
BRKG	Braking	• CHTR	Charter
BS	Broadcasting Station (Commercial)	CI	Cirrus
BTN	Between	CIV	Civil
		CK	Check
C	Degrees Celsius (Centigrade)	CL	Centre Line
C	Centre (Runway)	CLA	Clear type of ice formation
• CA/GRS	Certified Air/Ground Radio Service	CLBR	Calibration
		CLD	Cloud
• CAO	Civil Aviation Order	CLG	Calling
• CAR	Civil Aviation Regulation	• CLIAS	Climbing Indicated Airspeed
• CASA	Civil Aviation Safety Authority	CLR	Clear, Cleared to..., Clearance
+ CAT	Category	CLSD	Closed, Close, Closing
CAT	Clear Air Turbulence	CM	Centimetre
		CMB	Climb to or Climbing to

CMPL	Completion, Completed, or Complete	CTN	Caution
• CMSD	Commissioned	CTOT	Calculated Take-off Time
CNL	Cancel, Cancelled	CTR	Control Zone
CNS	Communications, Navigation and Surveillance	CU	Cumulus
		CUF	Cumuliform
		CUST	Customs
COBT	Calculated Off Blocks Time	CWY	Clearway
COM	Communications	# D...	Danger Area (followed by identification)
CONC	Concrete		
COND	Condition	D	Downward (tendency in RVR during previous 10 minutes)
CONS	Continuous		
CONST	Construction, Constructed	DA	Decision Altitude
CONT	Continue(s), Continued	• DAH	Designated Airspace Handbook
COOR	Coordinate, Coordinated	• DAP	Departure and Approach Procedures
COORD	Coordinates	DCKG	Docking
COR	Correct, Corrected, Correction	• DCMSD	Decommissioned
• COS	Conical Surface	# DCPC	Direct Controller-Pilot Communications
COT	At the Coast, Coastal	DCT	Direct (in relation to flight plan clearances and type of approach)
COV	Cover, Covered, Covering		
# CPDLC	Controller-Pilot Data Link Communication	DEC	December
CRZ	Cruise	DEG	Degrees
CS	Cirrostratus	DEP	Depart, Departure, Departed, Departing, Departure Message
CS	Callsign		
# CTA	Control Area	DER	Departure End of Runway
•+ CTAF	Common Traffic Advisory Frequency	DEST	Destination
CTC	Contact	+ DETRESFA	Distress Phase
CTL	Control	DEV	Deviation, Deviating

# DF	Direction Finder/ Finding	DZ	Drizzle
DFDR	Digital Flight Data Recorder	E	East, East Longitude
DH	Decision Height	EAT	Expected Approach Time
DIF	Diffuse	EB	Eastbound
• DISP	Displaced	# EET	Estimated Elapsed Time
DIST	Distance	ELEV	Elevation
DIV	Diversion, Divert, Diverting	# ELT	Emergency Locator Transmitter
DL	Distant lightning	EM	Emission
• DLE	Delay En route	EMBD	Embedded in a Layer (to indicate cumulonimbus embedded in layers of other clouds)
DLY	Daily		
# DME	Distance Measuring Equipment	EMERG	Emergency
DNG	Danger, Dangerous	• ENDCE	Endurance
• DOC	Documents	ENE	East North-East
+ DOF	Date of Flight	ENG	Engine
DOM	Domestic	ENR	En Route
DP	Dew Point Temperature	ENRC	En Route Chart (<i>followed by name/ title</i>)
DPT	Depth		
# DR	Dead Reckoning	EOBT	Estimated off Block Time
DR...	Low drifting (followed by DU=dust,SA=sand or SN=snow)	•+ EPIRB	Electronic Position Indicating Radio Beacon (marine term)
DRG	During	EQPT	Equipment
DS	Duststorm	•# ERC	En Route Chart
DTG	Date-Time Group	•+ ERSA	En Route Supplement Australia
DTHR	Displaced Runway Threshold	#	
DTRT	Deteriorate, Deteriorating	ESE	East South-East
DU	Dust	EST	Estimate <i>or</i> estimated <i>or</i> estimate (message type designator)
DUC	Dense Upper Cloud		
DUR	Duration		
DVOR	Doppler VOR		

# ETA	Estimated Time of Arrival, Estimating Arrival	FC	Funnel Cloud (tornado or water spout)
# ETD	Estimated Time of Departure or Estimating Departure	FCST	Forecast
		• FDE	Fault Detection and Exclusion
ETO	Estimated Time Over significant point	FDPS	Flight Data Processing System
EV	Every	FEB	February
EVS	Enhanced Vision System	FEW	Few (cloud descriptor)
EXC	Except	• FFR	Flood or Fire Relief; Fire Fighting
EXER	Exercises, Exercising, to exercise	FG	Fog
EXP	Expect, Expected, Expecting	•# FIA	Flight Information Area
EXTD	Extend, Extending, Extended	# FIR	Flight Information Region
		# FIS	Flight Information Service
F	Fixed (chart symbol)		
FAC	Facility, Facilities	FL	Flight Level
FAF	Final Approach Fix	FLD	Field
• FANS 1/A	The term used to describe the initial future air navigations system	FLG	Flashing
		FLR	Flares
		FLT	Flight
FAP	Final Approach Point	FLTCK	Flight Check For Calibration of Nav aids
FAS	Final Approach Segment	FLUC	Fluctuating, Fluctuation, Fluctuated
FATO	Final Approach and Take-off Area		
+ FAX	Facsimile Transmission	FLW	Follow(s), Following
		FLY	Fly, Flying
FBL	Light (used to indicate the intensity of WX phenomena, interference or static reports, e.g. FBL RA = light rain)	FM	From
		FM...	From (followed by time weather change is forecast to begin)

• FMC WPR	The term used to describe flight management computer waypoint position reporting	G	Variation from mean wind speed (gusts) (MET - used in METAR/SPECI and TAF code forms)
# FMS	Flight Management System	# GA	General Aviation
FMU	Flow Management Unit	+ GAF	Graphical Area Forecast
• FN	Fly Neighbourly Area	# GBAS	Ground Based Augmentation System
FNA	Final Approach	GEN	General
• FPA	Flight Procedure Authorisation	GEO	Geographic, true
FPL	Filed Flight Plan Message	GES	Ground Earth Station
FPM	Feet per Minute	• GFY	Glider Flying
FR	Fuel Remaining	GLD	Glider
FREQ	Frequency	+ GLONASS	Global Orbiting Navigation Satellite System (pronounced "GLO-NAS")
FRI	Friday		
FRNG	Firing	# GLS	GBAS Landing System
FRQ	Frequent		
•# FS	Flight Service (in general)	GND	Ground
• FSP	Fish Spotting	GNDCK	Ground Check
FST	First	# GNSS	Global Navigation Satellite System
FT	Feet	GP	Glide Path
FU	Smoke	# GPS	Global Positioning System
• FXD	Fixed		
FZ	Freezing	# GPU	Ground Power Unit
FZDZ	Freezing Drizzle	# GPWS	Ground Proximity Warning System
FZFG	Freezing Fog	• GPWT	Grid Point Wind and Temperature
• FZLVL	Freezing Level (in AIRMET products)		
FZRA	Freezing Rain	GR	Hail
		• GRAD	Minimum Required Climb Gradient
G	Green	+ GRASS	Grass Landing Area

+ GRIB	Processed meteorological data in the form of grid point values expressed in binary form (meteorological code)	HLP HLS # HN HO	Heliport Helicopter Landing Site Sunset to Sunrise Service available to meet operational requirements
GRVL	Gravel		
GS	Groundspeed	HOSP	Hospital Aircraft
GS	Small Hail and/or Snow Pellets	HPA HR HRP	Hectopascal Hours Heliport Reference Point
H	High pressure area or the centre of high pressure (MET)	• HS HS	Homestead Service available during hours of scheduled operations
# H24	Continuous day and night service		
• HH	Time of commencement of a meteorological report validity period	HSL HUD HUM	Hold Short Lights Head-up display Humanitarian
• HAZMAT	Hazardous Material	HVY	Heavy
HBN	Hazard Beacon	HVY	Heavy (used to indicate the intensity of WX phenomena, e.g. HVY RA = heavy rain)
HDG	Heading		
• HDS	Hours of Daylight Saving		
• HEAD	Head of State		
HEL	Helicopter	HX	No specific working hours
# HF	High Frequency (3,000 to 30,000 kHz)	HZ HZ	Haze Hertz (cycle per second)
HGT	Height, Height Above		
•+ HIAL	High Intensity Approach Lighting	• HZS	Horizontal Surface
• HIOL	High Intensity Obstacle Lights	IAC	Instrument Approach Chart (<i>followed by name/title</i>)
• HIRL	High Intensity Runway Lighting		
# HJ	Sunrise to Sunset	IAF	Initial Approach Fix
HLDG	Holding	•# IAL	Instrument Approach and Landing

IAP	Instrument Approach Procedure	•+ INTER	Intermittent (ie. lasting less than 30 minutes) Fluctuations from forecast prevailing conditions
# IAS	Indicated Airspeed		
• IAWP	Initial Approach Waypoint		
+ ICAO	International Civil Aviation Organization	INTL	International
ICE	Icing	INTRP	Interrupt, Interruption, Interrupted
ID	Identifier, identify	INTSF	Intensify, Intensifying
+ IDENT	Identification	INTST	Intensity
•+ IDEP	Instrument Departure (FPA)	+ ISA	International Standard Atmosphere
IF	Intermediate Fix or Intermediate Approach Fix	ISOL	Isolated
# IFR	Instrument Flight Rules	• IVA	Independent Visual Approach
# ILS	Instrument Landing System	• IWI	Illuminated Wind Indicator
IM	Inner Marker	JAN	January
# IMC	Instrument Meteorological Conditions	• JF	Saturday, Sunday and PH
IMG	Immigration	• JO	Monday to Friday except PH
IMPR	Improve, Improving, Improvement	JTST	Jet Stream
INBD	Inbound	JUL	July
+ INCERFA	Uncertainty Phase	JUN	June
+ INFO	Information	KG	Kilograms
+ INOP	Inoperative	kHz	Kilohertz
# INS	Inertial Navigation System	KIAS	Knots Indicated Airspeed
INSTL	Install, Installed, Installation	KM	Kilometres
INSTR	Instrument	KMH	Kilometres per Hour
INT	Intersection	kPa	Kilopascals
		KT	Knots
		KW	Kilowatts

L	Left (runway identification)	• LP	Localiser Performance
L	Litre	LPV	Localiser
L	Low pressure area or the centre of low pressure (MET)		Performance with Vertical Guidance
• LAHSO	Land and Hold Short Operations	• LSALT	Lowest Safe Altitude
+ LAT	Latitude	LTD	Limited
LCA	Locally, Location, Located, Local	• LUL	Lowest Usable Level
LDA	Landing Distance Available	LV	Light and Variable (relating to wind)
LDG	Landing	LVL	Level
LEN	Length	• LVO	Low Visibility Operation(s)
LGT	Light, Lighting	# LVP	Low Visibility Procedure(s)
LGTD	Lighted	LYR	Layer, Layered
LIH	Light Intensity High	M	Metres (preceded by figures)
LIL	Light Intensity Low		
LIM	Light Intensity Medium	M	Mach number (followed by figures)
• LIOL	Low Intensity Obstacle Lights	• MAE	Men and Equipment
• LIRL	Low Intensity Runway Lights	MAG	Magnetic
• LJR	Low Jet Route	MAINT	Maintenance
• LL	Lower Limits	• MAN	Manual
• LLN	Low Level Navigation (by the MIL)	MAP	Aeronautical Maps and Charts
• LLO	Low Level Operations (by the MIL)	MAPT	Missed Approach Point
LMT	Local mean time	MAR	At Sea
+ LNAV	Lateral Navigation	MAR	March
LOC	Localiser	•+ MARSA	Military Assumes Responsibility for Separation of Military Aircraft
• LOE	Lane of Entry		
+ LONG	Longitude	+ MAX	Maximum
		MBST	Microburst

MDA	Minimum Descent Altitude	• MO	Meteorological Office
MDH	Minimum Descent Height	MOD	Moderate (used to indicate the intensity of WX phenomena, interference or static reports, e.g. MOD RA = moderate rain).
# MEA	Minimum En Route Altitude		
+ MEDEVAC	Medical Evacuation Flight	MON	Monday
+ MET	Meteorological, Meteorology	+ MOPS	Minimum Operational Performance Standards
+ METAR	Aviation routine weather report (in aeronautical meteorological code)	MOV	Move, Moved, Moving, Movement
		• MOWP	Method of Working Plan
MET REPORT			
	Aviation routine weather report	MS	Minus
MF	Medium Frequency (300 to 3,000 kHz)	# MSA	Minimum Sector Altitude
MHz	Megahertz	MSG	Message
• MI	Shallow (MET)	MSL	Mean Sea Level
MIFG	Shallow Fog	MSSR	Monopulse Secondary Surveillance Radar
MIL	Military		
MIN	Minutes	MT	Mountain
• MIOL	Medium Intensity Obstacle Lights	• MTOW	Maximum Take-off Weight
• MIRL	Medium Intensity Runway Lights	• MTP	Maximum Tyre Pressure
• MISC	Miscellaneous	MTW	Mountain waves
• MLJ	Military Low Jet	• MVA	Minimum Vector Altitude
# MLS	Microwave Landing System	MWO	Meteorological Watch Office
MM	Middle Marker		
MNM	Minimum	MX	Mixed type of ice formation (white and clear)
MNT	Monitor, Monitoring, Monitored		
MNTN	Maintain, Maintained, Maintaining		

N	No distant tendency (in RVR during previous 10 minutes)	+ NOSIG	No Significant Change
N	North, North Latitude	# NOZ	Normal Operating Zone
• NAIPS	National Aeronautical Information Processing System	+ NOTAM	Notice to Airmen (A notice containing information concerning the establishment, condition or change in facility, service, procedure or hazard which is essential to personnel concerned with flight operations)
• NAP	Noise Abatement Procedures		
• NAT	NAVAID Training		
NAV	Navigation		
NAVAID	Navigation Aid		
NB	Northbound		
NC	No Change		
• NCC	Network Coordination Centre	NOTAMC	Cancelling NOTAM
		NOTAMN	New NOTAM
NCD	No Cloud Detected (by ceilometer) [<i>used in automated METAR/SPECI</i>]	NOTAMR	Replacing NOTAM
		NOV	November
		NPA	Non-Precision Approach
# NDB	Non-Directional Radio Beacon	NR	Number
NE	North-East	NS	Nimbostratus
NEG	Negative, No, permission not granted, or, that is not correct	NSC	Nil Significant Cloud
		NSW	Nil Significant Weather
		• NTA	No TAF Amendment
NGT	Night	NTL	National
+ NIL	None	# NTZ	No Transgression Zone
NM	Nautical Miles		
NML	Normal	•# NVG	Night Vision Goggles
NN	No name, unnamed	NW	North-West
NNE	North North-East	NXT	Next
NNW	North North-West		
NOF	International NOTAM Office	OBS	Observe, Observed, Observation
NONSTD	Non-Standard	OBSC	Obscure, Obscured, Obscuring

OBST	Obstacle	# P....	Prohibited Area
• OBSTR	Obstruction		(followed by identification)
# OCA	Oceanic Control Area	PA	Precision Approach
OCA	Obstacle Clearance Altitude	•+ PAL	Pilot Activated Lighting
OCC	Occulting (light)		
OCH	Obstacle Clearance Height	PANS	Procedures for Air Navigation Services
OCNL	Occasional, Occasionally	+ PAPI	Precision Approach Path Indicator
OCT	October	PARL	Parallel
•# OCTA	Outside Control Area	PAX	Passengers
•# OCTR	Outside Control Zone	PBN	Performance-based navigation
OFZ	Obstacle Free Zone	PCD	Proceed, Proceeding
OHD	Overhead	PCL	Pilot Controlled Lighting
OK	We agreed, <i>or</i> , It is correct	PCN	Pavement Classification Number
• OLS	Obstacle Limitation Surface	# PDC	Pre-Departure Clearance
OM	Outer Marker	• PEC	Pressure Error Correction
OPA	Opaque. White type of ice formation	PER	Performance
+ OPMET	Operational Meteorological (information)	PERM	Permanent
OPN	Open, Opening, Opened	• PH	Public Holiday
		• PFR	Preferred Route
OPR	Operator, Operate, Operative, Operating, Operational	PIB	Pre-flight Information Bulletin
		• PILS	Practice ILS
OPS	Operations	• PIFR	Private IFR (rating)
O/R	On Request	PJE	Parachute Jumping Exercise
• OT	Other Times	PL	Ice Pellets
OVC	Overcast	• PLN	Flight Plan
• OW	Over Water	PN	Prior Notice Required
		# PNR	Point of No Return

	PO	Dust Devils	R	Red
#	POB	Number of Persons on Board	R	Right (runway identification)
	POSS	Possible	R	Runway (followed by figures in METAR/ SPECI)
#	PPI	Plan Position Indicator		
	PPR	Prior Permission Required	R...	Radial from VOR (followed by three figures)
	PPSN	Present Position		
•	PRD	Prohibited, Restricted and Danger Areas	R....	Restricted Area (followed by number)
	PRFG	Aerodrome Partially Covered by Fog (MET code)	• RA RA RA	Radio Altimeter Rain Resolution Advisory
	PRI	Primary	• RA	Restricted Area
	PRKG	Parking	• RAD	Radius
•	PRM	Precision Runway Monitoring	+ RAIM	Receiver Autonomous Integrity Monitoring
+	PROB	Probability		
	PROC	Procedure	•+ RAPIC	Radar Picture (MET)
	PROV	Provisional	+ RASC	Regional AIS System Centre
	PS	Plus		
	PSG	Passing	# RCC	Rescue Coordination Centre
	PSN	Position		
	PSP	Pierced Steel Plank	• RCGL	Runway Circling Guidance Lights
#	PSR	Primary Surveillance Radar	RCH RCL RCLL	Reach, Reaching Runway Centre Line Runway Centre Line Lights
•	PTBL	Portable		
	PTN	Procedure Turn		
•	PTT	Press to Talk	RDH	Reference Datum Height
•	PVT	Private		
	PWR	Power	RDL RDO	Radial Radio
#	QNH	Altimeter subscale setting to obtain elevation or altitude	RE...	Recent (used to qualify weather phenomena, e.g. RERA = recent rain)
	QUAD	Quadrant		

REC	Receive, Receiver, Received	+ ROBEX	Regional OPMET Bulletin Exchanges
REDL	Runway Edge Lights	ROC	Rate of Climb
REF	Reference to..., Refer to...	ROD	Rate of Descent
REG	Registration	# RP	Remote Pilot
RENL	Runway End Lights	# RPA	Remotely Piloted Aircraft
REP	Report, Reported, Reporting, Reporting Point	+ RPAS	Remotely Piloted Aircraft System
REQ	Request, Requested	• RPT	Regular Public Transport
ERTE	Re Route	RPT	Repeat, I Repeat
• RES	Reserve Fuel	RQ	Require(d)
RESA	Runway End Safety Area	RQMNTS	Requirements
• RESTR	Restrictions	RSCD	Runway Surface Condition
• REV	Review	RSP	Responder Beacon
# RF	Constant Radius Arc to Fix	RTE	Route
• RFC	Regional Forecasting Centre (MET)	RTF	Radio Telephone
RFFS	Rescue and Fire Fighting Services	RTHL	Runway Threshold Light(s)
RHC	Right Hand Circuit	• RTIL	Runway Threshold Identification Lights
RIF	Reclearance in Flight	RTN	Return, Returned, Returning
RL	Report Leaving	RTS	Return to Service
RLA	Relay to	RTZL	Runway Touchdown Zone Light(s)
RLLS	Runway Lead-in Lighting System	# RVR	Runway Visual Range
RMK	Remark	RVSM	Reduced Vertical Separation Minimum
+ RNAV	Area Navigation (Navigation Specification prefix)	• RWS	Runway Strip
RNP	Required Navigation Performance (Navigation Specification prefix)	RWY	Runway
		S	South, South Latitude
		SA	Sand

#• SA	Special Authorisation	SER	Service, Servicing, Served
SALS	Simple Approach Lighting System	SEV	Severe (used e.g. to qualify icing and turbulence report)
+ SAR	Search and Rescue	SFC	Surface
SARPS	Standards and Recommended Practices (ICAO)	• SFL	Sequenced Flashing Lights
•+ SARTIME	Time search action required	SG	Snow Grains
SAT	Saturday	SH...	Showers (followed by RA=rain, SN=snow, PL=ice pellets, GR=hail, GS=small hail and or snow pellets or combinations thereof, e.g. SHRASN = showers of rain and snow)
+ SATCOM	Satellite Communication (used only when referring generally to both voice and data satellite communication or only data satellite communication)	+ SID	Standard Instrument Departure
+ SATVOICE	Satellite Voice Communication	SIGWX	Significant Weather
SB	Southbound	+ SIGMET	Information concerning en route weather and other phenomena in the atmosphere that may affect the safety of aircraft operations
+ SBAS	Satellite-Based Augmentation System	SIMUL	Simultaneous, or Simultaneously
SC	Stratocumulus	•+ SIS	Surveillance Information Service
SCT	Scattered	+ SKED	Schedule, Scheduled
SDBY	Standby	SLP	Speed Limiting Point
SE	South East	SLW	Slow
SEA	Sea (used in connection with sea-surface temperature and state of the sea)	# SMC	Surface Movement Control
SEC	Seconds		
SECT	Sector		
+ SELCAL	Selective Calling System		
SEP	September		

•# SMCV	Surface Movement Control Vehicles	SST	Supersonic Transport
		SSW	South South-West
SMR	Surface Movement Radar	ST	Stratus
SN	Snow	+ STAR	Standard Instrument Arrival
+ SNOWTAM	A special series NOTAM notifying the presence or removal of hazardous conditions due to snow, ice, slush or standing water associated with snow, slush and ice on the movement area	STD	Standard
		STF	Stratiform
		STN	Station
		STNR	Stationary
		• STODA	Supplementary Take-off Distance
		STOL	Short Take-off and Landing
		STS	Status
• SOT	Start of TORA (take-off)	STWL	Stopway Light(s)
• SP	Single Pilot	SUBJ	Subject to
• SPA	Sport Aviation	SUN	Sunday
+ SPECI	Aviation Special Weather (in aeronautical meteorological code)	SUP	Supplement (AIP Supplement)
		SUPPS	Regional Supplementary Procedures
• SPFIB	Specific Preflight Information Bulletin	SVCBL	Serviceable
+ SPOT	Spotwind	• SVY	Survey Operations
SQ	Squall	SW	South-West
SQL	Squall Line	• SWS	Soft Wet Surface
SR	Sunrise	SWY	Stopway
# SRR	Search and Rescue Region	T	Bearing (true)
		T	Temperature
SRY	Secondary	TA	Traffic Advisory
SS	Sandstorm	TA	Transition Altitude
SS	Sunset		
SSB	Single Sideband	•+ TAC	Terminal Area Chart
SSE	South South-East	+ TACAN	UHF Tactical Air Navigation Aid
SSR	Secondary Surveillance Radar	+ TAF	Aerodrome Forecast

# TAS	True Airspeed	• TLW	Time Limited WIP (work in progress)
TAX	Taxiing, Taxi		
• TBA	To be advised	# TMA	Terminal Control Area
TC	Tropical Cyclone	TN	Indicator for Minimum Temperature (MET - used in TAF code form)
+ TCAS	(tee-kas) Traffic Alert and Collision Avoidance System		
TCH	Threshold Crossing Height	• TNS	Transitional Surface
		TODA	Take-off Distance Available
• TCTA	Trans-Continental Control Area	TOP	Cloud Top
• TCU	Terminal Control Unit	+ TORA	Take-off Run Available
TCU	Towering Cumulus		
• TDA	Temporary Danger Area	TOX	Toxic
		TP	Turning Point
TDO	Tornado	TR	Track
TDZ	Touchdown Zone	•# TRA	Temporary Restricted Area
TECR	Technical Reason	TRANS	Transmits, Transmitter
TEL	Telephone		
+ TEMPO	Temporary, Temporarily	TROP	Tropopause
TFC	Traffic	TS...	Thunderstorm (followed by RA=rain, SN=snow, PE=ice pellets, GR=hail, GS=small hail and/or snow pellets or combinations thereof, e.g. TSRASN = thunderstorm with rain and snow)
• TFR	Terrain Following Radar (by the MIL)		
TGL	Touch & Go Landing		
THR	Threshold		
THRU	Through		
THU	Thursday		
TIBA	Traffic Information Broadcasts by Aircraft	• TSO	Technical Standard Order
+ TIL	Until	+ TSUNAMI	Tsunami (used in aerodrome warnings)
TKOF	Take-off		
TL...	Till (followed by time by which weather change is forecast to end)	TUE	Tuesday
		TURB	Turbulence

+ T-VASIS	“T” Visual Approach Slope Indicator System (pronounced “TEE-VASIS”)	V	Variation from mean wind speed (MET - used in METAR/ SPECI code forms)
• TW	Tailwind	VA	Volcanic Ash
TWR	Aerodrome Control Tower <i>or</i> Aerodrome Control	VAAC	Volcanic Ash Advisory Centre
TWY	Taxiway	VAR	Magnetic Variation
TX	Indicator for Maximum Temperature (MET - used in TAF code form)	+ VASIS	Visual Approach Slope Indicator System
TXL	Taxilane	VC	Vicinity of the aerodrome (followed by FG=fog, TS=thunderstorm, FC=funnel cloud, PO=dust/sand whirls, BLDU=blowing dust, BLSA=blowing sand or BLSN=blowing snow; e.g. VCFG=vicinity fog
TYP	Type of Aircraft		
TYPH	Typhoon		
U	Upward (tendency in RVR during previous 10 minutes)		
UA	Unmanned aircraft	VCY	Vicinity
UAS	Unmanned aircraft system	# VFR	Visual Flight Rules
UFN	Until Further Notice	# VHF	Very High Frequency (30 to 300 MHz)
# UHF	Ultra High Frequency (300 to 3,000 MHz)	• VIA	By way of...
• UL	Upper Limits	# VIP	Very Important Person
UNA	Unable	VIS	Visibility
UNL	Unlimited	# VMC	Visual Meteorological Conditions
UNREL	Unreliable		
UP	Unknown	# VNAV	Vertical Navigation
	Precipitation	• VNC	Visual Navigation Chart
U/S	Unserviceable		
# UTC	Coordinated Universal Time	+ VOLMET	Meteorological Information for Aircraft in Flight

#	VOR	VHF Omnidirectional Radio Range	WKN	Weaken, Weakening
			WNW	West North-West
	VRB	Variable	WO	Without
	VSA	by Visual reference to the ground	WPT	Waypoint
•	VTC	Visual Terminal Chart	WRNG	Warning
	VTOL	Vertical Take-off and Landing	WS	Wind Shear
			WSW	West South-West
			WT	Weight
			WTSPT	Water Spout
	W	West, West Longitude	WWW	World Wide Web
	W	White	WX	Weather
	WAC	World Aeronautical Chart - ICAO 1:1,000,000 (<i>followed by name/title</i>)	WXR	Weather Radar
			X	Cross
	WAFC	World Area Forecast Centre	• XW	Crosswind
•	WAFS	World Area Forecast System	Y	Yellow
•	WATIR	Weather and Terminal Information Reciter	YCZ	Yellow Caution Zone
			YR	Your/s
			Z	Coordinated Universal Time (in meteorological messages)
	WB	Westbound		
	WDI	Wind Direction Indicator		
	WDSPR	Widespread		
	WED	Wednesday		
	WEF	With Effect From, Effective From		
	WGS-84	World Geodetic System - 1984		
	WI	Within		
	WID	Width		
	WIE	With Immediate Effect, Effective Immediately		
+	WILCO	Will Comply		
	WIP	Work in Progress		

GEN 2.3 CHART SYMBOLS

1. Symbols used for Australian aeronautical charts are identified on the legend of individual charts.

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GEN 2.4 LOCATION INDICATORS**1. CODE ALLOCATION**

- 1.1 Australia follows international conventions in the allocation of codes. For locations where a landing area exists (fixed-wing or helicopter), a four-letter location indicator is assigned with the first letter being a “Y”. This is referred to as the “Y” code. Locations other than those given a “Y” code are identified by two, three, four or five letter codes, but to avoid confusion with location indicators, visual waypoint codes do not begin with the letter “Y”. The following table summarises code allocation:

Type	Code	Example
Certified Aerodrome Aircraft Landing Area Helicopter Landing Site	4 letters (first letter “Y”)	Renmark (YREN)
Navigation Aid	2 or 3 letters (2 letter codes no longer issued)	Caiguna VOR (CAG)
Visual Waypoint (as depicted on chart)	4 letters (first letter other than “Y”) (3 letter codes no longer issued)	Cranbourne (CRAN)
IFR Waypoint	5 letters (3 letter codes no longer issued)	DADOP

2. LIST OF CODES

- 2.1 Codes are listed in *ERSA GEN*.

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GEN 2.5 RADIO NAVIGATION AIDS

1. Australian radio navigation aids are identified in ERSA Facilities (FAC) section for each location under the heading NAVIGATION AIDS. Listings conform to the following sequence:

Aid Ident Frequency Lat/Long Remarks

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GEN 2.6 CONVERSION TABLES

1. Conversion tables are contained in *ERSA GEN*.

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GEN 2.7 FIRST LIGHT AND LAST LIGHT COMPUTATIONS

1. For all intents and purposes, 'first light' should be construed as the beginning of morning civil twilight, and 'last light' as the end of evening civil twilight.
2. To compute first light and last light using the graphs contained in this section:
 - a. enter the top or bottom of the scale at the appropriate date;
 - b. move vertically up or down to the curve for the latitude of the place concerned (interpolating for intermediate latitudes if necessary);
 - c. move horizontally to the left or right and read local mean time on the vertical scale at the side;
 - d. to convert to UTC, subtract (in E longitudes) from the LMT obtained, the time increment corresponding to the longitude of the place concerned in the "Conversion of Arc to Time" table.
 - e. to convert to EST, add 10 hours to UTC;
 - f. to convert to CST, add 9½ hours to UTC;
 - g. to convert to WST, add 8 hours to UTC.

Example: To determine last light at Echuca

(360900S 1444600E) on 20th November.

Using the graph, enter at 20th November at the top of the page and follow downwards to latitude 36° (by interpolation), then horizontally to the left and read off LMT = 1919. To convert to UTC, enter the "Conversion of Arc to Time" table, at longitude 144° (9 hours 36 minutes). Add the increment corresponding to 46' in the right hand column

$$= 3' 04'' + 0936 = 0939.$$

Subtract this from the LMT found: $1919 - 0939 = 0940$ UTC.

To find EST add 10 hours to UTC = 1940 EST.

Users of these graphs should note that the parameters used in compiling the Time of First Light/Last Light Graphs do not include the nature of the terrain surrounding a location, or the presence of other than a cloudless sky and unlimited visibility at that location.

Consequently, the presence of cloud cover, poor visibility or high terrain to the west of an aerodrome will result in last light occurring at a time earlier than that extracted from the appropriate graph. Allowance should be made for these factors when planning a flight having an ETA near the time of last light.

3. NAIPS automatically computes first light and last light. This information can be provided through pilot access, as part of a telephone briefing, or from FLIGHTWATCH.
4. Sunrise, sunset and civil twilight times (first and last light) can also be obtained from www.ga.gov.au/geodesy/astro/sunrise.jsp.

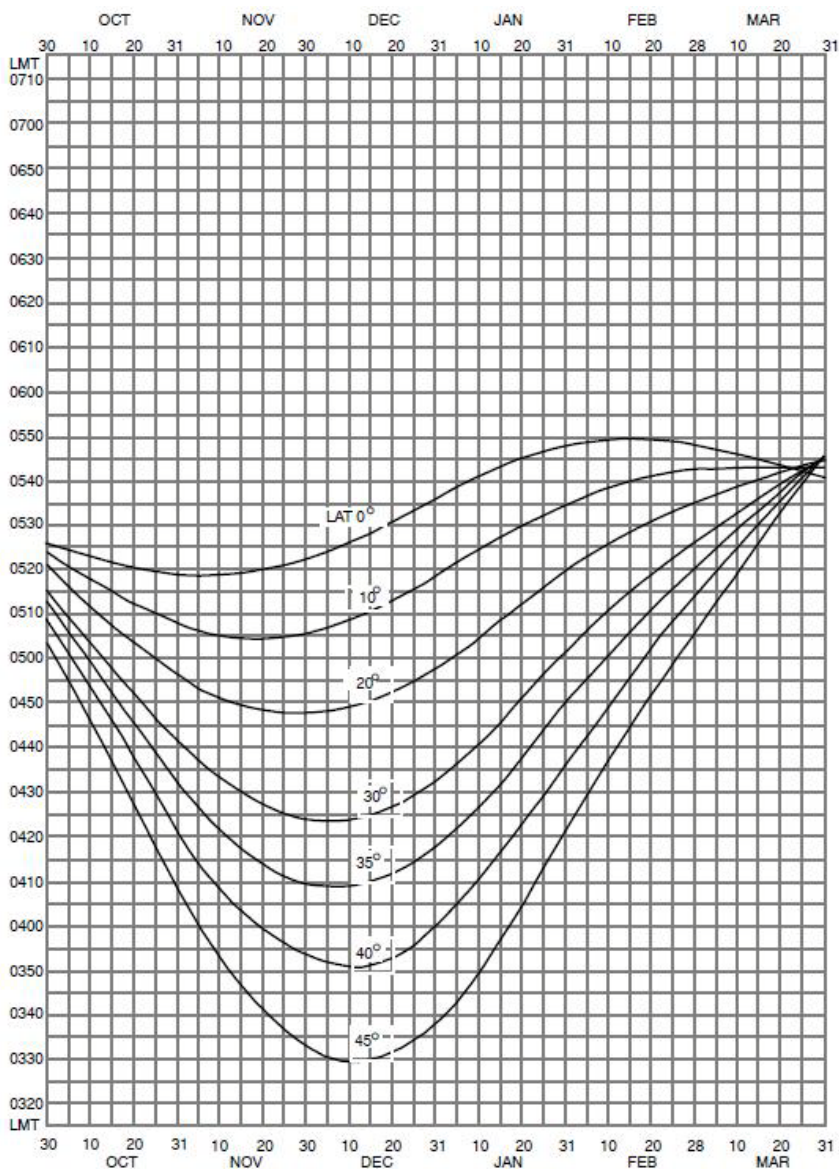
5. **LOCAL TIME**

Local time in Australia falls into three separate zones:

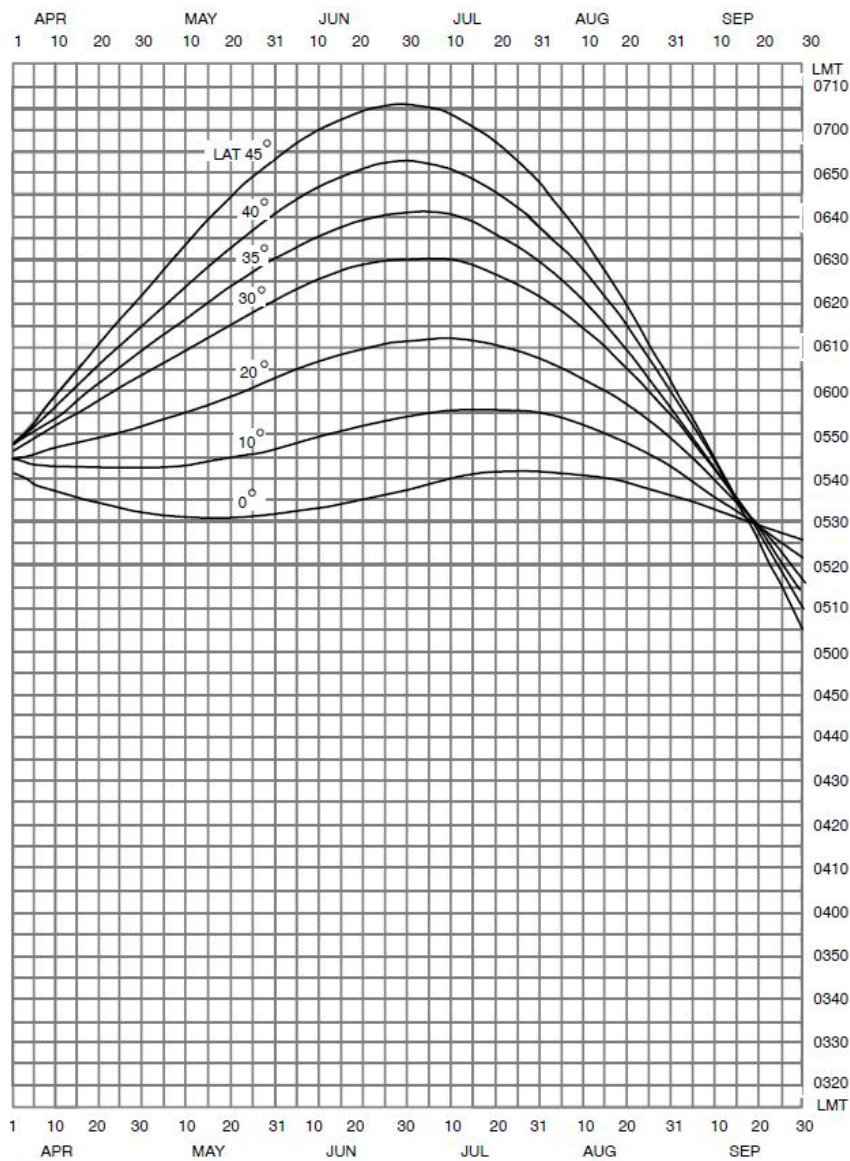
Time Zone	Local Time	States
Eastern Standard Time (EST)	UTC + 10 hours	New South Wales* (except the Broken Hill area), Queensland, Victoria*, Tasmania* and the Australian Capital Territory*
Central Standard Time (CST)	UTC + 9 ½ hours	South Australia*, the Northern Territory and the Broken Hill area*
Western Standard Time (WST)	UTC + 8 hours	Western Australia

Note:* Daylight Saving Time applies between October of one year and April of the following year, which adds an additional hour to the local time of that State or area. NOTAM or AIP Supplements will be issued detailing revised hours of operation during Daylight Saving Time where such hours are not already promulgated in AIP.

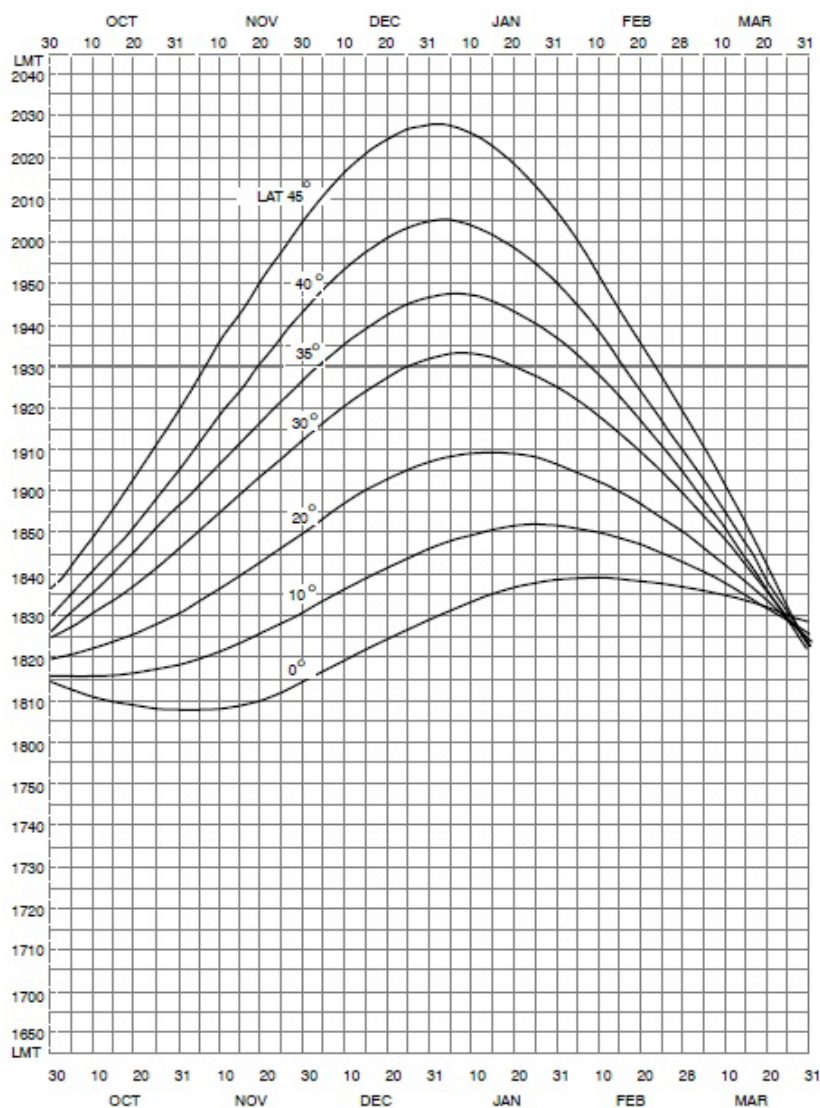
TIME OF FIRST LIGHT



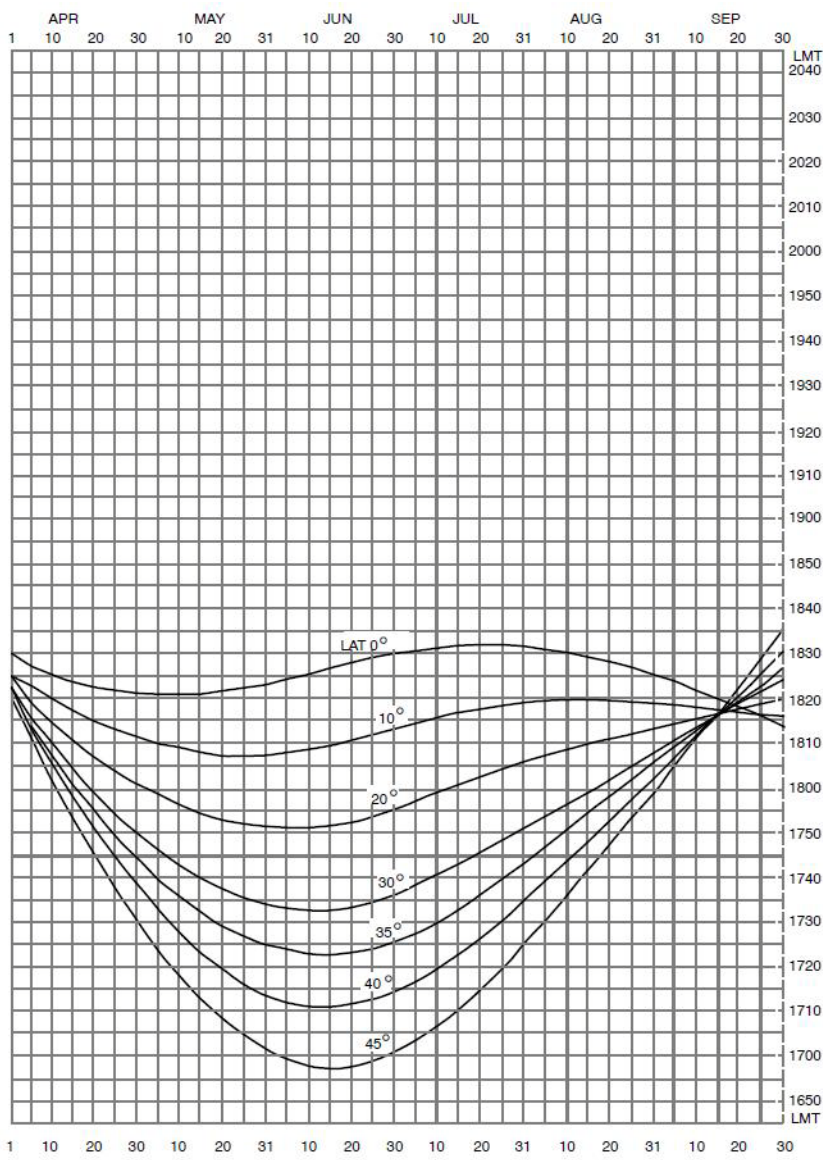
TIME OF FIRST LIGHT



TIME OF LAST LIGHT



TIME OF LAST LIGHT



CONVERSION OF ARC TO TIME

DEGREES					MINUTES						
Long Deg	Time		Long Deg	Time		Long Min	Time		Long Min	Time	
	Hours	Min		Hours	Min		Min	Sec		Min	Sec
110	7	20	140	9	20	0	0	00	30	2	00
111	7	24	141	9	24	1	0	04	31	2	04
112	7	28	142	9	28	2	0	08	32	2	08
113	7	32	143	9	32	3	0	12	33	2	12
114	7	36	144	9	36	4	0	16	34	2	16
115	7	40	145	9	40	5	0	20	35	2	20
116	7	44	146	9	44	6	0	24	36	2	24
117	7	48	147	9	48	7	0	28	37	2	28
118	7	52	148	9	52	8	0	32	38	2	32
119	7	56	149	9	56	9	0	36	39	2	36
120	8	00	150	10	00	10	0	40	40	2	40
121	8	04	151	10	04	11	0	44	41	2	44
122	8	08	152	10	08	12	0	48	42	2	48
123	8	12	153	10	12	13	0	52	43	2	52
124	8	16	154	10	16	14	0	56	44	2	56
125	8	20	155	10	20	15	1	00	45	3	00
126	8	24	156	10	24	16	1	04	46	3	04
127	8	28	157	10	28	17	1	08	47	3	08
128	8	32	158	10	32	18	1	12	48	3	12
129	8	36	159	10	36	19	1	16	49	3	16
130	8	40				20	1	20	50	3	20
131	8	44				21	1	24	51	3	24
132	8	48				22	1	28	52	3	28
133	8	52				23	1	32	53	3	32
134	8	56				24	1	36	54	3	36
135	9	00				25	1	40	55	3	40
136	9	04				26	1	44	56	3	44
137	9	08				27	1	48	57	3	48
138	9	12				28	1	52	58	3	52
139	9	16				29	1	56	59	3	56

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GEN 3. SERVICES**GEN 3.1 AERONAUTICAL INFORMATION SERVICES****1. AERONAUTICAL AUTHORITY**

- 1.1 Responsibility for civil aviation in Australia and its Territories rests with two organisations: the Civil Aviation Safety Authority (CASA) and Airservices Australia (abbreviated: Airservices). CASA is responsible for safety regulation of all civil aviation in Australia, including the safety regulation of Airservices' provision of support services. Requests for advice on Australia's civil aviation support services including Air Traffic Services (ATS), Rescue and Fire Fighting (RFF) services and Aeronautical Information Service (AIS) may be directed to:

Postal Address: Business Reply Post
PERMIT No 1986 - CIVIC SQUARE
Airservices Australia
Aeronautical Information Service
GPO Box 367
CANBERRA ACT 2601
AUSTRALIA

**Aeronautical/
Telegraphic Address:** YSHOYOYX

Email: docs.amend@airservicesaustralia.com

Website: www.airservicesaustralia.com/aip/ccard

Requests for advice on Australia's civil aviation search and rescue services may be directed to:

Postal Address: Australian Maritime Safety Authority
GPO Box 2181
CANBERRA ACT 2601
AUSTRALIA

**Aeronautical/
Telegraphic Address:** YSARYCYX

Email: rccaus@amsa.gov.au

Website: www.amsa.gov.au

2. AERONAUTICAL INFORMATION SERVICE

- 2.1 The Aeronautical Information Service (AIS) is established pursuant to *para 8.(1)* of the *Air Services Act 1995*. The AIS is responsible for the collection, collation and dissemination of aeronautical information and instructions relating to the safety, regularity and efficiency of air navigation within the areas covered.

An International NOTAM Office (NOF) is established at Canberra (YBBBYNYX) for the purpose of the international exchange of NOTAM.

2.2 Area of Responsibility.

The AIS is responsible for the collection and dissemination of aeronautical information for the entire territory of Australia and its associated airspace, and for the airspace over the high seas encompassed by the Brisbane and Melbourne FIRs.

3. PUBLISHED AERONAUTICAL INFORMATION

- 3.1 The Australian **Aeronautical Information Publication (AIP)** provides the primary source of information concerning rules of the air and procedures for the safe and efficient movement of aircraft in Australian airspace. The AIP should be read in conjunction with CASRs, CARs, CAOs and CAAPs which detail the statutory requirements.

3.2 NOTAM

- 3.2.1 **Area of Responsibility.** Airservices Australia's NOTAM Office is responsible for the issuing of NOTAM. Contact details are:

Airservices NOTAM Office

GPO BOX 367

CANBERRA ACT 2601

Phone: +61 2 6268 5063

Fax: +61 2 6268 5044

Email: nof@airservicesaustralia.com

- 3.2.2 NOTAM provide information that is of direct operational significance and which may immediately affect aircraft operations.

- 3.2.3 A NOTAM is issued in a format containing fields (Q) and (A) to (G) as follows:

Q. This field consists of eight sub fields separated by oblique strokes.

1. FIR in which the location listed in field A) is located.
2. NOTAM code. This is a coded version of the subject and status of the NOTAM preceded by the letter 'Q'
3. Traffic field. Signifies if a NOTAM affects IFR or VFR flights
4. Purpose field. Signifies if a NOTAM is for immediate attention and/or for briefings or concerning flight operations.
5. Scope field. Signifies if the NOTAM is an aerodrome, en route or warning NOTAM
6. Lower level of the activity in the NOTAM. If no level specified the default is 000.
7. Upper level of the activity in the NOTAM. If no level specified, the default is 999.
8. Geographical coordinates. For location specific NOTAM, the latitude/longitude of the location listed in field A) of the NOTAM is listed. If not a specific location, the field is left blank.

Example of Q field:

Q) YBBB/QMRAU/IV/BO/A/000/999/2723S15307E

Note: The list of codes used in the Q) field is available in ICAO Annex 15 and Doc-8126. Briefings obtained from NAIPS are decoded.

- A. Location identification.
- B. Time of commencement of information contained in Field E.
or
Time of publication where prior notification is required. In this case, Field E commences with "WEF...(date/time)...".
This date/time will then reflect the actual commencement time of the NOTAM information.
- C. Time of cessation of information. If timing is uncertain, the duration is indicated by using an estimated date-time group followed by EST. PERM is used in lieu of the date-time group when the information is permanent.
- D. Times of periods of activity.

Note: When the days of the week are referenced in Item D of a NOTAM, the day refers to the local day with timings in UTC, i.e. SUN 2300-0300 refers to SAT 2300 UTC - SUN 0300 UTC.

- E. Plain language text (for international NOTAM, ICAO codes are used).

F. Lower limit.

G. Upper limit.

In Australian Domestic distribution only, NOTAM series and their respective categories are

- 1. 'B' series for Domestic NOTAM - ATS category only
- 2. 'C' series for Domestic NOTAM - All other categories

For example NOTAM numbering is preceded by the letter "C" followed by the year; e.g.

C0689/08

For each location, a separate series of numbers is issued; thus the NOTAM is identified by both the location and the number, not by the number alone.

3.2.4 In the international environment, Australia issues NOTAM against a series of registers. These registers are by individual FIRs, multiple FIRs, or Australia General. The individual FIRs and multiple FIRs registers are further subdivided by NOTAM category. The series are as follows:

Brisbane FIR - PRD NOTAM category	D
Brisbane FIR - AD NOTAM category	J
Brisbane FIR - ATS NOTAM category	K
Brisbane FIR - all other NOTAM category	N
Melbourne FIR - PRD NOTAM category	E
Melbourne FIR - AD NOTAM category	H
Melbourne FIR - ATS NOTAM category	L
Melbourne FIR - all other NOTAM category	F
Australia General FIR	G

3.3 **AIP Supplement (SUP)**

3.3.1 **Area of Responsibility.** Airservices Australia's AIS is responsible for publication and distribution of AIP SUP. Responsibility for content is shared. Refer to *AIS Services para 1.1*.

3.3.2 An AIP Supplement (SUP) is issued to supplement the information in the AIP when the information is of a temporary nature, requires advanced distribution, or is appropriate to the AIP, but would not be made available with sufficient rapidity by the issue of an amendment to the AIP.

-
- 3.3.3 SUPs which conform with the international schedule of effective dates for a minimum 28 days' notice of effect have the word AIRAC included in the heading.
- 3.3.4 Most SUPs are addressed and disseminated to all AIP holders. The distribution can be widened depending on content, and is advised in the SUP under the heading DISTRIBUTION. SUPs that have relevance to only a small section of the industry will be distributed electronically via the Airservices Australia website. When a restricted distribution is required, notice to industry is via a "trigger" NOTAM.
- 3.3.5 A check list (summary) of current SUPs is issued monthly.
- 3.4 **Aeronautical Information Circular (AIC)**
- 3.4.1 **Area of Responsibility.** Airservices Australia's AIS is responsible for publication and distribution of AIC. Responsibility for content is shared. Refer to *AIS Services para 1.1*.
- 3.4.2 AICs are used to disseminate aeronautical information to aircrew. Usually, the information is of an administrative nature and not directly concerned with the present conduct of airborne operations, but may have implications for the future. AICs contain advice which does not qualify for promulgation in AIP or NOTAM. Some examples of information suitable for promulgation as an AIC are:
- a. a long-term forecast of a major change in legislation, regulations, procedures or facilities;
 - b. information of a purely explanatory or advisory nature liable to affect flight safety; and
 - c. information or notification of an explanatory or advisory nature concerning technical, legislative or purely administrative matters.
- 3.4.3 Each AIC to be distributed in hard copy is addressed to all AIP holders and, if necessary, those persons or organisations affected, and this selective addressing is advised in the AIC under the heading DISTRIBUTION. AICs which address information applicable to a limited section of the aviation community may be disseminated by the Airservices Australia website only. When this occurs, notification is via a "trigger" NOTAM.
- 3.4.4 A checklist (summary) of current AICs is issued monthly.

4. AIRAC SYSTEM

- 4.1 In order to control and regulate the operationally significant changes requiring amendments to aeronautical charts, route listings, etc, such changes will generally be issued on predetermined dates according to the Aeronautical Information Regulation and Control (AIRAC) system. This type of information will normally be published as a planned AIP amendment or an AIRAC SUP. In circumstances in which AIRAC notification should be given, but a normal AIP amendment or an SUP cannot be produced due to a lack of time, a non-AIRAC SUP or NOTAM will be issued.
- 4.2 The table below indicates AIRAC effective dates for the coming years. AIRAC information will be issued so that the information will be received by the user not later than 28 days before the effective date. In some circumstances of major change, AIRAC notice of 56 days may be given.
- 4.3 Documents and charts issued in accordance with the AIRAC cycle become effective at 1600 hours UTC on the day prior to the nominated date unless otherwise notified; e.g. a document with an AIRAC date 26 June becomes effective 06251600UTC (i.e. during Australian Eastern Standard Time, becomes effective at 0200 hours local on 26 June).
- 4.4 At each AIRAC effective date, a Head Office 'trigger' NOTAM will be issued which identifies the elements of the AIP effective on that date and their respective 'with effect' dates. This 'trigger' NOTAM will remain in force for a period of 14 days.

AIRAC Effective Dates			
2020	2021	2022	2023
2 JAN	28 JAN	27 JAN	26 JAN
30 JAN	25 FEB	24 FEB	23 FEB
27 FEB	25 MAR	24 MAR	23 MAR
26 MAR	22 APR	21 APR	20 APR
23 APR	20 MAY	19 MAY	18 MAY
21 MAY	17 JUN	16 JUN	15 JUN
18 JUN	15 JUL	14 JUL	13 JUL
16 JUL	12 AUG	11 AUG	10 AUG
13 AUG	9 SEP	8 SEP	7 SEP
10 SEP	7 OCT	6 OCT	5 OCT
8 OCT	4 NOV	3 NOV	2 NOV
5 NOV	2 DEC	1 DEC	30 NOV
3 DEC	30 DEC	29 DEC	28 DEC
31 DEC			

5. PREFLIGHT INFORMATION SERVICE

- 5.1 A preflight information service is provided from the Network Coordination Centre (NCC) Pilot Briefing Office, located in Canberra. This office provides a NOTAM, meteorological, and flight notification service. Contact details are:

Airservices Pilot Briefing Office
 GPO BOX 367,
 CANBERRA ACT 2601
 Ph: +61 2 6268 5062
 Fax: +61 2 6268 5033

- 5.2 A description of the preflight information service available in Australia is contained in *ERSA GEN*.

6. OBSTACLE AND TERRAIN DATASETS

- 6.1 Airservices provides Vertical Obstacle Data (VOD) for:
- Area 1 – Australian data collected and maintained as defined in *ICAO Annex 15*, and
 - Area 2 – Australian aerodromes with regular international operations.

-
- 6.2 Information on how to order this data is available from the Airservices website:
www.airservicesaustralia.com/services/aeronautical-information-and-management-services/electronic-data
- 6.3 Terrain data is available from Geoscience Australia via their online store: elevation.fsdf.org.au
- 6.4 Obstacle data in the vicinity of aerodromes is collated and provided by the airport operator and is published as ICAO Type A/B charts. Terrain data for precision approach runways is also collected by the airport operator and published as Precision Approach Terrain Charts. The aerodromes where this information is available, and the airport contact details are available on the Airservices website:
www.airservicesaustralia.com/aip/aip.asp

GEN 3.2 AERONAUTICAL CHARTS**1. CHART SERIES****1.1 Charts Available****1.1.1** The following aeronautical charts are produced:

Planning Chart Australia (PCA)
World Aeronautical Chart (WAC)
Visual Terminal Chart (VTC)
Visual Navigation Chart (VNC)
En Route Chart - Low (ERC-L)
En Route Chart - High (ERC-H)
Terminal Area Chart (TAC)
Aerodrome (AD) chart
Apron chart
Standard Instrument Departure (SID) chart
Standard Instrument Arrival (also called Standard Arrival Route) (STAR) chart
DME and GNSS Arrival chart
Instrument Approach and Landing (IAL) chart
Obstruction chart (Type A) (available from aerodrome operator).

1.2 Planning Chart Australia**1.2.1** PCA depicts the following information:

- a. Briefing/Area QNH boundaries,
- b. GAF boundaries,
- c. WAC coverage and chart titles,
- d. location names and abbreviations,
- e. estimated FIS VHF coverage at 5,000FT and 10,000FT, and
- f. HF network boundaries.

1.3 Visual Charts**1.3.1** WACs (scale of 1:1 000 000) are designed for preflight planning and pilotage. They are constructed on Lambert's conformal conic projection. Australian coverage is shown on the back of each chart.

- 1.3.2 VNCs (scale 1:500 000) are designed for operations under the VFR. They contain an aeronautical overlay of controlled airspace over a topographical base, and contain some radio communication and other navigational data appropriate for visual navigation. Map coverage is shown on the front of each map.
- 1.3.3 VTCs (scale of 1:250 000) are designed for visual operations near terminal areas. They contain some topographical detail and appropriate airspace, radio communication and navigation aid information. These charts are intended for use up to and including FL180.

Note: When planning visual navigation outside the coverage of VTCs, pilots will need to refer to the appropriate VNC (if available) or IFR chart ERC-L for depiction of controlled airspace and Prohibited, Restricted and Danger areas.

1.4 **IFR Charts**

- 1.4.1 ERCs-L, ERCs-H and TACs are presented at various scales and depict airspace, air routes and radio navigation facilities.
- 1.4.2 ERCs-L are intended for use primarily up to and including FL200.
- 1.4.3 ERCs-L show an outline of the areas covered by TACs and VTCs.

These areas impact on the ERC-L presentation as follows:

 - a. Within the areas covered by TACs, full details of air routes may not be shown due to lack of space.
 - b. Air route information within these areas will usually only include the route line and bearing. Where space permits, the route designator, distance and LSALT may also be shown.
 - c. Within the areas covered by TACs and VTCs, full details of airspace may not be shown. Information may only indicate lateral boundaries. Restricted and Danger area numbers and sport aviation symbols may not be shown.

For complete details of aeronautical data in these areas refer to the appropriate TACs or VTCs.
- 1.4.4 ERCs-H are intended to be used for operations above FL200.

- 1.4.5 All data represented on ERCs that lies outside the Australian FIR is compiled from a variety of state sources and is representative of the airspace and air route mosaic as it was understood at the time of compilation. Amendments will routinely occur to non-Australian FIR data outside of the publication cycle of the Australian AIP MAP products, and pilots should therefore check the AIP, AIP SUP and NOTAM of relevant adjoining states to ensure they are in receipt of the most up to date information for non-Australian FIRs.
- 1.4.6 TACs show details applicable to both high and low level operations in terminal areas.
- 1.4.7 Aerodrome charts, Apron charts, Noise Abatement Procedures, SID charts, STAR charts, DME and GNSS Arrival charts, and IAL charts are published in DAP EAST and DAP WEST.
- 1.4.8 Obstruction charts (Type A), when required to be produced, are available from respective aerodrome owners/operators.

2. AIR ROUTE DETAILS, SPECIFICATIONS AND CHART DEPICTIONS

2.1 Air Routes

- 2.1.1 The following designators are used to identify ATS routes:

REGIONAL ROUTES - A, B, G & R

REGIONAL ROUTES (TASMAN) - L, M, N, P

DOMESTIC ROUTES - H (ONE WAY) & J (TWO WAY)

DOMESTIC ROUTES - V (ONE WAY) & W (TWO WAY)
Predominantly Low Level

DOMESTIC ROUTES - Q (180° - 359°), Y (360° - 179°), T (TWO WAY) & Z (LOW LEVEL)

Note: Prefix U INDICATES ROUTE NEAR MAJOR TERMINAL.

- 2.1.2 A black arrowhead on a route designator box indicates that the route is to be used, within controlled airspace, only in the direction shown by the arrow.
- 2.1.3 Air routes are divided into route segments. Each route segment contains data for the magnetic track, distance, lowest safe altitude (LSALT) and reporting requirements.

2.2 **Lowest Safe Altitude**

- 2.2.1 The LSALT specified for a route segment is only valid for RNP 2 operations. For operations other than RNP 2 operations, operators and pilots must use a pilot calculated LSALT or grid LSALT.

The minimum LSALT published is 1,500FT due to lack of data concerning terrain near sea level. Techniques for calculating LSALT are detailed in *GEN 3.3 para 4*.

- 2.2.2 LSALT details for Area Navigation routes are shown in each grid square formed by the parallels and meridians. On the ERCs-H, the grid is at 4° intervals, and at 1° intervals on the ERCs-L and TACs. (See also *GEN 3.3 Para 4*.)
- 2.2.3 On IFR charts, some LSALTs on one-way air routes have an associated direction arrow. This arrow indicates that the LSALT is only applicable in the direction of the one-way route, and a LSALT has not been calculated for the opposite direction.
- 2.2.4 A LSALT without a direction arrow on any air route indicates that the LSALT is the same in both directions. However, one-way routes should only be flown, in controlled airspace, in the direction indicated by the route designator box.
- 2.2.5 On ERCs, the LSALT figure is always attached adjacent to the distance “bubble” of the route to which the LSALT applies. In areas of chart clutter, these LSALT figures may sometimes cross adjacent route tracks.

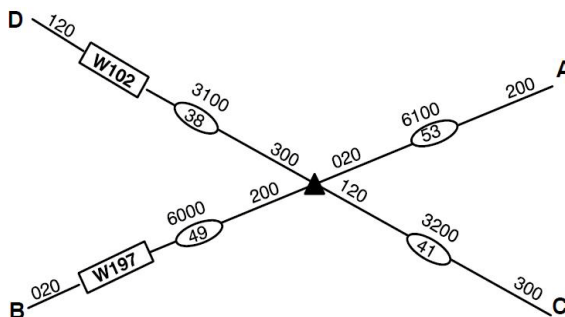
2.3 **Track Bearing Specifications**

- 2.3.1 Each route segment is shown as the minor arc of a Great Circle passing through the end points. The track angles of the Great Circle segments are measured at the end points. Rhumb Line track angles can be determined by taking the track out and the track in to the next waypoint, and then averaging the Great Circle track angles.

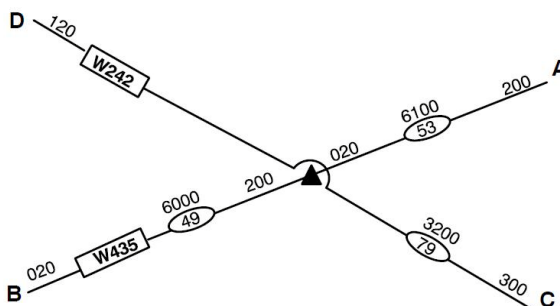
2.4 **Reporting Points**

- 2.4.1 Reporting points are normally referenced to a radio-navigation aid, aerodrome, town or within 10NM of a town or a geographical feature. Where this is not possible, names have been invented.
- 2.4.2 The following examples and diagrams detail the reporting requirements that apply on crossing air routes that intersect at a reporting point:

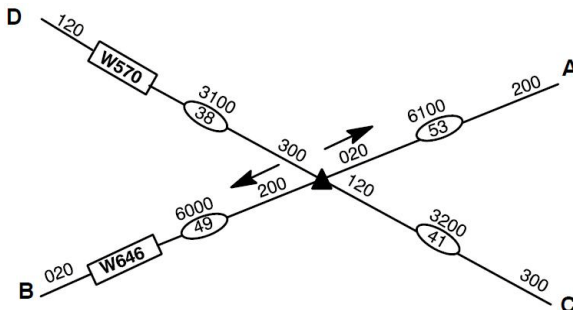
- a. A report is required on both routes



- b. A report is required only on W435. The route segment on W242 is a single segment between D&C and the compulsory position report does not apply.



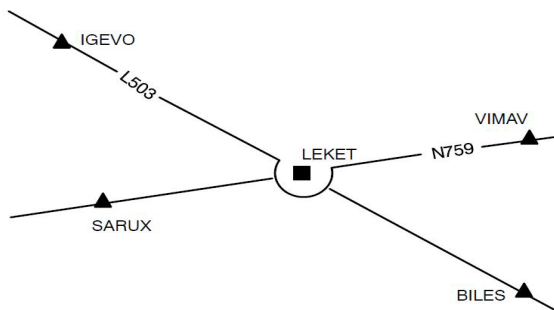
- c. A compulsory position report is required on W646, indicated by the arrows associated with the report symbol. A compulsory position report for aircraft with TAS less than 300KT and for other aircraft on request applies on W570.



- 2.4.3 Where arrows are associated with a reporting point, then a solid triangle (compulsory report for ALL aircraft) applies in the direction indicated by the arrows, and an open triangle (compulsory report for aircraft with TAS less than 300KT and for other aircraft on request) applies on the crossing route. The same principle applies if the AIREP Section 3 report is required.

2.5 Intersection Waypoint

- 2.5.1 An intersection waypoint is included at the intersection of two air routes, but is not included in the description of either air route. Effectively, this waypoint is a “point in space”.
- 2.5.2 For a flight that will plan via one air route, the intersection waypoint is not displayed in the FMS route data. However, if the crossing route is to be flown from the intersection, the waypoint is included in the flight plan and appears in the FMS.
- 2.5.3 An intersection waypoint is displayed on en route charts as a Type 1 (solid square) waypoint and the tracks arc around that waypoint. The legend defines a Type 1 reporting point as “waypoint - no report required unless used as a turning point between two routes”. An example of an intersection waypoint is depicted on the following page.



- 2.5.4 As the intersection waypoint is not included on either air route, operators wishing to plan two routes will flight plan via:
- the air route to the waypoint short of the intersection waypoint, then
 - direct to the intersection waypoint, then
 - direct to the first waypoint on the second air route, then
 - via the new air route.
- 2.5.5 An example of a flight plan entry based on the map at *para 2.5.3* is as follows:

L503 IGEVO DCT LEKET DCT VIMAV N759

3. AIRSPACE DEPICTIONS

- 3.1 Airspace categories and their lateral and vertical limits are indicated by labels, boundary lines and colour tints. The depictions used on the ERCs-L, ERCs-H and TACs are common across all these charts. Differing depictions have been utilised on the VTCs in order to complement the topographic base.
- 3.2 The depiction of airspace vertical limits where the lower limit is the surface of the earth is shown as “SFC”.
- 3.3 The vertical limits of airspaces are shown on all charts by indicating the airspace class and the lower limit, i.e.
- C LL 7500 (blue label), D LL 3500 (blue label), and
E LL 8500 (brown label).
- 3.4 Where different classes of airspace are vertically stacked the labels will be shown in layers, e.g.
- A LL FL180 (blue label)
E LL 8500 (brown label).

3.5 Airspace depictions used on the ERCs-H, ERCs-L and TACs are as follows:

a. Class A airspace

- (1) The lateral limits of Class A airspace are depicted with blue lines.
- (2) The lower limit of Class A airspace is shown with blue labels.
- (3) The vertical limit of Class A airspace is shown with blue labels along the lateral boundary.

b. Class C airspace

- (1) The lateral limits of Class C control area steps below Class A airspace are depicted with blue lines and a blue tint.
- (2) The lower limit of Class C is shown with blue labels.
- (3) The boundary between Class C and Class C OCA is shown by blue lines and labels.

c. Class D airspace

- (1) The lateral limits Class D control area steps are depicted with blue lines and a blue tint.
- (2) The lower limit of Class D is shown with blue labels.

d. Class E airspace

- (1) The lateral limits of Class E are depicted with a brown line and a brown tint.
- (2) The lower limit of Class E is shown with brown labels.

e. Class G airspace

- (1) Class G airspace is all airspace not promulgated as Class A, C, D, or E.
- (2) Class G airspace is not tinted or specifically labelled.

3.6 Airspace depictions used on the VTCs are as follows:

- a. Blue lines indicate the lateral boundaries of classes A, C & D airspace.
- b. The lower limits of classes A, C and D airspace are shown with blue labels.
- c. A broken brown line indicates the lateral boundary of Class E airspace.

- d. The lower limits of Class E are shown with brown labels.
- e. Class G is designated as all airspace not already promulgated as Class A, C, D, or E. Class G has not been specifically labelled.

3.7 **Restricted and Danger Areas**

3.7.1 Restricted and Danger areas are depicted as follows:

- a. On all charts, Restricted areas are shown with a magenta verge. RA conditional status is displayed in tables within the legend.
- b. On the ERCs and TACs, Danger area boundaries are shown with a solid magenta line.
- c. On the VTCs, Danger areas are shown with a solid magenta line with a magenta dot verge along the inside of its boundary.
- d. On all charts where a Restricted and Danger area have a common lateral boundary, only the Restricted area verge is shown. The Danger area boundary is indicated by labels.

3.8 **Airspace Boundary Information**

3.8.1 Distances associated with airspace boundaries indicate the datum on which the airspace is based, and is shown as follows:

- a. "NM" indicates a distance from the ARP.
- b. "DME" or "TAC" indicates a distance based on that navigation aid.
- c. Some control zones have boundaries based on a runway threshold; e.g. "7NM FM THR RWY 33" indicates a distance based on the threshold of Runway 33 at the associated aerodrome.

4. **FREQUENCY INFORMATION**

4.1 Flight Information Area (FIA) frequencies and associated boundaries are depicted in green.

4.2 ATC frequencies and associated boundaries for use in Class E airspace are depicted in brown.

4.3 The prefix to a frequency indicates the provider of the service.

4.4 Where a single area is divided vertically between different frequencies, the vertical limits applicable to each frequency will be indicated.

4.5 Depiction of Common Traffic Advisory Frequency (CTAF)

- 4.5.1 At non-controlled aerodromes where MULTICOM 126.7MHz is not the CTAF, or non-controlled aerodromes that have an associated navaid, an entry “CTAF” followed by the designated frequency, is annotated in a box associated with the location.

4.6 Broadcast Areas

- 4.6.1 Broadcast Areas are depicted on charts by a dotted dark green line and a label stating ‘for operations in this area SFC - <altitude> use CTAF <frequency>’.

5. NAVIGATION AIDS

- 5.1 An asterisk next to a NAVAID indicates that it is subject to an operating limitation such as reduced range, bearing fluctuations, terrain shielding, etc. Details of the limitation will be listed in *ERSA FAC*.
- 5.2 An asterisk will not be shown to indicate that an aid is pilot monitored.

6. AERODROME OBSTRUCTION CHARTS

- 6.1 Aerodrome obstruction charts, as detailed in *ERSA FAC*, are available to aircraft operators operating in accordance with *CAO 20.7.1B* by contacting the appropriate aerodrome operator.

7. COPYRIGHT

- 7.1 All charts are subject to the copyright conditions detailed on each chart.

GEN 3.3 AIR TRAFFIC SERVICES**1. RESPONSIBLE SERVICE**

1.1 The responsible authorities for the provision and administration of Air Traffic Services in Australia are:

a. Airservices Australia

GPO BOX 367

CANBERRA ACT, 2601

Australia

Email: atsintegrity@airservicesaustralia.com

Website: www.airservicesaustralia.com/services

b. Department of Defence - Royal Australian Air Force (RAAF)

Headquarters No. 44 Wing

RAAF Base Williamtown

WILLIAMTOWN NSW, 2314

Australia

Email: 44wg.standteam@defence.gov.au

1.2 The services are provided in accordance with the following ICAO documents:

a. Annex 2

b. Annex 11

c. Annex 10; Vol II

d. DOC 4444 (PANS-ATM)

e. DOC 7030 (Regional Supplementary Procedures)

f. DOC 8168 (PANS-OPS)

g. DOC 9426 (ATS Planning Manual)

1.3 Differences from ICAO Standards and Recommended Practices are detailed in *GEN 1.7*.

2. AREA OF RESPONSIBILITY

2.1 Air traffic services are provided as follows:

Authority	Area of Responsibility
Airservices Australia	The territory of Australia, including territorial waters and the airspace over the high seas within the Brisbane FIR and Melbourne FIR, except: Norfolk Island and Christmas Island and associated territorial waters; and Where the Department of Defence provide services as below.
Department of Defence (RAAF)	Aerodrome services at Edinburgh and Richmond. Aerodrome and Approach services at Amberley, Darwin, East Sale, Nowra, Oakey, Pearce, Tindal, Townsville and Williamtown.

3. TYPES OF SERVICE**3.1 General**

3.1.1 The following types of services are provided to ensure the safe, orderly and expeditious flow of air traffic:

a. Air Traffic Control Service:

(i) En Route Control (Surveillance and Procedural);

(ii) Approach Control (Surveillance and Procedural);

(iii) Aerodrome Control (Tower);

b. Flight Information Service; and

c. Alerting Service.

3.1.2 Hours of operation, services provided, and identification of ATS units are published in *ERSA*.

3.2 Air Traffic Control Service

3.2.1 An Air Traffic Control service is provided to:

a. all IFR flights in classes A, B, C, D and E airspace;

b. all VFR flights in classes B, C and D airspace;

c. all Special VFR flights in classes B, C and D airspace; and

d. all aerodrome traffic at controlled aerodromes.

3.3 **Flight Information Service (FIS)**

3.3.1 **Pilot Responsibility**

3.3.1.1 Pilots are responsible for obtaining information necessary to make operational decisions. To ensure that accurate information is obtained in adequate time, pilots must take into consideration that ATC initiated FIS is limited to aircraft within one hour's flight time of the condition or destination at time of receipt of the information by ATC. The only exception to this is SIGMET information, which shall cover a portion of the route up to two hours' flight time ahead of the aircraft.

3.3.2 **Preflight Information (*CAR 239*)**

3.3.2.1 Before beginning a flight, the pilot in command must study all available information appropriate to the intended operation. This requirement includes all Head Office and FIR NOTAM applicable to the en route phase of flight and location specific NOTAM for aerodromes.

3.3.2.2 The Preflight Briefing Service is primarily an automated service. Pilots are encouraged to obtain preflight briefing, either via the self-help electronic systems or through the briefing offices. These services are listed in *ERSA GEN*.

3.3.2.3 For pilots who require an elaborate briefing, contact numbers for ATS and Bureau of Meteorology (BoM) staff are available from the briefing offices.

3.3.2.4 Pilots must obtain an appropriate preflight briefing before departure from those places where suitable facilities exist. Where suitable facilities are not available, a briefing may be obtained from FLIGHTWATCH as soon as practicable after the flight commences. The information requested should be confined to data considered essential for the safe conduct of the flight to the first point of intended landing where additional information can be obtained.

3.3.2.5 Preflight briefing will not normally be provided on ATC communications channels.

3.3.3 **In-flight Information**

3.3.3.1 The in-flight information service consists of three elements:

- a. ATC Initiated FIS;
- b. Automatic Broadcast Services; and
- c. On-Request Service.

3.3.4 ATC Initiated FIS

3.3.4.1 ATC provides pilots with pertinent information that will affect flight within one hour's flight time (two hours for SIGMET). At the time the information is identified, information will be directed to pilots maintaining continuous communications and broadcast on appropriate ATS frequencies.

3.3.5 Automatic Terminal Information Service (ATIS)

3.3.5.1 Operational information required by aircraft for takeoff or landing is broadcast on a dedicated frequency and/or on the voice channel of radio navigation aids.

3.3.5.2 Outside the hours of tower activation, operational information of an unchanging nature may be broadcast over ATIS.

Note: For further information on automatic broadcast services, refer to GEN 3.5.

3.3.6 Aerodrome Flight Information Service (AFIS)

3.3.6.1 An AFIS provides pilots with an alerting service, local traffic and operational information on the CTAF assigned to the particular aerodrome.

3.3.6.2 Essential aerodrome information is provided by an Automatic Aerodrome Information Service (AAIS) broadcast on a dedicated frequency (similar to ATIS) during AFIS HRS.

3.3.7 Traffic Information

3.3.7.1 A traffic information service is provided, depending on higher priority duties of the controller or other limitations; e.g. surveillance limitations, volume of traffic and/or frequency congestion. Additionally, controllers may not be able to provide traffic information concerning all traffic in the aircraft's proximity. Traffic information does not relieve pilots of their responsibility to see and avoid other aircraft.

3.3.7.2 In Class G airspace, a traffic information service is provided to IFR flights about other conflicting IFR and observed VFR flights except:

- a. An IFR flight reporting taxiing or airborne at a non-controlled aerodrome will be advised of conflicting IFR traffic that is not on the CTAF; and
- b. An IFR flight inbound to a non-controlled aerodrome will be advised of conflicting IFR traffic until the pilot reports changing to the CTAF.

- 3.3.7.3 A Surveillance Information Service (SIS) is available on request, to VFR flights in classes E and G airspace within ATS surveillance system coverage, subject to ATC workload. Pilots receiving a SIS are provided with traffic information, an alerting service and on request position or navigation information.

Note: All information is advisory in nature. The pilot remains responsible for terrain clearance, aircraft-to-aircraft separation and obtaining clearances into controlled airspace.

- 3.3.7.4 Pilots wishing to receive a SIS must be in direct VHF communications with ATC and equipped with a serviceable SSR transponder or ADS-B transmitter. The pilot must maintain a continuous listening watch with ATC, advise ATC prior to any changes to track or level and advise prior to leaving the frequency.

- 3.3.7.5 SIS may be terminated at any time by the controller, or by pilot advice.

3.3.8 **On-Request Service - ATC and FLIGHTWATCH**

- 3.3.8.1 An On-Request FIS is available to aircraft in all classes of airspace on ATC VHF or HF (Domestic and International) frequencies.

- 3.3.8.2 Information derived from BoM weather radar sites is available to pilots on request, subject to ATS workload.

3.4 **Alerting Service**

- 3.4.1 An Alerting Service will be provided:

- a. for all aircraft provided with ATC service;
- b. in so far as practicable, to all other aircraft having filed a flight plan or otherwise known to the air traffic services; and
- c. to any aircraft known or believed to be the subject of unlawful interference.

3.5 **Safety Alerts and Avoiding Action**

- 3.5.1 ATC will issue a Safety Alert to aircraft, in all classes of airspace, when they become aware that an aircraft is in a situation that is considered to place it in unsafe proximity to:

- a. terrain;
- b. obstruction;
- c. active restricted or prohibited areas; or
- d. other aircraft.

3.5.2 When providing an ATS surveillance service, ATC will issue avoiding action advice as a priority, when they become aware that an aircraft is at risk of collision with another aircraft.

4. **CALCULATION OF LOWEST SAFE ALTITUDE**

4.1 A pilot using Grid LSALT for obstacle clearance is responsible for determining the allowance for navigation error that should be applied, considering the limitations of the navigation aids or method of navigation being used for position fixing. This navigation error allowance must be applied to the proposed track. The highest Grid LSALT falling within the area covered by the determined navigation error must be used.

4.2 For routes and route segments not shown on AIP aeronautical charts, the lowest safe altitude must not be less than that calculated in accordance with *para 4.3* within an area defined in the following *paras 4.6, 4.7, 4.8 and 4.9*.

4.3 Unreported obstacles up to 360FT may exist in navigation tolerance areas. The LSALT must be calculated using the following method:

- a. where the highest obstacle is more than 360FT above the height determined for terrain, the LSALT must be 1,000FT above the highest obstacle; or
- b. where the highest obstacle is less than 360FT above the terrain, or there is no charted obstacle, the LSALT must be 1,360FT above the elevation determined for terrain; except that
- c. where the elevation of the highest terrain or obstacle in the tolerance area is not above 500FT, the LSALT must not be less than 1,500FT.

4.4 An aircraft must not be flown under the IFR, lower than the published lowest safe altitude or the lowest safe altitude calculated in accordance with this section, except when being assigned levels in accordance with ATS surveillance service terrain clearance procedures or when being flown in accordance with a published DME arrival, instrument approach or holding procedure, or except when necessary during climb after departure from an aerodrome, or except during VMC by day (*CAR 178* refers).

4.5 If the navigation of the aircraft is inaccurate, or the aircraft is deliberately flown off-track, or where there is a failure of any radio navigation aid normally available, the area to be considered is a circle centred on the DR position, with a radius of 5NM plus 20% of the air distance flown from the last positive fix.

4.6 **For Routes Defined by Radio Navigation Aids or to be Navigated by DR**

The area to be considered must be within an area of 5NM surrounding and including an area defined by lines drawn from the departure point or en route radio aid, 10.3° each side of the nominal track (where track guidance is provided by a radio navigation aid), or 15° each side of the nominal track (where no track guidance is provided) to a limit of 50NM each side of track, thence paralleling track to abeam the destination and then converging by a semicircle of 50NM radius centred on the destination.

On shorter routes, where these lines are displaced by less than 50NM abeam the destination, they shall converge by a radius based on that lesser distance. Where the lines thus drawn come at any time within the coverage of an en route or destination radio aid the aircraft is equipped to use, they will converge by straight lines to that aid. The minimum angle of convergence which must be used in this case is 10.3° each side of track.

4.7 **For Routes Operated Under the RNP 2 Navigation Specification**

The area to be considered must be within an area of 5NM surrounding and including the departure point, the destination and each side of the nominal track.

4.8 **For Other Area Navigation Operations**

The area to be considered must be within an area of 5NM surrounding and including an area defined by lines drawn from the departure point not less than 15° each side of the nominal track to a maximum of:

- a. 8NM for a flight under the RNP 4 navigation specification;
- b. 7NM for flight under an RNAV navigation specification having a GNSS input; or
- c. 30NM for flight under a non GNSS area navigation specification.

Thence paralleling track to abeam the destination and converging by a semicircle of the same radius centered on the destination.

4.9 **For Aircraft Flown at Night Under the VFR**

The area to be considered must be:

- a. the area specified in *para 4.6, 4.7 or 4.8* for aircraft navigated by means of a radio navigation system; or
- b. within a radius of 10NM from any point along the aircraft's nominal track.

However, the pilot of an aircraft who has positively determined by visual fix that a critical obstruction has been passed may nevertheless descend immediately to a lower altitude, provided that the required obstacle clearance above significant obstructions ahead of the aircraft is maintained.

4.10 **An aircraft must not be flown at night under the VFR, lower than the published lowest safe altitude or the lowest safe altitude calculated in accordance with this section except:**

- a. during takeoff and climb in the vicinity of the departure aerodrome;
- b. when the destination aerodrome is in sight and descent can be made within the prescribed circling area of 3NM radius of the destination; or
- c. when being vectored.

5. CONTINGENCY PROCEDURES - AIR TRAFFIC SERVICES TEMPORARILY NOT AVAILABLE

5.1 Introduction

5.1.1 When Air Traffic Services are temporarily not available in a given airspace, the procedures contained in the following paragraphs may be authorised. Operators/pilots are responsible for obtaining any required changes to their Air Operator's Certificate (AOC) for operations in the classes and types of airspace addressed in the following paragraphs. Details of specific procedures will be promulgated by NOTAM.

5.1.2 Nothing in these procedures precludes the pilot from exercising responsibility for safe operations, including separation and collision avoidance with other aircraft in the air and on the ground.

5.2 Airspace Classification

5.2.1 Airspace subject to contingency will retain its ATS classification except that airspace associated with a tower whose hours of operation are non continuous will revert to the classification normally in place when the tower is closed.

5.3 En route Service Not Available

5.3.1 TIBA procedures will apply on published TIBA high and low frequencies, except that in Class G airspace other than over the high seas, published area VHF frequencies shall be used.

5.3.2 FIS and SAR alerting will be provided as remaining capability permits.

5.4 Approach Control Service Not Available

5.4.1 In Class C terminal airspace and control zones, TIBA procedures will apply utilising a nominated broadcast frequency. Additionally, mandatory broadcast procedures as specified in *para 5.7* shall be adopted.

5.4.2 In terminal airspace and the control zone associated with a Class D tower, ATS will be in accordance with procedures in force when the tower is closed under normal circumstance.

5.4.3 FIS and SAR alerting will be provided as remaining capability permits.

5.5 Aerodrome Control Service Not Available

5.5.1 At continuous aerodromes, TIBA procedures will apply utilising a nominated broadcast frequency. Additionally, mandatory broadcast procedures as specified in *para 5.7* shall be adopted.

5.5.2 At non continuous aerodromes, ATS will be in accordance with procedures in force when the tower is closed under normal circumstances.

5.5.3 FIS and SAR alerting will be provided as remaining capability permits.

5.6 Airspace Management

5.6.1 Procedures consistent with *Attachment C to ICAO Annex 11* may be promulgated by NOTAM to assist with management of operations in contingency airspace. Procedures may include one or more of, but not be limited to:

- a. Programmed takeoff and arrival times at locations where there is a likelihood of high traffic densities occurring;
- b. additional mandatory broadcast requirements in terminal airspace;
- c. nomination of preferred runways;
- d. a requirement for all operations in Class C terminal areas to be under the IFR;
- e. a requirement to operate TCAS and transponder where fitted; and
- f. a requirement to display navigation lights.

**5.7 Mandatory Broadcast Procedures
(ATC Temporarily Not Available)**

5.7.1 When ATC is temporarily not available, mandatory broadcast procedures may be specified in addition to TIBA broadcasts and will be used by pilots to provide advisory traffic information to other aircraft and to arrange mutual segregation. Mandatory broadcast frequencies will be notified by NOTAM.

5.7.2 When arriving or departing from an aerodrome where mandatory broadcast procedures apply, pilots must monitor the appropriate mandatory broadcast frequency. Broadcasts must be made as follows:

Situation	Phrase
1. Broadcasts When a pilot broadcasts intentions.	ALL STATIONS (location) (appropriate information)
2. Taxi Taxiing at an aerodrome.	(aircraft type) TAXIING (location) RUNWAY (number) FOR (destination, or departure quadrant or intention)
3. About to Commence Takeoff	LINING UP/ROLLING (runway number) TURNING (left/right) TRACKING (quadrant) CLIMBING TO (level)
4. Departing	DEPARTED (location) TRACKING (degrees magnetic) CLIMBING TO (level) FOR (destination)
5. Inbound When inbound - before crossing the boundary of the area in which mandatory broadcasts apply.	(Aircraft type) (position reported as either the radial, bearing or quadrant from the aerodrome) (level) (intentions)
6. Joining the Circuit	(Aircraft type) JOINING (position in circuit) RUNWAY (number)

5.7.3 Pilot discretion should be used in making other than the prescribed calls to assist other traffic; e.g. executing a missed approach, or position in the circuit area, or leaving levels designated on TMA routes.

6. TRAFFIC INFORMATION BROADCAST BY AIRCRAFT (TIBA)

6.1 TIBA Procedures

6.1.1 TIBA procedures are intended to permit reports and relevant supplementary information of an advisory nature to be transmitted by pilots for the information of pilots of other aircraft in the vicinity.

6.2 Frequency

6.2.1 Aircraft must maintain a listening watch on the appropriate TIBA frequency. Where VHF is used for air-ground communications with ATS and an aircraft has two serviceable VHF sets, one must be tuned to the appropriate ATS frequency and the other to the TIBA frequency.

- 6.2.2 The appropriate TIBA frequencies are:
- at or above FL200, 128.95MHz;
 - below FL200:
 - In Class G airspace other than in oceanic areas, the relevant Area VHF;
 - otherwise 126.35MHz.

6.3 **Listening Watch**

- 6.3.1 A listening watch must be maintained on the TIBA frequency 10 minutes before entering the designated airspace until leaving this airspace. For an aircraft taking off from an aerodrome located within 10 minutes flying time of that airspace, listening watch must start as soon as practicable after takeoff.

6.4 **Time of Broadcasts**

- 6.4.1 Broadcasts must be made:
- 10 minutes before entering the designated airspace or, for an aircraft taking off from an aerodrome located with 10 minutes flying time of the airspace, as soon as practicable after takeoff;
 - 10 minutes prior to crossing a reporting point;
 - 10 minutes prior to crossing or joining an ATS contingency route;
 - at 20 minute intervals between distant reporting points;
 - 2 to 5 minutes, where possible, before a change in flight level;
 - at the time of a change in flight level; and
 - at any other time considered necessary by the pilot.

6.5 **Acknowledgement of Broadcasts**

- 6.5.1 Broadcasts should not be acknowledged unless a potential collision risk exists.

6.6 **Changes of Cruising Level**

- 6.6.1 Cruising level changes should not be made within the designated airspace, unless considered necessary by pilots to avoid traffic conflicts, for weather avoidance or for other valid operational reasons.

- 6.6.2 When changes to cruising level are unavoidable, all available aircraft lighting which would improve the visual detection of the aircraft must be displayed while changing levels.
- 6.6.3 When a change of level is anticipated or initiated, a change of level report must be made. When the new level is reached, a report advising that the aircraft is maintaining the new level must be made.

6.7 **Collision Avoidance**

- 6.7.1 If, on receipt of a traffic information broadcast from another aircraft, a pilot decides that immediate action is necessary to avoid an imminent collision risk to the aircraft, and this cannot be achieved in accordance with the right of way provisions or TCAS resolution, the pilot should:
- a. unless an alternative manoeuvre appears more appropriate, immediately descend 1,000FT if above FL410, or 500FT if at or below FL410;
 - b. display all available aircraft lighting which would improve the visual detection of the aircraft;
 - c. as soon as possible, reply to the broadcast advising action being taken;
 - d. notify the action taken on the appropriate TIBA frequency; and
 - e. as soon as practicable, resume normal flight level, notifying the action on the appropriate TIBA frequency.

6.8 **Position Reporting**

- 6.8.1 Normal position reporting procedures should be continued at all times, regardless of any action taken to initiate or acknowledge a traffic information broadcast.
- 6.8.2 A position report must be made on the next CTA/Area VHF 15 minutes prior to leaving airspace in which TIBA procedures apply to obtain a clearance or re-establish SARWATCH on the appropriate ATS frequency.

7. **CONTROL OF VEHICULAR AND PEDESTRIAN MOVEMENT ON AERODROMES**

- 7.1 Drivers of vehicles which need to operate on the manoeuvring area must not seek permission to do so from ATC, unless the driver and vehicle holds the appropriate Driver Authority for Use Airside as issued by the airport operator and/or owner.

-
- 7.2 ATC has the authority to issue or to withhold for reasons of traffic, permission for vehicular or pedestrian movement on the manoeuvring area. When it is permitted, such movement will be rigidly controlled.
- 7.3 All persons, including drivers of vehicles, will be instructed to stop and hold position for radio clearances, or light signal clearances, from the tower before crossing any runway or taxiway, unless they are on a portion of the manoeuvring area marked off by lights, flags or other conventional warning signs. In radio advices to aircraft, ATC will identify as distinctly as possible, persons or vehicles on the manoeuvring area.
- 7.4 All persons, including drivers of vehicles, on the manoeuvring area must stop and hold at all lighted stop bars and may only proceed further when a clearance to enter or cross the runway has been received and the stop bar lights have been switched off. (See also *ENR 1.1 Section 2.4.3.*)
- 7.5 All persons, including drivers of vehicles, required to hold short of a runway, must hold at the appropriate runway-holding position for that runway, or the runway strip edge.
- 7.6 All persons, including drivers of vehicles, in receipt of a clearance from ATC to enter a runway, must hold short of an intersecting runway except when an instruction “CROSS RUNWAY (number)” has been issued and the stop bar lights, where fitted, have been switched off. (See also *ENR 1.1 Section 2.4.3.*)

GEN 3.4 COMMUNICATION SERVICES

1. INTRODUCTION

- 1.1 The following services are provided:
- a. Radio Navigation,
 - b. Radio Communication, and
 - c. Special Broadcast.
- 1.2 Details of facilities and services appear in *ERSA*, *DAP* and aeronautical charts.

2. RADIO NAVIGATION SERVICE

2.1 General

The following types of radio aids to navigation operate within Australian FIRs:

- a. MF Non-Directional Beacon (NDB);
- b. VHF Omni-Directional Radio Range (VOR);
- c. Distance Measuring Equipment (DME);
- d. Instrument Landing System (ILS);
- e. Primary Surveillance Radar (PSR);
- f. Secondary Surveillance Radar (SSR);
- g. Global Navigation Satellite System (GNSS) including GPS, GLONASS, Galileo etc;
- h. GBAS Landing System (GLS) - (Polarisation GBAS/H);
- i. Tactical Air Navigation System (TACAN) (military locations);
- j. Automatic Dependent Surveillance – Contract (ADS-C) (FANS-1/A); and
- k. Automatic Dependent Surveillance – Broadcast (ADS-B) (1090MHz Extended Squitter).

2.2 Identification

- 2.2.1 Radio navigation aids serving the same location normally radiate the same identification codes. Further, at ILS/localiser installations, the normal identification is preceded by the letter “I”; and at private non-accredited NDBs, a four letter identifier is radiated, the first letter being “X”.

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- 2.2.2 A GBAS station is identified by the relevant Aerodrome's 4 letter ICAO code where the GBAS is installed (e.g. YSSY). Approaches provided from the GBAS station are identified by the Reference Path ID field in the Final Approach Segment (FAS) data blocks. The Reference Path ID is unique to the approach to be used and published on the Approach Plate for the runway. Each Reference Path ID commences with a letter "G".
- 2.3 **Non-Directional Beacons**
- 2.3.1 Due to the frequency range available within Australia, a number of beacons share the same frequency. Where this occurs, the beacons are widely spaced geographically.
- 2.3.2 Some NDBs have been sited in mountainous country and reflections of the signal can cause bearing fluctuations which may occasionally exceed 10°. Since these fluctuations may tend to obscure the "over the top" indications, other aids should be used as a check. The rated coverage of these NDBs is generally reduced to no more than 30NM.
- 2.4 **VHF Omni-Directional Radio Range (VOR)**
- 2.4.1 These aids operate in the frequency band 112 – 118MHz. The track radials are designated by their magnetic bearing away from the station.
- 2.5 **Distance Measuring Equipment (DME)**
- 2.5.1 Australia uses the international 1000MHz system. The system uses the channels designated in *ICAO Annex 10* for operation with the VOR frequency selected for the same site. This "pairing" facilitates compatible airborne equipment to display both the DME and VOR information by the selection of only the VOR frequency.
- 2.5.2 When specific ICAO requirements are met, collocated DME and VOR are said to be "associated" and are shown in AIP documents as VOR/DME with the VOR frequency. In other cases, a bracket will be used to indicate collocation of navigation aids.
- 2.5.3 When a DME is not "associated" with the VOR at the same site, it is identified in NOTAM and AIP documents by its channel number and suffix with the VOR frequency in parenthesis - e.g. DME 111X (116.4).

2.6 Tactical Air Navigation (TACAN)

TACAN systems are installed at a number of military/joint-user aerodromes. The DME element of the TACAN can be obtained by using its “paired” VOR frequency.

Note: TACAN and VOR installations at joint-user airfields are never “associated”.

TACAN is shown on AIP aeronautical charts by the channel number with the “paired” VOR frequency - e.g. TACAN88 (114.1).

2.7 Public Broadcasting Stations

Some broadcast stations are shown on visual navigation charts when they may be of value as supplementary aids to navigation. Broadcast station locations and frequencies are published in *ERSA*.

2.8 Abnormal Operation of Radio Navigation Aids

2.8.1 Users must notify ATS of any abnormal condition in the operation of any radio navigation facility.

2.8.2 **Aids not Available for Navigation.** Sometimes a facility that is not suitable for navigation has to be operated for test purposes. To provide a warning to pilots in such cases, in addition to NOTAM or verbal advice, the station identifier will either:

a. be suppressed; or

b. for ILS:

- (1) if the localiser is out of service, the glide path will not be radiated and there will be no identifier; or
- (2) if the glide path is out of service but radiating test signals, the localiser will not be radiated; or
- (3) if the glide path is out of service and switched off, the localiser may be radiated together with the station identification; or

c. for GLS:

- (1) when required for maintenance or on failure the system will be withdrawn from service; or
- (2) if the audible Reference Path ID is corrupt or not received, the system will be withdrawn from service.

d. for newly installed NDBs or experimental facilities, the identifier XP will be used.

Note: When a disabled GLS approach is selected, the Reference Path ID may still be displayed on the Primary Flight Display and the audible IDENT heard. No deviation indications or steering commands will be displayed.

2.9 **Remote facilities**

Sometimes circumstances necessitate the introduction of a station identification before the aid is notified as being available for operational use. Whilst use of the aid in these circumstances does not present an operational hazard, navigation by use of the aid must not be planned until its availability is notified by NOTAM.

2.10 **Monitoring of Identifier**

If a station identification is not received or is corrupt, the aid should not be used as the primary means of navigation except when its serviceability in this condition is confirmed by NOTAM.

2.11 **Global Navigation Satellite System (GNSS)**

2.11.1 GNSS is a worldwide satellite navigation service comprising of one or more satellite constellations, including GPS, aircraft receivers and integrity monitoring, augmented as necessary to achieve specific navigational performance.

2.12 **Global Positioning System (GPS)**

2.12.1 GPS is a satellite-based radio navigation system, based on the World Geodetic System - 1984 (WGS-84) datum, which provides highly accurate position and velocity information.

2.12.2 Use of GPS for IFR operations is dependent on the US Department of Defence GPS Standard Positioning Service operating to its defined full operating capability. Use of this service to meet the requirements for a sole means navigation system must be in accordance with *GEN 1.5 Section 2*.

3. **COMMUNICATIONS SERVICES**

3.1 **Radio Frequencies**

3.1.1 **General.** Air ground communications in Australian FIRs are conducted by radiotelephony in the VHF, UHF and HF bands. Air-to-air communications are normally conducted in the VHF band. The requirements for carriage of radio communications systems are contained in *GEN 1.5 Section 1*. Frequencies are published in *ERSA*. VHF is the primary frequency band, with HF only being used when outside VHF coverage.

Selected VHF frequencies are published in *ERSA* and are depicted on AIP Aeronautical Navigation Charts. The estimated coverage is shown on *Planning Chart Australia (PCA)*.

- 3.1.2 **UHF** is intended primarily for use with military aircraft. At some locations, re-transmit facilities, which permit UHF and VHF aircraft to copy VHF/UHF transmissions conducted with a common ATS unit, are installed.
- 3.1.3 **HF - Domestic Operations.** The National Aeronautical HF network appropriate to the area of operations is shown in MAP (Charts). In TCTAs and OCAs, the ground organisation may nominate the appropriate International Network to be used by aircraft. For those operations outside VHF coverage, where the maintenance of a continuous two way communications watch with an airways operations unit is mandatory, the carriage of suitable HF frequencies is required.
- 3.1.4 **HF - International Operations.** HF networks to be used in order of preference are:
 - a. the appropriate international network (SEA3, SP6, IN01); or
 - b. the national network shown in MAP (Charts).
- 3.1.5 **Interpilot Air-to-Air Communication.** In accordance with regional agreements, 123.45MHz is designated as the air-to-air VHF communications channel. Use of this channel will enable aircraft engaged in flights over remote and oceanic areas out of range of VHF ground stations and not in the vicinity of a non-controlled aerodrome depicted on a chart to exchange necessary operational information and to facilitate the resolution of operational problems.
- 3.1.6 **SELCAL** is available to appropriately equipped aircraft. Frequencies for this service are listed in *ERSA*.
- 3.2 **Certified Air/Ground Radio Service (CA/GRS)**
- 3.2.1 A Certified Air/Ground Radio Service is an aerodrome-based radio information service, which may operate at non-controlled aerodromes. The service is a safety enhancement facility which provides pilots with operational information relevant to the particular aerodrome. The service is operated by or for the aerodrome operator to published hours, on the CTAF assigned to the particular aerodrome. It is not an Airservices or RAAF-provided air traffic service.
- 3.2.2 The CA/GRS does not provide any separation service.

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- 3.2.3 The callsign of the service is the aerodrome location followed by "Radio"; e.g. "Ayers Rock Radio". The radio operators of the service have been certified to meet a CASA standard of communication technique and aviation knowledge appropriate to the service being provided.
- 3.2.4 The CA/GRS is provided to all aircraft operating within the designated broadcast area for the specific location. Refer to *ERSA* for the location specific designated broadcast areas.
- 3.2.5 When a CA/GRS is operating, pilot procedures are unchanged from the standard non-controlled aerodrome operating and communication procedures. *ERSA* includes location specific information relating to procedures.
- 3.2.6 The operational information provided by a CA/GRS assists pilots in making informed operational decisions. Pilots retain authority and responsibility for the acceptance and use of the information provided.
- 3.2.7 Aircraft making the normal inbound or taxiing broadcast receive a responding broadcast from the CA/GRS operator, conveying the following information:
- a. Confirmation of the correct CTAF.
 - b. Current, known, relevant traffic in the vicinity of the aerodrome and on the manoeuvring area of the aerodrome. Traffic information may include some or all of the following:
 - (1) the aircraft type, callsign, position and intention; or
 - (2) where circuit flying is in operation, general advice on the number of aircraft in the circuit, and position in the circuit if relevant.

Note: this information is provided as an advisory to pilots in VMC and to assist pilots in arranging self-separation in IMC.

- c. Weather conditions and operational information for the aerodrome. The information which may be advised includes:
 - (1) runway favoured by wind or noise abatement,
 - (2) runway surface conditions,
 - (3) wind direction and speed,
 - (4) visibility and present weather,
 - (5) estimated cloud base,
 - (6) aerodrome surface temperature, and
 - (7) aerodrome QNH.

This information will be provided by means of an Automatic Aerodrome Information Service (AAIS) broadcast on a discrete frequency (similar to ATIS) during OPR HR of CA/GRS or on request to the CA/GRS operator. Pilots should monitor the published AAIS frequency before making the taxiing or inbound broadcast, and indicate that the AAIS information has been received when making the inbound or taxiing broadcast.

d. Other operational information of a local nature, relevant to the safety of operations at the aerodrome.

3.2.8 The CA/GRS will provide emergency services call-out if requested by the pilot in an emergency or, if in the opinion of the operator, a call-out is warranted.

3.2.9 The weather information provided by the service is derived from approved measuring equipment, which meets BoM aeronautical precision standards. QNH provided by a CA/GRS or AAIS may be used to reduce landing, circling and alternate minima in accordance with *ENR 1.5 para 5.3* (QNH Sources).

3.2.10 The CA/GRS operator may act as a representative of an air operator (where formal agreement with the operator has been established) for the purposes of holding SARWATCH.

3.3 **UNICOM**

3.3.1 UNICOM (Universal Communications) is a non-ATS communications service provided to enhance the value of information normally available about a non-controlled aerodrome.

3.3.2 The primary function of the frequency used for UNICOM services where the UNICOM is the CTAF is to provide pilots with the means to make standard positional broadcasts when operating in the vicinity of an aerodrome. Participation in UNICOM services must not inhibit the transmission of standard positional broadcasts.

3.3.3 Participation in UNICOM services relates to the exchange of information concerning:

- a. fuel requirements;
- b. estimated times of arrival and departure;
- c. aerodrome information;
- d. maintenance and servicing of aircraft including the ordering of parts and materials urgently required;
- e. passenger requirements;

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- f. unscheduled landings to be made by aircraft;
 - g. general weather reports; and
 - h. basic information on traffic.
 - 3.3.4 This information is available to all aircraft during the times that the UNICOM is operating.
 - 3.3.5 Weather reports, other than simple factual statements about the weather, may not be provided by UNICOM operators unless they are properly authorised to make weather observations under *CAR 120*.
 - 3.3.6 The UNICOM operator is solely responsible for the accuracy of any information passed to an aircraft, while the use of information obtained from a UNICOM is at the discretion of the pilot in command.
 - 3.3.7 Stations providing a UNICOM service are required to be licensed by the Australian Communications and Media Authority (ACMA). Detailed information regarding the licensing and use of equipment may be obtained by contacting the ACA in the appropriate State or Territory capital city.
 - 3.3.8 UNICOM operators must comply with the requirements of *CAR 83 (2)*.
 - 3.4 **Aerodrome Frequency Response Unit**
 - 3.4.1 To assist pilots' awareness of inadvertent selection of an incorrect VHF frequency when operating into non-controlled aerodromes, a device known as an Aerodrome Frequency Response Unit (AFRU) may be installed. An AFRU will provide an automatic response when pilots transmit on the CTAF for the aerodrome at which it is installed.
 - 3.4.2 The features of the AFRU are as follows:
 - a. When the aerodrome traffic frequency has not been used for the past five (5) minutes, the next transmission over two (2) seconds long will cause a voice identification to be transmitted in response, e.g. "GOULBURN CTAF".
 - b. When the aerodrome traffic frequency has been used within the previous five (5) minutes, a 300 millisecond tone will be generated after each transmission over two (2) seconds long.
 - 3.4.3 A series of three (3) microphone clicks within a period of five (5) seconds will also cause the AFRU to transmit a voice identification for the particular aerodrome.

- 3.4.4 In the event that the transmitter in the AFRU becomes jammed for a period of greater than one minute, the unit will automatically shut down.
- 3.4.5 The operation of the AFRU provides additional safety enhancements by confirming the operation of the aircraft's transmitter and receiver, the volume setting, and that the pilot has selected the correct frequency for use at that aerodrome.
- 3.5 **High Frequency Harmful Radio Interference**
- 3.5.1 Domestic aeromobile HF communications in Australia are sometimes subjected to periods of significant radio interference.
- 3.5.2 The harmful interference is generally broadcasting in a variety of foreign languages and is not aviation related. Airservices Australia may use recorded messages in a variety of languages and dialects to advise the "target" that they are transmitting on a frequency reserved for aviation communications, and that they should cease transmitting.
- 3.5.3 Recorded messages may broadcast for up to three minutes. During this time, the frequency will not be useable by the ATS centre controlling the broadcast, and aircraft wishing to communicate on HF may need to change to an alternative frequency, or wait until the broadcast is completed.
- 3.5.4 Minor delays in responding to VHF calls may also occur whilst HF broadcasts are taking place. Broadcasts are made on a "workload permitting" basis and ATS will terminate the broadcast if higher priority HF or VHF communications are required.
- 3.6 **Telephone Facilities**
- 3.6.1 Telephone services may be used as follows to contact Australian ATS units for urgent, non-routine or safety-related matters, or to report arrival:
 - a. **ATS unit telephone numbers.**
Direct dial or reverse charge to the ATS unit telephone numbers listed in ERSA. Airservices will bear the cost of operator-connected calls of an urgent operational nature.
 - b. **Satellite Voice Communication (SatVoice).**
Contact can be made by dialling the following full telephone numbers or abbreviated dialling codes:

Australian ATC Facility	Full Telephone Number	Abbreviated Dialling Code
Brisbane Centre	+61 7 3866 3868	450302
Melbourne Centre	+61 3 9338 4032	450303
Perth TCU	+61 8 9476 8545	450304
Sydney TCU	+61 2 9556 6875	450305

3.6.2 Telephone facilities may be used to contact the National Coordination Centre (NCC) for routine matter as detailed in AIP and ERSA.

3.7 **Recording Of Operational Communications**

3.7.1 All ATS units are equipped with automatic recording facilities which record all communications to and from each ATS unit, irrespective of the medium used.

3.8 **Aeronautical Fixed Telecommunication Network (AFTN)**

3.8.1 The AFTN is established primarily for ATS unit intercommunication. However, subject to certain provisos, the AFTN may be used to transmit messages concerning flight safety, flight regularity, reservation and general operating agency aspects. Details are available from ATS units.

3.8.2 A matrix of the Australian AFTN circuitry is contained at *APPENDIX 1*.

3.9 **Special Broadcast Services**

3.9.1 **ATIS** is a continuous transmission, on a discrete frequency or on the IDENT channel of a VOR or NDB, of the operational information. Details are in *GEN 3.3 Section 3.3* and frequencies in *ERSA*.

3.9.2 **AERIS** is a continuous transmission of operational information on a discrete frequency. AERIS is described in *ERSA GEN*.

3.9.3 **VOLMET** broadcasts contain selected meteorological information on discrete frequencies. Details are in *GEN 3.5 section 7.2* and frequencies in *ERSA*.

3.9.4 **AWIS** broadcasts actual weather conditions on navigation aids from AWS sites which use Bureau of Meteorology AWS equipment. Details are in *GEN 3.5 Section 7.3* and frequencies in *ERSA*.

3.10 Aeronautical Codes

3.10.1 Aeronautical codes, including location indicators for Australian aerodromes, are published in *ERSA* and on aeronautical charts.

4. RADIOTELEPHONY PROCEDURES**4.1 Introduction**

4.1.1 The communication procedures, phraseologies and requirements contained in this section have been selected to harmonise with ICAO, and international practices where applicable. Additional phrases to supplement where ICAO is silent have been included.

4.1.2 Primary reference documents on radiotelephony are *ICAO Doc 4444*, *Doc 9432*, and *Annex 10*. ATS and pilots should refer to these documents to obtain additional information as necessary. Only procedures appropriate to Australia and commonly used phrases are contained in this section.

4.1.3 Use of standard phrases for radio telephony communication between aircraft and ground stations is essential to avoid misunderstanding the intent of messages and to reduce the time required for communication.

4.1.4 Where circumstances warrant, and no phraseology is available, clear and concise plain language should be used to indicate intentions.

4.1.5 Phraseologies contained in this section are generic and, although primarily reflecting a controlled airspace environment, pilots operating in Class G airspace should use these generic phrases unless specific Class G phrases are shown.

4.2 General**4.2.1 Symbols and Parentheses**

Words in parentheses “()” indicate that specific information, such as a level, a place, or a time, etc, must be inserted to complete the phrase, or alternatively, that optional phrases may be used. Words in square parentheses “[]” indicate optional additional words or information that may be necessary in specific instances.

4.2.2 The following symbols indicate phraseologies which may differ from those used in an international aviation environment, but are necessitated by Australian requirements.

- UNIQUE TO AUSTRALIA (ICAO SILENT)
- ▲ MILITARY SPECIFIC PHRASEOLOGIES

- 4.2.3 Phraseologies show the text of message components without callsigns. They are not intended to be exhaustive, and when circumstances differ, pilots, ATS and Air Defence personnel, and other ground personnel will be expected to use appropriate subsidiary phraseologies which should be clear, concise, and designed to avoid any possible confusion.
- 4.2.4 For convenience, the phraseologies are grouped according to types of air traffic service. However, users should be familiar with and use, as necessary, phraseologies from groups other than those referring specifically to the type of air traffic service being provided. All phraseologies must be used in conjunction with callsigns (aircraft, ground vehicle, ATC or other) as appropriate.
- 4.2.5 Phraseologies for the movement of vehicles, other than tow-tractors on the manoeuvring area, are not listed separately as the phraseology associated with the movement of aircraft is applicable. The exception is for taxi instructions, in which case the word “PROCEED” will be substituted for the word “TAXI” when ATC communicates with vehicles.

4.3 **Transmission Format**

- 4.3.1 When initiating a transmission to ATS, pilots will commence the transmission with the callsign of the unit being addressed followed by the aircraft callsign.
- 4.3.2 The ATS unit will respond using the station’s callsign followed by their callsign. In the absence of an instruction to “STAND BY”, this response by the ATS unit is an invitation for the aircraft calling to pass their message.

Note: The use of the words “GO AHEAD” is no longer considered appropriate due to the possibility of misconstruing “GO AHEAD” as an authorisation for an aircraft to proceed.

- 4.3.3 A readback of an ATS message will be terminated with the aircraft’s callsign.

4.4 **Readback Requirements**

- 4.4.1 Pilots must transmit a correct readback of ATC clearances, instructions and information which are transmitted by voice. For other than Item a, only key elements of the following clearances, instructions, or information must be read back ensuring sufficient detail is included to indicate compliance:

- a. an ATC route clearance in its entirety, and any amendments;
Note: "Rest of clearance unchanged" is not required to be read back.
- b. en route holding instructions;
- c. any route and runway-holding position specified in a taxi clearance;
- d. any clearances, conditional clearances or instructions to hold short of, enter, land on, line-up on, wait, take-off from, cross, taxi or backtrack on, any runway or HLS;
- e. any approach clearance;
- f. assigned runway or HLS;
- g. altimeter settings directed to specific aircraft, radio and radio navigation aid frequency instructions;

Note: An "expectation" of the runway to be used is not to be read back.

- h. SSR codes, data link logon addresses;
- i. level instructions (including 'VIA SID/STAR TO' when this is part of the instruction), direction of turn, heading and speed instructions.

4.4.2 The controller will listen to the readback to ascertain that the clearance or instruction has been correctly acknowledged and will take immediate action to correct any discrepancies revealed by the readback.

4.4.3 Reported level figures of an aircraft must be preceded by the words "FLIGHT LEVEL" when related to standard pressure and may be followed by the word "FEET" when related to QNH.

4.5 **Conditional Clearances**

4.5.1 In all cases, a conditional clearance will be given in the following order and consist of:

- a. identification (callsign);
- b. the condition (including position of the subject of the condition);
- c. the clearance; and
- d. brief reiteration of the condition.

4.6 Route Terminology

- 4.6.1 The phrase “FLIGHT PLANNED ROUTE” may be used to describe any route or portion thereof that is identical to that filed in the flight notification and sufficient routing details are given to definitely establish the aircraft on its route.

4.7 Amended Route or Level

- 4.7.1 When ATS provide an initial airways clearance that is not in accordance with the details currently held by ATC system, ATS will prefix the route and/or level details with the word “AMENDED”.
- 4.7.2 When an issued airways clearance needs to be changed ATS will prefix the new route and/or level details with the word “RECLEARED”. The level will be stated in all clearance changes regardless of whether a change to the cleared level is made or not.
- 4.7.3 The prefixes “AMENDED” and “RECLEARED” will not be used:
- a. for SID or STAR clearances; or
 - b. during normal progressive climb/descent instructions

4.8 Language

- 4.8.1 English language must be used for all air-ground RTF communications within Australian FIRs unless use of an alternative language has been arranged with ATS prior to any specific flight.

4.9 Phonetic Alphabet

- 4.9.1 When proper names, service abbreviations and words of which the spelling is doubtful are spelled out in radiotelephony, the alphabet shall be used as follows:

Letter/Word	Pronunciation	Letter/Word	Pronunciation
A ALFA	AL fah	B BRAVO	BRAH voh
C CHARLIE	CHAR lee or SHAR lee	D DELTA	DELL tah
E ECHO	ECK ho	F FOXTROT	FOKS trot
G GOLF	GOLF	H HOTEL	ho TELL
I INDIA	IN dee A	J JULIETT	JEW lee ETT
K KILO	KEY loh	L LIMA	LEE mah
M MIKE	MIKE	N NOVEMBER	no VEM ber
O OSCAR	OSS cah	P PAPA	pah PAH
Q QUEBEC	keh BECK	R ROMEO	ROW me oh
S SIERRA	see AIR rah	T TANGO	TANG go
U UNIFORM	YOU nee form or OO nee form	V VICTOR	VIK tah
W WHISKEY	WISS key	X X-RAY	ECKS ray
Y YANKEE	YANG key	Z ZULU	ZOO loo

Note: For pronunciation, syllables to be emphasised are in all capitals.

4.10 **Pronunciation of numbers**

4.10.1 Radiotelephony pronunciation of numbers shall be as follows:

0 ZE-RO	5 FIFE	Decimal	DAY-SEE-MAL
1 WUN	6 SIX	Hundred	HUN-dred
2 TOO	7 SEV-en	Thousand	TOU-SAND
3 TREE	8 AIT		
4 FOW-er	9 NIN-er		

Note: The syllables printed in capital letters in the above list are to be stressed.

- 4.11.4 All numbers used in the transmission of transponder codes should be transmitted by pronouncing each digit separately except that transponder code containing whole thousands should be transmitted by pronouncing the digit in the number of thousands followed by the word THOUSAND.

Transponder codes	Transmission format
2,400	SQUAWK TWO FOUR ZERO ZERO
1,000	SQUAWK ONE THOUSAND
2,000	SQUAWK TWO THOUSAND

- 4.11.5 All numbers used in the transmission of altitude, cloud height, visibility and RVR, which contain whole hundreds and whole thousands, should be transmitted by pronouncing each digit in the number of hundreds or thousands followed by the word HUNDRED or THOUSAND as appropriate. Combinations of thousands and whole hundreds should be transmitted by pronouncing each digit in the number of thousands followed by the word THOUSAND followed by the number of hundreds followed by the word HUNDRED.

Element	Transmission format
<i>Altitude</i>	
800	EIGHT HUNDRED
3,400	THREE THOUSAND FOUR HUNDRED
12,000	ONE TWO THOUSAND
<i>Cloud height</i>	
2,200	TWO THOUSAND TWO HUNDRED
4,300	FOUR THOUSAND THREE HUNDRED
<i>Visibility</i>	
1,000	VISIBILITY ONE THOUSAND
700	VISIBILITY SEVEN HUNDRED
<i>RVR</i>	
600	RVR SIX HUNDRED
1,700	RVR ONE THOUSAND SEVEN HUNDRED

- 4.11.6 When providing information regarding relative bearing in terms of the 12-hour clock, the information should be transmitted by pronouncing the double digits as TEN, ELEVEN, or TWELVE [O'CLOCK].
- 4.11.7 Numbers containing a decimal point should be transmitted with the decimal point in appropriate sequence being indicated by the word DECIMAL.

Number	Transmitted as
100.3	ONE ZERO ZERO DECIMAL THREE
38,143.9	THREE EIGHT ONE FOUR THREE DECIMAL NINE
29.93 (<i>inches QNH</i>)	QNH TWO NINE DECIMAL NINE THREE
M0.84 (Mach)	MACH DECIMAL EIGHT FOUR

- 4.11.8 When transmitting time, only the minutes of the hour should normally be required. Each digit should be pronounced separately. However, the hour should be included when any possibility of confusion is likely to result.

Element	Transmitted as
<i>Time</i>	
0920	TIME TWO ZERO or ZERO NINE TWO ZERO
1643	TIME FOUR THREE or ONE SIX FOUR THREE

Accurate time check (nearest half minute)

0945 and 25 seconds TIME **FOUR FIVE AND A HALF** or **ZERO NINE FOUR FIVE AND A HALF**

4.12 **Ground Station Callsigns**

4.12.1 **ATS Callsigns**

- 4.12.2 ATS units are identified by the name of the location followed by the service available as follows:

CENTRE	En route area control, SIS and FIS.
APPROACH	Approach control where provided as a separate function.
DEPARTURES	Departure control where provided as a separate function.
FINAL/DIRECTOR	Surveillance control providing vectors onto final approach.
TOWER	Aerodrome control or aerodrome and approach control where these services are provided from an aerodrome control tower, e.g. Coffs Harbour.
GROUND	Surface movement control.
DELIVERY	Clearance delivery to departing aircraft.
FLIGHTWATCH	Flight Information Service.

- 4.12.3 The name of the location or the service may be omitted provided that satisfactory communication has been established.

4.13 **Aircraft Callsigns**

- 4.13.1 Improper use of callsigns can result in pilots executing a clearance intended for another aircraft. Callsigns should never be abbreviated on an initial contact or at any time when other aircraft callsigns have similar numbers/sounds or identical letters/numbers, e.g. CHARLIE WHISKEY ZULU - WHISKEY CHARLIE ZULU.

- 4.13.2 Pilots must be certain that aircraft identification is complete and clearly identified before taking action on an ATC clearance. ATS will use full or abbreviated callsigns in accordance with section 4.19. The pilot may only use an abbreviated callsign when initiated by ATS. When aware of similar/identical callsigns, ATS will take action to minimise errors by:

- emphasising certain numbers/letters,
- repeating the entire callsign, e.g. QANTAS451 QANTAS451, or
- repeating the prefix, e.g. QANTAS451 QANTAS, or
- asking pilots to use a different callsign, either temporarily or for the duration of the flight.

Pilots should use the phrase “VERIFY CLEARANCE FOR (complete callsign)” if doubt exists concerning proper identity.

- 4.13.3 Civil aircraft pilots may state the aircraft type, model or manufacturer’s name, followed by the digits/letters of the registration number, e.g.

Bonanza CHARLIE ALPHA ECHO

Cherokee ALPHA BRAVO CHARLIE.

4.14 **Flight Number Callsigns - Using Group Form**

- 4.14.1 Within Australian airspace, “group form” is the preferred means of transmitting callsign/flight number. Group form should also be used with military and other aircraft using a rootword callsign with numeric suffix.

- 4.14.2 Group form is the grouping of numbers into pairs, or where a number ending in “00” is spoken in hundreds (*refer para 4.15*). For three digit numbers, the second and third numbers are grouped. Examples are as follows:

QLINK 122

QLINK ONE TWENTY TWO

QANTAS 1220

QANTAS TWELVE TWENTY

CAR 21

CAR TWENTY ONE

CLASSIC 12

CLASSIC TWELVE

VIRGIN 702

VIRGIN SEVEN ZERO TWO

BIRDOG 021

BIRDOG ZERO TWENTY ONE

- 4.14.3 Pilots and ATS should be aware that the preference to use “group form” does not invalidate any transmissions made in conventional formats. However, to retain the integrity in the communication between ATS and operators, the identification format used should be consistent.

- 4.14.4 A pilot not using “group form” in establishing communication, but subsequently addressed by ATS in this format, should adopt the use of “group form” for the remainder of the flight in Australian airspace.

- 4.14.5 There is no additional abbreviated form when using flight number callsigns. The airline designator and all digits of the callsign, including leading zeros, must be pronounced.

4.15 Selection of Aircraft Identification Numbers and Suffixes

4.15.1 When selecting an aircraft identification number or callsign suffix, operators should avoid using numbers that correlate with:

- a. ending in “zero” or “five”, to avoid confusion with headings;
- b. potential level utilisation (e.g. 3000, 500, 350 etc);
- c. emergency codes (e.g. 7600, 7700 etc); and
- d. numerical aircraft types (e.g. 767, 330 etc).

4.15.2 Flight numbers and callsign suffix numbers should be limited to 2 or 3 characters and take into account flight numbers already in use by the operator and other agencies in the intended control environment, operational area or nearby.

4.16 Ground Vehicles

4.16.1 Ground vehicles shall be identified by the type of vehicle; e.g. car, truck, tractor, tug, etc, or an ATS approved format, followed by the assigned vehicle number spoken in group form.

e.g.

TRUCK 12 “TRUCK TWELVE”

CAR 23 “CAR TWENTY THREE”.

4.17 Interchange and Leased Aircraft

4.17.1 Controllers issue traffic information based on familiarity with airline equipment and colour/markings. When an airline dispatches a flight using another company’s aircraft and the pilot does not advise the terminal ATC facility, the possible confusion in aircraft identification can compromise safety.

4.17.2 Pilots flying an “interchange” or “leased” aircraft, not bearing the normal colours/markings of the company operating the aircraft, should inform the terminal ATC facility (on first contact) of the name of the operating company and aircraft callsign, followed by the company name as displayed on the aircraft, and aircraft type,

e.g. VELOCITY THREE ELEVEN, AIR NEW ZEALAND INTERCHANGE (or LEASE), BOEING SEVEN FOUR SEVEN.

4.18 Unmanned Aerial Vehicles

4.18.1 Unmanned Aerial Vehicles (UAV) should select identification based on the aircraft manufacturer or model using a maximum of three syllables. Numbers may be added. UAV flight plan identification is detailed in *ENR 1.10 APPENDIX 2*

4.18.2 Communications on any frequency must use the prefix “UNMANNED” before the callsign. When the UAV operation is conducted in controlled airspace ATC may vary this requirement after initial contact.

4.19 **Callsigns - Full and Abbreviated Formats**

4.19.1 When establishing two way communications and for subsequent communications on any frequency, Australian registered aircraft must use one of the following callsigns:

- a. for VH-registered aircraft, the last 3 characters of the registration marking (e.g. VH-TQK “TANGO QUEBEC KILO”); or
- b. the approved telephony designator of the aircraft operating agency, followed by the last 3 characters of a VH registration marking (e.g. “QLINK TANGO QUEBEC KILO”); or
- c. the approved telephony designator of the aircraft operating agency, followed by the flight identification (e.g. “VELOCITY EIGHT FIFTY SIX DELTA”); or
- d. for recreation-category aircraft, the aircraft type followed by the last 4 characters of the aircraft’s registration number (e.g. “JABIRU THIRTEEN FORTY SIX”).

4.19.2 When establishing two way communications on any frequency, foreign registered aircraft must use one of the following callsigns:

- a. the characters corresponding to the registration marking of the aircraft (e.g. N35826 “NOVEMBER THREE FIFTY EIGHT TWENTY SIX”); or
- b. the approved telephony designator of the aircraft operating agency, followed by the last 4 characters of the registration marking of the aircraft (e.g. “UNITED FIFTY EIGHT TWENTY SIX”); or
- c. the approved telephony designator of the aircraft operating agency, followed by the flight identification (e.g. “SPEEDBIRD FIFTY FIVE”).

Note: The name of the aircraft manufacturer or aircraft model may be used as a radiotelephony prefix to the callsign type mentioned in sub-para 4.19.1a. and 4.19.2a.

- 4.19.3 For foreign registered aircraft, after establishing two way communications, ATS may initiate abbreviated callsigns for the type stated in 4.19.2a. and 4.19.2b. These callsigns may be abbreviated to:
- a. the first character of the registration and at least the last 2 characters of the registration marking (e.g. N35826 “NOVEMBER EIGHT TWENTY SIX”);
 - b. the telephony designator of the aircraft operating agency, followed by at least the last 2 characters of the registration marking (e.g. “UNITED TWENTY SIX”).

Note: For flight planning, all callsigns are limited to 7 characters.

- 4.19.4 In addition to the requirements of 4.19.1 to 4.19.3, the prefix “HELICOPTER” must be used by rotary wing aircraft when first establishing two way communications on any frequency (e.g. VH-WSO “HELICOPTER WHISKEY SIERRA OSCAR”).
- 4.19.5 Civil formation flights of Australian registered aircraft may use the suffix “FORMATION” after one of the following callsigns:
- a. the registration of the formation leader, e.g. “ALPHA BRAVO CHARLIE FORMATION”, or
 - b. the approved telephony designator of the formation leader, with or without an alpha or numeric, e.g. “JETSPEED FORMATION” or “JETSPEED ONE FORMATION” or “JETSPEED BRAVO FORMATION”.

4.20 **Registration of Radiotelephony Designators**

- 4.20.1 Operators wishing to use flight number callsigns must obtain approval from Airservices Australia. Application information and materials are available from Airservices Australia website: www.airservicesaustralia.com/services/flight-number-call-signs.

4.21 **Callsigns - Special Task Operations**

- 4.21.1 Aircraft engaged in special task operations, and with the agreement of ATS, may use a call sign indicative of the nature of the task with a numerical suffix (if applicable) (see 4.15), e.g.

Type of Operation	Radio Telephony Designator (Callsign)	Flight Plan Designator
Ambulance	AMBULANCE	AM
Coordination of Firebombing Aircraft	BIRDOG	BDOG
Fire Bombing	BOMBER	BMBR
Federal Police	FEDPOL	FPL
Federal Police (Priority)	FEDPOL RED	FPLR
Night-time NVG firefighting operations	FIREAIR	FYRA
General Fire Support Tasks (light rotary)	FIREBIRD	FBIR
Remote Sensing Fire Operations	FIRESCAN	FSCN
Fire Intelligence Gathering	FIRESPOッター	SPTR
General Fire Support Tasks (medium rotary)	HELITAK	HLTK
Lifesaver Operations	LIFESAVER	LIFE
Media Operations	MEDIA	MDIA
Validation of instrument procedures	NAVCHECK	NVCK
Parks and Wildlife Service	PARKAIR	PKAR
Police	POLAIR	POL
Police (Priority)	POLAIR RED	POLR
Rescue Mission	RESCUE	RSCU
Aerial Survey	SURVEY	SVY

4.21.2 Callsign suffix numbers are allocated as follows:

NSW/ACT – commencing with 2 (e.g. 201, 214, 223);
VIC – commencing with 3; **QLD** – commencing with 4;
SA – commencing with 5; **WA** – commencing with 6;
TAS – commencing with 7; **NT** – commencing with 8;
Defence – commencing with 9.

Use of these numbers will ensure aircraft transiting state borders utilising the same callsign prefix do not duplicate an existing callsign suffix number or flight plan.

5. PHRASEOLOGIES**5.1 Standard Words and Phrases**

5.1.1 The following words and phrases are to be used in radiotelephony communications, as appropriate, and have the meaning given:

Word/Phrase	Meaning
ACKNOWLEDGE	Let me know that you have received and understood this message.
AFFIRM	Yes.
APPROVED	Permission for proposed action granted.
BREAK	I hereby indicate the separation between portions of the message (to be used where there is no clear distinction between the text and other portions of the message).
BREAK BREAK	I hereby indicate separation between messages transmitted to different aircraft in a very busy environment.
CANCEL	Annul the previously transmitted clearance.
CHECK	Examine a system or procedure (no answer is normally expected).
CLEARED	Authorised to proceed under the conditions specified.
CONFIRM	I request verification of: (clearance, instruction, action, information).
CONTACT	Establish communication with...
CORRECT	True <i>or</i> Accurate.
CORRECTION	An error has been made in this transmission (or message indicated) the correct version is...
DISREGARD	Ignore.
HOW DO YOU READ	What is the readability of my transmission? The readability scale is:

Word/Phrase	Meaning
	1. Unreadable 2. Readable now and then 3. Readable but with difficulty 4. Readable 5. Perfectly readable.
I SAY AGAIN	I repeat for clarity or emphasis.
MAYDAY	My aircraft and its occupants are threatened by grave and imminent danger and/or I require immediate assistance.
MAINTAIN	Continue in accordance with the condition(s) specified or in its literal sense, e.g. "Maintain VFR".
MONITOR	Listen out on (frequency).
NEGATIVE	No <i>or</i> Permission is not granted <i>or</i> That is not correct <i>or</i> Not capable.
OUT	This exchange of transmissions is ended and I expect no response from you (<i>not normally used in VHF or satellite communication</i>).
OVER	My transmission is ended and I expect a response from you (<i>not normally used in VHF or satellite communication</i>).
PAN PAN	I have an urgent message to transmit concerning the safety of my aircraft or other vehicle or of some person on board or within sight but I do not require immediate assistance.
READBACK	Repeat all, or the specified part, of this message back to me exactly as received.
RECLEARED	A change has been made to your last clearance and this new clearance supersedes your previous clearance or part thereof.
REPORT	Pass me the following information.

Word/Phrase	Meaning
REQUEST	I should like to know or I wish to obtain.
ROGER	I have received all of your last transmission (<i>under NO circumstances to be used in reply to a question requiring READBACK or a direct answer in the affirmative or negative</i>).
SAY AGAIN	Repeat all or the following part of your last transmission
SPEAK SLOWER	Reduce your rate of speech.
STANDBY	Wait and I will call you.
UNABLE	I cannot comply with your request, instruction or clearance (<i>normally followed by a reason</i>).
VERIFY	Check and confirm with originator.
WILCO	I understand your message and will comply with it.
WORDS TWICE	<p>a. as a request: Communication is difficult. Please send every word or group of words twice.</p> <p>b. as information: Since communication is difficult every word or group of words in this message will be sent twice.</p>

5.2 Emergency

<i>Circumstances</i>	<i>Phraseologies</i> <i>* Denotes pilot transmission</i>
1. Distress message	a.* MAYDAY [MAYDAY, MAYDAY] <i>followed as necessary by:</i> (i) <i>(station addressed)</i> (ii) <i>(aircraft identification)</i> (iii) <i>(nature of distress condition e.g. FUEL or EMERGENCY DESCENT)</i> (iv) <i>(intentions)</i> (v) <i>(position, level and heading)</i> (vi) <i>(any other useful information).</i>
2. Acknowledgement of distress message ATC acknowledgement of MAYDAY call ATC acknowledgement of MAYDAY on frequency transfer Imposition of radio silence ATC broadcast for emergency descent traffic Cancellation of distress condition Termination of distress and radio silence	a. ROGER MAYDAY b. MAYDAY [(type of emergency)] ACKNOWLEDGED c. STOP TRANSMITTING. MAYDAY d. EMERGENCY DESCENT AT <i>(significant point or location)</i> ALL AIRCRAFT BELOW <i>(level)</i> WITHIN <i>(distance)</i> OF <i>(significant point or navigation aid)</i> [LEAVE IMMEDIATELY] <i>[(specific instructions as to direction, heading or track, etc)]</i> e.* CANCEL DISTRESS <i>(information)</i> f. DISTRESS TRAFFIC ENDED

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
3. Urgency message ATC acknowledgement of PAN call ATC acknowledgement of PAN on frequency transfer	a*. PAN PAN [PAN PAN, PAN PAN] followed as necessary by: (i) (station addressed) (ii) (aircraft identification) (iii) (nature of urgency condition e.g. MEDICAL PRIORITY REQUIRED or WEATHER DEVIATION REQUIRED) (iv) (intentions) (v) (position, level and heading) (vi) (any other useful information). b. ROGER PAN c. PAN [(type of emergency)] ACKNOWLEDGED

5.3 Traffic Alert and Collision Avoidance System (TCAS), Safety Alerts and Avoiding Action and Wind Shear Escape

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. Level Changes, Reports/ Rates a flight crew starts to deviate from any ATC clearance or instruction to comply with an ACAS resolution advisory (RA) (pilot and controller interchange) after the response to an ACAS RA is completed and a return to the ATC clearance or instruction is Initiated (pilot and controller interchange)	a.* TCAS RA b. ROGER c.* CLEAR OF CONFLICT RETURNING TO (assigned clearance) d. ROGER (or alternative instructions)

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
<p>after the response to an ACAS RA is completed and the assigned ATC clearance or instruction has been resumed (Pilot and Controller interchange)</p> <p>after an ATC clearance or instruction contradictory to the ACAS RA is received, the flight crew will follow the RA and inform ATC directly (Pilot and Controller interchange)</p>	<p>e.* CLEAR OF CONFLICT <i>(assigned clearance)</i> RESUMED</p> <p>f. ROGER <i>(or alternative instructions)</i></p> <p>g.* UNABLE TO COMPLY, TCAS RA</p> <p>h. ROGER <i>Note: Pilots are required to comply with any TCAS RA manoeuvre irrespective of ATC traffic advisories or instructions</i></p>
<p>2. Safety Alert and Avoiding Action</p> <p>low altitude warning</p> <p>terrain alert</p> <p>traffic alert</p>	<p>a. SAFETY ALERT, <i>followed as necessary by:</i></p> <p>(i) LOW ALTITUDE WARNING, CHECK YOUR ALTITUDE IMMEDIATELY, QNH IS <i>(number) [(units)]</i>. [THE MINIMUM SAFE ALTITUDE IS <i>(altitude)</i>].</p> <p>(ii) TERRAIN, CHECK YOUR ALTITUDE IMMEDIATELY <i>(suggested pilot action if possible)</i></p> <p>(iii) TRAFFIC <i>(number)</i> MILES OPPOSITE DIRECTION/ CROSSING LEFT TO RIGHT/ RIGHT TO LEFT <i>(level information)</i>.</p>

Circumstances	Phraseologies * Denotes pilot transmission
avoiding action	<p>b. AVOIDING ACTION, <i>followed as necessary by:</i></p> <p>(i) [SUGGEST] TURN LEFT/ RIGHT IMMEDIATELY HEADING (<i>three digits</i>) TRAFFIC ([LEFT/RIGHT] <i>number</i>) O'CLOCK (<i>distance</i>) MILES OPPOSITE DIRECTION/ CROSSING LEFT TO RIGHT/ RIGHT TO LEFT (<i>level information</i>).</p> <p>(ii) [SUGGEST] CLIMB/ DESCEND IMMEDIATELY TO (<i>level</i>) TRAFFIC [LEFT/ RIGHT] (<i>number</i>) O'CLOCK (<i>distance</i>) MILES OPPOSITE DIRECTION/ CROSSING LEFT TO RIGHT/ RIGHT TO LEFT (<i>level information</i>).</p> <p><i>Note 1: Where clock codes are used to provide the relative bearing, the prefix left/right is optional.</i></p> <p><i>Note 2: In high density traffic scenarios it may be impractical for ATC to use the full phraseologies for safety alerts and avoiding action. ATC will provide information that conveys the immediacy of the situation and relevant instructions to allow pilots the best opportunity to avoid a collision.</i></p> <p><i>Note 3: Pilots are required to comply with any TCAS RA manoeuvre irrespective of ATC traffic advisories or instructions.</i></p>

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
3. Wind Shear Escape Manoeuvre ATC acknowledgement Mutual traffic information Wind Shear Escape Manoeuvre complete ATC acknowledgement Wind shear prevents compliance with an ATC clearance or instruction	•a. * WIND SHEAR ESCAPE b. ROGER [SAFETY ALERT] [TRAFFIC (<i>distance</i>) MILES (<i>relevant information</i>)] c. [SAFETY ALERT] TRAFFIC (<i>distance</i>) MILES (<i>relevant information</i>) EXPERIENCING WIND SHEAR d. * CLEAR OF WIND SHEAR RETURNING TO (<i>assigned clearance, instruction and/or procedure etc</i>) e. ROGER [<i>alternative instructions</i>] f. * UNABLE, WIND SHEAR ESCAPE

5.4 Status of Restricted Areas

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
When active:	a. RESTRICTED AREA (<i>number</i>) ACTIVE, <i>followed as necessary by:</i> (i) CLEARANCE REQUIRED (ii) AVAILABLE FOR TRANSIT (iii) AVAILABLE UNTIL TIME (<i>time</i>) (iv) CLEARANCE NOT AVAILABLE (v) ...(<i>other qualification as appropriate</i>)

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
Released to civil ATC	b. RESTRICTED AREA (<i>number</i>) RELEASED TO (<i>civil ATS unit</i>), <i>followed as necessary by:</i> i) CLEARANCE NOT AVAILABLE ii) (<i>clearance</i>) iii) APPROVED TO OPERATE IN RESTRICTED AREA (<i>number</i>) [CLASS (<i>airspace category</i>) PROCEDURES APPLY]
Unauthorised deviation into active restricted area	c. HAZARDOUS ACTIVITIES ARE OCCURRING, UNABLE TO ISSUE CLEARANCE PROCEED AT YOUR OWN RISK, SQUAWK 7700

5.5 **SARWATCH**5.5.1 **SARTIME**

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. SARTIME nomination	a.* SARTIME <i>details</i> b. STANDBY <i>or (callsign)</i> c.* SARTIME FOR DEPARTURE (<i>or ARRIVAL</i>) [<i>location</i>] (<i>time</i>)
2. SARTIME cancellation	a.* SARTIME <i>details</i> b. STANDBY <i>or (callsign)</i> c.* (<i>position/location</i>) CANCEL SARTIME
3. SARTIME amendment	a.* SARTIME <i>details</i> b. STANDBY <i>or (callsign)</i> c. <i>As required, including specific phrases nominated above if applicable.</i>

5.5.2 SARWATCH Other Than SARTIME

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. Departure Reports to initiate a SARWATCH when communication on the ground is not available.	•a.* AIRBORNE (<i>location</i>)
2. Flight & Arrival Reports form of acknowledgement to CANCEL SARWATCH when the ATS unit accepting the arrival report is other than the unit addressed	•a.* (<i>position</i>) CANCEL SARWATCH [ADVISE (<i>unit</i>) if appropriate] •b. SARWATCH CANCELLED [WILCO (<i>unit</i>)] •c. [<i>location</i>] SARWATCH TERMINATED •d. ROGER (<i>identity of unit acknowledging</i>)

5.6 General Phrases

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. Description of Levels (subsequently referred to as “(<i>level</i>)”	a. FLIGHT LEVEL (<i>number</i>) or b. (<i>number</i>) [FEET]
2. Level Instructions when there is an expectation that the aircraft will maintain the level or to eliminate confusion, the instruction “AND MAINTAIN” shall be included	a. CLIMB (or DESCEND) followed as necessary by: (i) TO (<i>level</i>) (ii) TO AND MAINTAIN (<i>level</i>) (iii) TO REACH (<i>level</i>) AT (or BY) (<i>time or significant point</i>) (iv) TO (<i>level</i>) REPORT LEAVING (or REACHING or PASSING or APPROACHING) (<i>level</i>) (v) AT (<i>number</i>) FEET PER MINUTE [MINIMUM (or MAXIMUM)]

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
<p>when a pilot is assigned and required to maintain separation with a sighted aircraft</p> <p>ATC requesting confirmation of equipment, capability or approval e.g. RVSM, ADS-B, PRM.</p> <p>Pilot report of equipment, capability or approval status</p> <p>Pilot of IFR flight requests to climb/descend VFR</p> <p>IFR separation is available for part of the climb/descent</p>	<p>•p. FOLLOW (<i>or</i> MAINTAIN OWN SEPARATION WITH [AND PASS BEHIND]) (<i>aircraft type or identification</i>) [<i>instructions or restriction</i>]</p> <p>•q.* CONFIRM (<i>equipment, capability or approval</i>) APPROVED (<i>or</i> EQUIPPED)</p> <p>•r.* AFFIRM (<i>or</i> NEGATIVE) (<i>equipment, capability or approval</i>) (<i>reason if applicable</i>)</p> <p>s.* REQUEST VFR CLIMB (<i>or</i> DESCEND) [TO (<i>level</i>)]</p> <p>t.* CLIMB (<i>or</i> DESCEND) VFR to (<i>level</i>)</p> <p>u. CLIMB (<i>or</i> DESCEND) [TO (<i>assigned level</i>)] <i>followed as necessary by:</i></p> <p>(i) CLIMB (<i>or</i> DESCEND) VFR BETWEEN (<i>level</i>) AND (<i>level</i>)</p> <p>(ii) CLIMB (<i>or</i> DESCEND) VFR BELOW (<i>or</i> ABOVE) (<i>level</i>)</p>
<p>3. NVG Operations</p> <p>Pilots who have flight planned for operations or request to operate not above published or pilot calculated LSALT with NVG and visual.</p> <p>Pilots who have flight planned for operations or request to operate at a specific level which is at or below the published or pilot calculated LSALT</p>	<p>a.* REQUEST NOT ABOVE (<i>altitude</i>) [PILOT CALCULATED LOWEST SAFE] VISUAL</p> <p>b. CLIMB (<i>or</i> DESCEND) TO (<i>or</i> OPERATE NOT ABOVE) (<i>altitude</i>) [PILOT CALCULATED LOWEST SAFE] VISUAL</p> <p>c.* REQUEST [NOT ABOVE] (<i>altitude</i>) NVG</p> <p>d. CLIMB (<i>or</i> DESCEND) TO (<i>or</i> OPERATE NOT ABOVE) (<i>altitude</i>) NVG</p>

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
When climbing to regain LSALT/MSA other than in accordance with assigned airways clearance	e.* CLIMBING TO (<i>level</i>), (<i>reason e.g. NVG failure or inadvertent IMC</i>)
4. Maintenance of Specified Levels <i>Note: The term “MAINTAIN” must not to be used in lieu of “DESCEND” or “CLIMB” when instructing an aircraft to change level</i>	a. MAINTAIN (<i>level</i>) [TO (<i>significant point</i>)] [<i>condition</i>]
5. Use of Block Levels established in the level range cancelling block level clearance	<ul style="list-style-type: none"> •a.* REQUEST BLOCK LEVEL (<i>level</i>) TO (<i>level</i>) •b.* CLIMB (<i>or</i> DESCEND) TO AND MAINTAIN BLOCK (<i>level</i>) TO (<i>level</i>) •c. MAINTAIN BLOCK (<i>level</i>) TO (<i>level</i>) •d. CANCEL BLOCK CLEARANCE. CLIMB (<i>or</i> DESCEND) TO AND MAINTAIN (<i>level</i>)
6. Specification of Cruising Levels reply to cruise climb request	<ul style="list-style-type: none"> a. CROSS (<i>significant point</i>) AT (<i>or</i> ABOVE, <i>or</i> BELOW) (<i>level</i>) b. CROSS (<i>significant point</i>) AT (<i>time</i>) OR LATER (<i>or</i> BEFORE) AT (<i>level</i>) c. CRUISE CLIMB NOT AVAILABLE [<i>reason</i>]
7. Where an aircraft operation requires random climb and descent at and below (or at and above) a specified level.	•a. OPERATE NOT ABOVE (<i>or</i> BELOW) (<i>level</i>)

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
8. Termination of Identification and Control Services or Control Services only	a. [IDENTIFICATION AND] CONTROL SERVICE TERMINATED <i>followed as necessary by:</i> i) [DUE (<i>reason</i>)] ii) (<i>instructions</i>) iii) FREQUENCY CHANGE APPROVED
9. When instructing an aircraft to turn 180° or more when tracking instructions follow	a. TURN LEFT (<i>or RIGHT</i>) - I SAY AGAIN - LEFT (<i>or RIGHT</i>) [<i>tracking instructions</i>]

5.7 Frequency Management

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
<p>1. Transfer of Control and/or Frequency Change</p> <p><i>Note: An aircraft may be requested to “STAND BY” on a frequency when the intention is that the ATS unit will initiate communications, and to “MONITOR” a frequency when information is being broadcast thereon.</i></p> <p>pilot requesting to maintain radio silence for a specific time or event (e.g. fuel dump)</p>	<p>a. CONTACT (<i>unit callsign</i>) (<i>frequency</i>)</p> <p>b.* (<i>frequency</i>)</p> <p>c. AT (<i>or OVER</i>) (<i>time or place</i>) CONTACT (<i>unit callsign</i>) (<i>frequency</i>)</p> <p>d. IF NO CONTACT (<i>instructions</i>)</p> <p>e.* REQUEST CHANGE TO (<i>frequency</i>) (<i>service</i>)</p> <p>f. FREQUENCY CHANGE APPROVED</p> <p>g.* REQUEST TO MAINTAIN RADIO SILENCE DUE (<i>reason</i>) [UNTIL (<i>time</i>)]</p> <p>h. MONITOR (<i>unit callsign</i>) (<i>frequency</i>)</p> <p>i.* MONITORING (<i>frequency</i>)</p> <p>j. REMAIN THIS FREQUENCY</p>

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
<p>nominating scheduled reporting times</p> <p>an IFR pilot changing to the CTAF</p> <p>a pilot contacting next frequency when on a heading</p> <p>when a pilot/ATC broadcasts general information</p> <p>when a pilot broadcasts location specific general information</p> <p>notifying wake turbulence category to approach, departures, director, ground and tower</p> <p>ATC acknowledgment</p>	<p>k. REPORT <i>followed as necessary by:</i></p> <p>(i) <i>(situation)</i></p> <p>(ii) AT</p> <p>(iii) BY</p> <p>(iv) TIME <i>(time)</i></p> <p>l. STAND BY FOR <i>(unit callsign)</i> <i>(frequency)</i></p> <p>•m.* CHANGING TO <i>(location)</i> CTAF <i>(frequency)</i></p> <p>n.* HEADING <i>(as previously assigned)</i></p> <p>o.* ALL STATIONS <i>(appropriate information)</i></p> <p>•p.* <i>(location)</i> TRAFFIC <i>(appropriate information)</i> <i>(location)</i></p> <p>q.* SUPER <i>(or HEAVY)</i></p> <p>r. SUPER <i>(or HEAVY)</i></p>
<p>2. Flights Contacting Approach Control</p> <p>not identified or procedural tower</p>	<p>•a.(i)* <i>(distance)</i> MILES (GNSS or DME) [FROM] <i>(aerodrome)</i></p> <p>(ii) <i>(GNSS track)</i> TRACK ((<i>or</i> (VOR radial) RADIAL) <i>or</i> (STAR designator) <i>or</i> (compass quadrant from aerodrome))</p> <p>(iii) MAINTAINING <i>(or</i> DESCENDING TO) <i>(level)</i></p> <p>(iv) VISUAL <i>if visual approach can be made</i></p>

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
	(v) INFORMATION (ATIS <i>identification</i>)
3. Change of callsign to instruct an aircraft to change callsign to advise an aircraft to revert to the callsign indicated in the flight notification to ATS	a. CHANGE YOUR CALLSIGN TO (<i>new callsign</i>) [UNTIL FURTHER ADVISED] b. REVERT TO FLIGHT PLAN CALLSIGN (<i>callsign</i>) (AT (<i>significant point</i>))
4. After landing	a. CONTACT GROUND [<i>frequency</i>] b. WHEN VACATED CONTACT GROUND [<i>frequency</i>]
5. To request a station relay a clearance or information to a third party	FOR [RELAY TO] (<i>third party callsign</i>) (<i>clearance or information</i>)

5.8 **Traffic Information**

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. Traffic Information pilot request for traffic information to pass traffic information to acknowledge traffic information	a.* REQUEST TRAFFIC •b. NO REPORTED (IFR) TRAFFIC c. [IFR] TRAFFIC (<i>relevant information</i>) [REPORT SIGHTING] d. [ADDITIONAL] [IFR] TRAFFIC (<i>direction</i>) BOUND (<i>type of aircraft</i>) (<i>level</i>) ESTIMATED (<i>or OVER</i>) (<i>significant point</i>) AT (<i>time</i>) e.* LOOKING f.* TRAFFIC IN SIGHT

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
interception of relevant traffic information transmitted by other aircraft or ATS facility	g.* NEGATIVE CONTACT (<i>reasons</i>) •h.* COPIED (<i>callsign of traffic intercepted</i>)
2. Advice of Military Aircraft Conducting Abrupt Vertical Manoeuvres	•a. ABRUPT VERTICAL MANOEUVRES AT (<i>position</i>) UP TO (<i>level</i>)
3. Advice of Military Low Jet Operations Known to be Taking Place	•a. MILITARY LOW JET OPERATIONS (<i>relevant information</i>)

5.9 Meteorological Information

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
<p>1. Meteorological Conditions <i>Note: Wind is always expressed by giving the mean direction and speed and any significant variations.</i></p> <p>During RVR/RV operations where an assessment is not available or not reported.</p>	<p>a. [THRESHOLD] WIND (<i>number</i>) DEGREES (<i>number</i>) KNOTS</p> <p>b. WIND AT (<i>height/altitude/flight level</i>) (<i>number</i>) DEGREES (<i>number</i>) KNOTS</p> <p>c. WIND AT UP WIND END (<i>number</i>) DEGREES (<i>number</i>) KNOTS</p> <p>d. VISIBILITY (<i>distance</i>) (<i>direction</i>)</p> <p>e. RUNWAY VISUAL RANGE (RVR) <i>or</i> RUNWAY VISIBILITY (RV) [RUNWAY (<i>number</i>)] (<i>distance</i>) (<i>for RV assessments – ASSESSED AT TIME (minutes)</i>)</p> <p>f. RUNWAY VISUAL RANGE (RVR) <i>or</i> RUNWAY VISIBILITY (RV) [RUNWAY (<i>number</i>)] NOT AVAILABLE (<i>or</i> NOT REPORTED).</p>

Circumstances	Phraseologies * Denotes pilot transmission
<p>Where multiple RVR/RV observations are made. <i>Note 1. Multiple RVR/RV observations are always representative of the touchdown zone, midpoint zone and the roll-out/stop end zone, respectively.</i> <i>Note 2. Where reports for three locations are given, the indication of these locations may be omitted, provided that the reports are passed in the order of touchdown zone, followed by the midpoint zone and ending with the roll-out/stop end zone report.</i></p> <p>When RVR/RV information on any one position is not available this information will be included in the appropriate sequence.</p>	<p>g. RUNWAY VISUAL RANGE (RVR) <i>or</i> RUNWAY VISIBILITY (RV) RUNWAY (number) (first position) (distance) (units), (second position) (distance) (units), (third position) (distance) (units) (for RV assessments – ASSESSED AT TIME (minutes))</p> <p>h. RUNWAY VISUAL RANGE (RVR) <i>or</i> RUNWAY VISIBILITY (RV) RUNWAY (number) (first position) (distance) (units), (second position) NOT AVAILABLE, (third position) (distance) (units) (for RV assessments – ASSESSED AT TIME (minutes))</p> <p>i. PRESENT WEATHER (details)</p> <p>j. CLOUD (amount, [type] and height of base) (or SKY CLEAR)</p> <p>k. CAVOK</p> <p>l. TEMPERATURE [MINUS] (number) (and/or DEWPOINT [MINUS] (number))</p> <p>m. QNH (number) (units)</p> <p>n. MODERATE (or SEVERE) ICING (or TURBULENCE) [IN CLOUD] (area)</p> <p>o. REPORT FLIGHT CONDITIONS</p>

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
unless responding to a request for turbulence or icing information	•p.* IMC (<i>or</i> VMC)

5.10 Reports and Information

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. Position Reporting <i>Note: Phrases for use in en route position and MET reports are listed in ENR 1.1 APPENDIX 1.</i>	a. NEXT REPORT AT (<i>significant point</i>)
2. Additional Reports to request a report at a specified place or distance to request a report of present position when descending a non-DME equipped aircraft to LSALT above CTA steps the pilot will give this only when satisfied that the CTA step has been passed, allowing for navigational tolerances.	a. REPORT PASSING (<i>significant point</i>) b. REPORT (<i>distance</i>) MILES [GNSS (<i>or</i> DME)] FROM (<i>significant point</i>) c. REPORT PASSING (<i>three digits</i>) RADIAL (<i>name of VOR</i>) VOR d. REPORT [GNSS (<i>or</i> DME)] DISTANCE FROM (<i>significant point</i>) •e. REPORT PASSING CONTROL AREA STEPS FOR FURTHER DESCENT •f.* INSIDE (<i>distance of a CTA step</i>) MILES

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
3. GNSS tracking	a. CONFIRM (<i>or</i> REPORT) ESTABLISHED ON THE [(<i>three digits</i>)] GNSS TRACK [BETWEEN (<i>significant point</i>) AND (<i>significant point</i>)] b. MAINTAIN TRACK BETWEEN (<i>significant point</i>) AND (<i>significant point</i>). REPORT ESTABLISHED ON THE TRACK c. * ESTABLISHED ON THE [(<i>three digits</i>)] TRACK [BETWEEN (<i>significant point</i>) AND (<i>significant point</i>)]
4. GNSS navigation GNSS unavailable Resuming GNSS operation	a. CONFIRM GNSS NAVIGATION b. * AFFIRM GNSS NAVIGATION c. * UNAVAILABLE [DUE TO (<i>reason e.g. LOSS OF RAIM or RAIM ALERT</i>)] d. * GNSS AVAILABLE [DUE TO (<i>reason</i>)]
5. Aerodrome Information	a. RUNWAY (<i>number</i>) (<i>condition</i>) b. LANDING SURFACE (<i>condition</i>) c. CAUTION (WORK IN PROGRESS) (OBSTRUCTION) (<i>position and any necessary advice</i>) d. BRAKING ACTION REPORTED BY (<i>aircraft type</i>) AT (<i>time</i>) GOOD (<i>or</i> MEDIUM, <i>or</i> POOR) e. RUNWAY (<i>or</i> TAXIWAY) WET [<i>or</i> DAMP, WATER PATCHES, FLOODED (<i>depth</i>)]
6. Information to Aircraft wake turbulence jet blast on apron or taxiway propeller-driven aircraft slipstream	a. CAUTION (i) WAKE TURBULENCE (ii) JET BLAST (iii) SLIPSTREAM

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
helicopter downwash	(iv) DOWNWASH
7. Pilot Initiated Waiver of Wake Turbulence Separation Standards	•a.* ACCEPT WAIVER

5.11 **Clearances**

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
<p>1. Clearances</p> <p>If the route and/or level issued in the initial airways clearance is not in accordance with the flight plan</p> <p>If an airways clearance is amended en route</p> <p>when the clearance is relayed by a third party; e.g. pilot/ FLIGHT WATCH (ATC excepted)</p> <p>when clearance will be issued subject to a delay</p>	<p>a.* REQUEST CLEARANCE</p> <p>b. CLEARED TO</p> <p>c. CLEARED TO (<i>destination</i>) [AMENDED ROUTE] (<i>route clearance details</i>) [AMENDED LEVEL] (<i>level</i>)</p> <p>d. RECLEARED (<i>amended clearance details</i>) [REST OF CLEARANCE UNCHANGED] [(<i>level</i>)]</p> <p>e. RECLEARED (<i>amended route portion</i>) TO (<i>significant point of original route</i>) [REST OF CLEARANCE UNCHANGED] (<i>level</i>)</p> <p>f. (<i>name of unit</i>) CLEARS (<i>aircraft identification</i>)</p> <p>g. REMAIN OUTSIDE CLASS (<i>airspace class</i>) (or RESTRICTED) [AND CLASS (<i>airspace class</i>)] AIRSPACE AND STANDBY</p>

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
when clearance will be issued at a specified time or place	h. REMAIN OUTSIDE CLASS (<i>airspace class</i>) (<i>or</i> RESTRICTED) [AND CLASS (<i>airspace class</i>)] AIRSPACE, EXPECT CLEARANCE AT (<i>time/place</i>)
when a clearance will not be available	i. CLEARANCE NOT AVAILABLE, REMAIN OUTSIDE CLASS (<i>airspace class</i>) (<i>or</i> RESTRICTED) [AND CLASS (<i>airspace class</i>)] AIRSPACE
when requesting a deviation from cleared route	j.* REQUEST TO DEVIATE UP TO (<i>distance</i>) MILES LEFT (<i>or</i> RIGHT) OF ROUTE DUE (<i>reason</i>)
when requesting a deviation from cleared track	k.* REQUEST TO DEVIATE UP TO (<i>distance</i>) MILES LEFT (<i>or</i> RIGHT) OF TRACK DUE (<i>reason</i>)
when a deviation from cleared route or track is requested	•l. DEVIATE UP TO (<i>distance</i>) MILES LEFT (<i>or</i> RIGHT) OF ROUTE (<i>or</i> TRACK)
when clearance for deviation cannot be issued	m. UNABLE, TRAFFIC (<i>direction</i>) BOUND (<i>type of aircraft</i>) (<i>level</i>) ESTIMATED (<i>or</i> OVER) (<i>significant point</i>) AT (<i>time</i>) CALLSIGN (<i>callsign</i>) ADVISE INTENTIONS
when a weather deviation has been completed and onwards clearance is requested	n. *CLEAR OF WEATHER [REQUEST (<i>route clearance</i>)]
when a weather deviation has been completed and the aircraft has returned to its cleared route	o. * BACK ON ROUTE (<i>or</i> TRACK)

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
when subsequent restrictions/ requirements are imposed in addition to previous restrictions to be complied with	<p>•p. FURTHER RESTRICTION</p> <p>q. [RE] ENTER CONTROLLED AIRSPACE (or CONTROL ZONE) [VIA (<i>significant point or route</i>)] AT (<i>level</i>) [AT (<i>time</i>)]</p> <p>r. LEAVE CONTROLLED AIRSPACE (or CONTROL ZONE) [VIA (<i>significant point or route</i>)] AT (<i>level</i>) (or CLIMBING, or DESCENDING)</p> <p>s. LEAVE AND RE-ENTER CONTROLLED AIRSPACE AT (<i>level</i>) (or CLIMBING TO (<i>level</i>), or DESCENDING TO (<i>level</i>) or ON (<i>type of approach</i>))</p> <p>t. JOIN (<i>specify</i>) AT (<i>significant point</i>) AT (<i>level</i>) [AT (<i>time</i>)]</p>
2. Indication of Route and Clearance Limit	<p>a. FROM (<i>location</i>) TO (<i>location</i>)</p> <p>b. TO (<i>location</i>) followed as necessary by:</p> <p>(i) DIRECT</p> <p>(ii) VIA (<i>route and/or significant points</i>)</p> <p>(iii) FLIGHT PLANNED ROUTE</p> <p>(iv) VIA (<i>distance</i>) DME ARC (<i>direction</i>) OF (<i>name of DME station</i>)</p> <p>c. (<i>level or route</i>) NOT AVAILABLE DUE (<i>reason</i>) ALTERNATIVE[S] IS/ARE (<i>levels or routes</i>) ADVISE</p> <p>issuing a specific clearance limit</p> <p>•d. CLEARANCE LIMIT (<i>place/aid</i>)</p>

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
when a pilot requests, or ATC issues a visual departure in lieu of a SID	•e. [<i>clearance details</i>] VISUAL DEPARTURE
3. When a Clearance has been Cancelled	•a. CANCEL CLEARANCE •b.* CANCEL CLEARANCE
4. Change of Flight Rules cancelling IFR (to be initiated only by the pilot) changing from VFR to IFR	•a.* CANCEL IFR, [<i>REQUEST</i>] (<i>intention</i>) •b. IFR CANCELLED, OPERATE VFR (<i>instruction or clearance</i>) •c.* CHANGE OF FLIGHT RULES, REQUEST IFR [<i>CLEARANCE</i>] [<i>AT (time or place)</i>] (<i>IFR level</i>) •d. [<i>AT (time or place)</i>] OPERATE IFR, [<i>CLEARED</i>] (<i>clearance or instructions</i>)
5. Requesting Clearance when notification of flight details has not been submitted to ATS flight details to be passed after ATS response if clearance cannot be issued immediately upon request) if giving warning of clearance requirement when requesting IFR Pick-up	•a.* FLIGHT DETAILS [<i>INBOUND or FOR (DEPARTURE or TRANSIT)</i>] •b.* (<i>Aircraft type</i>) (<i>position</i>) (<i>route in controlled airspace and next estimate</i>) (<i>preferred level</i>) •c. EXPECT CLEARANCE AT (<i>time or place</i>) •d.* EXPECT CLEARANCE REQUEST (<i>aircraft type</i>) VFR (<i>if appropriate</i>) FOR (<i>destination</i>) VIA (<i>point outside controlled airspace at which clearance will be requested</i>) ESTIMATE (<i>estimate at destination</i>) AT (<i>altitude proposed for entry to controlled airspace</i>) •e.* REQUEST IFR PICK-UP

Circumstances	Phraseologies * Denotes pilot transmission
6. Pilot of IFR flight requests to climb to VFR-on-top	a.* REQUEST VFR-ON-TOP b. CLIMB TO [(level)] AND REPORT REACHING VFR-ON-TOP, TOPS REPORTED (level), or NO TOPS REPORTS
Pilot of an IFR flight is established VFR-on-top Where vertical restrictions apply Pilot request to cancel VFR-on-top <i>Note: Full IFR separation is applied when ATC re-clears the aircraft to maintain an IFR level</i>	c.* VFR-ON-TOP d. MAINTAIN VFR ON TOP e. MAINTAIN VFR-ON-TOP AT OR BELOW/ABOVE/BETWEEN (level(s)) f.* REQUEST (IFR level) g. MAINTAIN (IFR level)
7. VFR Departure: Pilot of IFR flight requests VFR departure Pilot of IFR flight approved to depart VFR wishing to revert to IFR <i>Note: The pilot is responsible for separation until IFR separation can be applied by ATC</i> Pilot of IFR flight having departed VFR, on first contact with ATC entering Class G airspace <i>Note: Pilots wishing to continue VFR should CANCEL IFR. See sub-para 4. above.</i>	•a. *REQUEST VFR DEPARTURE •b. VFR DEPARTURE APPROVED •c. *REQUEST IFR CLEARANCE [AT (time or place)] (IFR level) •d. *RESUMING IFR
8. Parachute Operations: Clearance for parachutists to exit the aircraft and transit Restricted Area(s) or Classes A, C or D airspace	a. CLEAR TO DROP

5.12 SID

<i>Circumstances</i>	<i>Phraseologies</i> *Denotes pilot transmission
1. Issuing a SID	a. CLEARED (<i>SID designator</i>) DEPARTURE (<i>level instruction</i>)
2. Clearance to climb on a SID a. comply with published level restrictions b. follow the lateral profile of the SID c. comply with published speed restrictions and ATC-issued speed control instructions	a. CLIMB VIA SID TO (<i>level</i>)
3. During a SID climb: a. published level restrictions are cancelled b. follow the lateral profile of the SID c. comply with published speed restrictions and ATC-issued speed control instructions	a. [CLIMB VIA SID TO (<i>level</i>)], CANCEL LEVEL RESTRICTION(S)
4. During a SID climb: a. published level restrictions at the specified point(s) are cancelled b. follow the lateral profile of the SID c. comply with published speed restrictions and ATC-issued speed control instructions	a. [CLIMB VIA SID TO (<i>level</i>)], CANCEL LEVEL RESTRICTION(S) AT (<i>point(s)</i>)
5. During a SID climb: a. comply with published level restrictions b. follow the lateral profile of the SID c. published speed restrictions and ATC-issued speed control instructions are cancelled	a. [CLIMB VIA SID TO (<i>level</i>)], CANCEL SPEED RESTRICTION(S)

<i>Circumstances</i>	<i>Phraseologies</i> *Denotes pilot transmission
<p>6. During a SID climb:</p> <ul style="list-style-type: none"> a. comply with published level restrictions b. follow the lateral profile of the SID c. published speed restriction are cancelled at the specific point(s) d. comply with ATC-issued speed control instructions 	<p>a. [CLIMB VIA SID TO (<i>level</i>)], CANCEL SPEED RESTRICTION(S) AT (<i>point(s)</i>)</p>
<p>7. During a SID climb:</p> <ul style="list-style-type: none"> a. published level restrictions are cancelled b. follow the lateral profile of the SID c. published speed restrictions and ATC-issued speed control instructions are cancelled <p><i>Note: the phrase 'CLIMB UNRESTRICTED TO...' is not used</i></p>	<p>a. [CLIMB TO (<i>level</i>)], CANCEL LEVEL AND SPEED RESTRICTIONS</p>
<p>8. Clearance to proceed direct during a SID:</p> <ul style="list-style-type: none"> a. track direct to the specified waypoint and then follow the lateral profile of the SID b. published level and speed restrictions for bypassed waypoints are cancelled c. comply with published speed and level restrictions at and after the specified waypoint <p><i>Note: direct tracking on a SID does not require a rejoin instruction</i></p>	<p>a. CLEARED DIRECT (<i>waypoint</i>)</p>

<i>Circumstances</i>	<i>Phraseologies</i> *Denotes pilot transmission
9. Initiation of vectoring during SID Clearance to proceed direct to a waypoint that is not on a SID	a. TURN LEFT (<i>or</i> RIGHT) HEADING (<i>three digits</i>) [(<i>reason</i>)], (<i>level instruction</i>), [EXPECT TO REJOIN SID] [AT (<i>waypoint</i>)] b. CLEARED DIRECT (<i>waypoint</i>) (<i>level instruction</i>)
10. Rejoining a SID	a. REJOIN SID (<i>or</i> (<i>SID designator</i>)) [AT (<i>waypoint</i>)] [(<i>transition restrictions</i>)]
11. When a SID has been cancelled	a. CANCEL SID (<i>instructions</i>)

5.13 **STAR**

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. Notification of STAR clearance availability (on first contact) when associated with a frequency transfer Notification of STAR clearance availability when NOT associated with a frequency transfer	a. EXPECT STAR CLEARANCE b. STAR CLEARANCE AVAILABLE
2. Issuing a STAR clearance	a. CLEARED (STAR <i>designator</i>) ARRIVAL [(<i>name</i>) TRANSITION] [RUNWAY(<i>number</i>)] (<i>level instruction</i>)
3. Descend to the cleared level: a. comply with published level restrictions b. follow the lateral profile of the STAR c. comply with published speed restrictions and ATC-issued speed control instructions	a. DESCEND VIA STAR TO (<i>level</i>)

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
4. During a STAR descent: a. published level restrictions are cancelled b. follow the lateral profile of the STAR c. comply with published speed restrictions and ATC-issued speed control instructions	a. [DESCEND VIA STAR TO <i>(level)</i>], CANCEL LEVEL RESTRICTION(S)
5. During a STAR descent: a. published level restrictions at the specified point(s) are cancelled b. follow the lateral profile of the STAR c. comply with published speed restrictions and ATC-issued speed control instructions	a. [DESCEND VIA STAR TO <i>(level)</i>], CANCEL LEVEL RESTRICTION(S) AT <i>(point(s))</i>
6. During a STAR descent: a. comply with published level restrictions b. follow the lateral profile of the STAR c. published speed restrictions and ATC-issued speed control instructions are cancelled	a. [DESCEND VIA STAR TO <i>(level)</i>], CANCEL SPEED RESTRICTION(S)
7. During a STAR descent: a. comply with published level restrictions b. follow the lateral profile of the STAR c. published speed restrictions are cancelled at the specific point(s) d. comply with ATC-issued speed control instructions	a. [DESCEND VIA STAR TO <i>(level)</i>], CANCEL SPEED RESTRICTION(S) AT <i>(point(s))</i>

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
8. During a STAR descent: a. published level restrictions are cancelled b. follow the lateral profile of the STAR c. published speed restrictions and ATC-issued speed control instructions are cancelled <i>Note: the phrase 'DESCEND UNRESTRICTED TO...' is not used</i>	a. DESCEND TO (<i>level</i>), CANCEL LEVEL AND SPEED RESTRICTIONS
9. Clearance to proceed direct during a STAR: a. track direct to the specified waypoint and then follow the lateral profile of the STAR b. published level and speed restrictions for bypassed waypoints are cancelled c. comply with published speed and level restrictions at and after the specified waypoint <i>Note: direct tracking on a STAR does not require a rejoin instruction</i>	a. CLEARED DIRECT (<i>waypoint</i>)
10. Initiation of vectoring after STAR has been issued Clearance to proceed direct to a waypoint that is not on a STAR	a. TURN LEFT (<i>or RIGHT</i>) HEADING (<i>three digits</i>) [(<i>reason</i>)], (<i>level instruction</i>), [EXPECT TO REJOIN STAR] [AT(<i>waypoint</i>)] b. CLEARED DIRECT (<i>waypoint</i>) (<i>level instruction</i>)
11. Rejoining a STAR	a. REJOIN STAR (<i>or (STAR designator)</i>) [AT (<i>waypoint</i>)] [(<i>transition restrictions</i>)]
12. When a STAR clearance is cancelled	a. CANCEL STAR (<i>instructions</i>)

5.14 Approach and Area Control Services

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. Departures Instructions	a. TRACK (<i>three digits</i>) DEGREES [MAGNETIC] TO (or FROM) (<i>significant point</i>) [UNTIL (<i>time</i>) (or REACHING) (<i>fix or significant point or level</i>)]
2. Approach Instructions RNAV (GNSS) (or RNP APCH) approach via an IAWP or IF RNAV (RNP) (or RNP AR APCH) approach where an aircraft has been subject to vectoring or random tracking and is subsequently re-cleared direct to the IAF.	<ul style="list-style-type: none"> •a. CLEARED DME (or GNSS) ARRIVAL [SECTOR (<i>identifying letter of the sector</i>)] b.* REQUEST [STRAIGHT-IN] (<i>chart title</i>) APPROACH c. CLEARED [STRAIGHT-IN] (<i>chart title</i>) APPROACH [FOLLOWED BY CIRCLING TO RUNWAY (<i>number</i>)] d.* REQUEST (<i>chart title</i>) APPROACH VIA (<i>last two letters of the IAWP or IF designator</i>) •e. RECLEARED DIRECT (<i>last two letters of the IAWP or IF designator</i>) CLEARED (<i>chart title</i>) APPROACH f. COMMENCE APPROACH AT (<i>time</i>) g. RECLEARED DIRECT (IAF/ <i>Latest Intercept Point designator</i>) followed as necessary by: <ul style="list-style-type: none"> (i) TRACK VIA (<i>chart title</i>) MAINTAIN (or DESCEND TO) (<i>level</i>) (ii) WHEN ESTABLISHED, CLEARED (<i>chart title</i>) APPROACH

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
GLS Approach <i>Note: The chart title for the procedure must be used. Except for circling approaches, the procedure suffix may be omitted when no possibility of confusion exists. The words (GNSS) or (RNP) do not need to be included in the RNAV approach request or clearance.</i>	h.* REQUEST GLS APPROACH RUNWAY (<i>runway identifier</i>)
3. Degradation of aircraft navigation performance	a. UNABLE RNP (<i>or</i> RNAV) (<i>specify type</i>) [DUE TO (<i>reason, e.g. LOSS OF RAIM or RAIM ALERT</i>)].
4. Where a temporary level restriction is to be imposed. (Applicable to civil aircraft during practice approaches in VMC; or MIL aircraft NPA, or precision if clearance will allow descent in accordance with procedure) pilot to advise when able to conduct a visual approach visual approach (by day or night) visual approaches by night when including a VFR climb/descent instruction:	<ul style="list-style-type: none">•a. TRACK VIA (<i>chart title</i>) APPROACH NOT BELOW (<i>level</i>)b. REPORT VISUALc. REPORT RUNWAY [LIGHTS] IN SIGHTd. REPORT (<i>significant point</i>) [OUTBOUND <i>or</i> INBOUND]e. CLEARED VISUAL APPROACH [TRACKING VIA THE STAR]•f. WHEN ESTABLISHED (<i>position</i>) CLEARED VISUAL APPROACH

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
<ul style="list-style-type: none"> – when VFR descent clearance applies for the entire approach – when VFR descent clearance applies for a portion of the approach 	<ul style="list-style-type: none"> g. DESCEND VFR, CLEARED (<i>chart title</i>) APPROACH h. CLEARED (<i>chart title</i>) APPROACH DESCEND VFR ABOVE (or BETWEEN) (<i>level(s)</i>)
<p>5. Holding Instructions</p> <p>visual</p> <p>published holding procedure over a waypoint, facility or fix</p> <p>when pilot requires an oral description of holding procedure based on a facility</p>	<ul style="list-style-type: none"> a. HOLD VISUAL [OVER] (<i>position</i>) b. HOLD AT (<i>waypoint, facility or fix</i>) (<i>level</i>) EXPECT APPROACH (or FURTHER CLEARANCE) AT (<i>time</i>) c.* REQUEST HOLDING INSTRUCTIONS d. HOLD AT (<i>waypoint, facility or fix</i>) (<i>callsign and frequency, if necessary</i>) (<i>level</i>) INBOUND TRACK (<i>three digits</i>) DEGREES RIGHT (or LEFT) HAND PATTERN, OUTBOUND TIME (<i>number</i>) MINUTES (<i>additional instructions, if necessary</i>) e. HOLD ON THE (<i>three digits</i>) RADIAL OF THE (<i>name</i>) VOR/ TACAN (<i>callsign and frequency, if necessary</i>) AT (<i>distance</i>) DME (or BETWEEN (<i>distance</i>) AND (<i>distance</i>) DME) (<i>level</i>) INBOUND TRACK (<i>three digits</i>) DEGREES RIGHT (or LEFT) HAND PATTERN (<i>additional instructions, if necessary</i>)

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
6. To advise ATC of Minimum Fuel status ATC acknowledgment of Minimum Fuel status <i>Note: Advice of fuel status must be made to each subsequent ATC sector on frequency transfer and ATC will acknowledge the status.</i>	a.* MINIMUM FUEL b. MINIMUM FUEL ACKNOWLEDGED [NO DELAY EXPECTED <i>or</i> EXPECT (<i>delay information</i>)]
7. Expected Approach Time	a. NO DELAY EXPECTED b. EXPECTED APPROACH TIME (<i>time</i>)

5.15 Phraseologies to be used related to CPDLC

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. Operational Status failure of CPDLC failure of a single CPDLC message to correct CPDLC clearances, Instructions, information or requests to instruct all stations or a specific flight to avoid sending CPDLC requests for a limited period of time to instruct the flight crew to manually initiate a logon to the subsequent ATSU	a. [ALL STATIONS] CPDLC FAILURE (<i>instructions</i>). b. CPDLC MESSAGE FAILURE (<i>appropriate clearance, instruction, information or request</i>) c. DISREGARD CPDLC (<i>message type</i>) MESSAGE, BREAK (<i>correct clearance, instruction, information or request</i>) d. [ALL STATIONS] STOP SENDING CPDLC REQUESTS [UNTIL ADVISED] [(REASON)] e. DISCONNECT CPDLC THEN LOGON TO [<i>facility designation</i>]

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
to advise the flight crew prior to the commencement of CPDLC shutdown and instruct them to continue on voice	f. CPDLC WILL BE SHUT DOWN DISCONNECT CPDLC. CONTINUE ON VOICE
to resume normal use of CPDLC	g. [ALL STATIONS] RESUME NORMAL CPDLC OPERATIONS

5.16 Vicinity of the Aerodrome

5.16.1 Visual Identification

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. Identification of Aircraft	a. SHOW LANDING LIGHT
2. Acknowledgment by Visual Means	a. ACKNOWLEDGE BY MOVING AILERONS (<i>or</i> RUDDER) b. ACKNOWLEDGE BY ROCKING WINGS c. ACKNOWLEDGE BY FLASHING LANDING LIGHTS

5.16.2 Starting and Initial Clearance Issue

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. Starting Procedures to request permission to start engines	a.* [<i>aircraft location</i>] REQUEST START b.* [<i>aircraft location</i>] REQUEST START INFORMATION (ATIS <i>identification</i>)
ATC response	c. START APPROVED d. START AT (<i>time</i>) e. EXPECT START AT (<i>time</i>) f. EXPECT DEPARTURE (<i>time</i>) START AT OWN DISCRETION

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
2. When clearance delivery is in operation. if runway other than runway nominated is required.	•a.* <i>(flight number, if any)</i> TO <i>(aerodrome of first intended landing)</i> REQUEST CLEARANCE •b.* REQUIRE RUNWAY <i>(number)</i>

5.16.3 Pushbacks

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. Pushback Procedures for Aircraft <i>Note: Where a pushback does not enter the manoeuvring area, ERSAs will specify the frequency on which apron service is provided.</i>	a.* <i>[aircraft location]</i> REQUEST PUSHBACK b. PUSHBACK APPROVED <i>[TAIL (direction e.g. North or Right)]</i> c. PUSHBACK AT OWN DISCRETION <i>[TAIL (direction e.g. Left or West)]</i> d. EXPECT <i>(number)</i> MINUTES DELAY DUE <i>(reason)</i>
2. Towing Procedures ATC response	a. # REQUEST TOW <i>[company name] (aircraft type) FROM (location) TO (location)</i> b. TOW APPROVED VIA <i>(specific routing to be followed)</i> # <u>Denotes transmission from aircraft/ tow vehicle combination</u>
3. To Request Aerodrome Data for Departure when no ATIS broadcast is available	a.* REQUEST DEPARTURE INFORMATION b. RUNWAY <i>(number)</i> , WIND <i>(direction and speed)</i> , QNH <i>(detail)</i> , TEMPERATURE <i>(detail)</i> , [VISIBILITY FOR TAKE-OFF <i>(detail)</i> (or RVR) <i>(detail)</i>]

5.16.4 Taxi Procedure

Circumstances	Phraseologies * Denotes pilot transmission
<p>1. Taxi Procedures</p> <p>for departure at a controlled aerodrome</p> <p>for departure at a non-controlled aerodrome</p> <p>military pilots on local sorties when ready to taxi (<i>include details of flight if not already notified</i>)</p> <p>where detailed taxi instructions are required</p>	<p>a.* [flight number] [aircraft type] [wake turbulence category if “Super or Heavy”] [POB (number)] [DUAL (or SOLO)] INFORMATION (ATIS identification) [SQUAWK (SSR code)] [aircraft location] [flight rules, if IFR] [TO (aerodrome of destination)] REQUEST TAXI [intentions]</p> <p>• b.* (aircraft type) [POB (number)] [IFR (if operating IFR)] TAXIING (location) FOR (destination or intentions) RUNWAY (number)</p> <p>▲ c.* (number of aircraft) FOR (area of operation) POB (number) (DANGEROUS CARGO) INFORMATION (ATIS identification) REQUEST TAXI</p> <p>d. TAXI TO (HOLDING POINT [identifier] or intermediate point) [RUNWAY (number)] [TIME (minutes)]</p> <p>e.* ([HOLDING POINT] (identifier) or intermediate point), RUNWAY (number)</p> <p>f.* [aircraft type] REQUEST DETAILED TAXI INSTRUCTIONS</p> <p>g. TAXI VIA (specific routing to be followed) TO HOLDING POINT (identifier) [RUNWAY (number)] [TIME (minutes)]</p>

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
<p>where aerodrome information is not available from an alternative source such as ATIS</p> <p>for arrival at a controlled aerodrome</p>	<p>h.* [HOLDING POINT] (<i>identifier</i>), RUNWAY (<i>number</i>)</p> <p>i. TAXI TO HOLDING POINT (<i>identifier</i>) (<i>followed by aerodrome information as applicable</i>) [TIME (<i>minutes</i>)]</p> <p>j.* [HOLDING POINT] (<i>identifier</i>)</p> <p>k.* (<i>aircraft callsign</i>) [<i>parking area or bay number</i>]</p> <p>l. TAXI TO [TERMINAL <i>or other location</i>; e.g. GENERAL AVIATION AREA] [STAND (<i>number</i>)]</p>
<p>2. Intersection Departures when a pilot requests an intersection departure</p> <p>when a pilot is offered an intersection departure</p> <p>when a pilot accepts an intersection departure</p>	<ul style="list-style-type: none"> • a.* REQUEST INTERSECTION DEPARTURE FROM (<i>taxiway identifier</i>) • b. TAXI TO HOLDING POINT (<i>taxiway identifier</i>) [RUNWAY (<i>number</i>)] • c. INTERSECTION DEPARTURE AVAILABLE FROM (<i>taxiway identifier</i>) (<i>distance</i>) REMAINING (<i>if this information is not readily available to the pilot</i>) • d. TAXI TO HOLDING POINT (<i>taxiway identifier</i>) [RUNWAY (<i>number</i>)]
<p>3. Specific Routing</p>	<p>a. TAKE (<i>or TURN</i>) FIRST (<i>or SECOND</i>) LEFT (<i>or RIGHT</i>)</p> <p>b. TAXI VIA (<i>identification of taxiway</i>)</p> <p>c. TAXI VIA RUNWAY (<i>number</i>)</p>

Circumstances	Phraseologies * Denotes pilot transmission
<p>4. Manoeuvring on Aerodrome</p> <p>general</p> <p><i>Note: The pilot must, when requested, report RUNWAY VACATED" when the aircraft is well clear of the runway.</i></p>	<p>a.* REQUEST BACKTRACK</p> <p>b. BACKTRACK APPROVED</p> <p>c. BACKTRACK RUNWAY (number)</p> <p>d.* (aircraft location) REQUEST TAXI TO (destination on aerodrome)</p> <p>e. TAXI STRAIGHT AHEAD</p> <p>f. TAXI WITH CAUTION (reason)</p> <p>g. GIVE WAY TO (description and position of other aircraft)</p> <p>h.* GIVING WAY TO (traffic)</p> <p>i. TAXI INTO HOLDING BAY</p> <p>j. FOLLOW (description of other aircraft or vehicle)</p> <p>k. VACATE RUNWAY</p> <p>l.* RUNWAY VACATED</p> <p>m. EXPEDITE TAXI [reason]</p> <p>n.* EXPEDITING</p>
<p>5. ATFM Ground Delay Program Calculated Off Block Time (COBT) non-compliance - early request for taxi clearance</p> <p>Calculated Off Block Time (COBT) non-compliance - late request for taxi clearance</p>	<p>a. PUSH BACK (or TAXI) CLEARANCE NOT AVAILABLE DUE FLOW MANAGEMENT. EXPECT CLEARANCE AT TIME (COBT - 5 minutes)</p> <p>b. YOU ARE NON-COMPLIANT WITH FLOW MANAGEMENT. EXPECT AIRBORNE DELAY.</p>

5.16.5 Aerodrome Movements

Circumstances	Phraseologies * Denotes pilot transmission
<p>1. Holding <i>Note: The procedure words ROGER and WILCO are insufficient acknowledgment of the instructions HOLD, HOLD POSITION and HOLD SHORT OF (position). In each case, the acknowledgment must be by the phraseology HOLDING or HOLDING SHORT, as appropriate.</i></p>	<p>a. HOLD (<i>direction</i>) OF (<i>position, runway number, etc</i>) b. HOLD POSITION c. HOLD SHORT OF (<i>position</i>) d.* HOLDING e.* HOLDING SHORT</p>
<p>2. To Cross a Runway <i>Note: If the control tower is unable to see the crossing aircraft (e.g. night, low visibility, etc), the instruction should always be accompanied by a request to report when the aircraft has vacated and is clear of the runway.</i></p>	<p>a.* [AT (<i>or ON</i>) (<i>location</i>)] REQUEST CROSS RUNWAY (<i>number</i>) b. AT (<i>or ON</i>) (<i>location</i>) CROSS RUNWAY (<i>number</i>) [REPORT VACATED] c.* AT (<i>or ON</i>) (<i>location</i>) CROSSING RUNWAY (<i>number</i>) d. EXPEDITE CROSSING RUNWAY (<i>number</i>) TRAFFIC (<i>aircraft type</i>) (<i>distance</i>) MILES FINAL</p>
<p>3. To Enter a Runway (not used in conjunction with clearance to line-up or enter the Operational Readiness Platform). <i>Note: If the control tower is unable to see the relevant aircraft (e.g. night, low visibility, etc), the instructions should always be accompanied by a request to report when the aircraft has vacated and is clear of the runway.</i></p>	<p>a.* [AT (<i>or ON</i>) (<i>location</i>)] REQUEST ENTER RUNWAY (<i>number</i>) b. AT (<i>or ON</i>) (<i>location</i>) ENTER RUNWAY (<i>number</i>) [REPORT VACATED] c.* AT (<i>or ON</i>) (<i>location</i>) ENTER RUNWAY (<i>number</i>)</p>

5.16.6 Runway Operations

Note: During multiple runway operations where the possibility of confusion exists, the runway number will be stated. The runway number may be stated if the caller wishes to emphasise the runway to be used. For parallel runway operations on discrete frequencies, at Class D aerodromes, the runway number may be omitted.

Circumstances	Phraseologies * Denotes pilot transmission
1. Preparation for Take-off when reporting ready for operations wholly within Class D CTR or departure from Class D CTR not in receipt of airways clearance for operations outside Class D airspace.	a. REPORT WHEN READY [FOR DEPARTURE] b.* READY [FOR CIRCUITS] [VIA (<i>published departure route, circuit leg for departure or first tracking point</i>)] c. ARE YOU READY FOR IMMEDIATE DEPARTURE? d.* READY
2. Clearance to Enter Runway and Await Take-off when the pilot desires to enter the runway and assume take-off position for checks before departure conditional clearances acknowledgment of a conditional clearance	•a.* REQUEST LINE-UP [REQUIRE (<i>required number of seconds delay in lined-up position before departure</i>) SECONDS ON RUNWAY] b. LINE UP [RUNWAY (<i>number</i>)] [AND WAIT] [BE READY FOR IMMEDIATE DEPARTURE] c. (<i>condition</i>) LINE UP [(RUNWAY (<i>number</i>)) (<i>brief reiteration of condition</i>)] d.* (<i>condition</i>) LINE UP [RUNWAY (<i>number</i>)] [AND WAIT]
3. Take-off Clearance	a. CLEARED FOR TAKE-OFF [REPORT AIRBORNE]

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
<p>multiple runway operations, other than Class D aerodromes where aircraft are operating on parallel runways using discrete frequencies</p> <p>when take-off clearance has not been complied with</p> <p>when LAHSO are in use</p> <p>when a radar SID has been issued</p> <p>when an IFR aircraft is cleared for a visual departure to a level at or above the MVA or MSA/LSALT</p>	<p>b. RUNWAY (<i>number</i>) CLEARED FOR TAKE-OFF</p> <p>c. TAKE-OFF IMMEDIATELY OR VACATE RUNWAY</p> <p>d. TAKE-OFF IMMEDIATELY OR HOLD SHORT OF THE RUNWAY</p> <p>•e. (<i>aircraft type</i>) LANDING ON CROSSING RUNWAY WILL HOLD SHORT - RUNWAY (<i>number</i>) CLEARED FOR TAKE-OFF</p> <p>•f. ASSIGNED HEADING [LEFT (<i>or</i> RIGHT)] (<i>three digits</i>) [(<i>altitude restriction</i>)] [RUNWAY (<i>number</i>)] CLEARED FOR TAKE-OFF</p> <p>g.* HEADING (<i>or</i> LEFT <i>or</i> RIGHT) (<i>three digits</i>) [(<i>altitude restriction</i>)] [RUNWAY (<i>number</i>)] CLEARED FOR TAKE-OFF</p> <p>h. TRACK EXTENDED CENTRE LINE (<i>three digits</i>) DEGREES [(<i>altitude restriction</i>)] [RUNWAY (<i>number</i>)] CLEARED FOR TAKE-OFF</p> <p>•i. (<i>instructions</i>) [RUNWAY (<i>number</i>)] CLEARED FOR TAKE-OFF, [MAKE LEFT (<i>or</i> RIGHT) TURN]</p>

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
<p>when a VFR aircraft, or an IFR aircraft cleared for a visual departure is issued radar heading instructions</p> <p>when an IFR aircraft cleared for a visual departure is assigned a level below the MVA or MSA/LSALT in the departure instructions.</p> <p>when the airways clearance issued to an IFR aircraft includes a visual departure and a level below the MVA or MSA/LSALT and no turn on departure required</p>	<p>•j.* <i>(instructions)</i> [RUNWAY (number)] CLEARED FOR TAKE-OFF, [LEFT (or RIGHT) TURN]</p> <p>•k. <i>(instructions)</i> MAINTAIN RUNWAY HEADING (or TURN LEFT (or RIGHT) HEADING (three digits)) VISUAL, [(altitude restriction)] [RUNWAY (number)] CLEARED FOR TAKE-OFF</p> <p>•l.* <i>(instructions)</i> RUNWAY HEADING (or LEFT (or RIGHT) HEADING (three digits)) VISUAL, [(altitude restriction)] [RUNWAY (number)] CLEARED FOR TAKE-OFF</p> <p>•m. <i>(instructions)</i> CLIMB TO (level) VISUAL, [RUNWAY (number)] CLEARED FOR TAKE-OFF</p> <p>•n.* <i>(instructions)</i> (level) VISUAL, [RUNWAY (number)] CLEARED FOR TAKE-OFF</p> <p>•o. [RUNWAY (number)] CLEARED FOR TAKE-OFF, VISUAL</p>
<p>4. Take-off Clearance Cancellation</p>	<p>a. HOLD POSITION, CANCEL, I SAY AGAIN CANCEL TAKE-OFF (reasons)</p> <p>b.* HOLDING</p>

Circumstances	Phraseologies * Denotes pilot transmission
to stop a take-off in emergency conditions <i>Note: Used only when an aircraft is in imminent danger.</i>	c. STOP IMMEDIATELY (<i>repeat aircraft callsign</i>) STOP IMMEDIATELY (<i>reason</i>) d.* STOPPING RUNWAY (<i>number</i>)

5.16.7 Helicopter Operations

Circumstances	Phraseologies * Denotes pilot transmission
1. Helicopter Operations air taxi or air transit for departure and arrival	a.* REQUEST AIR TAXI (<i>or AIR TRANSIT or GROUND TAXI</i>) FROM (<i>or VIA</i>) TO (<i>location or routing as appropriate</i>) b. AIR TAXI (<i>or AIR TRANSIT or GROUND TAXI</i>) TO (<i>or VIA</i>) (<i>location, parking position, stand, or routing as appropriate</i>) [CAUTION (<i>dust, loose debris, taxiing light aircraft, personnel, wake turbulence, etc</i>)] c. AIR TAXI (<i>or AIR TRANSIT or GROUND TAXI</i>) VIA (<i>direct, as requested, or specified route</i>) TO (<i>location, heliport, parking position, stand, operating or movement area, or runway</i>) AVOID (<i>aircraft or vehicles or personnel</i>)
2. Departure from: a) a RWY, or b) HLS visible to the tower and located on a manoeuvring area subject to ATC. Departure other than above	a. (<i>instructions as appropriate, position or runway</i>) CLEARED FOR TAKE-OFF b. (<i>instructions as appropriate</i>) [DEPARTURE APPROVED] REPORT AIRBORNE

Circumstances	Phraseologies * Denotes pilot transmission
3. Arrival to: a) a RWY, or b) HLS visible to the tower and located within a manoeuvring area subject to ATC. Arrival other than above	a. <i>(instructions as appropriate, position or runway)</i> CLEARED TO LAND b. CLEARED VISUAL APPROACH <i>(instructions as appropriate)</i> , REPORT ON THE GROUND

5.16.8 After Take-off

Note: ALL "level" reports within ATS surveillance system coverage must be to the nearest 100FT.

Circumstances	Phraseologies * Denotes pilot transmission
1. Tracking After Take-off when instructing an aircraft to turn 180° or more after take-off heading to be followed when a specific track is to be followed	a.* REQUEST RIGHT <i>(or LEFT)</i> TURN [WHEN AIRBORNE] b. LEFT <i>(or RIGHT)</i> TURN APPROVED c. AFTER PASSING <i>(level)</i> <i>(instructions)</i> d. MAKE LEFT <i>(or RIGHT)</i> - I SAY AGAIN - LEFT <i>(or RIGHT)</i> TURN e. CONTINUE ON <i>(magnetic direction of runway)</i> <i>(instructions)</i> f. TRACK <i>(magnetic direction of runway)</i> <i>(instructions)</i> g. CLIMB STRAIGHT AHEAD <i>(instructions)</i>
2. Airborne Report - where an ATS surveillance service is provided unrestricted turn to track (including SID) heading specified by ATC	•a.* PASSING <i>(level)</i> CLIMBING TO <i>(level)</i>

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
<p>heading specified by ATC</p> <p>confirmation of an assigned Radar SID heading when establishing contact with ATC and unable to execute turn immediately due procedural requirements</p> <p>when assigned heading approximates runway bearing</p>	<p>•b.* TURNING LEFT (<i>or</i> RIGHT) (<i>three digits</i>) PASSING (<i>level</i>) CLIMBING TO (<i>level</i>) <i>or</i></p> <p>•c.* MAINTAINING RUNWAY HEADING PASSING (<i>level</i>) CLIMBING TO (<i>level</i>)</p> <p>•d.* ASSIGNED HEADING LEFT (<i>or</i> RIGHT) (<i>three digits</i>) PASSING (<i>level</i>) CLIMBING TO (<i>level</i>)</p> <p>e.* HEADING (<i>three digits</i>) PASSING (<i>level</i>) CLIMBING TO (<i>level</i>)</p>
<p>3. Departure Report - when notifying departure report to a Class D control tower</p> <p>non-controlled aerodromes - non-surveillance</p> <p>non-controlled aerodromes-surveillance</p> <p>when notifying departure and identification is expected with the departure report</p>	<p>•a.* TRACKING (<i>track being flown</i>) (FROM (<i>reference aid used to establish track</i>) <i>or</i> VIA SID (<i>identifier</i>)) CLIMBING TO (<i>level</i>)</p> <p>•b.* DEPARTED (<i>location</i>) (<i>time in minutes</i>) TRACKING [TO INTERCEPT] (<i>track</i>) CLIMBING TO (<i>intended level</i>) ESTIMATING (<i>first reporting point</i>) AT (<i>time</i>)</p> <p>•c.* (<i>location reference departure aerodrome</i>) PASSING (<i>current level</i>) CLIMBING TO (<i>intended level</i>) ESTIMATING (<i>first reporting point</i>) AT (<i>time</i>)</p>

5.16.9 Arrival at Aerodrome

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
<p>1. Entering an Aerodrome Traffic Circuit</p> <p>when ATIS information is available</p>	<p>a.* [aircraft type] (position) (level) (intentions)</p> <p>b.* [aircraft type] (position) (level) INFORMATION (ATIS identification) (intentions)</p> <p>c. JOIN (instruction) RUNWAY (number) [(level)] [QNH (detail)] [TRAFFIC (detail)] [TRACK (requirements)]</p> <p>d. OVERFLY [(circuit direction) RUNWAY (number) [(level)] [QNH (detail)] [TRAFFIC (detail)] [TRACK (requirements)]</p>
<p>2. In the Circuit</p> <p>when advising or requesting a non-standard circuit</p> <p>nearing position at which approach must be aborted if not cleared to land</p> <p><u>Abnormal Operations/Doubt Exists</u> – (additional phrases)</p>	<p>a.* (position in circuit, e.g. DOWNWIND/ FINAL)</p> <p>b.* (position in circuit, e.g. DOWNWIND/FINAL) [GLIDE APPROACH, FLAPLESS APPROACH])</p> <p>c. [NUMBER (sequence number)] FOLLOW (aircraft type and position) [additional instructions if required]</p> <p>d.* BASE (or CROSSWIND)</p> <p>e.* FINAL (or LONG FINAL)</p> <p>f.* SHORT FINAL</p>

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
<p>For a civil aircraft, when doubt exists as to whether the gear is fully extended, or when a general aviation aircraft with retractable undercarriage has experienced abnormal operations</p> <p><u>Military Pilots</u> – (additional phrases)</p> <p>routine circuit reports must be made as and when arranged</p> <p>to sequence for downwind base call and wheel check (on reaching the base leg of a circuit, each aircraft, whether in stream landing or single, is to call tower and advise undercarriage down)</p> <p>ATC wheels check will include hook check for all hook cable operations</p>	<p>g.* CHECK GEAR DOWN [AND LOCKED]</p> <p>h.* GEAR DOWN [AND LOCKED]</p> <p>▲ i.* LEFT (<i>or</i> RIGHT) INITIAL</p> <p>▲ j. PITCH LONG (<i>or</i> SHORT)</p> <p>▲ k.* BASE GEAR GREEN (<i>or</i> THREE GREENS <i>or</i> THREE WHEELS)</p> <p>▲ l. (<i>instruction</i>) CHECK WHEELS</p> <p>▲ m.* (<i>readback</i>) (<i>activate beeper</i>) <i>or</i></p> <p>▲ n.* (<i>readback</i>) GEAR GREEN (<i>or</i> THREE GREENS <i>or</i> THREE WHEELS)</p> <p>▲ o. APPROACH/DEPARTURE END CABLE UP (<i>instruction</i>) CHECK WHEELS AND HOOK</p> <p>▲ p.* (<i>readback</i>) HOOK DOWN (<i>activate beeper</i>)</p>
<p>3. Arriving at an Aerodrome – Military Formations Circuit Area</p>	<p>▲ a.* (<i>formation callsign</i>), BASE THREE GREENS (<i>or</i> GEAR GREEN <i>or</i> THREE WHEELS)</p> <p>▲ b. (<i>formation callsign</i>) (<i>instruction</i>) CHECK WHEELS</p>

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
Lead aircraft undercarriage status report	▲ c.* <i>(individual callsign) (activate beeper) or</i>
	▲ d.* THREE GREENS <i>(or GEAR GREEN or THREE WHEELS) (individual callsign)</i>
Subsequent formation aircraft undercarriage status report	▲ e.* <i>(individual callsign), THREE GREENS (or GEAR GREEN or THREE WHEELS) (activate beeper if fitted)</i>
	▲ f. <i>(formation callsign)</i>
Pairs Landing	▲ g.* <i>(formation callsign), OUTER MARKER (or FINAL APPROACH FIX) SIX GREENS (or GEAR GREEN or SIX WHEELS)</i>
	▲ h. <i>(formation callsign) CLEARED TO LAND, CHECK WHEELS</i>
	▲ i.* <i>LAND (individual callsign) (activate beeper if fitted)</i>
	▲ j.* <i>(individual callsign) (activate beeper if fitted)</i>
	▲ k.* <i>(formation callsign)</i>
In-trail Landing	▲ l.* <i>(formation callsign) IN TRAIL, OUTER MARKER (or FINAL APPROACH FIX) THREE GREENS (or GEAR GREEN or THREE WHEELS)</i>
	▲ m.* <i>(formation callsign) IN TRAIL CLEARED TO LAND, CHECK WHEELS</i>
	▲ n.* <i>LAND (callsign) 1 (activate beeper if fitted)</i>
	▲ o.* <i>(callsign) 2 OUTER MARKER (or FINAL APPROACH FIX) THREE GREENS (or GEAR GREEN or THREE WHEELS) (activate beeper if fitted)</i>

Circumstances	Phraseologies * Denotes pilot transmission
	<p>▲ p.* (callsign) 3 OUTER MARKER (or FINAL APPROACH FIX) THREE GREENS (or GEAR GREEN or THREE WHEELS) (activate beeper if fitted)</p> <p>▲ q. CALLSIGN</p>
<p>4. Speed Adjustments - <u>Military Aircraft</u> military ATC instruction</p>	<p>▲ a. REDUCE TO CIRCUIT SPEED</p> <p>▲ b. REDUCE TO APPROACH SPEED</p> <p>▲ c. REDUCE TO MINIMUM SAFE SPEED</p>
<p>5. Approach Instructions</p> <p><i>Note: The report "LONG FINAL" is made when aircraft turn on to final approach at a distance greater than 4NM from touchdown or when an aircraft on a straight-in approach is 8NM from touchdown. In both cases, a report "FINAL" is required at 4NM from touchdown.</i></p>	<p>a. MAKE SHORT APPROACH</p> <p>b. MAKE LONG APPROACH (or EXTEND DOWNWIND)</p> <p>c. REPORT BASE (or FINAL or LONG FINAL)</p> <p>d. CONTINUE APPROACH</p>
<p>6. Landing</p> <p>multiple runway operations, other than Class D aerodromes where aircraft are operating on parallel runways using discrete frequencies.</p> <p>where the aircraft cannot be sighted by ATC</p>	<p>a. CLEARED TO LAND (or TOUCH AND GO) (or STOP AND GO)</p> <p>b. RUNWAY (number) CLEARED TO LAND (or TOUCH AND GO) (or STOP AND GO)</p> <p>•c. [RUNWAY (number)] NOT IN SIGHT - CLEARED TO LAND</p>

Circumstances	Phraseologies * Denotes pilot transmission
<p>pilot requesting option for touch and go, full stop, stop and go, or go around</p> <p>advising the pilot the option to touch and go, full stop, stop and go, or go around</p> <p>where ATC require the aircraft to make a full stop landing during the conduct of circuit operations</p> <p>when runway is occupied and ATC assessment is that the runway will not become available.</p>	<p>•d.* (<i>position in circuit</i>) REQUEST THE OPTION</p> <p>•e. [RUNWAY (<i>number</i>)] CLEARED FOR THE OPTION</p> <p>f. MAKE FULL STOP (<i>reason</i>) CLEARED TO LAND</p> <p>▲ g. AT THE MINIMA GO AROUND</p>
<p>7. When Landing Approved and LAHSO Are in Use</p> <p>required readback</p> <p>When the full length of the landing runway subsequently becomes available</p> <p>Where an aircraft operating on a flight number callsign cannot participate in LAHSO</p>	<p>a. (<i>aircraft type</i>) DEPARTING (<i>or LANDING</i>) ON CROSSING RUNWAY, HOLD SHORT RUNWAY (<i>number</i>) CLEARED TO LAND RUNWAY (<i>number</i>)</p> <p>•b.* HOLD SHORT RUNWAY (<i>number</i>) CLEARED TO LAND RUNWAY (<i>number</i>)</p> <p>c. FULL RUNWAY LENGTH NOW AVAILABLE</p> <p><i>Note: The HOLD SHORT lights will remain illuminated even though the full length of the RWY is available</i></p> <p>d. * NEGATIVE ACTIVE (<i>or PASSIVE or ACTIVE AND PASSIVE</i>) LAHSO</p>

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<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
8. When a Pilot Advises That an “Autoland”, “Coupled” or Similar Approach is Being Made (note not applicable for GLS) and the ILS Critical Area is Not Protected.	•a. ILS CRITICAL AREA NOT PROTECTED
9. Delaying Aircraft	a. ORBIT RIGHT (<i>or</i> LEFT) [FROM PRESENT POSITION]
10. Pilot Request for Low Approach or Pass to make an approach along a runway descending to an agreed minimum level to fly past the control tower or other observation point for the purpose of visual inspection by persons on the ground	a.* REQUEST LOW APPROACH (<i>reasons</i>) b. CLEARED LOW APPROACH [RUNWAY (<i>number</i>)] [(<i>altitude restriction</i>)] [(<i>go around instructions</i>)] •c.* REQUEST LOW PASS (<i>reasons</i>) •d. CLEARED LOW PASS [RUNWAY (<i>number</i>)] [(<i>altitude restriction</i>)] [(<i>go around instructions</i>)]
11. Missed Approach to discontinue an approach multiple runway operations	a. GO AROUND [TRACK EXTENDED CENTRE LINE (<i>three digits</i>) DEGREES (<i>or instructions</i>)] b.* GOING AROUND c.* GOING AROUND RUNWAY (<i>number</i>)

5.17 **ATS Surveillance Service Phraseologies**5.17.1 **General Phrases**

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. Identification of Aircraft	a. REPORT HEADING [AND FLIGHT LEVEL (<i>or</i> ALTITUDE)] b. FOR IDENTIFICATION TURN LEFT (<i>or</i> RIGHT) HEADING (<i>three digits</i>) c. IDENTIFIED [<i>position</i>] d. NOT IDENTIFIED [<i>reason</i>], [RESUME (<i>or</i> CONTINUE) OWN NAVIGATION]
2. Termination of ATS Surveillance Service	a. IDENTIFICATION TERMINATED [DUE (<i>reason</i>)] [<i>(instructions)</i>] [FREQUENCY CHANGE APPROVED] b. WILL SHORTLY LOSE IDENTIFICATION (<i>appropriate instructions or information</i>) c. IDENTIFICATION LOST [<i>reasons</i>] (<i>instructions</i>)
3. ATS Surveillance System Position Information to request traffic, position, and/ or navigation information	•a.* REQUEST (i) ATS SURVEILLANCE ASSISTANCE (<i>reason</i>) (ii) POSITION [WITH REFERENCE TO (<i>aid or location</i>)] (iii) TRAFFIC (<i>or</i> POSITION <i>or</i> NAVIGATION) ADVISORY [BY SURVEILLANCE] (iv) [HANDOFF FOR] FLIGHT FOLLOWING

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
to request an ongoing SIS to terminate an ongoing SIS to provide position information	b.* CANCEL FLIGHT FOLLOWING c. POSITION (<i>distance</i>) (<i>direction</i>) OF (<i>significant point</i>) (<i>or OVER</i> <i>or ABEAM (significant point)</i>) d.* SURVEILLANCE SERVICE NOT AVAILABLE
4. To request continuation of an SIS Where ongoing service is not available	a.* REQUEST HAND-OFF FOR FLIGHT FOLLOWING b. ATS SURVEILLANCE NOT AVAILABLE
5. ATS surveillance system ground equipment unserviceability	a. SURVEILLANCE SYSTEM OUT OF SERVICE/- DEGRADED (<i>appropriate information as necessary</i>)
6. To request the aircraft's SSR or ADS-B capability	a. ADVISE TRANSPONDER CAPABILITY b. ADVISE ADS-B CAPABILITY
7. To advise the aircraft's SSR or ADS-B capability	a.* TRANSPONDER (ALPHA, CHARLIE <i>or</i> SIERRA <i>as shown in the Flight Plan</i>) b.* ADS-B TRANSMITTER [TEN c.* NINETY DATALINK] d.* ADS-B RECEIVER [TEN NINETY DATALINK] e.* NEGATIVE TRANSPONDER

5.17.2 ATS Surveillance Service Communication and Navigation

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. Communications	a. [IF] RADIO CONTACT LOST (<i>instructions</i>) b. IF NO TRANSMISSIONS RECEIVED FOR (<i>number</i>) MINUTES (<i>or SECONDS</i>) (<i>instructions</i>)

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
if loss of communication is suspected	c. REPLY NOT RECEIVED (<i>instructions</i>) d. IF YOU READ [<i>manoeuvre instructions or SQUAWK (code or IDENT)</i>] e. (<i>manoeuvre or SQUAWK</i>) OBSERVED, POSITION (<i>position of aircraft</i>), WILL CONTINUE TO PASS INSTRUCTIONS
2. Aircraft Directional Indicator Failure notify pilot of intention to use directional indicator failure procedures when suspected by ATC if heading response appears at variance with the track of the ATS Surveillance symbol turn instructions	•a. ATS SURVEILLANCE SERVICE WILL CONTINUE, MAKE ALL TURNS RATE ONE (<i>or RATE HALF or (number) DEGREES PER SECOND</i>), EXECUTE INSTRUCTIONS IMMEDIATELY UPON RECEIPT •b. CONFIRM HEADING •c. SUSPECT YOUR DIRECTIONAL INDICATOR HAS FAILED d. TURN LEFT (<i>or RIGHT</i>) NOW e. STOP TURN NOW

5.17.3 ATS Surveillance System Manoeuvres

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. General Manoeuvres	a. LEAVE (<i>significant point</i>) HEADING (<i>three digits</i>) [INBOUND] [AT (<i>time</i>)] b. CONTINUE HEADING (<i>three digits</i>)

Circumstances	Phraseologies * Denotes pilot transmission
<p>when an ACFT is assigned a level below the MVA or MSA/LSALT</p> <p>when an ACFT is issued a heading instruction below the MVA or MSA/LSALT <i>Note: Where both heading and altitude instructions are issued, VISUAL need only be appended to the second part of the instruction.</i></p> <p>when instructing an aircraft to turn 180° or more and in order to emphasize the direction of turn</p> <p>when necessary to specify a reason for a manoeuvre, the following phraseologies should be used:</p>	<p>c. CONTINUE PRESENT HEADING</p> <p>d. FLY HEADING (<i>three digits</i>)</p> <p>e. TURN LEFT (<i>or RIGHT</i>) (<i>number</i>) DEGREES (<i>or HEADING (three digits)</i>) [<i>reason</i>]</p> <p>f. ORBIT LEFT (<i>or RIGHT</i>) [<i>reason</i>]</p> <p>g. CLIMB (<i>or DESCEND</i>) TO (<i>level</i>) VISUAL</p> <p>h. TURN LEFT (<i>or RIGHT</i>) (<i>number</i>) DEGREES (<i>or HEADING (three digits)</i>) [CLIMB (<i>or DESCEND</i>) TO (<i>level</i>)] VISUAL</p> <p>i. STOP TURN HEADING (<i>three digits</i>)</p> <p>j. TURN LEFT (<i>or RIGHT</i>) - I SAY AGAIN - LEFT (<i>or RIGHT</i>) HEADING (<i>three digits</i>) [<i>reason</i>]</p> <p>(i) DUE TRAFFIC</p> <p>(ii) FOR SPACING</p> <p>(iii) FOR DELAY</p> <p>(iv) FOR DOWNWIND (<i>or BASE, or FINAL</i>)</p>
2. Aircraft Vectoring by ATS Surveillance Service	<p>a.* REQUEST VECTORS [TO (<i>or FROM</i>) (<i>aid, location or reason</i>)]</p> <p>b. DO YOU WANT VECTORS?</p>

Circumstances	Phraseologies * Denotes pilot transmission
3. To transfer responsibility to the pilot for navigation on termination of vectoring	a. RESUME OWN NAVIGATION (<i>position of aircraft</i>) (<i>specific instructions</i>)

5.17.4 **Speed Control**

Circumstances	Phraseologies * Denotes pilot transmission
<p>1. Speed <i>Note: All speed communications shall relate to INDICATED AIRSPEED unless otherwise stipulated. Where applicable, Mach Number may be nominated as the basis of a speed statement.</i></p> <p>when an aircraft is required to reduce speed to the minimum possible in a clean configuration</p>	<p>a.* SPEED (<i>number</i>) KNOTS (<i>or Mach Number</i>)</p> <p>b. REPORT SPEED <i>or</i> ([CLIMB <i>or</i> CRUISE] MACH NUMBER)</p> <p>c. MAINTAIN (<i>number</i>) KNOTS (<i>or MACH (number)</i>) [OR GREATER (<i>or LESS</i>)] [UNTIL (<i>significant point</i>)]</p> <p>d. MAINTAIN PRESENT SPEED</p> <p>e. INCREASE (<i>or REDUCE</i>) SPEED TO (<i>or BY</i>) (<i>number</i>) KNOTS [OR GREATER (<i>or LESS</i>)]</p> <p>f. REDUCE TO MINIMUM APPROACH SPEED</p> <p>g. CROSS (<i>significant point</i>) [AT (<i>time</i>)] [OR LATER (<i>or OR BEFORE</i>)] [AT (<i>number</i>) KNOTS]</p> <p>•h. REDUCE TO MINIMUM CLEAN SPEED</p>

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
<p>when an ATC-issued speed restriction no longer applies and the aircraft is on a published procedure for which a published speed currently applies</p> <p>when ATC-issued speed restriction no longer applies and no published speed currently applies. Comply with airspace speed limitations and all subsequent published speed restrictions. (<i>Note: Normal speed is the speed the aircraft would be maintaining had it not been issued an ATC speed restriction.</i>)</p> <p>when aircraft speed is pilot's discretion. ATC speed restrictions are cancelled. Comply with airspace speed limitations. (<i>Note: Not used with SID or STAR instructions.</i>)</p> <p>when aircraft speed is pilot's discretion. All airspace and ATC speed restrictions are cancelled. (<i>Note: Not used with SID or STAR instructions.</i>)</p> <p><i>Note: Airspace speed limitations are at ENR 1.4 para 4.</i></p>	<p>•i. RESUME PUBLISHED SPEED (<i>or</i> LEVEL RESTRICTIONS <i>or</i> SPEED AND LEVEL RESTRICTIONS)</p> <p>j. RESUME NORMAL SPEED</p> <p>k. NO ATC SPEED RESTRICTIONS</p> <p>l. NO SPEED RESTRICTIONS</p>

5.17.5 Traffic Information

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. Traffic Information aircraft type to be passed if known	a. TRAFFIC (<i>number</i>) O'CLOCK (<i>distance</i>) (<i>direction of flight</i>) [<i>any other pertinent information</i>] (i) UNKNOWN (ii) SLOW MOVING (iii) FAST MOVING (iv) CLOSING (v) OPPOSITE (<i>or</i> SAME) DIRECTION (vi) OVERTAKING (vii) CROSSING LEFT TO RIGHT (<i>or</i> RIGHT TO LEFT) (viii) (<i>type</i>) (ix) (<i>level</i>) (x) CLIMBING (<i>or</i> DESCENDING) b. CLEAR OF TRAFFIC [<i>appropriate instructions</i>]

5.17.6 Secondary Surveillance Radar (SSR) and ADS-B

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. To Instruct Setting of Transponder (<i>The word "code" is not used in transmissions.</i>) <u>to request:</u> reselection of the assigned mode and code	a. SQUAWK (<i>code</i>) [AND IDENT <i>if required</i>] b.* [SQUAWK] (<i>code</i>) [AND IDENT <i>if instructed by ATS</i>] c. SQUAWK NORMAL d. RECYCLE [(<i>mode</i>)] (<i>code</i>) e.* RECYCLING [(<i>mode</i>)] (<i>code</i>)

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
reselection of aircraft identification	f. RE-ENTER MODE S (or ADS-B) AIRCRAFT IDENTIFICATION
confirmation of Mode A Code selection	g. CONFIRM SQUAWK (code)
operation of the IDENT feature	h.* SQUAWKING (code)
temporary suspension of transponder operation	i. SQUAWK IDENT
<i>Note: ADS-B and SSR are linked in many aircraft and terminating one will terminate the other.</i>	j. TRANSMIT ADS-B IDENT
emergency code selection	k. SQUAWK STANDBY [TRANSMIT ADS-B ONLY]
termination of SSR transponder or ADS-B transmitter operation	l. SQUAWK MAYDAY
<i>Note: ADS-B and SSR are linked in many aircraft and terminating one will terminate the other.</i>	m. STOP SQUAWK [TRANSMIT ADS-B ONLY]
transmission of pressure altitude	n. STOP ADS-B TRANSMISSION [SQUAWK (code) ONLY]
pressure setting check and confirmation of level	o. SQUAWK CHARLIE
termination of pressure altitude transmission because of faulty operation	p. TRANSMIT ADS-B ALTITUDE
<i>Note: ADS-B and SSR are linked in many aircraft and terminating one will terminate the other.</i>	q. CHECK ALTIMETER SETTING AND CONFIRM LEVEL
altitude check	r. STOP SQUAWK CHARLIE, WRONG INDICATION
	s. STOP ADS-B ALTITUDE TRANSMISSION [(WRONG INDICATION, or reason)]
	t. VERIFY LEVEL

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
confirmation of ADS-B operation	•u. ADS-B TRANSMISSIONS NOT RECEIVED, CONFIRM ADS-B OPERATIONAL
change to secondary transponder	•v. SELECT SECONDARY TRANSPONDER
2. Advice on Traffic Level Where the Pressure Altitude Derived Level Information Has Not Been Verified	•a. UNVERIFIED LEVEL (<i>level</i>)

5.17.7 General ADS-C Phraseologies

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
ADS-C DEGRADATION	ADS-C (<i>or</i> ADS-CONTRACT) OUT OF SERVICE (<i>appropriate information as necessary</i>).

5.17.8 Approach Radar Services

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
1. Vectoring for Approach <i>Note: The chart title for the procedure must be used. Except for circling approaches, the procedure suffix may be omitted when no possibility of confusion exists. The words (GNSS) or (RNP) do not need to be included in the RNAV approach request or clearance.</i>	a. VECTORING FOR (<i>chart title</i>) APPROACH b. VECTORING FOR VISUAL APPROACH RUNWAY (<i>number</i>) REPORT FIELD (<i>or</i> RUNWAY) IN SIGHT c. VECTORING FOR (<i>positioning in the circuit</i>) d. (<i>chart title</i>) APPROACH NOT AVAILABLE DUE (<i>reason</i>) (<i>alternative instructions</i>)
2. Vectoring for ILS/GLS, pilot-interpreted NAVAIDs and RNAV (GNSS) (<i>or</i> RNP APCH) approaches via the IF	a. POSITION (<i>number</i>) MILES FROM (<i>fix</i>), TURN LEFT (<i>or</i> RIGHT) HEADING (<i>three digits</i>)

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
instructions and information	<ul style="list-style-type: none"> b. YOU WILL INTERCEPT (<i>radio aid or track</i>) (<i>distance</i>) FROM (<i>significant point or TOUCHDOWN</i>) c.* REQUEST (<i>distance</i>) FINAL d. CLEARED FOR (<i>chart title</i>) APPROACH e. REPORT ESTABLISHED [ON ILS (<i>LOCALISER</i>) <i>or</i> (<i>GLIDE PATH</i>) <i>or</i> GLS (<i>FINAL APPROACH COURSE</i>) <i>or</i> RNAV (<i>GNSS</i>) (<i>chart title</i>) APPROACH] f. CLOSING FROM LEFT (<i>or</i> RIGHT) [REPORT ESTABLISHED] g. TURN LEFT (<i>or</i> RIGHT) HEADING (<i>three digits</i>) [TO INTERCEPT] <i>or</i> [REPORT ESTABLISHED] h. EXPECT VECTOR ACROSS (<i>intermediate segment</i> [GNSS], <i>localiser course/final approach course or aid</i>) (<i>reason</i>) i. THIS TURN WILL TAKE YOU THROUGH (<i>aid</i>) [<i>reason</i>] j. TAKING YOU THROUGH (<i>aid</i>) [<i>reason</i>] k. MAINTAIN (<i>level</i>) UNTIL GLIDE PATH INTERCEPTION l. REPORT ESTABLISHED ON GLIDE PATH m. INTERCEPT (<i>radio aid</i>) [REPORT ESTABLISHED]

<i>Circumstances</i>	<i>Phraseologies</i> * Denotes pilot transmission
<p>3. Independent and Dependent Parallel Approaches</p> <p>When aircraft will operate within 1NM of traffic on the adjacent final approach</p> <p>Independent Parallel Approaches when an aircraft is observed to be deviating towards the NTZ</p> <p>Break-out instruction issued when an aircraft penetrates, or is likely to penetrate, the NTZ</p>	<p>a. CLEARED FOR (<i>chart title</i>) APPROACH</p> <p>b. YOU HAVE CROSSED THE LOCALISER (<i>or</i> FINAL APPROACH COURSE), TURN LEFT (<i>or</i> RIGHT) IMMEDIATELY AND RETURN TO THE LOCALISER (<i>or</i> FINAL APPROACH COURSE)</p> <p>c. TURN LEFT (<i>or</i> RIGHT) HEADING (<i>three digits</i>) JOIN FINAL RUNWAY (<i>number</i>) FROM THAT HEADING CLEARED INDEPENDENT VISUAL APPROACH</p> <p>d. TRAFFIC (<i>aircraft type</i>) [RUNWAY LEFT (<i>or</i> RIGHT)] BEHIND (<i>or</i> AHEAD <i>or</i> ADJACENT)</p> <p>e. YOU ARE DEVIATING FROM THE FINAL APPROACH COURSE. TURN LEFT (<i>or</i> RIGHT) IMMEDIATELY AND RETURN TO YOUR CLEARED APPROACH</p> <p>f. BREAK-OUT ALERT, (<i>callsign</i>) TURN LEFT (<i>or</i> RIGHT) IMMEDIATELY HEADING (<i>three digits</i>) CLIMB (<i>or</i> DESCEND) TO (<i>level</i>)</p>
<p>4. Position</p>	<p>a. (<i>distance</i>) FROM TOUCHDOWN</p>

5.17.9 Pilot Actions for Speechless Radar Approach

<i>Circumstances</i>	<i>Phraseologies</i> <i>* Denotes pilot transmission</i>
1. Pilot Request for Speechless Radar Approach When Microphone/s Unserviceable	▲a.* <i>Pilot transmits four (4) separate and distinct unmodulated transmissions of one second duration</i>
2. Pilot Response to Subsequent Control Questions:	
(i) affirmative or acknowledgment	▲b.* (i) <i>one distinct transmission</i>
(ii) negative	▲c.* (ii) <i>two separate and distinct transmissions</i>
(iii) say again	▲d.* (iii) <i>three separate and distinct transmissions</i>
3. Pilot Indication of a Further and Pertinent Unserviceability or an Emergency	▲a.* <i>Five (5) separate continuous transmissions</i>
4. Pilot Indication of Abandoning the Aircraft	▲a.* <i>A single continuous transmission as long as practicable</i>
5. Controller Requires Pilot to Indicate When an Instruction Has Been Completed	▲a. <i>WHEN (condition or instruction is completed) MAKE A TWO SECOND TRANSMISSION</i>

6. ATS DATA LINK SERVICES

6.1 General

- 6.1.1 FANS 1/A data link services (CPDLC and ADS-C) are available within airspace controlled by Australian ATC within the Melbourne (YMMM), Brisbane (YBBB), Honiara (AGGG) and Nauru (ANAU) FIRs.
- 6.1.2 Pre-Departure Clearances (PDC) utilising FANS 1/A data link are not available within Australian administered airspace. (See *ENR 1.1 para 2.2.15*).
- 6.1.3 The data link procedures described herein are in accordance with international procedures. For more information concerning other data link procedures, refer to Chapter 5 of the *ICAO Global Operational Data Link (GOLD) Manual (Doc 10037)*.
- 6.1.4 FMC Waypoint Position Reporting (FMC WPR) is available within Oceanic airspace east of Australia for operators whose AOC supports the conversion of ACARS position reports into a suitable format (ARP) and the forwarding of these messages to ATC.

Operators wishing to participate in FMC WPR should submit such a request to Airservices Australia.

6.2 Pilot Responsibilities

- 6.2.1 Participating flight crews must be trained in the use of data link equipment to a level approved by the State of Registry of the operator, and the aircraft must meet all State of Registry ATC data link requirements.
- 6.2.2 A logon request must be received from the aircraft before any data link connections can be initiated by the ground system. The initial logon request must be initiated by the flight crew in accordance with company and ATS procedures.
- 6.2.3 When using CPDLC for communications and/or ADS-C or FMC WPR for position reporting, flight crews must advise ATC when any fault occurs (e.g. loss of SATCOM) that may result in the degraded performance or non-availability of CPDLC, ADS-C and/or FMC WPR.

- 6.2.4 To ensure reliable Automatic Dependant Surveillance-Contract (ADS-C) is available, flight crews must ensure that the ADS-C application remains ARMED. Flight crews must also ensure that the ADS-C emergency mode has not been selected inadvertently.
- 6.2.5 CPDLC “latency timer” functionality is not available in Australian airspace. If the aircraft is equipped with CPDLC latency timer functionality, flight crews must ensure that this functionality is either disabled or set to maximum value prior to entering the YBBB, AGGG, ANAU or YMMM FIRs.
- 6.3 **Controller Pilot Data Link Communication (CPDLC)**
- 6.3.1 In controlled airspace beyond the range of VHF voice, CPDLC is the primary means of communications between ATC and flight crews operating FANS 1/A equipped aircraft. HF voice will be used as the backup communications medium. In Class G airspace HF is the primary means of communication, although controllers may initiate the use of CPDLC. The controller communicating by CPDLC holds responsibility for SAR and communications alerting.
- 6.3.2 In Australian continental airspace, VHF voice is normally the primary medium for communication. Within East Coast SSR Coverage flight crews should not initiate CPDLC messaging except:
- a. when transmitting position reports in accordance with *para 6.5.1* or
 - b. when authorised by the controller; or
 - c. in an emergency
- 6.3.3 Outside East Coast SSR coverage, ATC and pilots may use CPDLC to augment VHF communications.
- 6.3.4 Where CPDLC is to be used as the primary means of communications, flight crews will be instructed to transfer to CPDLC using the phraseology:
“TRANSFERTO(MELBOURNE/BRISBANE)CENTREONDATA LINK. MONITOR [frequency].”
- 6.3.5 CPDLC messages must be constructed using standard message elements, free text message elements or a combination of both. Standard message elements are contained in *PANS-ATM (DOC 4444)*, *Appendix 5* and *ICAO Doc 10037 - Global Operational Data Link (GOLD) Manual*.

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- 6.3.6 When CPDLC is being used and the intent of the message is included in the CPDLC message set contained in *PANS-ATM (Doc 4444)*, *Appendix 5* or *ICAO Doc 10037 - Global Operational Data Link (GOLD) Manual*, the associated standard message elements must be used.
- 6.3.7 The use of free text message elements should be kept to a minimum. When the CPDLC message set contained in the *PANS-ATM (Doc 4444)* or *ICAO Doc 10037 - Global Operational Data Link (GOLD) Manual* does not provide for specific circumstances, the free text message elements may be used. These free text message elements should be sorted for selection within the aircraft system or ground system to facilitate their use.
- 6.3.8 To ensure the correct synchronisation of messages, dialogues initiated by voice must, wherever possible, be closed by voice. Dialogues initiated by CPDLC must be closed by CPDLC.
- 6.3.9 To avoid ambiguity, a CPDLC downlink message should not contain more than one clearance request.
- 6.3.10 If a CPDLC downlink message contains multiple clearance requests and not all of the requested clearances are available, the controller will respond with the uplink message UNABLE. The controller may subsequently uplink a separate CPDLC message containing any requested clearances that are available.
- 6.3.11 If any ambiguity exists as to the intent of a CPDLC message, clarification should be sought by voice.
- 6.3.12 A clearance issued by CPDLC requires only the appropriate CPDLC response, not a readback as would be required if the clearance had been delivered by voice.
- 6.3.13 The downlink response WILCO indicates that the flight crew has accepted the full terms of the entire uplink message including any clearance or instruction.
- 6.3.14 The downlink response UNABLE indicates that the flight crew is unable to accept the uplinked clearance or instruction. The flight crew must continue to operate in accordance with the most recently accepted clearance and/or instructions.
- 6.3.15 The use of the uplink STANDBY message element provides advice that the downlink request is being assessed and a short-term delay of less than 10 minutes can be expected until a response will be sent. The original message remains open.

- 6.3.16 The use of the uplink REQUEST DEFERRED message element provides advice that the downlink request is being assessed and a longer-term delay of greater than 10 minutes can be expected until a response will be sent. The original message remains open.

6.4 **Logon Procedures**

- 6.4.1 Before entering an airspace where data link applications are used by the ATS unit, data link communications shall be initiated between the aircraft and the ATS unit in order to register the aircraft and, when necessary, allow the start of a data link application. This shall be initiated by the aircraft, either automatically or by the pilot, or by the ATS unit on address forwarding.

Note: Provisions concerning the data link initiation capability (DLIC) are contained in Annex 10, Volume II, Chapter 8.

- 6.4.2 Brisbane ATC provides data link services in the Honiara and Nauru FIRs. The logon addresses for the appropriate FIRs are:

Brisbane YBBB

Honiara YBBB

Nauru YBBB

Melbourne YMMM.

- 6.4.3 To avoid automatic rejection of the logon request:

- a. the aircraft identification and the aircraft registration contained in the logon request must be identical to the aircraft details filed in the flight plan, and
- b. aircraft departing from airports either within Australia (YBBB or YMMM FIR) or the AGGG and ANAU FIRs should not logon earlier than 45 minutes prior to the flight planned EOBT, and
- c. aircraft inbound to the YBBB, YMMM, AGGG or ANAU FIRs should not logon:
 - (i) prior to departure; or
 - (ii) earlier than 45 minutes prior to the FIR boundary estimate

- 6.4.4 Aircraft departing from airports either within Australia (YBBB or YMMM FIR) or the AGGG and ANAU FIRs, requesting data link services, should logon as described below:
- On the ground using the logon address for the FIR that the departure airport is located within; or
 - Airborne at any time after passing 10,000FT, using the logon address for the FIR in which the aircraft is currently operating, with the following exceptions:
 - Aircraft approaching an FIR boundary should logon to the next ATS unit, rather than the current ATS unit; and
 - Airborne aircraft departing Sydney/Bankstown/Richmond should logon in accordance with the following table:

Airborne aircraft departing Sydney/Bankstown/Richmond	
Departure track	Logon address
Airborne aircraft departing on tracks south of SY- OPTIC through west to SY-RI-MDG.	YMMM
Airborne aircraft departing on tracks from SY-RI- MDG through east to SY-OPTIC (inclusive).	YBBB

Note: The above table applies to logons from airborne aircraft only. Flight crews who logon whilst on the ground at Sydney/ Bankstown/Richmond must logon to YMMM.

- 6.4.5 When instructed to logon by voice, the flight crew must readback the logon address.
- 6.4.6 Unless otherwise instructed, aircraft remaining wholly within East Coast SSR Coverage are not required to logon for data link services.
- 6.4.7 Flight crews of operators participating in PDC at Australian airports must not initiate a logon until after the PDC has been received.
- 6.4.8 Aircraft requesting data link services on entering the AGGG, ANAU, YBBB or YMMM FIRs from a non-data link FIR should logon to the ATS appropriate unit between 15 and 45 minutes prior to crossing the FIR boundary. CPDLC and ADS-C connections will be established automatically by the ATS unit concerned.

6.4.9 For aircraft entering the AGGG, ANAU, YBBB or YMMM FIRs from a data link FIR, the CPDLC connection will be either transferred automatically by the Address Forwarding process, or the transferring ATS unit will instruct the flight crew to logon manually at an appropriate time/distance prior to the FIR boundary.

6.4.10 Aircraft transiting between the YBBB and YMMM FIRs will be automatically Address Forwarded to the appropriate ATS unit. Aircraft departing Australian airspace (or the AGGG and ANAU FIRs) and directly entering an adjoining data link FIR can expect to be Address Forwarded to the appropriate ATS unit prior to the FIR boundary.

6.5 **Position Reporting Requirements**

6.5.1 A CPDLC downlink is required to enable the controlling ATS unit to ensure that it is CPDLC data authority for the aircraft. To facilitate this, flight crews must send a single CPDLC position report either:

- a. whenever a new CPDLC Connection is established; or
- b. on entering the YMMM, YBBB, AGGG or ANAU FIR from another ATS unit; or
- c. crossing the YMMM/YBBB FIR boundary, except that aircraft inbound to land at Sydney/Bankstown/Richmond from the north or east are not required to downlink a CPDLC position report at the FIR boundary 45NM from SY.

6.5.2 Following this initial CPDLC position report, additional CPDLC or voice position reports are not required unless specifically requested by ATC. A CPDLC position report is not required when an aircraft is transferred from voice to CPDLC providing a report was downlinked earlier in accordance with *para 6.5.1*.

6.5.3 For non-identified aircraft, ADS-C reporting fulfils position reporting requirements. In the event of ADS-C failure, the pilot will be instructed to resume position reporting by either voice or CPDLC as appropriate.

6.6 **CPDLC Level Reporting Following Change of Level**

6.6.1 For non-identified aircraft, ADS-C reports fulfil level reporting requirements for a flight. Where ATC requires a CPDLC report, following or during a change of level, an appropriate instruction, will be uplinked; e.g. "CLIMB TO AND MAINTAIN 370. REPORT LEVEL 370" or "REPORT LEAVING 350"

6.6.2 Upon receipt of this CPDLC uplink, flight crews must ensure that the correct downlink report is sent.

6.6.3 If no instruction to make a CPDLC report is received, the flight crew has no requirement to report either maintaining the assigned level, or leaving the previously assigned level.

6.7 **Reporting Back on Route by CPDLC**

6.7.1 If an aircraft is subject to a weather deviation and has been instructed to report back on route, the CPDLC BACK ON ROUTE message must not be downlinked until either:

- The aircraft has rejoined its previously cleared route; or
- The aircraft has requested and has been cleared direct to a subsequent waypoint and is proceeding directly to that waypoint

6.7.2 If an aircraft is off track, but proceeding directly to a subsequent waypoint, the BACK ON ROUTE message must not be downlinked until after the aircraft has sequenced that waypoint.

Note: Downlinking BACK ON ROUTE before the aircraft is actually established on the cleared route may result in ATC applying incorrect separation tolerances to the aircraft.

6.8 **Block Level Clearances**

6.8.1 Subject to traffic, ATC may issue block level clearances to facilitate operations in adverse weather or to allow flight crews to optimise fuel burn for an aircraft.

6.8.2 A block level clearance is cancelled or amended by the issuing of a new vertical clearance.

6.8.3 To request a cancellation of a block clearance when it is no longer required, flight crews should downlink a CPDLC request for the preferred level in order to enable ATC to issue the new vertical clearance.

6.9 **Revision of Estimates Using CPDLC**

6.9.1 Under normal circumstances, an aircraft position reporting via ADS-C is not required to advise ATC of any revised waypoint estimates. Exceptions are:

- a. revisions of greater than two (2) minutes to a previous flight crew advised estimate (i.e. by voice or CPDLC); or

- b. following a flight crew-initiated action (e.g. speed change) resulting in an amended estimate of greater than two (2) minutes.

6.9.2 If required, flight crews shall advise a revised estimate by one of the following methods:

- a. by voice report; or
- b. a CPDLC position report containing the revised estimate; or
- c. the CPDLC free text message element, "REVISED ETA [position][time]"

6.10 **CPDLC Message Restrictions**

6.10.1 Controllers will not issue uplink instructions relating to cruise climbs, or the message element "CRUISE (altitude)". Additionally controllers will not issue uplink instructions containing the "AT PILOT DISCRETION" message element.

6.11 **CPDLC CONTACT and MONITOR messages**

6.11.1 The format of the [frequency] variable in the CPDLC "CONTACT" and "MONITOR" message elements permits the inclusion of only a single frequency. Due to this limitation, only the primary frequency will be notified to flight crews. The secondary frequency - uplinked as a free text - will be available on request.

6.11.2 The format of the [unit name] variable in the CPDLC "CONTACT" and "MONITOR" message elements does not support ATS unit types such as "RADIO", or "HF". Due to this limitation, "CENTRE" will be used (i.e. "CONTACT BRISBANE CENTRE 13261", rather than "CONTACT BRISBANE HF 13261").

6.12 **CPDLC route clearances**

6.12.1 On occasions, controllers may issue amended route clearances by CPDLC in order to optimise an aircraft's route, or to separate with either traffic or restricted airspace. Operators must ensure that flight crews are familiar with the functionality associated with the display and loading of CPDLC route clearances.

6.13 **CPDLC Failure**

6.13.1 Flight crews becoming aware of a CPDLC connection failure when CPDLC is being used as the primary means of communication must immediately re-establish primary communications on the appropriate voice frequency.

- 6.13.2 In the event of either a programmed or unexpected CPDLC shutdown, ATC will advise all data link connected aircraft to re-establish primary communications by voice. The return of the system to an operational state may require a new logon from affected aircraft. Voice will continue to be used as the primary means of communication until CPDLC connections are re-established and ATC has authorised a return to data link communications.
- 6.14 **Notification Of Emergency**
- 6.14.1 Depending on the nature of the emergency condition experienced, flight crews should notify ATC of the circumstances by the most efficient means (voice, CPDLC or ADS-C).
- 6.14.2 If a CPDLC MAYDAY or PAN message is received by the ATS unit, ATC will respond with the free text uplink message ROGER MAYDAY (or ROGER PAN). ATC will not expect a ROGER response to the uplink until being notified that the emergency situation has been cancelled or stabilised to the extent that messages are able to continue being exchanged (if CPDLC is considered to be the best communications medium for the situation).
- 6.14.3 ATC may respond via CPDLC to a report indicating unlawful interference with the uplink message ROGER 7500.
- 6.14.4 If an ADS-C report containing emergency mode is received by the ground system without voice or CPDLC confirmation of an emergency situation, ATC will check for inadvertent activation of emergency mode by voice or CPDLC using the phraseology "CONFIRM ADS-C EMERGENCY".
- a. If the emergency mode has been inadvertently activated, the flight crew must respond by voice or CPDLC using the phraseology "ADS-C RESET" and cancel the ADS-C emergency mode.
 - b. ATC will assume an emergency situation exists if there is no confirmation that the activation of emergency mode was inadvertent and ADS-C emergency reports are still being received.
- 6.14.5 When an emergency situation no longer exists, the flight crew should cancel the ADS-C emergency mode (if activated).

6.15 CPDLC Message Set

6.15.1 Standard message elements are listed in *ICAO Doc 10037 - Global Operational data Link (GOLD) Manual*.

6.15.2 The following table contains CPDLC free text message elements used in Australia.

Uplinks - Free text message elements

MESSAGE ELEMENT	MESSAGE INTENT	RESPONSE
REPORT DISTANCE (to/from) (position)	Instruction to report the present distance to or from the specified position.	NE
CONFIRM POSITION	Instruction to report the present position.	NE
CONFIRM ALTITUDE	Instruction to report the present level.	NE
CONFIRM TIME OVER REPORTED WAYPOINT	Instruction to confirm the previously reported time over the last reported waypoint.	NE
CONFIRM REPORTED WAYPOINT	Instruction to confirm the identity of the previously reported waypoint.	NE
CONFIRM NEXT WAYPOINT	Instruction to confirm the identity of the next waypoint.	NE
CONFIRM NEXT WAYPOINT ETA	Instruction to confirm the previously reported estimated time at the next waypoint.	NE
CONFIRM HEADING	Instruction to report the present heading.	NE
IDENTIFICATION TERMINATED	ATS advisory that the radar and/or ADS-B service is terminated.	R
CONFIRM ADS-C ARMED	Instruction for the flight crew to check that the ADS-C function is armed.	R
ADVISE PREFERRED LEVEL TO CROSS [position]	Instruction to advise the preferred flight level at the specified position for the flight.	R

MESSAGE ELEMENT	MESSAGE INTENT	RESPONSE
REPORT ETA [position]	Instruction to report the estimated time of arrival at the specified position.	R
ADS-C INDICATES OFF ROUTE. ADVISE INTENTIONS	Instruction to notify of receipt of any ADS-C report indicating a deviation from cleared route and to request the flight crew to advise of intentions.	R
ADS-C INDICATES ROUTE NON-CONFORMANCE. ADVISE INTENTIONS	Instruction to notify of receipt of any ADS-C report indicating a future deviation from cleared route and to request the flight crew to advise of intentions.	R
ADS-C ESTIMATES APPEAR INACCURATE. CHECK FMS	Instruction to notify of receipt of any ADS-C report that appears to contain inaccurate time estimates and to request the flight crew to check FMS.	R
CHECK AND RESPOND TO OPEN CPDLC MESSAGES	Instruction to check the status of CPDLC messages and to respond to unanswered uplink messages.	R
EXPECT SELCAL CHECK HF [frequency]	Notification that a SELCAL check on the specified HF frequency should be expected.	R
EXPECT CPDLC TRANSFER AT [time]	Notification that the CPDLC transfer process will not be completed at the FIR boundary and will be delayed until the specified time. If the CPDLC transfer is not completed by the specified time, the flight crew should manually disconnect and logon to the next centre.	R

MESSAGE ELEMENT	MESSAGE INTENT	RESPONSE
EXPECT NEXT CENTRE [facility designation]. CONTACT WITH [facility designation] NOT REQUIRED	Notification that a CPDLC connection is not required by the next FIR (e.g. due to short transition time of the next FIR) and CPDLC connection will be transferred to the subsequent FIR.	R
REQUEST RECEIVED RESPONSE WILL BE VIA VOICE	Notification that the CPDLC downlink request was received by the controller and that any further communication about the request will be via voice.	R
ADS-C INDICATES LEVEL DEVIATION. ADVISE INTENTIONS	Instruction to notify of receipt of any ADS-C report indication a deviation from cleared level and to request the flight crew to advise of intentions.	R
REACH [level] BY [time]	Instruction that a change of level is to continue, but at a rate such that the specified level is reached at or before the specified time.	R
REACH [level] BY [position]	Instruction that a change of level is to continue, but at a rate such that the specified level is reached at or before the specified position.	R
LEAVE CONTROL AREA DESCENDING	Instruction to leave controlled airspace on descent.	R
CRUISE CLIMB PROCEDURE NOT AVAILABLE IN AUSTRALIAN ADMINISTERED AIRSPACE	Response to a request for a cruise climb. This procedure is not available.	R
IDENTIFIED	ATS advisory that the aircraft has been identified on radar and/or ADS-B.	R

MESSAGE ELEMENT	MESSAGE INTENT	RESPONSE
REACH [level] BY [distance] NM [before/after] [position]	Instruction that a change of level is to continue, but at a rate such that the specified level is reached at or before the specified distance before or after the specified position.	R
MELBOURNE [or BRISBANE] CENTRE AT REDUCED SYSTEM CAPACITY. DISCONNECT CPDLC	Notification that the specified ATS Unit is operating at reduced capacity.	R
RE-ENTER ADS-B IDENTIFICATION [flight identification]	Instruction to check and to re-enter the correct ADS-C flight identification for the flight.	R
ADS-C REPORTS NOT RECEIVED. REQUEST CPDLC POSITION REPORTS	Notification that ADS-C reports are not being received from a flight and that the flight crew is to report position using CPDLC position reports.	R
DO NOT DISCONNECT CPDLC. LOGON TO [unit name]	Instruction to logon to the specified ATS Unit without disconnecting CPDLC.	R
DISCONNECT CPDLC	Instruction to disconnect CPDLC.	R

APPENDIX 1

AUSTRALIAN AFTN CIRCUITRY

NATIONAL COMMUNICATIONS CENTRE CANBERRA - YSCBYFYX

ATS UNITS IN AUSTRALIA	
Adelaide (YPAD)	
Albury (YMAV)	
Alice Springs (YBAS)	
Archerfield (YBAF)	
Avalon (YMAV)	
Bankstown (YSBK)	
Brisbane FIR (YBBB)	
Brisbane (YBBN)	
Broome (YBRM)	
Cairns (YBCS)	
Camden (YSCN)	
Canberra *COMC/BOF/NOF (YSCB)	
Christmas Island = (YXXM)	
Coffs Harbour (YCFH)	
Darwin * (YPDN)	
Essendon (YMEN)	
Gold Coast (YBCG)	
Hamilton Island (YBHM)	
Hobart (YSHO)	
Hendokot (YHBT)	
Karratha (YPKA)	
Launceston (YMLT)	
Mackay (YMLK)	
Melbourne FIR (YMMB)	
Melbourne (YMMML)	
Moorabbin (YMMB)	
Perth (YPPH)	
Perth (YPPD)	
Port Hedland (YBRK)	
Rockhampton (YBSU)	
Sunshine Coast (YSSY)	
Sydney (YSTW)	
Tamworth (YBTL)	
Townsville * (YPTW)	
Woomera (YPMR)	

EXTERNAL ORGANISATIONS

Australian Maritime Safety Authority (AMSA)
Joint Rescue Coordination Centre (JRCC)
Australian Transport Safety Bureau (ATSB)=
Civil Aviation Safety Authority (CASA)
Customs
Darwin District Airport Inspector
Bureau of Meteorology (MET)
Airline Company Network (SITA)

(YSMO)
(YSARYCYX)
(see Note 2)
(YSCA)
(YSCBCUST)
(YPDNYDYX)
(YMMC)
(WSSSSITX)

INTERNATIONAL CENTRES

Fiji - Nadi
Indonesia - Jakarta
Johannesburg
Nauru Is - Nauru
New Guinea - Port Moresby
New Zealand - Christchurch
Singapore Is - Singapore
Solomon Islands - Honiara
USA - Salt Lake City
Vanuatu - Port Vila

(NFFF)
(WIII)
(FAJS)
(ANAU)
(APYV)
(NZCH)
(WSSS)
(AGGH)
(KSLC)
(NVVV)

MILITARY UNITS

Amberley
East Sale
Edinburgh
Nowra
Oakey
Pearce
RAAF AIS
Richmond
Tindal *
Williamtown *

(YAMB)
(YMES)
(YPED)
(YSNW)
(YBOK)
(YPEA)
(YMMX)
(YSRI)
(YPTN)
(YWLM)

AIRLINE COMPANIES

Japan Airlines
Qantas Airlines
United Airlines
Virgin Australia

(YBCSJALX)
(YSSYQFAO)
(YSSYUALO)
(YBBBVOZX)

LEGEND

* Military/civil use
= Fax connection

Note 1: There are many supplementary inter-unit AFTN circuits available which are not indicated.

Note 2: Messages for the ATSB should be directed by Fax to 61-2-6274 6434.

GEN 3.5 METEOROLOGICAL SERVICES**1. RESPONSIBLE SERVICE**

- 1.1 The Australian Bureau of Meteorology (BoM) is the designated Meteorological Authority for Australia and is responsible for the provision of meteorological services, as defined in ICAO Annex 3, within the Australian FIR and external Australian territories.

Contact details:

Meteorological Authority Office
Australian Bureau of Meteorology
GPO Box 1289
MELBOURNE VIC 3001
Phone: 61 3 9669 4000
Fax: 61 3 9669 4699
Email: metauthority@bom.gov.au

- 1.2 Meteorological services for civil aviation in Australia and its territories are provided by the BoM.

Contact details:

Group Manager Aviation Land and Maritime Transport
Program
Australian Bureau of Meteorology
GPO Box 1289
MELBOURNE VIC 3001
Telegraph Address: METAUST MELBOURNE
Telex Address: AA 30664
Phone: 61 3 9669 4000
Fax: 61 3 9669 4699
Email: webav@bom.gov.au

1.3 Applicable ICAO Documents

The meteorological service is provided in accordance with provisions in the following ICAO documents:

- *Annex 3 – Meteorological Service for International Air Navigation*
- *Doc 7030 – Regional Supplementary Procedures*
- *Doc 8400 – PANS – ICAO Abbreviations and Codes*
- *Doc 8896 – Manual of Aeronautical Meteorological Practice*

- *Doc 9673 – Air Navigation Plan Asia and Pacific Regions*
- *Doc 10100 – Manual on Space Weather Information in Support of International Air Navigation*
- *Annex 11: Air Traffic Services* (MET related issues only)
- *Annex 12: Search and Rescue* (MET related issues only)
- *Annex 15: Aeronautical Information Services* (MET related issues only)

Differences from Annex 3, “Meteorological Service for International Air Navigation,” are listed in GEN 1.7, “Differences from ICAO Standards, Recommended Practices and Procedures.”

1.4 **Area of Responsibility**

The area of responsibility for the provision of aeronautical meteorological services set out in this publication covers the Australian FIR and Australian external territories in other FIR. An aeronautical meteorological watch service is provided to issue SIGMET for the Australian FIR. Australia operates a Volcanic Ash Advisory Centre and Tropical Cyclone Advisory Centre.

2. **METEOROLOGICAL SERVICES**

2.1 Meteorological services are provided by officers of the BoM within the types of meteorological offices listed below:

- a. **Aviation Weather Centre (AWC).** The AWC is located within the Hazardous Weather Unit (HWU) which is located within the Melbourne Aviation Forecasting Centre (AFC), and originates forecasts and warnings for operations above A100 on domestic air routes and for international operations within the Australian region.

- b. **Aviation Forecasting Centres (AFC).** There is an AFC located in Brisbane and one in Melbourne. The Brisbane AFC typically covers QLD, NT and northern WA. The Melbourne AFC typically covers southern WA, SA, TAS, VIC and NSW. The exact responsibilities may change on any given shift to redistribute workload and maximise efficiency and value. For aviation requirements, AFC originate and obtain warnings, forecasts, observations and other relevant information for flights with which they are concerned and maintain a meteorological watch over the aerodromes for which they are responsible.
- c. **Defence Weather Service Office (DWSO).** DWSOs provide forecasts and warnings for at least the local aerodrome. They also supply and display meteorological information and provide briefing and documentation for military aircrew.
- d. **Meteorological Watch Office (MWO).** MWO are located within both the AFC and also separately in the HWU. They maintain watch over meteorological conditions affecting flight operations in assigned areas and prepare and disseminate SIGMET information relating to these areas.
- e. **Airport Meteorological Unit (AMU).** Currently, the only AMU in Australia is located at Sydney Airport. Its main function is to provide meteorological services for Sydney Airport and support for air traffic services, and users of Sydney Airport. It provides a telephone briefing service only.
- f. **Meteorological Support for the Network Coordination Centre (NCC).** This unit is located within Airservices' NCC to provide meteorological support to the centre.

2.2 Meteorological information is available by telephone and electronic briefing systems from the Network Coordination Centre (NCC) Pilot Briefing Office, located in Canberra. Contact details are:

Airservices Pilot Briefing Office
GPO Box 367
CANBERRA ACT 2601
Ph: +61 2 6268 5062
Fax: +61 2 6268 5033

2.3 METAR, SPECI and TAF will generally be encoded using the international weather code listed at *Section 12*. When these messages are passed to pilots verbally, limited plain language will be used. See *Section 11*. for other details relating to the decoding of aerodrome weather forecasts.

2.4 **ATS Meteorological Information Service**

The ATS meteorological information service is contained within the Flight Information Service (FIS) described in *GEN 3.3 Section 3.3*

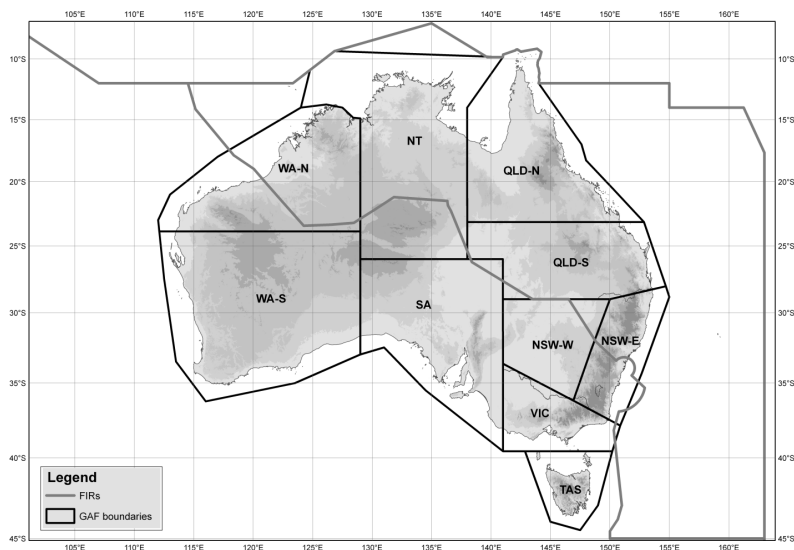
3. AVIATION FORECASTS

3.1 **Interpretation and Use of Forecasts**

The specific value of any of the meteorological elements given in a forecast shall be understood to vary due to the limitations of forecasting techniques and limitations caused by the definition of some of the elements. The recipient shall understand that any specific element in a forecast will be the probable value which the element is likely to assume during the period of the forecast. Similarly, when the time of occurrence or change of an element is given in a forecast, this time shall be understood to be the probable time which is likely during the period of the forecast.

3.2 **Graphical Area Forecasts (GAF) for Operations Surface to 10,000FT**

3.2.1 These domestic forecasts are issued for aircraft operations at or below 10,000FT. They comprise of an image and supporting text detailing the meteorological conditions. More details are provided in *Section 16*. GAF are prepared and issued for the 10 areas as detailed on AUS PCA and shown on the following page, at times covering periods set out in *para 16.2*, using abbreviations detailed in *para 16.3*.



Forecasts for critical locations are included in some GAF. These are Bowral (BWL - NSW-E), Mt Victoria (MVI - NSW-E), Murrurundi (MUI - NSW-E) and Kilmore Gap (KMG - VIC). Aerodrome Weather Reports (AWRs), i.e. METAR/SPECI and AWIS, are only available for MUI and KMG. However, AWRs from Moss Vale (MSV) and Mount Boyce (MTB) typically provide representative observations for BWL and MVI respectively.

A Flight Forecast (text based forecasts) may be issued for any part of a flight for which a routine GAF is not prepared.

3.2.2 These forecasts are available from the ATS automated briefing systems and briefing offices listed in *ERSA GEN*.

3.3 Forecasts for Operations Above 10,000FT

3.3.1 These forecasts are issued in chart form for aircraft operations above 10,000FT. They are issued for the area and at times covering the periods set out in *Section 17*. and utilise symbols and abbreviations to depict significant meteorological conditions, and grid-point winds and temperatures as detailed in *para 19*.

3.3.2 They are available from the ATS automated briefing systems NAIPS-AVFAX or charts, ATS briefing offices by telephone or facsimile, and MET offices.

- 3.3.3 The following upper-air charts and data are issued:
- Significant Weather (SIGWX) charts (refer *section 18.*)
 - Grid Point Forecasts (refer *section 19.*)
 - Route Sector Winds and Temperatures (refer *section 20.*)
 - Wind and Temperature charts (refer *section 22.2.*)

3.4 Aerodrome Forecasts

- 3.4.1 Aerodrome forecasts (TAF) are a statement of meteorological conditions expected for a specified period in the airspace within a radius of 5NM of the ARP.
- 3.4.2 The TAF service is typically provided in accordance with the aerodrome's TAF category, the category being determined by the aerodrome type (refer to *para 3.4.3*).
- 3.4.3 Category description and routine TAF service are as follows:

Category	Aerodrome Type	Routine TAF Service
TAF3	Selected aerodromes specified in <i>ERSA</i> and <i>AIP GEN 3.5</i> paras 3.4.4, 3.4.5, and 3.4.6	Issued 3 hourly. Validity is either 18, 24 or 30 hours depending on which aerodrome type of TAF category A or B applies to the aerodrome.
A	International.	Issued 6 hourly, valid for 24 or 30 hours. Commencement times 00, 06, 12 and 18 UTC.
B	Large: Passengers > 150 000 or Movements > 75,000	Issued 6 hourly, valid for 12 or 18 hours. Commencement times 00, 06, 12 and 18 UTC.
C	Medium: Passengers > 50,000 or Movements > 10,000	Issued 6 hourly, typically valid for 12 hours. Commencement times are 02, 08, 14 and/or 20 UTC, except in Western Australia where commencement times are 04, 10, 16 and/or 22 UTC.

Category	Aerodrome Type	Routine TAF Service
D	Small: Aerodromes meeting passenger and movement thresholds, or other operational criteria.	Issued 6 or 12 hourly, valid for up to 12 hours. Commencement times are typically 20 and/or 02 UTC, except in Western Australia where commencement times are typically 22 and/or 04 UTC.

Note 1: Commencement times for C and D TAFs will be one hour earlier in States using Daylight Saving.

Note 2: TAF will be provided upon request for other locations in support of SAR and emergency flights.

Note 3: The content of TAF, and locations for which TAF are issued and their categories, are given in section 14. and 15.

Note 4: TAF3 aerodromes may not have H24 TAF3 service. MO hours for TAF3 watch and routine TAF3 validity periods are annotated in ERSA.

3.4.4 TAF3 is identical in format to any other TAF and can be identified by the indicator "TAF3" in the RMK section of the TAF.

3.4.5 A TAF3 service is provided, H24 for the following locations:

- a. Adelaide
- b. Brisbane
- c. Cairns
- d. Canberra
- e. Darwin
- f. Gold Coast
- g. Hobart
- h. Melbourne
- i. Perth
- j. Sydney

- 3.4.6 A TAF3 service is also provided at the following Defence bases when staffed by Defence Decision Support meteorologists:
- a. Amberley
 - b. East Sale
 - c. Nowra
 - d. Oakey
 - e. Pearce
 - f. Tindal
 - g. Townsville
 - h. Williamtown.

3.5 **Airport Weather Briefings (AWB)**

- 3.5.1 Airport Weather Briefings (AWB) are provided for Brisbane (YBBN), Melbourne (YMML), Adelaide (YPAD), Perth (YPPH) and Sydney (YSSY) aerodromes only. The AWB is provided to expand on the information provided in the TAF. Once issued, it is not amended or updated.

- 3.5.2 AWBs are issued as follows. For YSSY, the AWB is issued after each routine TAF issuance, i.e. they are issued four times per day. For the other locations, the AWBs are issued only after issuance of the 18Z and 06Z TAFs, i.e. they are issued twice a day.

- 3.5.3 The Thunderstorm Potential section gives the probability of thunderstorms occurring within the Terminal Area of major airports. The Outlook section gives a brief description of the weather for the following two or three days based on the Public Weather forecasts. The Other Possibilities section of the AWB includes comments on possibilities, other than thunderstorms, that may occur during the validity of the TAF.

This will particularly include low probabilities of fog. It can include conditions that have a less than 30% chance of occurring, or if there is uncertainty as to the timing of the event.

3.6 Forecast Abbreviations and Terms

3.6.1 In reports, forecasts and Graphical Area Forecasts, the amount of cloud will be indicated by the following abbreviations:

FEW = 1 TO 2 OKTAS

SCT = 3 TO 4 OKTAS

BKN = 5 TO 7 OKTAS

OVC = 8 OKTAS

NSC and CAVOK = NIL SIGNIFICANT CLOUD

3.6.2 The only cloud types that are included in aeronautical code format are towering cumulus (TCU) and cumulonimbus (CB). Forecasts such as GAF will also include cloud types other than CB and TCU when appropriate.

3.6.3 In the case of CB and TCU cloud, the amount will be indicated in “non-aerodrome” type forecasts as follows:

ISOL – ISOLATED – for individual CB and/or TCU over an area with a maximum spatial coverage of up to 50%

OCNL – OCCASIONAL – for well-separated CBs and/or TCUs over an area with spatial coverage of 50-75%

FRQ – FREQUENT – for CBs and/or TCUs with little or no separation over an area with spatial coverage greater than 75%

3.6.4 **>10KM** is used in the visibility section of GAF to indicate a visibility greater than or equal to 10KM over the entire area. When weather elements are forecast to reduce the visibility below 10KM, the weather and associated visibilities are given. Note that the visibility remains greater than or equal to 10KM in parts of the area unaffected by those elements.

3.6.5 **TEMPO** and **INTER** indicate significant variations, from the previously given mean conditions, of a temporary or intermittent nature, expected during the period which is given in the TAF format ddhh/ddhh, e.g. 0108/0114 (from 08 until 14 UTC on the 1st).

TEMPO is used when variations from the forecast mean conditions are expected to last for periods of 30 minutes or more but less than 60 minutes in each instance, and which in the aggregate are not expected to cover more than half the given period, i.e: the variations take place sufficiently infrequently such that the mean conditions remain those of the preceding part of the forecast.

INTER is used when variations from the forecast mean conditions are expected to last for periods less than 30 minutes in each instance and which, in the aggregate, are not expected to cover more than half the given period, i.e: the variations take place throughout the period sufficiently infrequently such that the mean conditions remain those of the preceding part of the forecast.

3.6.6 The change groups FM (from) and BECMG (becoming) are used to specify significant changes (both deteriorations and improvements) from the preceding information that are more lasting in nature. FM is used when rapid changes are expected at the specified time, and is given in the TAF format FMddhhmm, e.g. FM301015 (from 1015 UTC on the 30th). BECMG is used when the changes are expected to develop at a regular or irregular rate during the specified time period, and is given in the format BECMG ddhh/ddhh, e.g. BECMG 3010/3011 (between 10 and 11 UTC on the 30th). In both cases, the new conditions will continue until the end of the validity period of the TAF, or until replaced by another FM or BECMG.

3.6.7 **PROB%** is used in TAF to indicate an expected 30 or 40% probability of occurrence.

3.7 **Cloud Height Datum**

3.7.1 In aerodrome and trend forecasts, cloud heights are given above aerodrome elevations. In other forecasts, heights are expressed:

- a. as a flight level; or
- b. with reference to mean sea level.

3.8 **Forecast Amendments**

3.8.1 Amendments to forecasts are issued as necessary when changes are expected during the period of validity of a given forecast.

3.9 Wind Shear Warning Service

- 3.9.1 Aircraft reports of wind shear encountered during climb and descent are the primary means of detecting wind shear. The MET forecasting office provides advice, when possible, on the likely duration of the event and forecast low level winds.
- 3.9.2 Where wind shear has been observed and reported, or when from a consideration of the meteorological situation it is assessed as a risk, then a WIND SHEAR WARNING is issued. Wind Shear Warnings for an event will specify a validity period, and sequence numbers will be assigned to each warning associated with an event. A Wind Shear Warning will be cancelled when wind shear is no longer expected. This service is provided at Cairns, Brisbane, Sydney, Melbourne, Adelaide, Darwin, Perth, Hobart and some Defence locations.
- 3.9.3 When wind shear is forecast or reported by pilots at an intensity greater than “light”, this information, together with a forecast low level wind, will be included on the ATIS at any of the above aerodromes.

4. METEOROLOGICAL REPORTS

4.1 Aerodrome Meteorological Reports (METAR/SPECI)

- 4.1.1 Aerodrome meteorological reports are reports of observations of meteorological conditions at an aerodrome. The reports are generated by electronic recording devices called Automatic Weather Stations (AWS) and may have manual input of visibility, weather and cloud by approved observers.
- 4.1.2 Owing to the variability of meteorological elements in space and time, to limitations of observing techniques and to limitations caused by the definitions of some of the elements, the specific value of any of the elements given in a report shall be understood by the recipient to be the best approximation to the actual conditions at the time of observation.
- 4.2 **Routine Reports (METAR)**
 - 4.2.1 METAR are routine aerodrome reports issued on the hour and half hour, 24 hours of each day.
 - 4.2.2 METAR are issued as SPECI when meeting SPECI criteria.
 - 4.2.3 METAR are made available at preflight briefing and/or on request to aircraft in flight.

4.3 Special Reports (SPECI)

4.3.1 SPECI are non-routine aerodrome reports issued whenever weather conditions fluctuate about or are below specified criteria. At staffed stations (and non-staffed stations with appropriate equipment), SPECI reports are issued when either of the following conditions are present:

- a. when there is BKN or OVC cloud covering the celestial dome below an aerodrome's highest alternate minimum cloud base or 1,500FT, whichever is higher; or
- b. when the visibility is below an aerodrome's highest alternate minimum visibility or 5,000M, whichever is greater.

At non-staffed stations with cloud and visibility sensors, SPECI for cloud and visibility based on output from these sensors may also be issued.

4.3.2 SPECI may also be issued under the following conditions:

- a. wind:
 - (1) when mean direction changes by 30° or more, the mean speed before or after the change being 20KT or more; or
 - (2) when the mean speed changes by 10KT or more, the mean speed before or after the change being 30KT or more; or
 - (3) when gusts vary by 10KT or more from a mean speed of 15KT or more; or
 - (4) when a gust exceeds the last reported gust by 10KT or more.
- b. other conditions:
 - (1) when any of the following begins, ends or changes in intensity - thunderstorm, moderate or heavy precipitation, freezing precipitation, duststorm, sandstorm, funnel cloud (tornado or waterspout), low drifting or blowing dust, sand or snow, freezing fog;
 - (2) at the incidence of any other phenomena likely to be significant to the operation of an aircraft;
 - (3) when the QNH altimeter setting changes by 2HPA or more;
 - (4) when the temperature changes by 5°C or more.

- (5) when the 10MIN mean RVR is less than 800M, and the weather causing the obscuration is fog or mist, and additionally at some aerodromes when the obscuration is smoke, haze, dust, sand or volcanic ash.

4.4 **Takeoff and Landing Reports**

Are provided at aerodromes where a control tower is established. This service may also be provided by a CA/GRS or UNICOM, details of which can be obtained in *ERSA*.

- 4.4.1 Takeoff and landing reports are included on ATIS, where available, or passed to aircraft reporting taxiing or inbound. Takeoff and landing reports contain, as available, the following:
- a. wind velocity, with direction in degrees magnetic;
 - b. altimeter setting;
 - c. air temperature (if appropriate to the type of aircraft);
 - d. low cloud, if significant;
 - e. visibility, if significant - in metres up to and including 5,000M, above this value in KM. A visibility greater than 10KM is given as "VISIBILITY GREATER THAN 10KM";
 - f. additional items, i.e. extent of cloud below the main ceiling, disposition and intensity of rain, reported turbulence area, presence of freezing fog, etc;
 - g. CAVOK - when the following conditions are observed to occur simultaneously:
 - (1) visibility of 10KM or more;
 - (2) Nil significant cloud, i.e: no cloud below 5,000 FT or below the highest 25NM minimum sector altitude, whichever is greater, and no cumulonimbus or towering cumulus at any height; and
 - (3) Nil significant weather, i.e: none of the weathers listed at *section 12*.

When the term CAVOK is used, the elements d, e and f will not be advised.

4.4.2 The meteorological information provided by Air Traffic Controllers may be obtained by observation of the whole horizon or only the area that will contain the probable flight path of an aircraft. Reports based on AWS data will be limited to wind direction and velocity, QNH and temperature, except when a qualified observer at the aerodrome provides visually observed information.

4.5 **Approved Observers**

4.5.1 “Approved Observers” are officers of the BoM, Air Traffic Controllers, and other persons on the ground approved for the purpose by the BoM and/or the CASA.

4.5.2 For the purpose of aircraft weather reporting and observing visibility for takeoff and landing at an aerodrome, the pilot in command shall be deemed an approved observer for that flight.

4.6 **Observing Point**

4.6.1 The location of the observing point for the aerodrome weather reports is such that the meteorological conditions observed within visual range, or interpreted from instruments at that point, are representative of conditions at the aerodrome.

5. **METEOROLOGICAL ADVICES**

5.1 **SIGMET**

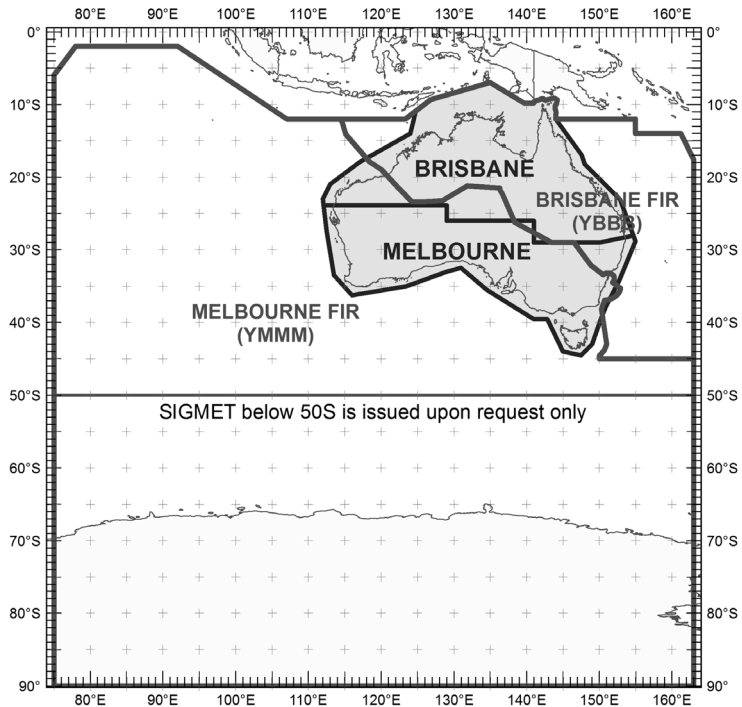
5.1.1 SIGMET is a concise description of the occurrence or expected occurrence, in an area over which area meteorological watch is maintained, of specified phenomena which may affect the safety of aircraft operations. They are issued for the following phenomena:

Phenomenon	Code Used
Obscured thunderstorms	OBSC TS
Embedded thunderstorms	EMBD TS
Frequent thunderstorms	FRQ TS
Squall line thunderstorms	SQL TS
Obscured thunderstorms with hail	OBSC TSGR
Embedded thunderstorms with hail	EMBD TSGR
Frequent thunderstorms with hail	FRQ TSGR
Squall line thunderstorms with hail	SQL TSGR
Tropical Cyclone	TC

Phenomenon	Code Used
Severe turbulence	SEV TURB
Severe icing	SEV ICE
Severe icing due to freezing rain	SEV ICE (FZRA)
Severe mountain wave	SEV MTW
Heavy duststorm	HVY DS
Heavy sandstorm	HVY SS
Volcanic ash	VA
Radioactive cloud	RDOACT CLD

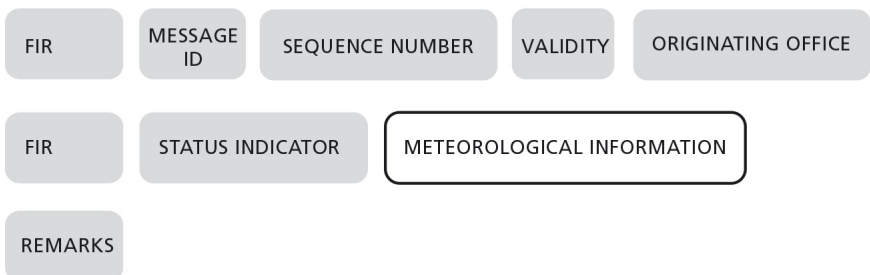
- 5.1.2 SIGMET for thunderstorms are only issued when the thunderstorms are:
- a) obscured (OBSC) by haze or smoke and cannot be readily seen;
 - b) embedded (EMBD) within cloud layers and cannot be readily recognised. The area affected would be of the order of at least 3,000²NM over areas that currently receive a GAF and at least 7,200²NM over remaining areas;
 - c) frequent (FRQ) with little or no separation between adjacent storms and covering more than 75% of the area affected. The area affected would be of the order of at least 3,000²NM over areas that currently receive a GAF and at least 7,200²NM over remaining areas; or
 - d) squall line (SQL) thunderstorms, i.e: thunderstorms along a line of about 100NM or more in length with little or no separation between clouds.
- 5.1.3 SIGMET for thunderstorms do not include reference to cumulonimbus clouds or associated icing and turbulence as their presence is implied.
- 5.1.4 SIGMET for tropical cyclones include reference to the height of cumulonimbus tops but no reference is made to thunderstorms and associated icing and turbulence as their presence is implied.
- 5.1.5 SIGMET for mountain waves are issued when accompanying downdrafts of 600FT/MIN or more are estimated.
- 5.1.6 SIGMET for turbulence refers to low-level turbulence associated with strong surface winds, to rotor streaming or to turbulence near jet streams.

-
- 5.1.7 SIGMET are issued by MET forecasters and disseminated by ATS as an element of ATC initiated FIS to aircraft operating on routes or in areas likely to be affected. This information will normally relate the phenomenon reported to designated reporting points, and where possible will indicate the area in which the phenomenon exists.
 - 5.1.8 SIGMET for volcanic ash cloud and tropical cyclones is issued for the whole of Melbourne and Brisbane FIRs (YMMM and YBBB).
 - 5.1.9 SIGMET for turbulence or icing above 10,000FT are issued for the whole of YBBB, and for YMMM to 50°S, extending throughout YMMM south of 50°S upon request (See diagram below for Australia FIRs).
 - 5.1.10 SIGMET for thunderstorms are issued for the whole of YBBB, and YMMM to 50°S.
 - 5.1.11 SIGMET for phenomena at and below 10,000FT (other than thunderstorms, tropical cyclones and volcanic ash) are issued for the shaded area shown below and the remainder (including south of 50°S) upon request.



5.2 SIGMET Format

5.2.1 The format for SIGMET is shown below:



5.2.2 FIR gives the abbreviation of the Flight Information Region (YMMM or YBBB) for which the SIGMET is issued.

5.2.3 The message identifier is SIGMET.

-
- 5.2.4 The three character sequence number (e.g. A01) consists of:
- A single alpha character that will be assigned to the SIGMET event (e.g. severe icing). This character will be used for any subsequent SIGMET issued for that event within the FIR. The first event for the day (since 0001 UTC) will be given the first unassigned alpha character, e.g. C (when A and B have previously been allocated); the second event D and so on. There can be two Australian SIGMET current with the same alpha character simultaneously, one for each FIR (refer examples at 5.2.14).
 - A two digit number, being a sequential count of the number of SIGMET issued for the event within the FIR.
- 5.2.5 The validity period is given in the format DDHHMM/DDHHMM where DD is the day of the month and HHMM is the time in hours and minutes UTC. The period of validity should not be more than six hours for VA and TC SIGMET, and not more than four hours for other phenomena.
- 5.2.6 The originating office gives the ICAO location indicator for the BoM off issuing the SIGMET, i.e. one of the following:
- | | |
|------|-----------------------------------|
| YPRM | Adelaide |
| YPRF | Perth |
| YBRF | Brisbane |
| YSRF | Sydney |
| YPDM | Darwin |
| YMRF | Melbourne |
| YMHF | Hobart |
| YMMC | Aviation Weather Centre Melbourne |
- 5.2.7 FIR gives the code and full name of the Flight Information Region for which the SIGMET is issued.
- 5.2.8 Status Indicator is included for a test (TEST) or exercise (EXER) if required.

- 5.2.9 The meteorological information provides the following:
- a) type of phenomenon
 - b) phenomenon observed or forecast
 - c) location, both horizontal and vertical extent
 - d) movement or expected movement
 - e) expected change in intensity
 - f) forecast position at the end of the validity period or at the OBS + 6HR position (only for VA).

Note 1: the polygon given is the geographic position of the phenomenon at the beginning of the validity period.

Note 2: the first point of a polygon may not be repeated when describing the horizontal extent of an event.

Note 3: the vertical extent of an event will be given in feet AMSL for levels at and below 10,000 feet (e.g. 9,000FT); and in flight levels for levels above 10,000 feet (e.g. FL110).

Note 4: when an event straddles the boundary of the FIRs a SIGMET for each FIR will be issued, and the horizontal extent of the event given in each SIGMET will be the same.

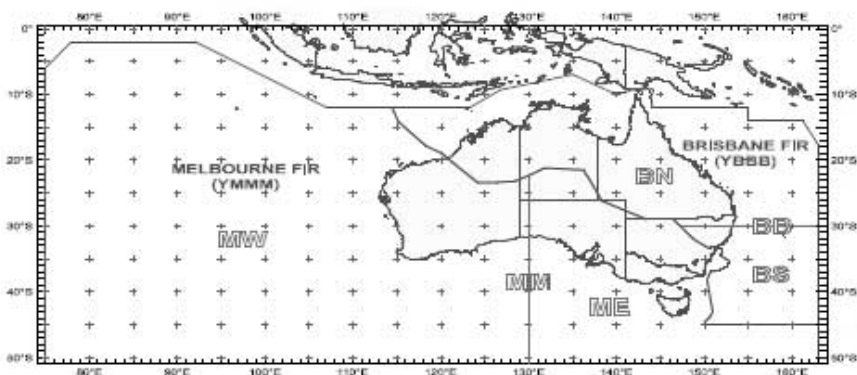
- 5.2.10 If during the validity period of a SIGMET, the phenomenon is no longer occurring or is no longer expected, the SIGMET is cancelled by issuing a SIGMET with the abbreviation CNL, followed by the sequence number and validity of the SIGMET being cancelled, in lieu of meteorological information. Cancellation SIGMET can be issued for a commencement time in the future.

- 5.2.11 The Remarks (RMK) line includes the following information:
- a) a two letter **location designator** to provide a quick reference on the general location of the phenomenon
 - b) **reference** to any SIGMET in adjoining FIR (YMMM or YBBB) that is current for the same event.

5.2.12 The two letter **location designator** will be one of the following:

BN	for events in YBBB north of 30° south
BS	for events in YBBB south of 30° south
BB	for events in YBBB that cross 30° south
MW	for events in YMMM to the west of 130° east
ME	for events in YMMM east of 130° east
MM	for events in YMMM that cross 130° east

The areas covered by these designators are also shown in the following diagram:



5.2.13 **Reference** to another SIGMET cancels a current SIGMET. SIGMET current for the same event in the adjoining Melbourne or Brisbane FIR (i.e: when the event straddles the boundary of YMMM and YBBB).

5.2.14 **Examples**

The first example is a SIGMET for a turbulence event which is initially confined to YBBB. The second and third SIGMET are subsequently issued because the extent of the turbulence is expected to move south and straddle the boundary of YMMM and YBBB. Note that the description of the horizontal extent of the event is the same in both SIGMET. The fourth and fifth SIGMET cancel C02 and C01 as the intensity of the turbulence has weakened and no longer requires a SIGMET.

Example of a SIGMET for turbulence which is initially confined to YBBB.

1. YBBB SIGMET C01 VALID 100800/101200 YBRF-
YBBB BRISBANE FIR SEV TURB FCST WI YMNY - YJAK -
YEUE - YTHY SFC/9000FT MOV S 15KT NC
RMK: BN=

Examples of SIGMET issued when the turbulence straddles the boundary of YMMM and YBBB.

2. YBBB SIGMET C02 VALID 101200/101600 YBRF-
YBBB BRISBANE FIR SEV TURB FCST WI YARY - YTIB -
YWAG - YEMG 2000/9000FT MOV S 15KT WKN
RMK: BN SEE ALSO YMMM C01=
3. YMMM SIGMET C01 VALID 101200/101600 YSRF -
YMMM MELBOURNE FIR SEV TURB FCST WI YARY -
YTIB - YWAG - YEMG 2000/10000FT MOV S 15KT WKN
RMK: ME SEE ALSO YBBB C02=

Examples of cancelling SIGMET

4. YBBB SIGMET C03 VALID 101500/101600 YBRF-
YBBB BRISBANE FIR CNL SIGMET C02 101200/101600
RMK: BN=
5. YMMM SIGMET C02 VALID 101500/1600 YSRF -
YMMM MELBOURNE FIR CNL SIGMET C01 101200/
101600
RMK: ME=

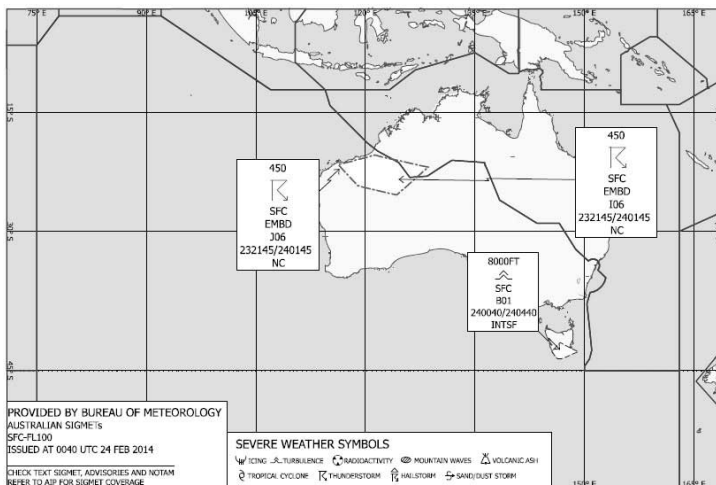
5.2.15 Graphical representations of text SIGMET are also available in NAIPS Flight Briefing. The polygon shown is the geographical position of the phenomenon at the beginning of the validity period. This product is intended for situational awareness, and the text SIGMET should be used for flight planning purposes. Coverage of this product is limited to those areas in the Australian FIRs given in sections 5.1.8, 5.1.9 and 5.1.10.

5.2.15.1 The following three graphics will be automatically generated and issued every 10 minutes and when a text SIGMET is issued:

- a) Low level SIGMET (affecting airspace below FL100);
- b) High level SIGMET (affecting airspace above FL100);
and
- c) All SIGMET


When the vertical extent of a phenomenon crosses FL100, the SIGMET will be shown in all three graphics. The graphics will be issued even if there are no text SIGMET current.

5.2.15.2 A graphical example is given below. The associated text SIGMET are also given.



1. YMMM SIGMET B01 VALID 240040/240440 YMHF –
YMMM MELBOURNE FIR SEV TURB FCST WI LRP –
LKEC – S4300 E14900 –SEC – YMSY SFC/8000FT STNR
INTSF
RMK: ME=
2. YMMM SIGMET J06 VALID 232145/240145 YPRF –
YMMM MELBOURNE FIR EMBD TS FCST WI S2500
E12400 – S2350 E11840 – S2100 E11600 – S1958 E12100
– S2130 E12820 TOP FL450 STNR NC
RMK: MW SEE ALSO YBBB I06=
3. YBBB SIGMET I06 VALID 232145/240145 YPRF –
YBBB BRISBANE FIR EMBD TS FCST WI S2500 E12400 –
S2350 E11840 – S2100 E11600 – S1958 E12100 – S2130
E12820 TOP FL450 STNR NC
RMK: BN SEE ALSO YMMM J06=

5.2.15.3 A decode of the information in the western-most box given in the graphic above as follows:

Symbol	Description
450	Upper limit of SIGMET (FL450)
	Phenomenon symbol (Thunderstorm)
SFC	Lower Limit of SIGMET (Surface)
EMBD	Thunderstorm descriptor (Embedded)
J06	SIGMET number
232145/240145	SIGMET validity
NC	Expected change in intensity (No change)

5.2.15.4 A full decode of the phenomenon symbols used in these images can be found at *section 21*.

5.2.15.5 There will be multiple SIGMET displayed for the one phenomenon when an extended (EXTD) SIGMET is first issued and the previous SIGMET (for the same phenomenon) is yet to expire; when a NEW SIGMET is first issued in response to a significant change to an event given in a previous SIGMET, and the previous SIGMET is yet to be cancelled; and when a SIGMET includes a second forecast location.

5.2.15.6 If a text SIGMET cannot be rendered graphically, it will be displayed in text format on the graphic.

5.3 **AIRMET**

5.3.1 AIRMET information concerns the occurrence or expected occurrence, in an area over which meteorological watch is being maintained, of one or more of the following phenomena when the phenomena have not been included in a current GAF.

Weather Element/ Phenomenon	Criteria
Visibility	<ul style="list-style-type: none"> – Widespread areas of visibility of less than 8,000M over an area of at least 3,000NM²; or – Visibility of less than 5,000M in areas of high traffic density
Cloud	<ul style="list-style-type: none"> – Widespread areas of cloud coverage of BKN or OVC below 1,500FT AGL over an area of at least 3,000NM²; or – Cloud coverage of BKN or OVC below 1,000FT AGL in areas of high traffic density; or – Any cumulonimbus or towering cumulus cloud
Weather	<ul style="list-style-type: none"> – Isolated and occasional thunderstorms (with and/or without hail); or – Moderate icing (not issued separately when icing occurs in convective clouds); or – Moderate turbulence (not issued separately when turbulence occurs in convective clouds); or – Moderate mountain waves
Freezing Level	<ul style="list-style-type: none"> – Significant change in freezing level (change of 2,000FT or more)

5.3.2 AIRMET information, which concerns phenomena of a lesser degree of severity than SIGMET information, is given to aircraft operating at or below 10,000FT.

5.3.3 AIRMET information is issued by MET forecasters and disseminated by ATS as an element of ATC initiated FIS, to aircraft operating on routes or in areas likely to be affected. It will indicate the locality or area in which the phenomena exist or are expected to exist.

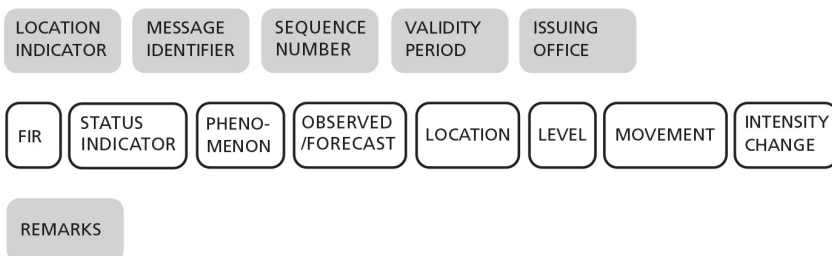
5.3.4 AIRMET Format

The coding format of an AIRMET will mostly follow the *ICAO Annex 3* format, including the following specifics:

- (1) two digit number providing sequential count of the number of AIRMET issued per FIR since 0001UTC in the day concerned
- (2) The validity period of an AIRMET shall not exceed 4 hours; and
- (3) Inclusion of a remark ('RMK') line, to list the identifiers of GAF that are impacted by the AIRMET. In addition, 'SEE ALSO YXXX' will be included when cross-referencing of AIRMET messages is required to any matching AIRMET in the other FIR.

5.3.5 AIRMET Structure

The structure of an Australian AIRMET is shown as follows:



5.3.5.1 Location Indicator

ICAO location indicator of the Australian Flight Information Region (YMMM or YBBB) for which AIRMET is issued.

5.3.5.2 Message ID

The message identifier is "AIRMET"

5.3.5.3 Sequence Number

A two-digit sequence number corresponding to the number of AIRMET messages issued within a FIR since the last 0001UTC, commencing at 01.

5.3.5.4 Validity period

The validity period is given in the format DDHHMM/DDHHMM, where DD is the day of the month and HHMM is the time in hours and minutes in UTC.

5.3.5.5 Issuing Office

The issuing office gives the ICAO indicator for the BoM office issuing the AIRMET, i.e. one of:

YPRM	Adelaide
YMRF	Melbourne
YBRF	Brisbane
YPDM	Darwin
YPRF	Perth
YMHF	Hobart
YSRF	Sydney

5.3.5.6 FIR

The abbreviation and full name of the Flight Information Region for which the AIRMET is issued.

5.3.5.7 Status Indicator

Status Indicator is included for a test (TEST) or exercise (EXER) if required.

5.3.5.8 Phenomenon

The description of the phenomenon consists of a qualifier and a phenomenon abbreviation.

5.3.5.9 Observed/Forecast

Indication of the element Observed or Forecast OBS [AT <GGggZ>] or FCST

5.3.5.10 Location

The location of the phenomenon can be depicted as a single location, where <CCCC> is an approved PCA location or it can be depicted as an area bounded by a series of PCA locations or geographical coordinates.

5.3.5.11 Level

The vertical extent of the phenomenon.

5.3.5.12 Movement

Movement or expected movement, where the direction is given with reference to one of the 16 compass radials and speed is given in knots (KT). The abbreviation STNR (stationary) is used if no significant movement is expected.

5.3.5.13 Intensity Change

The expected evolution of the phenomenon's intensity is indicated by one of the following abbreviations:

INTSF: intensifying

WKN: weakening

NC: no change

5.3.5.14 Remark

The remark (RMK) line includes additional information regarding an AIRMET message, such as:

- list of GAF identifiers the AIRMET message applies to; and/or
- cross-referencing AIRMET messages when a phenomenon straddles the FIR boundary;
- any additional information deemed necessary.

5.3.5.15 In addition to the above, AIRMET have the following procedural/format requirements:

- (i) AIRMET will not be issued to notify of improvements to weather in GAF (corrected GAF can be issued);
- (ii) AIRMET can be issued per GAF or per phenomena (Note: when crossing FIR boundary a separate AIRMET is issued for each FIR) at the forecaster's discretion; and
- (iii) An AIRMET will be cancelled when the phenomenon for which the AIRMET has been issued is included in the valid GAF even if the commencement of the AIRMET is in the future.
- (iv) If during the validity period of an AIRMET, the phenomenon is no longer occurring or is no longer expected, the AIRMET is cancelled by issuing an AIRMET with the abbreviation CNL, followed by the sequence number and validity of the AIRMET being cancelled. Cancellation AIRMET can be issued for a commencement time in the future.

5.3.6 AIRMET EXAMPLES**a) AIRMET for fog**

YMMM AIRMET 01 VALID 231400/231800 YSRF –
YMMM MELBOURNE FIR SFC VIS 0300M (FG) FCST WI
YORG – KIAN – YBOM – YSCN SFC/0600FT STNR NC
RMK: GAF NSW-E=

b) AIRMET for thunderstorms

YMMM AIRMET 02 VALID 190530/190930 YPRM –
YMMM MELBOURNE FIR ISOL TS OBS AT 0525Z WI YCFH -
YMRE - YCBP - YALA TOP ABV 10000FT MOV S 05KT NC
RMK: GAF SA=

c) AIRMET for Melbourne FIR:

YMMM AIRMET 06 VALID 230800/231200 YSRF –
YMMM MELBOURNE FIR MOD TURB FCST WI YCTM – YBIA
– YGFN – YSNW SFC/8000FT MOV E 05KT NC
RMK: GAF NSW-E SEE ALSO YBBB 10=

d) AIRMET for Brisbane FIR:

YBBB AIRMET 10 VALID 230800/231200 YSRF –
YBBB BRISBANE FIR MOD TURB FCST WI YCTM – YBIA –
YGFN – YSNW SFC/8000FT MOV E 05KT NC
RMK: GAF NSW-E SEE ALSO YMMM 06=

e) AIRMET for change to freezing level

WAAU21 ASRF 030638
YBBB AIRMET 03 VALID 030656/031056 YSRF-
YBBB BRISBANE FIR FZ LVL OBS WI YBOM - YSWG - YSDU
- YSCO
8000FT STNR NC
RMK: GAF NSW-E=

f) Cancel AIRMET for Example b)

YMMM AIRMET 07 VALID 190830/190930 YPRM –
YMMM MELBOURNE FIR CNL AIRMET 02 190530/190930
RMK: GAF SA=

5.4 Volcanic Activity

5.4.1 General. Many volcanoes to the North and East of Australia are active. This activity is monitored by the Darwin Volcanic Ash Advisory Centre (VAAC) operated by the Bureau of Meteorology.

5.4.2 **Volcanic Ash Advisory.** If required, the Darwin VAAC will issue a “Volcanic Ash Advisory” message containing the following information:

- (1) VA ADVISORY
- (2) STATUS (either test (TEST) or exercise (EXER) if required)
- (3) DTG (UTC year/month/day/time of issue)
- (4) VAAC (name of issuing centre)
- (5) VOLCANO (volcano name and IAVCEI reference number)
- (6) PSN (geographical coordinates of volcano in degrees and minutes)
- (7) AREA (State or region of ash)
- (8) SUMMIT ELEVATION (AMSL in metres or feet)
- (9) ADVISORY NR (year and incrementing number for volcano)
- (10) INFO SOURCE (free text, e.g. AIREP)
- (11) AVIATION COLOUR CODE (red, orange, yellow, green, unknown or nil)
- (12) ERUPTION DETAILS (summary of the eruption)
- (13) OBS VA DGT (UTC day & time of observation of ash)
- (14) OBS VA CLD (horizontal & vertical extent of observed or estimated ash cloud; and direction and speed of movement of ash cloud)
- (15) FCST VA CLD +6HR (Day/Time UTC of forecast; horizontal & vertical extent of forecast ash cloud)
- (16) FCST VA CLD +12HR (Day/Time UTC of forecast; horizontal & vertical extent of forecast ash cloud)
- (17) FCST VA CLD +18HR (Day/Time UTC of forecast; horizontal & vertical extent of forecast ash cloud)
- (18) RMK (NIL or free text)
- (19) NXT ADVISORY (Date and Time UTC)

An example of this message is shown at *Section 22*.



- 5.4.3 **Prolonged Volcanic Activity.** In conjunction with neighbouring States, temporary airspace and airways will be established to avoid hazardous areas, and notified by NOTAM.

6. AIRCRAFT REPORTS

6.1 Routine Aircraft Observations

- 6.1.1 Routine Observations in Australian FIRs are only required from aircraft equipped with Aircraft Meteorological Data Relay (AMDAR).

- 6.1.2 AMDAR equipped aircraft should transmit routine meteorological observations:

- a. at waypoints indicated by the symbols  and  on en route charts (ERC-L and ERC-H).
- b. at MET reporting points shown on charts which are used in lieu of Australian AIP aeronautical charts.
- c. whenever conditions experienced are significantly above or below those forecast.

- 6.1.3 In areas where ground meteorological reports are infrequent or any hazardous weather is encountered, or observed either visually or by radar, pilots in command are encouraged to report observations of MET conditions which they consider will assist in the provision of meteorological services.

- 6.1.4 Routine weather observations should be reported in accordance with the AIREP Format shown in *ENR 1.1 APPENDIX 1*.

6.2 AIREP Special

- 6.2.1 In the en route phase, a pilot in command should make an AIREP Special report when requested, or as soon as practicable after encountering or observing hazardous meteorological conditions which, in the opinion of the pilot are, or may become, severe enough to warrant a SIGMET, regardless of any reports from other aircraft and regardless of any SIGMET issued.

- 6.2.2 Examples of hazardous meteorological conditions that usually prompt an AIREP Special are:

- a. Moderate or severe turbulence;
- b. Moderate or severe icing;
- c. Severe mountain wave;

- d. Thunderstorms (with or without hail) that are obscured, embedded, widespread or in squall lines;
 - e. Heavy dust/sandstorm;
 - f. Volcanic ash cloud;
 - g. Pre-eruption volcanic activity or volcanic eruption.
- 6.2.3 Similarly, in the climb-out and approach phases, a pilot in command should make an AIREP Special report directly to ATS in the following circumstances:
 - a. Cloud - unexpected significant variations to amount, base or tops (by reference to QNH);
 - b. Visibility - reduced due fog, mist, hail, rain, snow or dust, or improvement observed;
 - c. Wind - significant variation to forecast;
 - d. Other Phenomena - incidence of severe or moderate turbulence, thunderstorms, moderate or severe icing, hail, line squalls, standing waves or winds of 40KT or more within 2,000FT of ground level.
- 6.2.4 AIREP Special weather reports should be completed in accordance with the AIREP Format shown in *ENR 1.1 APPENDIX 1*.
- 6.2.5 The estimate of next position may be omitted from an AIREP SPECIAL report unless the report is made at a planned position reporting point.
- 6.3 **Wind Shear - Reporting**
- 6.3.1 Wind shear encountered by aircraft should be reported by pilots to ATS as aircraft following may not have the performance required to recover from the same wind shear encounter. The wind shear may also be increasing in intensity, making flight through the wind shear more dangerous for following traffic.
- 6.3.2 Due to cockpit workload, reports may be initially reported as WIND SHEAR ESCAPE and a full report provided when workload allows.
- 6.3.3 The full report should include:
 - a. an assessment of the intensity as follows:
 - (1) light - shear causing minor excursions from flight path and/or airspeed;

- (2) moderate - shear causing significant effect on control of the aircraft;
 - (3) strong - shear causing difficulty in keeping the aircraft to desired flight path and/or airspeed; or
 - (4) severe - shear causing hazardous effects to aircraft controllability; and
- b. a factual plain language report regarding airspeed/ground speed changes (gain or loss) or undershoot/overshoot effects; and
 - c. the altitude or altitude band at which the adverse effect was experienced; and
 - d. where practicable, other relevant information such as significant changes in wind direction and/or speed may be included.

6.3.4 At non-controlled aerodromes, the report should also be broadcast to all aircraft on the CTAF and should include the name of the aerodrome.

6.4 **Volcanic Activity Reports**

6.4.1 Volcanic activity reports should be made by the pilot of an aircraft whenever observed, regardless of any previous reports from other aircraft. See *ENR 1.1 APPENDIX 1* for a sample form Volcanic Activity Reporting (Model VAR).

7. **AUTOMATIC METEOROLOGICAL BROADCASTS**

7.1 **Automatic En Route Information Service (AERIS)**

7.1.1 The AERIS continuously broadcasts METAR/SPECI and TAF where significant elements are forecast in the first three hours of validity, from a network of VHF transmitters installed around Australia. Details of transmitter sites, frequencies and locations for which meteorological information is provided are at *ERSA GEN-FIS*.

7.2 **VOLMET**

7.2.1 VOLMET broadcasts are prefixed by the designator "VOLMET" and may contain:

- a. METAR/SPECI
- b. TAF for locations where significant elements are forecast
- c. advice regarding the availability of SIGMET.

- 7.2.2 Due to broadcast time constraints TAF for a location will be included only if significant elements are forecast during the first three hours of validity. If no significant elements are forecast in this period the identifier NOSIG will be broadcast in place of the TAF details following the METAR/SPECI for that location.
- 7.2.3 Cloud types, excepting cumulonimbus, will not be included in VOLMET broadcasts.
- 7.2.4 Specific information regarding the VOLMET service is detailed in the following table:

Station Name (1)	Callsign (2)	FREQ (kHz) (3)	BCST Period (4)	HR of Service (5)	Locations (6)	Content Remarks (7)
Alice Springs	VKA-930 VKA-931 'Australian'	6676 11387	00 to 05 and 30 to 35	H24	Sydney Brisbane Cairns Townsville Melbourne Adelaide Darwin Perth	METAR/ SPECI TAF where significant Availability of SIGMET (see note)

Note: If time permits, additional information will include the availability of SIGMET. Should time not permit transmission of all content, deletions will be in reverse order of transmission.

- 7.3 **Aerodrome Weather Information Service (AWIS) and Weather and Terminal Information Reciter (WATIR)**
- 7.3.1 AWIS and WATIR provide actual weather conditions via telephone and, at specified locations, broadcast. Most broadcasts are continuous (updated every minute) but some (as indicated in *ERSA*) must be activated by a press-to-talk (PTT) pulse. AWIS provides information from the AWS. WATIR combines the AWS information with additional terminal information from the airport operator.
- 7.3.2 Basic AWSs provide wind direction and speed, temperature, humidity, pressure setting and rainfall. Advanced AWSs provide automated cloud and visibility and some AWSs also provide additional present weather fields (for example FG and TS).

- 7.3.3 AWIS will provide some of the following information:
- Message identifier e.g. “AWS AERODROME WEATHER” OR “AUTOMATED WEATHER INFORMATION SERVICE”.
 - station identifier as a plain language station name,
 - wind direction in degrees Magnetic and speed in Knots,
 - altimeter setting (QNH),
 - temperature in whole degrees Celsius,
 - cloud below 10,000FT*,
 - visibility*,
 - dew point in whole degrees Celsius,
 - RH,
 - RVR at selected locations ^,
 - rainfall over the previous 10 minutes, and
 - present weather information*.

*See *sub-sections 11.9, 11.14 and 11.15* for information on automated visibility, weather and cloud output.

^See ERSA FAC for aerodrome specific details.

- 7.3.4 AWIS and WATIR information is considered to be automated “real time” data. When information is not available from an installed sensor, either because of invalid data or an inoperative sensor, the relevant element of the broadcast will be identified as “[ELEMENT NAME] CURRENTLY NOT AVAILABLE”; e.g. “TEMPERATURE CURRENTLY NOT AVAILABLE”. When the information from the AWIS is determined as being corrupt, incomplete, or not available, a NOTAM will be issued.

- 7.3.5 The integrity of the barometric system in BoM-accepted AWSs is such that they are an approved source of QNH. Therefore, QNH from these AWSs may be used in accordance with *ENR 1.5 section 5.3*.

- 7.3.6 When AWIS information is available after hours (AH), and the aerodrome is uncontrolled, reference will be made to its availability in ATIS ZULU.

- 7.3.7 The availability of AWIS and WATIR is contained in *ERSA FAC* and *ERSA MET*.

8. METEOROLOGICAL BRIEFING

- 8.1 A briefing service is available from both AFC. Local numbers for each state are given in the following table:

Note: Both QLD and WA are divided into north-south groupings.

QLD-North	07 3239 8721	NSW	02 9296 1527
QLD-South	07 3229 1854	VIC	03 9669 4850
NT	08 8920 3814	TAS	03 6221 2026
WA-North	08 9263 2259	SA	08 8366 2617
WA-South	08 9263 2255		

Note: Conversations on these briefing services are recorded.

9. AVAILABILITY OF METEOROLOGICAL DOCUMENTATION

Available documents include the following:

- a. surface synoptic charts
- b. forecast medium and upper level charts
- c. satellite imagery
- d. grid point winds and temperatures
- e. route sector winds and temperatures
- f. significant weather charts
- g. Graphical Area Forecasts (GAF), and
- h. TAF

10. NOTIFICATION REQUIRED FROM OPERATORS**10.1 For International Operations**

Forecast Required	Availability	Notice Required
a) Preliminary operational planning (to assist in the general planning of the following day's operations)	3 - 24 hours before EOBT	8 hours
b) Preflight	At least 3 hours before EOBT	8 hours
c) En route	As arranged	

10.2 For Domestic Operations

- 10.2.1 All meteorological information issued on a routine basis and held by the briefing office concerned is available without prior notice. Eight (8) hours notice is required for non-routine forecasts unless stated otherwise in 10.3.

10.3 Forecasts for Flights - Valid Graphical Area Forecasts (GAF) not Available

- 10.3.1 Flight Forecasts required for flights for which valid GAF are not available will be supplied subject to the request being received three (3) days prior to departure and forecaster capacity to provide the service.

Note: Every effort will be made to expedite MET documentation for Mercy and SAR flights.

- 10.3.2 Notification should include part or all of the following information as applicable:
- a. departure aerodrome and EOBT;
 - b. destination and ETA;
 - c. route;
 - d. ETAs and EOBTs for intermediate stopping places;
 - e. heights for upper winds and temperatures;
 - f. time documentation required

11. AERODROME WEATHER AND FORECAST DECODE**11.1 Identifier**

- 11.1.1 METAR is used to identify routine observations (hourly or half hourly) when conditions are at or above specified levels. SPECI is used to identify special observations; i.e: observations when conditions are below specified criteria, or when there have been significant changes since the previous report. SPECI is also used to identify observations reported 10 minutes following an improvement to above SPECI conditions.

- 11.1.2 TAF, TAF AMD, TAF COR, TAF... CNL, TAF... and NIL are used to identify Aerodrome Forecast, Amended Aerodrome Forecast, Corrected Aerodrome Forecast, Cancelled Aerodrome Forecast and Nil Aerodrome Forecast.

Note: Message formats can be found at Section 13. for METAR/ SPECI and Section 14. for TAF.

11.2 Location

- 11.2.1 The location is indicated by the ICAO location indicator, the place name, or the approved abbreviation.

11.3 Origination Time

- 11.3.1 The origination date/time of TAF and METAR/SPECI is given in UTC using a six figure group followed by the abbreviation Z.

11.4 Validity Period

- 11.4.1 The validity period of a TAF is given in UTC in the format ddhh/ddhh, where ddhh is the day of month and hour, e.g: 0100/0206 is a validity period from 00 UTC on the 1st until 0600 UTC on the 2nd.

11.5 AUTO

- 11.5.1 This group will be included when the METAR/SPECI contains only automated observations, which may include visibility, present weather, and cloud.

- 11.5.2 When the Automatic Weather Station (AWS) includes sensors for horizontal visibility, present weather and cloud, the AUTO report will include the parameters from these sensors in the “body of the message” (where previously only manually observed visibility, present weather and cloud data were included).

Note: Pilots should exercise caution when interpreting automated visibility, present weather and cloud information as data from these instruments may not be equivalent to human observations.

11.6 Wind

- 11.6.1 Wind direction is rounded to the nearest 10 degrees and is given in three (3) figures relating to True North.

- 11.6.2 Wind speeds are given in two (2) figures.

- 11.6.3 When the wind is calm, the group is encoded as 00000KT.

- 11.6.4 A variable wind direction is given as VRB and is used when the reporting or forecasting of a mean wind direction is not possible, such as in the following conditions:

- a. Light winds (3KT or less).

- b. When forecasting a single direction is not possible; e.g. with a tropical cyclone, or with the passage of a thunderstorm, in which case the forecast wind might be, for example, VRB60KT.

11.6.5 Maximum wind speed is given only when it is 10KT or more greater than the mean wind speed. It is indicated by the letter G which is followed by the maximum wind speed; e.g. 280°, mean speed 20KT, maximum speed 35KT, is given as 28020G35KT

11.6.6 At some aerodromes, an additional wind group will be given in METAR/SPECI when the direction varies by 60° or more during the sampling period (normally 10 minutes). The group gives the extreme range of directions in clockwise order, e.g. 360V090.

11.7 **Visibility**

11.7.1 In TAF, the prevailing visibility (the greatest visibility covering more than half the aerodrome) is always given.

11.7.2 In METAR/SPECI, if the visibility is not the same in different directions and:

- a. the minimum visibility is the prevailing visibility, or
- b. if the visibility is fluctuating rapidly, then the minimum visibility is the only information provided.

11.7.3 When the minimum visibility is not the prevailing visibility and the minimum visibility is less than 5,000M, both the prevailing visibility and the minimum visibility will be given. In this case the prevailing visibility is reported first, followed by the minimum visibility including an indicator to show the general direction of the minimum visibility in relation to the observing point (the meteorological station), e.g. the visibility groups 9000 0600N indicate a prevailing visibility of 9,000M and a minimum visibility of 600M to the north.

11.7.4 A visibility of 10KM or more is given by 9999.

11.8 **Vertical Visibility (VV)**

11.8.1 ICAO recommends that cloud amount should be forecast using relevant abbreviations, however 'when it is expected that the sky will remain or become obscured and clouds cannot be forecast and information is available at the aerodrome, the VV should be forecast'. VV describes the vertical distance through a meteorological obscuration (e.g. a layer of smoke) that an observer can identify an object that is situated directly above.

- 11.8.2 BoM currently uses VV to describe conditions when the sky is obscured by smoke only.
- 11.8.3 In TAF/GAF (for critical locations), VV is given in hundreds of feet using three figures in the following format: VVnnn, where nnn is the height in hundreds of feet. For example, a situation of light winds, reduced prevailing visibility through smoke and a vertical visibility of 1,000FT could be shown as: 020005KT 4000 FU VV010. When VV is forecast, it is forecast in lieu of a cloud forecast.
- 11.8.4 In METAR/SPECI reports, if a station has a human observer, the observer may include VV information in their report, in the same format (VVnnn) as in GAF/TAF.
- 11.8.5 Operationally, where VV is forecast instead of cloud, the risk of a pilot not becoming “visual” after an approach or not remaining in VMC on a VFR flight is present. The practical effect is that the VV height is equivalent to an overcast cloud layer at that same height.
- 11.8.6 Significant changes and variations in VV (improvement or deterioration) will be included if it satisfies the specified amendment thresholds (100, 200, 500 or 1,000FT, or HAM).
- 11.9 **Automatic Visibility Information**
- 11.9.1 A report from an AWS with a visibility sensor will include data from this sensor in the body of the report if the report is fully automated (in which case the abbreviation AUTO is also included in the message).
- Note: Pilots should exercise caution when interpreting automated visibility information as it may not be equivalent to a human observation. The information is reported as a 10 minute average; and, as it is sourced from a single instrument sampling only a very small parcel of the atmosphere, it may not be representative of the entire airport.*
- 11.9.2 AWS may issue special reports (SPECI) for visibility using data from visibility sensors (where previously only manual observations of visibility could initiate a visibility SPECI).
- 11.9.3 Automatic visibility sensors do not currently provide information on VV.

11.10 Runway Visual Range (RVR)

11.10.1 RVR may be reported in SPECI messages from aerodromes with RVR instrumentation.

11.10.2 RVR will be reported in the format **RDD/VVVVi** or **RDD/VVVVVVVVi** where:

- a. **R** and **V** are fixed
- b. DD gives the runway indicator, e.g. 36
- c. VVVV gives the RVR value
- d. i gives any distinct upward or downward tendency of the RVR over the averaging period, where i will be either U (upward), D (downward) or N (nil) e.g. R36/0900U

11.10.3 When **RDD/VVVVi** is reported, VVVV is the average RVR. The averaging period is normally the preceding 10 minutes.

11.10.4 **RDD/VVVVVVVVi** is reported when the RVR has varied significantly during the averaging period. VVVVVVVVVV gives the one-minute mean minimum RVR followed by V followed by the one-minute mean maximum RVR during the averaging period, e.g. R16/0500V1100.

11.10.5 Parallel runways will be distinguished by appending to DD the letter L, C or R indicating the left, centre or right runway, respectively, e.g. R32L/0900.

11.10.6 When the RVR is greater than the maximum value which can be assessed by the system in use, the group VVVV will be preceded by the indicator P, and VVVV will give the highest value which can be assessed, e.g. R32L/P1900.

11.10.7 When the RVR value is assessed to be greater than 2,000 metres, the group VVVV will be reported as P2000, e.g. R32L/P2000.

11.10.8 When the RVR is less than the minimum value which can be assessed by the system in use, the group VVVV will be preceded by the indicator M, and VVVV will give the lowest value which can be assessed, e.g. R32L/M0100.

11.10.9 When the RVR value is assessed to be less than 50 metres, the group VVVV will be reported as M0050 e.g. R32L/M0050.

11.11 Present Weather

11.11.1 Present Weather is reported using the codes listed at *Section 12*.

- 11.11.2 Appropriate intensity indicators and letter abbreviations will be combined in groups of two (2) to nine (9) characters to indicate present weather at, or in the vicinity of, the aerodrome. If more than one form of precipitation is observed, the appropriate letter abbreviations shall be combined in a single group with the first reported being the dominant type of precipitation. In such a group, the intensity shall refer to the total precipitation.
- 11.11.3 Up to three (3) groups may be used to report present weather.
- 11.11.4 The intensity of precipitation, blowing dust, sand or snow, dust storm and sand storm will be indicated by the prefix (-) for light, (+) for heavy, and no prefix for moderate.
- 11.11.5 The qualifier VC will be used to report certain significant weather phenomena in the vicinity (between approximately 8 and 16KM of the ARP) of the aerodrome.

11.12 **Automatic Present Weather Information**

- 11.12.1 A report from an AWS with a present weather sensor will include data from this sensor in the “body of the report” if the report is fully automated, in which case the abbreviation AUTO is also included in the message. Pilots should exercise caution when interpreting automated present weather information, as it may not be equivalent to a human observation.

Note: Pilots should exercise caution when interpreting automated present weather information, as it may not be equivalent to a human observation.

11.13 **Cloud**

- 11.13.1 Cloud height is reported in hundreds of feet using three figures; e.g: 700FT is reported as 007.
- 11.13.2 Cloud amount is reported using the following abbreviations:

FEW = few	= 1 to 2 OKTAS
SCT = scattered	= 3 to 4 OKTAS
BKN = broken	= 5 to 7 OKTAS
OVC = overcast	= 8 OKTAS
- 11.13.3 Cloud information is not included in a forecast if the sky is clear.
- 11.13.4 Cloud information is reported from the lowest to the highest layer or mass in accordance with the following:
 - a. The lowest layer or mass, regardless of amount.

- b. The next layer or mass, covering more than 2 OKTAS.
- c. The next higher layer or mass, covering more than 4 OKTAS.
- d. Cumulonimbus and/or towering cumulus clouds, whenever observed and not reported in a, b or c above.

11.13.5 Type of cloud is identified only for cumulonimbus and towering cumulus observed at or near the aerodrome. These will be given as CB and TCU respectively. When an individual layer or mass of cloud is composed of cumulonimbus and towering cumulus with a common cloud base, the type of cloud is reported as cumulonimbus only, and the amount shall be reported as the sum of the CB and TCU amounts.

11.13.6 Whenever cumulonimbus cloud is forecast, the degree of associated thunderstorm activity or probability of occurrence is included.

11.14 **CAVOK**

11.14.1 CAVOK is included in the report (from staffed stations only) or forecast when the following conditions are observed, or forecast to occur, simultaneously:

- a. visibility of 10KM or more;
- b. Nil significant cloud, i.e. no cloud below 5,000 FT or below the highest 25NM minimum sector altitude, whichever is greater, and no cumulonimbus or towering cumulus at any height; and
- c. Nil significant weather, i.e. none of the weathers listed at *Section 12*.

When the term CAVOK is given, the elements visibility, weather and cloud will not be given.

11.14.2 In METAR/SPECI, whenever a total of BKN or more low or middle-level cloud is at or above 5,000FT, and CAVOK has been reported, the cloud amount and base will be given after the RMK indicator.

11.14.3 In TAF, when no cloud of operational significance is forecast and CAVOK is not appropriate, the cloud group is replaced by NSC (nil significant cloud). The cloud group is not included if the term CAVOK is appropriate.

11.15 Automatic Weather Stations with Cloud Information

11.15.1 A report from an AWS with a cloud sensor will include data from this sensor in the body of the report if the report is fully automated (in which case the abbreviation AUTO is also included in the message). The data will be in the same form as manual reports except that:

- a. NCD will be reported if no cloud is detected, and
- b. there will be no indication of cumulonimbus or towering cumulus.

Note: Pilots should exercise caution when interpreting automated cloud information as it may not be equivalent to a human observation. The information is reported as a 30 minute average (with double weighting given to the last 10 minutes); and, as it is sourced from a single ceilometer sampling only the sky directly overhead, it may not be representative of the skyline.

11.15.2 AWS may issue special reports (SPECI) for cloud using data from cloud sensors (where previously only manual observations of cloud could initiate a cloud SPECI).

11.16 Significant Variation

11.16.1 Aerodrome forecasts will include significant changes or variations (indicated by FM, BECMG, INTER and TEMPO) to the previously given conditions when the relevant criteria are met. These relate to improvements as well as deteriorations

11.16.2 The variation groups TEMPO and INTER are used to indicate significant variations of a temporary or intermittent nature. The change groups FM and BECMG are used to specify changes that are more lasting in nature. The indicators are the beginning of a self-contained forecast, except that wind is not included after INTER/TEMPO if it has not significantly changed.

11.16.3 When thunderstorms or reduced visibility due to fog, mist, dust, smoke or sand is forecast, but the probability is assessed at between 30% and 40%, the terms PROB30 or PROB40 are used respectively. INTER and TEMPO may also be used with a PROB for thunderstorms. If greater than or equal to 50% probability is forecast, reference is made to the phenomenon in the forecast itself not by the addition of a PROB statement.

11.16.4 Following FM or BECMG, where CAVOK is not appropriate, the weather group NSW (nil significant weather) or cloud group NSC (nil significant cloud) may be included to indicate weather or cloud of operational significance is no longer expected.

11.16.5 If a TAF includes a forecast of turbulence, its commencement will be indicated by the abbreviation FM, and its cessation within the forecast coverage will be indicated by the abbreviation TL. Start and finish times are given in the format ddhhmm (day of month, hour, minute). Turbulence associated with cumulonimbus (CB) and towering cumulus (TCU) clouds is not included in forecast.

11.17 **Temperature**

11.17.1 Aerodrome weather reports contain both air temperature and dewpoint.

11.17.2 Up to four forecast values of air temperature are given, for the times HH, HH+3hours, HH+6hours and HH+9hours, where HH is the time of commencement of the TAF validity period. Users should use linear interpolation to determine the forecast value between these points. The temperature forecasts are prefixed by the letter "T".

11.17.3 Negative values are indicated by the letter M before the numeral.

11.18 **QNH**

11.18.1 QNH is given in whole hectopascals using four (4) figures.

11.18.2 Observed intermediate values are rounded down. QNH is always given, prefixed by the letter Q; e.g: Q0997.

11.18.3 Up to four forecast values of QNH are given, for the times HH, HH+3 hours, HH+6 hours and HH+9 hours, where HH is the time of commencement of the TAF validity period. Users should use linear interpolation to determine the forecast value between these points. The QNH forecasts are prefixed by the letter "Q".

11.19 **Supplementary Information**

11.19.1 In METAR/SPECI, supplementary information is used to report the following:

- a. **recent weather** (RE) of operational significance, and
- b. **wind shear** (WS) information on a takeoff or landing runway.

11.20 Remarks Section

- 11.20.1 **Rainfall.** The remarks section of the report will include rainfall recorded by an automatic rain gauge. The information is in the form RF##.##/###.# where the first three (3) digits after the indicator RF will report the rainfall recorded in the 10 minutes prior to the observation time, and the next four (4) digits report the total rainfall recorded since 0900 local time. Both amounts are expressed in millimetres to the nearest 0.2MM.

Note: In situations of fine droplet precipitation, such as very light drizzle or fine mist situations, there may not be sufficient precipitation recorded to indicate any rainfall in the last 10 minutes. Therefore, pilots should regard automated reports of rainfall as guidance material.

11.20.2 Vicinity Thunderstorms and Distant Lightning Information.

A report from an AWS may include information on vicinity thunderstorms (VCTS) or distant lightning (DL), where vicinity refers to 8-16KM from the aerodrome reference point and distant refers to greater than 16KM. The direction in which vicinity thunderstorms or distant lightning are detected may also be reported in the remarks section, e.g. DL-NE means distant lightning to the northeast and VCTS-E means thunderstorm in the vicinity to the east.

- 11.20.3 **Plain Language.** Any other significant weather conditions (e.g: an approaching front or visible bushfires) are appended as plain language.

11.21 Elements Not Available

- 11.21.1 A report from a fully automated AWS that does not include information from sensors for visibility, weather, or cloud will report ////, // or ///// respectively in lieu of these parameters.

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11.22 **Examples**11.22.1 **Aerodrome Weather Reports**

- a. SPECI YMML 092000Z 22012KT 6000 SHRA SCT035TCU
31/20 Q1020 RETS RMK RF02.0/004.0
- b. SPECI YBCS 221745Z 23014G29KT 6000 1200NE TSRA
FEW040CB BKN100 26/22 Q1003 RMK RF04.0/004.0
- c. SPECI YSSY 271915Z VRB01KT 3000 VCFG FEW030
18/17 Q1018 RMK RF00.0/000.0
- d. METAR YMOR 100400Z 06013KT 5000 FU 31/08 Q1010
RMK RF00.0/000.0 SKY OBS DUE BUSH FIRE SMOKE
- e. SPECI YSCB 141400Z AUTO20008KT 9000 // BKN016
14/11 Q1001 RMK RF00.0/000.0
- f. SPECI YMAV 240215Z AUTO 36018G28KT 9999 // NCD
31/10 Q1014 RMK RF00.0/000.0
- g. METAR YSBK 241700Z AUTO 15002KT 0900 // ///// 04/04
Q1020 RMK RF00.0/000.0 CLD: SKY MAY BE OBSC

D |

11.22.2 **Aerodrome Forecasts**

- a. TAF YCOM 070635Z 0708/0720 18015KT 9999 FEW005
BKN020
TEMPO 0710/0714 2000 -SHSN BKN005 SCT020
RMK T 03 00 M02 M04 Q 1008 1007 1006 1006
- b. TAF YSSY 020435Z 0206/0312 31005KT CAVOK
FM021400 16015KT 8000 SHRA BKN008 SCT030
FM022300 23010KT 9999 NSW SCT030
RMK T 25 21 18 15 Q 1012 1013 1014 1014
- c. TAF YSCB 270448Z 2706/2806 33015G28KT 3000 +RA
BKN010 OVC100
FM271400 16015KT 8000 SHRA FEW010 SCT040 SCT100
INTER 2710/2714 1000 +TSRA BKN005 SCT040CB
RMK FM270800 MOD TURB BLW 5000FT TL280000
T 14 13 13 11 Q 1016 1015 1013 1016
- d. TAF YMHB 100445Z 1006/1100 14004KT 3500 DZ OVC012
FM101700 VRB02KT 0300 FG
RMK T 12 11 10 10 Q 1018 1019 1020 1019

- e. TAF YMML 291645Z 2918/3100 36007KT CAVOK
BECMG 3001/3002 18015KT 9999 -SHRA FEW015 SCT025
FM300900 15005KT CAVOK
PROB30 3016/3022 0500 FG
RMK T 11 12 14 16 Q 1020 1021 1019 1018
- f. TAF AMD YMML 252150Z 2522/2700
26016KT 2000 +RA BKN005
FM252330 22020KT 9999 -SHRA BKN010
FM260300 19014KT 9999 -SHRA BKN020
FM260500 18008KT 9999 NSW SCT025
INTER 2523/2605 5000 SHRA BKN010
RMK
T 08 11 12 11 08 Q 1025 1026 1026 1026
TAF3
- g. TAF YAMB 190418Z 1906/2000
VRB03KT CAVOK
FM191200 13010KT 9999 BKN010
FM192200 09008KT 9999 SCT020
RMK
T 28 23 20 18 Q 1020 1021 1022 1021
TAF3 VALID TL 190900
- h. TAF AMD YMES 090555Z 0906/0918
24020G33KT 8000 FU VV030
BECMG 0909/0911 24006KT 8000 FU VV030
PROB30 0914/0918 5000 FU VV025
RMK FM090600 MOD TURB BLW 5000FT TL091000
T 24 21 18 15 Q 1010 1016 1020 1020
- i. TAF YMNG 160630Z 1608/1620
14012KT 6000 FU NSC
FM161500 02012KT 9000 FU NSC
TEMPO 1608/1615 3000 FU VV010
RMK
T 29 22 19 17 Q 1013 1014 1015 1016

12. WEATHER CODE AND TRANSLATION

CODE	TRANSLATION
	WEATHER DESCRIPTORS
BC	PATCHES (or PATCHES OF)
BL	BLOWING
DR	DRIFTING
FZ	FREEZING
MI	SHALLOW
SH	SHOWERS (or SHOWERS OF)
TS	THUNDERSTORMS (or THUNDERSTORMS WITH)
PR	AERODROME PARTIALLY COVERED (USED ONLY TO DESCRIBE FG)

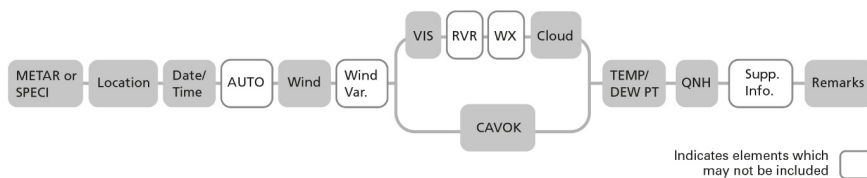
	PHENOMENA
BR	MIST
DU	DUST
DS	DUST STORM
DZ	DRIZZLE
FC	FUNNEL CLOUDS
FG	FOG
FU	SMOKE
GR	HAIL
GS	SMALL HAIL PELLETS
HZ	HAZE
IC	ICE CRYSTALS (VERY SMALL ICE CRYSTALS IN SUSPENSION, ALSO KNOWN AS DIAMOND DUST)
PL	ICE PELLETS
PO	DUST DEVILS
RA	RAIN
SA	SAND
SG	SNOW GRAINS
SN	SNOW

SQ	SQUALLS
SS	SAND STORM
UP	UNKNOWN PRECIPITATION TYPE (FROM WEATHER SENSOR)
VA	VOLCANIC ASH

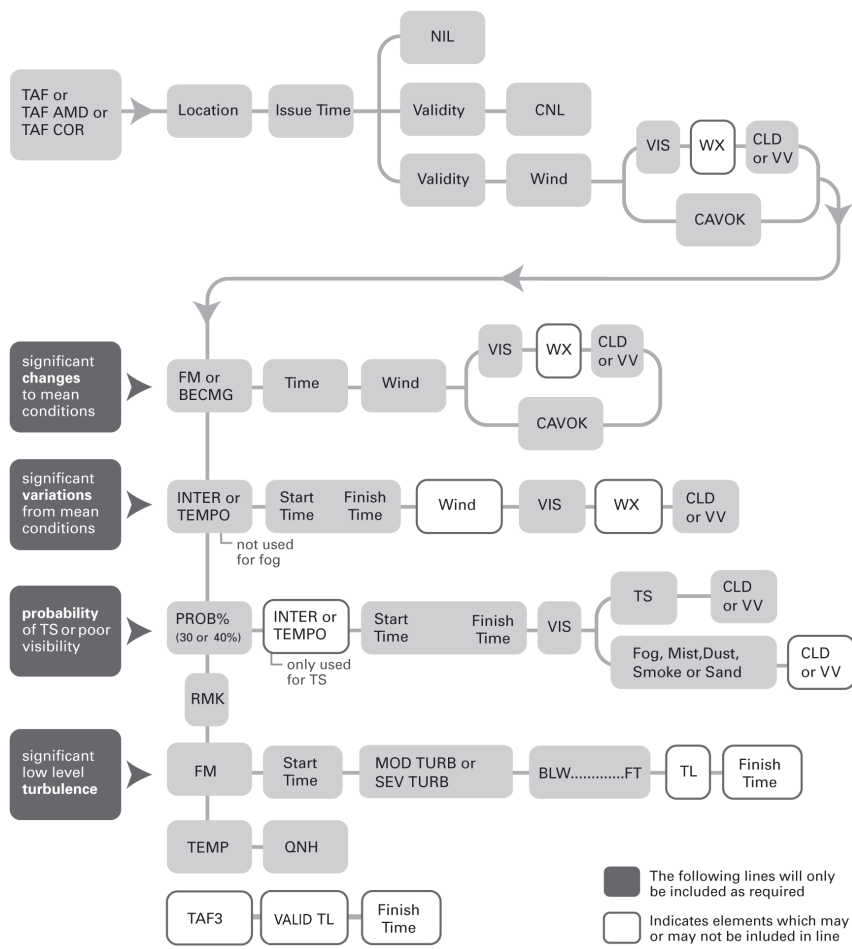
Note 1: Intensity is indicated with precipitation, duststorms and sandstorms. In these cases, the weather code is prefixed by the qualifier - for light and + for heavy. Moderate intensity is indicated by the absence of a prefix.

Note 2: METAR/SPECI may provide an indication of weather in the vicinity (within approximately 8 and 16 KM of the aerodrome reference point). The proximity qualifier VC will be used only in combination with the abbreviations TS, DS, SS, FG, FC, SH, PO, BLDU, BLSA and BLSN.

13. METAR/SPECI (AERODROME WEATHER REPORT) FORMAT



14. TAF - AERODROME FORECAST



Note: Flight planning requirements for TAF can be found at ENR 1.10 para 1.2.5.

15. AERODROMES AND CATEGORIES FOR WHICH TAF WILL BE AVAILABLE

Note: Airfield categories and associated services are contained at para 3.4.3.

Adelaide	A Birdsville	D Clermont	D
Adelaide/ Edinburgh (RAAF)	B Boolgeeda	C Cloncurry	C
Adelaide/Parafield	B Bourke	D Cobar	D
Albany	C Brisbane	A Cocos Island	A
Albury	B Brisbane/ Archerfield	B Coen	D
Alice Springs	A Brisbane West Wellcamp	C Coffs Harbour	A
Amberley (RAAF)	B Broken Hill	C Coober Pedy	D
Argyle	D Broome	A Cooktown	D
Armidale	C Browse Island	D Cooma - Snowy Mountains	C
Avalon	A Bunbury	C Coonabarabran	D
Ayers Rock/ Connellan (Yulara)	B Bundaberg	B Coondewanna	C
Bairnsdale	D Burketown	D Cunderdin	D
Ballarat	C Busselton	D Curtin/Derby South	B
Ballera Gas Field	D Cairns	A Darwin	A
Ballina/Byron Gateway	B Camden	B Derby	C
Barimunya	C Canberra	A Devonport	C
Barrow Island	B Carnarvon	D Dubbo	B
Bathurst	C Ceduna	D East Sale (RAAF)	B
Bathurst Island (Nguu)	C Charleville	C Elcho Island (Ngayawili)	D
Bayu Undan	D Christmas Creek	C Emerald	B
Bendigo	C Christmas Island	A Ernabella (Pukatja)	D

Esperance	C Jabiru	D Meekatharra	C
Fitzroy Crossing	D Jabiru Venture	D Melbourne	A
Flinders Island	C Julia Creek	D Melbourne/Essendon	B
Forrest	C Kalgoorlie-Boulder	A Melbourne/ Moorabbin	B
Fortescue Dave Forrest	C Karratha	B Merimbula	C
Georgetown (QLD)	D King Island	C Mildura	B
Geraldton	B Kingaroy	D Modec Venture	D
Giles	D Kingscote/ Kangaroo Island	C Moomba	C
Gladstone	B Kowanyama	D Moranbah	C
Glen Innes	D Kununurra	C Moree	C
Gold Coast (Coolangatta)	A Latrobe Valley	C Mornington Island	D
Goulburn	D Launceston	A Moruya	C
Gove	C Learmonth	A Mount Gambier	C
Grafton	D Leigh Creek	D Mount Isa	B
Griffith	C Leinster	C Mount Magnet	D
Groote Eylandt	C Leonora	C Mudgee	D
Halls Creek	D Lismore	C Murray Bridge	D
Hamilton	C Lockhart River	D Narrabri	C
Hamilton Island	B Lombadina	B Narrandera	D
Hervey Bay	B Longreach	C Newman	B
Hobart	A Lord Howe Island	A Ngukurr	D
Holsworthy	B Mackay	B Norfolk Island	A
Hooker Creek (Lajamanu)	D Maitland(NSW)	D Normanton	C
Horn Island	A Mangalore	D Nowra	B
Horsham	D Maningrida	C Oakey	B
Hughenden	D Mareeba	D Olympic Dam	C
Innisfail	D Maryborough (QLD)	D Onslow	D
Ivanhoe	D McArthur River Mine	D Orange	C

Paraburdoo	B Scone	D Townsville	A
Parkes	D Shark Bay	C Trepell	C
Pearce (RAAF)	B Shellharbour	D Tropicana	C
Perth	A Shepparton	C Truscott-Mungalalu	C
Perth/Jandakot	B Solomon	D Wagga Wagga	B
Port Augusta	C Southern Cross	C Walgett	D
Port Hedland	A Strahan	B Wangaratta	D
Port Keats	D Sunshine Coast	D Warburton	D
Port Lincoln	B Swan Hill	B Warrnambool	C
Port Macquarie	B Sydney/ Bankstown	A Weipa	C
Portland	D Sydney/Kingsford Smith	B West Angeles	C
Proserpine/ Whitsunday Coast	B Tamworth	C Whyalla	C
Renmark	D Taree	C Williamson (MIL)	D
Richmond (QLD)	D Telfer	C Williamstown (RAAF)	A
Richmond (NSW) (RAAF)	A Tennant Creek	D Wiluna	D
Rockhampton	A Thangool	D Windorah	D
Roma	C Thargomindah	D Winton	D
Rottnest Island	D The Granites	D Woomera	B
Saint George	D The Monument	A Wynyard (Burnie)	C
Saint Helens	C Tindal	C Young	D
Scherger (RAAF)	D Toowoomba	C Yuendumu	D

D

16. GRAPHICAL AREA FORECASTS (GAF) FOR OPERATIONS AT AND BELOW 10,000FT

16.1 The domestic graphical area forecast system provides for the routine issue of forecasts for designated areas.

16.2 Preparation and Issue Times

- a. GAF are issued with the 6 hour validity periods 2300Z to 0500Z, 0500Z to 1100Z, 1100Z to 1700Z and 1700Z to 2300Z;
- b. At each issue time two GAF will be issued covering a 12 hour period, for example at 2200Z, both 2300Z to 0500Z and 0500Z to 1100Z GAF will be issued
- c. GAF will be issued no later than 30min before the commencement of the validity period of the first GAF;
- d. the issuance of a new GAF replaces the previously issued GAF for the same validity period

16.3 Approved Abbreviations Used in Graphical Area Forecasts (GAF)

- a. Clouds: CU, TCU, SC, CB, ST, AS, AC, NS or combinations of these.
- b. Weather: CAVOK, MTW, NIL, TURB, and other abbreviations as per the codes given in *Section 13*.
- c. Cloud Amounts or descriptors: FEW, SCT, BKN, OVC and for CB, ISOL, OCNL, FRQ, EMBD, BASE, CLD ON GND
- d. Qualifiers: MOD, SEV, +, -.
- e. Units: KT, KM, M, FT.
- f. Time: Z.
- g. Variations: TEMPO and INTER are only used for Critical Locations. FM, TL, BECMG
- h. Heights: ABV, BLW, LYR, SFC
- i. Directions: N, NE, E, SE, S, SW, W, NW.
- j. Corrections: COR (correction), IMPR (improvement to conditions), TRANS ERR (transmission error), TYPO (typographical error).
- k. General: FZLVL, FZLYR, WDSPR, WI, VAL, STNR, BTN and other abbreviations listed in *GEN 2.2 Section 2*.

16.4 Sections of the Graphical Area Forecast (GAF)

The GAF shall comprise of:

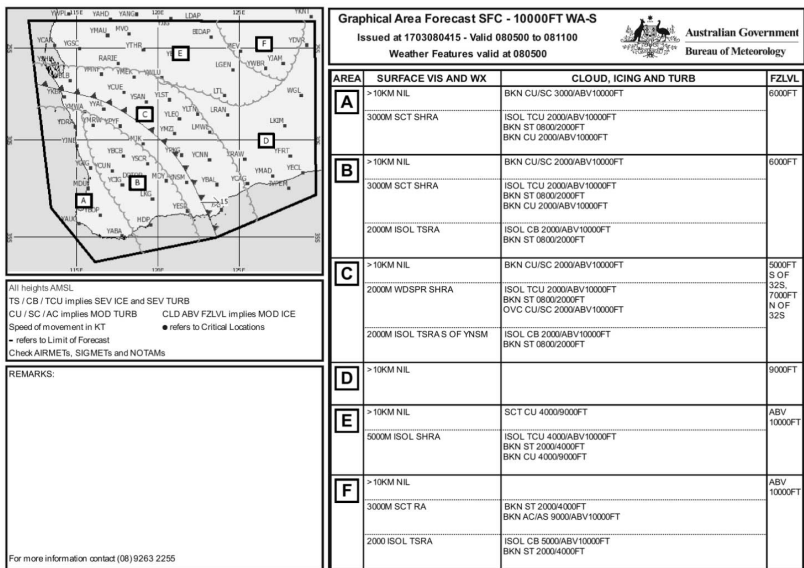
- a. a header giving details of issue time and validity times. It will also contain the word “CORRECTED” for a GAF correction (as per 16.5)
- b. an image depicting weather areas labelled with an alpha character, e.g. **A**. Weather areas may be subdivided further with addition of a numerical character, e.g. **A1**. The weather in **A1** will be the same as **A** with a minor differentiation, such as lower visibility in showers
- c. a table providing detailed meteorological information for the areas shown on the image divided into four columns:
 - (1) AREA gives the alpha character corresponding to areas in the image
 - (2) SURFACE VIS and WX gives details of weather and associated visibility
 - (3) CLOUD, ICING and TURB gives the cloud, icing and turbulence in the area or associated with the weather in the SURFACE VIS and WX column
 - (4) FZLVL gives the height of the freezing level, or ABV 10,000FT where the freezing level is above 10,000FT AMSL
- d. a legend explaining information important to the interpretation of the product
- e. a remarks box for additional information including forecasts for critical locations and reason for correction for a Corrected GAF.

16.5 Changes to GAF and Corrected GAF

GAF are not amended. Advice of deteriorating conditions will be in the form of an AIRMET (see section 5.3) or SIGMET (see section 5.2). A corrected GAF will be issued between standard issue times to notify of:

- a. Typographical error (TYPO)
- b. Errors such as transmitting before completion (TRANS ERR); and
- c. Improvement in conditions (IMPR) - e.g. removal of fog, thunderstorms, etc.

An example GAF is given below:



17. FORECASTS FOR OPERATIONS ABOVE 10,000FT

17.1 The meteorological documentation for operations above 10,000FT will consist of the following as appropriate:

- a. Forecasts.
- b. Significant Weather Prognostic Charts:
 - (1) Latitude Equator - 50°S, Longitude 100 - 180°E valid at 0000, 0600, 1200, 1800 UTC; or
 - (2) WAFS charts as applicable for areas outside of the above.
- c. Wind and Temperature Charts:
 - (1) Produced for the Australian region plus ICAO Areas E, F and K.
 - (2) Valid at 0000, 0600, 1200, 1800 UTC, and updated six hourly.
- d. Grid Point Forecasts (wind and temperature):
 - (1) Latitude 10 - 50°S, Longitude 100 - 160°E for FL385, FL340, FL300, FL235, FL185 valid at 0000, 0600, 1200, 1800 UTC;

- (2) WAFS charts as applicable for areas outside of the above.

Note: Charts are a mercator projection.

- e. For domestic operations, Route Sector Winds and Temperatures together with standard flight plan numbers for frequently used air routes.

18. SIGNIFICANT WEATHER CHARTS

- 18.1 The significant weather expected in the airspace from FL250 to FL 630 (SIGWX High) and FL100 to FL250 (SIGWX Medium) are depicted on the relevant chart using approved symbols and abbreviations. Significant features of the surface synoptic situation are also usually shown.

- 18.2 The approximate availability and validity times of the Australian area high-level SIGWX charts are as follows:

Available (UTC)	Valid (UTC)
0800	0000
1400	0600
2000	1200
0200	1800

Note: SIGWX High charts will be updated if an error or omission is found.

- 18.3 The approximate availability and the validity times of the Australian area medium-level SIGWX charts are as follows.

First Available (UTC)	Updated (UTC)	Valid (UTC)
0700	2000	0000
1330	0200	0600
1900	0800	1200
0130	1400	1800

- 18.4 Significant variations during three (3) hours each side of the validity time are included on the chart.

19. GRID POINT WIND AND TEMPERATURE (GPWT) FORECASTS

19.1 GPWT charts provide a display of wind and temperature data derived from weather model data. The high-level and mid-level charts are produced with a 2.5° or 5° latitude and longitude grid resolution using data from the World Area Forecast System (WAFS) models. The low level charts are produced with a 1.5° or 5° latitude and longitude grid resolution using data from the Bureau's Numerical Weather Prediction Model. The data is overlaid on a geographic background. The values given represent the wind and temperature at a specific pressure level, which is approximated to a height or flight level, for the mid-point of each square.

19.2 GPWT are presented to aircrew on a geographic background to facilitate interpretation on specific routes.

19.3 Low-level GPWT Reference Charts with PCA points can be found in the NAIPS Charts Directory.

19.4 A block of GPWT data contains the following information for each level:

- a. dd: two numbers indicating the wind direction in degrees true to the nearest 10;
- b. fff: three numbers indicating the wind speed in knots
- c. t: the sign of the temperature (+ or -)
- d. TT: two numbers indicating the temperature in whole degrees Celsius. Dashed line (-- --- ---) are used when the grid point is below ground level and hence there is no valid wind or temperature for that point.

Example: 2503563 dd fff tTT

25 035 -63

19.5 GPWT forecasts are issued every six hours. High-level and mid-level charts are valid in six hourly time steps for the next 24 hours, however, low level charts are valid in three hourly time steps for the next 24 hours.

19.6 Receipt of a forecast for a particular validity time will automatically amend and supersede any prior issue for that time. Both issue and validity times appear with each forecast.

19.7 An example of Grid Point Forecast presentation is given on the following page.

The figure displays 12 weather forecast charts for the GPWT Forecasts (1000FT - FL140) - NSW. The charts are arranged in a 3x4 grid. Each chart shows a 24-hour forecast for a specific location, with columns for time (00, 03, 06, 09, 12, 15, 18, 21, 00, 03, 06, 09, 12, 15, 18, 21) and rows for temperature (TEMP), wind speed (WIND), and cloud cover (CLOUD). The charts are labeled with coordinates (e.g., 37°S, 150°E) and a grid reference (e.g., 37°S, 150°E).

20. ROUTE SECTOR WINDS AND TEMPERATURES

20.1 Route Sector Winds and Temperatures (RSWT) forecasts are provided for various sectors of frequently used domestic air routes. Some longer routes may be sub-divided into segments, e.g: YPAD/YPOD/YMHB as per example below.

20.2 RSWT forecasts are prepared for six levels, as shown in the following example:

FL - ISA YMML/YSSY YSSY/YBBN YMML/YPAD YMML/YMHB
YPAD/YPOD/YMHB

450-56 2604859 2503761 2805659 2705557 2905659 2805457
390-56 2405360 2203757 2705260 2606861 2805960 2706961
340-52 2404950 2003849 2706050 2506551 2806450 2606651
300-44 2404439 2002939 2805039 2504941 2905639 2605341
240-33 2403123 2202322 2804123 2703825 2904523 2803925
180-21 2502312 2302111 2803412 2803013 3003812 2803114

20.3 A block of RSWT data contains the following information for each level:

- a. two numbers indicating the mean wind direction in degrees true to the nearest 10° true;
- b. three numbers indicating the wind speed in knots;
- c. two numbers indicating the mean temperature in degrees Celsius (without the negative sign).

20.4 The ISA value is the International Standard Atmosphere temperature for the given flight level.

20.5 The forecasts are issued twice daily, at approximately 0500 and 1700 UTC. Four validity times are provided at each issue - 0000, 0600, 1200 and 1800 UTC.

20.6 The issuance of a new forecast will supersede any forecast previously issued for that validity time.

20.7 RWST forecasts are available from NAIPS (under Charts) and from BoM's aviation web page.

1	YMMML-YSSY	16	YBBN-25S-YBMA	32	YPPH-YCAR-YPLM	48	YSSY-YGTH-YPAD
2	YMMML-YMHB	17	YBMA-YPDN	33	YCAR-YPPD	49	YBBN-YWLG
3	YMMML-YPAD	18	YBAS-ASB-YPDN	34	RESERVED	50	YPGV-YBCS
4	YMMML-CANDY	19	YPAD-LGS	35	YCMU-143E-YBMA	51	YPPH-KAGUX-YPKA
5	CANDY-CRICK	20	YMMML-YCDU	36	YSSY-149E-YCMU	52	YBCS-YHID
6	YCDU-YCAG	21	YSSY-APOMA	37	RESERVED	53	YSSY-28S
7	YCAG-YPPH	22	APOMA-138E-YBAS	38	RESERVED	54	28S-YEML-YBTL
8	CRICK-YPPH	23	YBBN-YROM-NONET-YBAS	39	RESERVED	55	YPPH-YMOG-YNWN
9	YMMML-YMMML-LGS	24	YBAS-YBMA	40	YPDN-YPGV	56	YNWN-CIN
10	YPAD-YPWR-YBAS	25	YBMA-YBTL	41	YPAD-POD-YMHB	57	YCAR-YNWN
11	YPPH-ERE-YPPD	26	YSDU-VENEL-YPAD	42	YBAS-LANOP	58	YPLM-YPPD
12	YPPD-CIN-TROUT YPDN	27	YSSY-YMCO-YMHB	43	LANOP-YPKG-YPPH	59	YGEL-GAS-WAL
13	YPDN-GRY-YBTL	28	YMMML-YMDG-YBBN	44	RESERVED	60	YPAD-YOOM
14	YBBN-YBMK-YBCS	29	LGS-YBAS	45	YMMML-YGTH-YWLG	61	YBBN-YSDU
15	YSSY-YBBN	30	YBCS-YBMA	46	YWLG-ABR-YBPN	62	YWLG-141E-YCDU
		31	RESERVED	47	YPAD-ISLAV-YCAG	63	YSSY-TAM-YBMK





















ROUTE SECTOR NUMBERS

21.






















SYMBOLS

21.1

Significant Weather Charts

	Tropical cyclone		Tropopause low
	Moderate turbulence		Tropopause level
	Severe turbulence		Position, speed & level of max. wind
	Moderate aircraft icing		Freezing level
	Severe aircraft icing		Cold front at the surface
	Volcanic eruption		Warm front at the surface
	Radioactive materials in the atmosphere		Occluded front at the surface
	Tropopause high		Quasi-stationary front at the surface
<div><div><div>220/400</div><div>FL320</div></div><div></div><div><div>FL310</div></div></div> <p>Wind arrows indicate the maximum wind in jet and the flight level at which it occurs. If the maximum wind speed is 120 kt or more, the flight levels between which winds are greater than 80 kt is placed below the maximum wind level. In the example, winds are greater than 80 kt between FL 220 and FL 400.</p> <p>The heavy line delineating the jet axis begins/ends at the points where a wind speed of 80 kt is forecast.</p> <p> Symbol used whenever the height of the jet axis changes by +/- 3000 ft or the speed changes by +/- 20 kt</p> <p>EXAMPLE: Arrows indicate direction. Number of pennants and/or feathers correspond to speed.</p> <p>270°/115 kt</p> <p> Pennants correspond to 50 kt</p> <p>Feathers correspond to 10 kt</p> <p>Half-feathers correspond to 5 kt</p>			

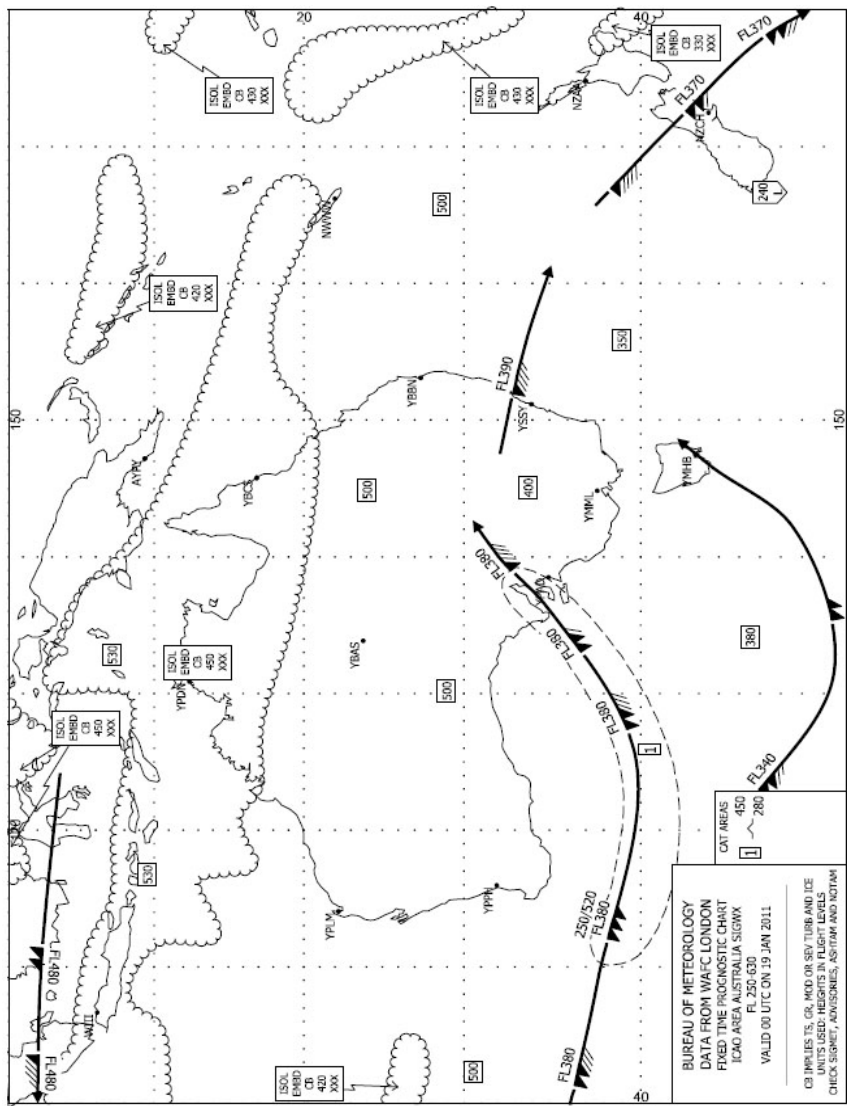
21.2 Other Symbols

	Severe squall line		Widespread blowing snow
	Mountain waves		Severe sand or dust haze
	Mountain obscuration		Widespread sandstorm or duststorm
	Widespread fog		Widespread haze
	Widespread mist		Widespread smoke
	Drizzle		Convergence line
	Rain		Intertropical convergence zone
	Shower		State of the sea
	Hail		Sea-surface temperature
	Freezing precipitation		Widespread strong surface wind*
	Snow		

*This symbol refers to widespread surface wind speeds exceeding 30 kt.

22. **EXAMPLES**

22.1 **Significant Weather Prognosis.**



Note 1: Significant variations during three (3) hours each side of the validity time are included on the chart.

Note 2: SIGWX High will be annotated ICAO AREA AUSTRALIA SIGWX FL250-630.

Note 3: For SIGWX Medium Level (SWM) the chart will be annotated "Significant weather (SIGWX) A100-FL250". Weather phenomena below A100 will not normally be shown.

Note 4: Heights are indicated on SWH and SWM charts in flight level (FL), top over base. When XXX is used, tops or bases are outside the layer of the atmosphere to which the chart applies.

Note 5: Cumulonimbus, altocumulus and altostratus cloud are indicated by the abbreviations CB, AC and AS respectively. CB is preceded by ISOL (isolated, i.e. individual), OCNL (occasional, i.e. well separated), FRQ (frequent, i.e. little or no separation) or EMBD (embedded in layers of other clouds or concealed by haze). AC and AS amounts are indicated by the abbreviations FEW, SCT, BKN or OVC. The upper figure following the abbreviations is the approximate flight level at the top of the cloud; the lower figure indicates the approximate flight level of the base of the cloud; XXX will indicate that the base or top is outside the layer of atmosphere to which the chart applies

eg, ISOL CB $\frac{400}{XXX}$

Note 6: The use of the abbreviation CB implies associated thunderstorms and the occurrence of turbulence and icing.

Note 7: A similar convention is employed to indicate the height indications of phenomena such as aircraft icing, turbulence etc.

Note 8: When shown, centres of surface high or low pressure are represented by H or L respectively, the position at the surface of the point of highest or lowest pressure is indicated by a "+" followed by the value of the MSL pressure in Hectopascals. When used, an arrow indicates the expected speed of movement (in knots). Movement of other significant features is shown in similar fashion.

Note 9. Colours, if used, are to improve clarity of presentation and have no other significance.

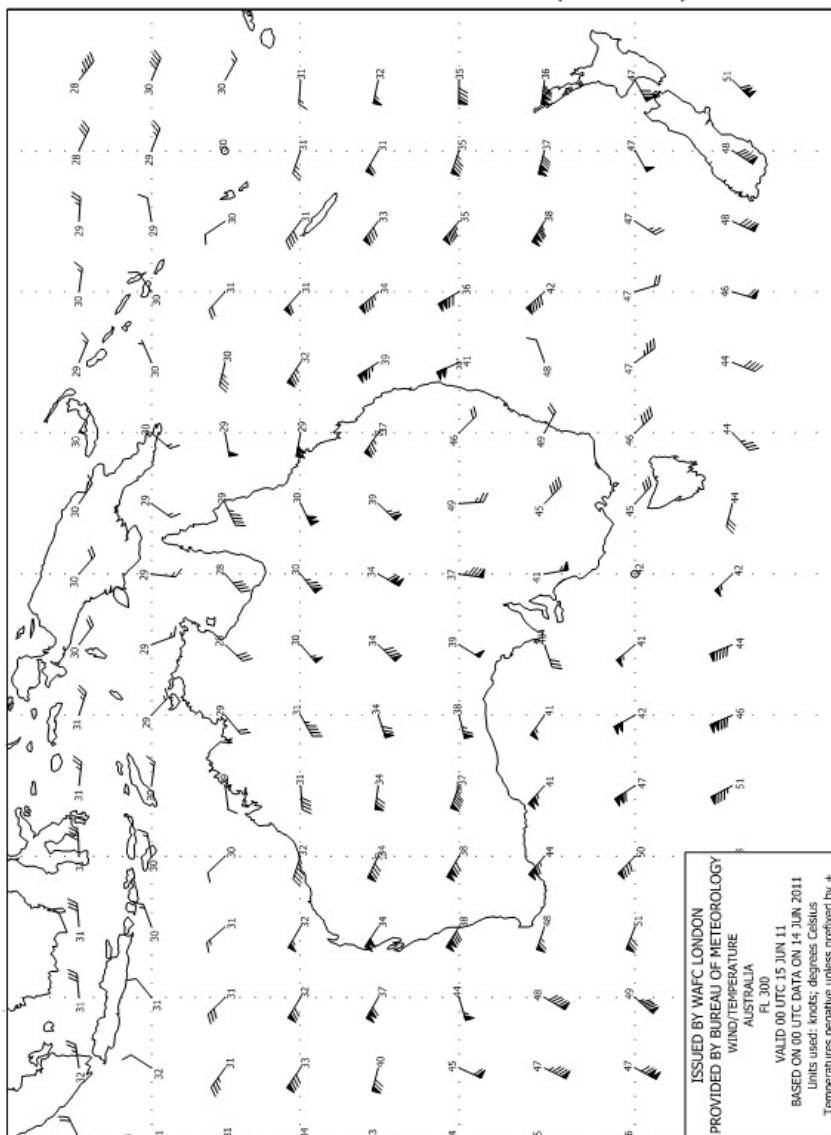
22.2 Wind and Temperature Charts

22.2.1 Wind and temperature charts are provided for four regions:

- a. Australian Region - Latitude 0 to 50S, Longitude 100E to 180E
- b. ICAO Area E - Latitude 45N to 47S, Longitude 25E to 180E
- c. ICAO Area F - Latitude 42 30N to 47 30S, Longitude 100E to 110W
- d. ICAO Area K - Latitude 0 to 90S, Longitude 0 to 180W

Note: Charts are a mercator projection except for ICAO Area K which is polar stereographic.

WIND AND TEMPERATURE CHART (EXAMPLE)



22.3 Volcanic Ash Advisory

VA ADVISORY

DTG: 20190314/0025Z
VAAC: DARWIN
VOLCANO: TENGGER CALDERA 263310
PSN: S0757 E11257
AREA: INDONESIA
SUMMIT ELEV: 2329M
ADVISORY NR: 2019/13
INFO SOURCE: HIMAWARI-8, VONA
AVIATION COLOUR CODE: ORANGE
ERUPTION DETAILS: VA OBS TO FL100 EXT TO NE AT 14/0000Z
OBS VA DTG: 14/0025Z
OBS VA CLD: SFC/FL100 S0758 E11257 - S0746 E11316 - S0735 E11302 - S0757 E11255 MOV NE 15KT
FCST VA CLD +6HR: 14/0625Z SFC/FL100 S0758 E11259 - S0758 E11255 - S0741 E11248 - S0734 E11259 - S0743 E11311
FCST VA CLD +12HR: 14/1225Z SFC/FL100 S0758 E11258 - S0740 E11306 - S0734 E11254 - S0741 E11245 - S0758 E11255
FCST VA CLD +18 HR: 14/1825Z SFC/FL100 S0758 E11256 - S0746 E11243 - S0735 E11248 - S0738 E11302 - S0758 E11258
RMK: VA OBS EXT TO NE ON LATEST VIS SAT IMAGERY; HOWEVER, EXTENT OBSCURED BY MET CLOUD. HEIGHT DECREASED TO FL100 BASED ON 13/2342Z VONA FOR CONTINUOUS ERUPTION TO FL100 AT 13/1300Z. FORECAST BASED ON SURABAYA 13/1200Z SOUNDING, HIMAWARI-8, AND MODEL GUIDANCE.
NXT ADVISORY: NO LATER THAN 20190314/0625Z

23. SPACE WEATHER

- 23.1 The Bureau of Meteorology is part of one of the ICAO designated aviation Space Weather Centres (SWXC) established to deliver space weather (SWX) services.
- 23.2 The SWXC monitor and provide current conditions, advisories and forecasts of space weather phenomena with the potential to impact:
- a. high frequency radio communications (HF COM);
 - b. global navigation satellite systems (GNSS) based navigation and surveillance systems;
 - c. radiation effects on avionics and/or human health (RADIATION).
- 23.3 A space weather advisory is issued whenever space weather conditions exceed pre-defined ICAO thresholds as defined in ICAO *Doc 10100* for both moderate impacts (MOD) and severe impacts (SEV) and given in the following table.

Effect	Sub-effect	Parameter used	MOD	SEV
GNSS	Amplitude Scintillation	S4 (dimensionless)	0.5	0.8
GNSS	Phase Scintillation	Sigma-phi (radians)	0.4	0.7
GNSS	Vertical Total Electron Content (TEC)	TEC units	125	175
RADIATION		Effective dose (micro-Sieverts/hour)*	30	80
HF COM	Auroral Absorption (AA)	Kp index	8	9
HF COM	Polar Cap Absorption (PCA)	dB from 30MHz riometer data	2	5
HF COM	Shortwave Fadeout (SWF)	Solar X-rays (0.1-0.8 nm) (W-m ⁻²)	1x10 ⁻⁴ (X1)	1x10 ⁻³ (X10)
HF COM	Post-Storm Depression	Maximum usable frequency (MUF)**	30%	50%
SATCOM	No threshold has been set for this effect			

* MOD advisories will only be issued when the MOD threshold is reached between FL250 and FL460. SEV advisories will be issued when the SEV threshold is reached at any FL above FL250.

** As compared to a 30-day running median of the critical frequency of the F2 layer (foF2).

23.4 The spatial extent of the SWX is either described using:

- a. six pre-defined latitude bands of width 30° shown in the table below (multiple bands may be given in one advisory), followed by a longitude range in 15° increments (E180 – W180 is used when the entire band is affected); or
- b. the term DAYLIGHT SIDE, meaning the extent of the planet that is in daylight (used for short wave fadeout events); or
- c. a polygon using latitude and longitude coordinates.

High latitudes northern hemisphere (HNH)	N90 – N60
Middle latitudes northern hemisphere (MNH)	N60 – N30
Equatorial latitudes northern hemisphere (EQN)	N30 – N00
Equatorial latitudes southern hemisphere (EQS)	S00 – S30
Middle latitudes southern hemisphere (MSH)	S30 – S60
High latitudes southern hemisphere (HSH)	S60 – S90

23.5 A Space Weather Advisory Message has the following format:

- (1) WMO Header (FNXX01, WMO location indicator, UTC date-time of issue of the message)
- (2) SWX ADVISORY (message type)
- (3) STATUS (either test (TEST) or exercise (EXER) if required)
- (4) DTG (Time of Origin - Year/month/date/time in UTC)
- (5) SWXC (name of Space Weather Centre)
- (6) ADVISORY NR (advisory number; unique sequence for each space weather effect: HF COM, GNSS, RADIATION, SATCOM)
- (7) NR RPLC (number of the previously issued advisory being replaced)
- (8) SWX EFFECT (effect and intensity of space weather phenomenon)

- (9) OBS (or FCST) SWX (Date and time (in UTC) and description of spatial extent of observed or forecast space weather phenomenon)
- (10)FCST SWX +6 HR (Date-time (in UTC) of forecast spatial extent of space weather event)
- (11)FCST SWX +12 HR (as above)
- (12)FCST SWX +18 HR (as above)
- (13)FCST SWX +24 HR (as above)
- (14)RMK (NIL or free text)
- (15)NXT ADVISORY (Year/month/date/time (in UTC) or NO FURTHER ADVISORIES)

23.6 Examples of this message are shown below:

FNXX01 YMMC 020100

SWX ADVISORY

DTG: 20190502/0054Z

SWXC: ACFJ

ADVISORY NR: 2019/319

SWX EFFECT: HF COM MOD

OBS SWX: 02/0054Z DAYLIGHT SIDE

FCST SWX + 6 HR: 02/0700Z DAYLIGHT SIDE

FCST SWX + 12 HR: 02/1300Z DAYLIGHT SIDE

FCST SWX + 18 HR: 02/1900Z NOT AVBL

FCST SWX + 24 HR: 03/0100Z NOT AVBL

RMK: SOLAR FLARE EVENT IN
PROGRESS IMPACTING HF COM
ON DAYLIGHT SIDE. PERIODIC
LOSS OF HF COM ON DAYLIGHT
SIDE POSSIBLE NXT 12HRS.

NXT ADVISORY: WILL BE ISSUED BY
20190502/0654Z=

FNXX01 EFKL 190300

SWX ADVISORY

DTG: 20190219/0300Z

SWXC: PECASUS

ADVISORY NR: 2019/20

SWX EFFECT: RADIATION MOD

OBS SWX: 19/0300Z HNH HSH E18000-W18000
ABV FL370

FCST SWX + 6 HR: 19/0900Z NO SWX EXP

FCST SWX + 12 HR: 19/1500Z NO SWX EXP

FCST SWX + 18 HR: 19/2100Z NO SWX EXP

FCST SWX + 24 HR: 20/0300Z NO SWX EXP

RMK: RADIATION AT AIRCRAFT
ALTITUDES ELEVATED BY SMALL
ENHANCEMENT JUST ABOVE
PRESCRIBED THRESHOLD.
DURATION TO BE SHORT LIVED.

NXT ADVISORY: NO FURTHER ADVISORIES=

FNXX01 KWNP 020100

SWX ADVISORY

DTG: 20190502/0100Z

SWXC: SWPC

ADVISORY NR: 2019/59

NR RPLC: 2019/58

SWX EFFECT: GNSS MOD

OBS SWX: 02/0100Z HNH HSH E18000-W18000

FCST SWX + 6 HR: 02/0700Z HNH HSH E18000-W18000

FCST SWX + 12 HR: 02/1300Z HNH HSH E18000-W18000

FCST SWX + 18 HR: 02/1900Z NO SWX EXP

FCST SWX + 24 HR: 03/0100Z NO SWX EXP

RMK: IONOSPHERIC STORM CONTINUES
TO CAUSE LOSS-OF-LOCK
OF GNSS IN AURORAL ZONE.
THIS ACTIVITY IS EXPECTED TO
SUBSIDE IN THE FORECAST
PERIOD

NXT ADVISORY: 20190502/0700Z=

GEN 3.6 SEARCH AND RESCUE**1. PURPOSE**

- 1.1 The purpose of the Search and Rescue (SAR) organisation is to provide assistance to aircraft in distress and to search for, provide aid to, and organise the rescue of survivors of aircraft accidents and forced landings.

2. RESPONSIBLE AUTHORITY

- 2.1 Airservices Australia is responsible for the provision of a SAR alerting and in-flight emergency response service. Joint Rescue Coordination Centre (JRCC) Australia is responsible for the conduct of SAR for missing aircraft, aircraft reported crashed and ELT searches within the Search and Rescue Region (SRR) under Australian jurisdiction.

3. ORGANISATION

- 3.1 The Australian Maritime Safety Authority (AMSA) have established a Joint Rescue Coordination Centre in Canberra (JRCC AUSTRALIA) which is responsible for the coordination of aviation and maritime SAR efforts within the Australian SRR. Refer to the chart at *para 10*.

4. RESCUE COORDINATION CENTRES

SAR Region	Location and Address
AUSTRALIA SRR	JRCC Australia 82 Northbourne Avenue BRADDON ACT 2601 Postal Address: GPO Box 2181 CANBERRA CITY ACT 2601 Ph: 1 800 815 257 Ph: +61 2 6230 6899 (overseas) Ph: +61 419 309 721 (text message) Fax: 1 800 622 153 Email: rccaus@amsa.gov.au Website: www.amsa.gov.au/safety-navigation/search-and-rescue AFTN: YSARYCYX

5. PROCEDURES

5.1 Emergency Phases

All ATS Units have been designated as alerting posts and are responsible for the declaration of the appropriate emergency phase. Three phases of emergency have been established for classifying emergency situations and are declared in accordance with the following paragraphs.

5.1.1 Uncertainty Phase (INCERFA) when:

- a. uncertainty exists as to the safety of the aircraft and its occupants;
- b. an aircraft operating in accordance with SAR procedures fails to report and communication checks fail to reveal any news of the aircraft;
- c. an aircraft is known or believed to be subject to irregular operations; namely, when it is experiencing navigational, altitude or communications difficulties;
- d. an aircraft is about to make or has made a landing other than a forced landing, where the position is in doubt, on an unprepared surface or on an aerodrome that is operationally unsuitable; or
- e. information is received that an aircraft is missing.

5.1.2 Alert Phase (ALERFA) when:

- a. apprehension exists as to the safety of the aircraft and its occupants;
- b. an aircraft fails to land within five (5) minutes of having received a landing or approach clearance, and communications cannot be re-established with the aircraft;
- c. following an uncertainty phase, subsequent communication checks or enquiries fail to reveal any news of the aircraft;
- d. information has been received that the operating efficiency of the aircraft has been impaired to the extent that the safety of the aircraft may be affected;
- e. there is reason to believe that the safe conduct of a flight is in jeopardy; or
- f. an aircraft is operating in IMC or at night when it should not.

5.1.3 Distress Phase (DETRESFA) when:

- a. there is reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger and require immediate assistance;
- b. an aircraft is known or believed to be subject to unlawful interference;
- c. following the alert phase there is the probability that an aircraft is in distress;
- d. the fuel on board is considered to be exhausted or insufficient to reach safety unless a SARTIME has been notified; or
- e. an aircraft is likely to or about to make, or has made, a forced landing or has ditched or crashed.

5.2 Pilot Notification

5.2.1 The efficacy of the SAR action by Airservices or JRCC Australia is directly related to the amount and accuracy of details notified in the flight notification or flight note, and to any position details reported in flight. When notifying of in-flight difficulties, early advice and the degree of apprehension felt by the pilot will enhance the assistance which can be provided by the ground organisation.

5.2.2 When a pilot lands at a place other than an aerodrome included in the flight notification, the pilot should report the fact to ATS, JRCC Australia or the police as soon as possible.

5.2.3 Flight Notes

Persons maintaining a SARWATCH by means of a Flight Note must contact JRCC Australia in the event that the flight becomes overdue.

5.3 Advice to Pilot

5.3.1 If a phase declaration concerns a technical difficulty, the operating company, if applicable, will normally be advised. Subsequent advice relating to the difficulty will be restricted to that authorised by the company and will be prefixed "YOUR COMPANY ADVISES".

5.4 **In-Flight Emergency Response Action**

5.4.1 **Radio Failure or Failure to Report.** On the basis that only the aircraft's transmitter may have failed and that ground transmissions can still be received, the following information may be broadcast from suitable stations, including some radio navigation aids:

- a. lowest safe altitudes;
- b. direction, bearings, DR position or headings to steer if practicable;
- c. emergency aerodromes;
- d. weather conditions at destination and alternates;
- e. ditching weather report; and
- f. separation action being taken by ATC.

5.4.2 **Navigational Assistance.** All available navigation aids, which may be of use to the aircraft, will be switched on and non-continuous aids may also be activated. Furthermore:

- a. ATS surveillance system equipped units will keep a lookout for the aircraft;
- b. aerodrome lighting may be activated; and
- c. if the aircraft can advise its last known position, and headings, speed and times flown since that position, an air plot can be made, actual winds added, and a DR position and heading to steer passed to the aircraft on an advisory basis.

5.4.3 **Intercept and Escort.** Arrangements may be made to escort an aircraft experiencing abnormal operations.

5.4.4 **Ditching.** When a ditching is likely, the JRCC will obtain the positions of ships along the aircraft's route and advise the pilot, and:

- a. attempts will be made to arrange a direct speech link or a rapid relay system between the aircraft and a selected ship;
- b. weather reports, including sea conditions and a selected ditching heading will be passed to the aircraft; and
- c. arrangements may be made for ships to provide navigational assistance, lighting, and reduce the effects of the sea swell or wind.

5.5 Medical Emergency

5.5.1 A pilot that is not engaged in the transport of patients under HOSP or MEDEVAC operations, should notify ATC of an on board medical emergency by declaring a PAN and appending the words 'MEDICAL PRIORITY REQUIRED'. The pilot should specify any service attendance requirements such as RFFS. ATC will provide the flight with MEDEVAC priority but will not arrange an ambulance or activate aerodrome emergency procedures unless requested. Declaring a medical emergency does not satisfy the biosecurity pre-reporting requirements specified in *GEN 1.3*.

5.5.2 The pilot of a medical flight should notify ATC of changes to priority requirements by changing the status of their flight e.g. by amending status from HOSP to MEDEVAC.

5.6 Participation In Searches

5.6.1 **General.** JRCC Australia may request aircraft and crew to assist with a SAR operation.

5.6.2 **Briefing.** Whenever possible the pilot of a search aircraft should contact the JRCC to confirm the briefing prior to the search commencing.

5.6.3 **Debriefing.** Pilots should present a post-flight report to the JRCC as soon as possible after completion of the flight.

5.6.4 **Safety.** Civil aircraft engaged in SAR operations are required to comply with the Civil Aviation Regulations and Civil Aviation Safety Regulations.

6. EMERGENCY LOCATOR TRANSMITTER (ELT)

6.1 Australian aircraft (except exempted aircraft) are required to be fitted with or to carry an ELT in accordance with the requirements of *CAR 252A*. Procedures detailing the use of ELTs in an emergency are found in *ERSA EMERG*.

Note 1: While the installation and use of automatic ELTs saves lives, improper use will lead to false alarms and a resultant strain on scarce SAR resources.

Note 2: An eligible ELT per CAR252A must be registered with the Australian Maritime Safety Authority.

Note 3: An ELT with GPS is able to transmit an accurate GPS location during an emergency. Search and rescue authorities will be able to locate you much faster if your ELT has GPS.

6.2 Monitoring 121.5MHz

Distress beacons, including ELTs, transmit on 121.5, 243 and 406MHz. Pilots should monitor 121.5MHz before engine start and after shutdown. Reception of a distress beacon transmission at any time must be reported to ATS or the JRCC immediately.

6.3 Inadvertent Activations

If an ELT has been inadvertently activated, this must also be reported to ATS or the JRCC immediately.

6.4 Testing ELTs

Operational tests must be limited to 5SEC, and the preferred procedure is that they be conducted within the first 5MIN of the hour. JRCC Australia must be notified in advance of the test and, where the beacon is operated on 406MHz, its HexID must be provided. Detailed ELT testing procedures can be found on the AMSA website at www.amsa.gov.au/beacons.

6.5 ELT Registration

All ELTs must be registered on the Australian Beacon Register. See www.amsa.gov.au/beacons for further details.

Registration allows the JRCC Australia to respond more quickly and effectively to real distress activations of an ELT, and also helps the JRCC Australia respond appropriately to inadvertent activations.

7. COSPAS-SARSAT**7.1**

COSPAS (from the Russian acronym for "Space System for Search of Vessels in Distress") and SARSAT (from "Search and Rescue Satellite Aided Tracking") is an international distress beacon detection system. The system has the capability to detect and provide locations for Emergency Locator Transmitters (ELTs), Personal Locator Beacons (PLBs) and Emergency Position Indicating Radio Beacons (EPIRBs).

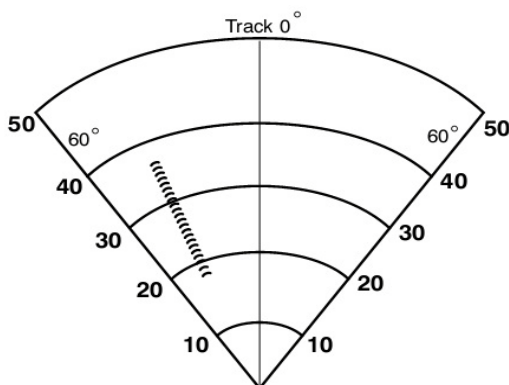
The Australian Mission Control Centre (AUMCC) operated by the JRCC Australia in Canberra receives beacon data from satellite tracking stations in Australia and New Zealand, and from other Mission Control Centres (MCCs) around the world.

The COSPAS-SARSAT system detects and locates 406MHz ELTs, PLBs and EPIRBs all over the world. The system uses three satellite constellations to provide continuous, global coverage.

COSPAS-SARSAT compatible beacons also transmit a local homing signal on 121.5MHz. Some defence force beacons transmit an additional homing signal on 243MHz.

8. **SEARCH AND RESCUE TRANSPONDER (SART)**

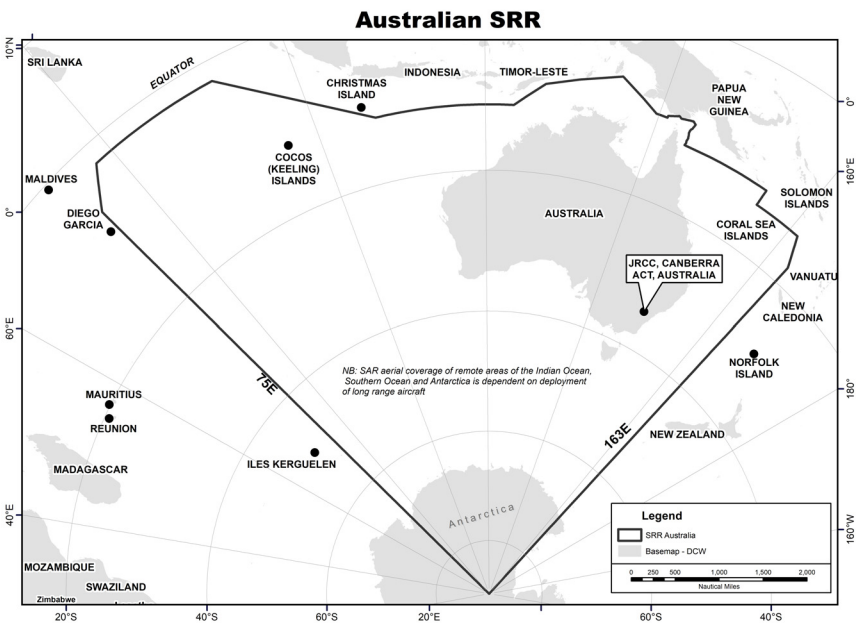
- 8.1 The International Maritime Organisation has introduced a requirement for all vessels over 300 tonnes gross weight, engaged in international trade, to be equipped with SARTs. These devices are intended to enhance the probability of location and rescue of survivors.
- 8.2 SARTs work by responding to radar transmissions in the 9 Gigahertz (GHZ) range, the frequencies used by most maritime and aviation navigation and weather radars (aircraft radars would need to be used in the mapping mode).
- 8.3 When a SART receives a radar pulse, it will transmit 10 - 20 pulses in reply. This will show on the radar screen as a series of 'returns' leading the way from the SARTs position. SART transmissions will not interfere with the primary role of aircraft radars, i.e: weather detection.
- 8.4 ICAO and Airservices do not intend to introduce SARTs to the aviation industry. However, pilots who detect SART transmissions should report them, with the position, to ATS, who will alert SAR authorities.
- 8.5 **Example of SART - 40° left at 19NM**



9. SAR ACTION

9.1 Events that will initiate SAR action include, but are not limited to: failure to cancel SARTIME, failure to cancel SARWATCH, aircraft declared overdue by Flight Note or concern from ATS, company, family or friends, an ELT activation, or other electronic distress notification device. As such, following safe arrival at destination, pilots are strongly encouraged to notify whomever is holding their SARWATCH as soon as practical after landing to avoid unnecessary SAR action.

10. SRR BOUNDARY



GEN 4. CHARGES FOR AERODROMES/HELIPORTS AND AIR NAVIGATION SERVICES

GEN 4.1 AERODROME/HELIPORT CHARGES

1. LANDING CHARGES

- 1.1 Most aerodromes will have airport specific conditions of use (including access agreements) and landing charge regimes. Aircraft operators should use the contact details listed in *ERSA FAC* to obtain specific information and/or obtain copies of appropriate documents.

2. PASSENGER MOVEMENT CHARGE

2.1 Definition

- 2.1.1 The Australian Government levies a Passenger Movement Charge (PMC), on all liable air and sea passengers departing Australia for another country, whether or not the passenger intends to return to Australia. The PMC is currently AUD\$60 per passenger. The Department of Home Affairs has administrative responsibility for the PMC.

2.2 Arrangements

- 2.2.1 Carriers (airlines, air charters and shipping operators) enter into voluntary 'Arrangements' with the Department of Home Affairs whereby the carrier remits, an amount equal to the PMC liability by the departing person on board the aircraft or vessel to the Department of Home Affairs. These Arrangements thereby remove the obligation for a passenger to pay the costs directly to the Department of Home Affairs.
- 2.2.2 The collection of the PMC occurs at the time a ticket is sold to the passenger and is forwarded to the Department of Home Affairs by the carrier within specified time frames.
- 2.2.3 Information on how to establish a PMC arrangement can be found at:
[www.abf.gov.au/entering-and-leaving-australia/crossing-the-border/passenger-movement/passenger-movement-charge-\(pmc\)](http://www.abf.gov.au/entering-and-leaving-australia/crossing-the-border/passenger-movement/passenger-movement-charge-(pmc)) or, contact the Passenger Movement Charge Administration Office by email: pmcadministration@abf.gov.au, or telephone 61 2 6264 1531.

2.2.4 Where an arrangement is not in place with a small itinerant flight and sea craft an Australian Border Force officer will collect the charge directly from each passenger, or from the captain, or agent for each voyage for the total number of passengers at the place of departure. An official receipt is provided after payment of the PMC has been collected.

2.3 **Collection and Remittance of the PMC**

2.3.1 Carriers are to collect AUD\$60 PMC from all liable passenger and remit to the Department of Home Affairs in accordance with the conditions contained within the PMC Arrangement.

2.3.2 A PMC Remittance Report is required at the time of payment containing information such as total passenger numbers and total number of exempt passengers. For more information see: [https://www.abf.gov.au/entering-and-leaving-australia/crossing-the-border/passenger-movement/passenger-movement-charge-\(pmc\)](https://www.abf.gov.au/entering-and-leaving-australia/crossing-the-border/passenger-movement/passenger-movement-charge-(pmc)) or contact: pmcadministration@abf.gov.au

2.3.3 Passengers who have paid the PMC at the time of ticket sale are required to have a record of payment on the ticket.

2.3.4 The collection and remittance of PMC will be a condition on which charters will be approved.

2.4 **Exemptions from the PMC**

2.4.1 Exemptions from the PMC include:

- a. **a person under** 12 years of age at the date of departure;
- b. **traditional inhabitants** of Torres Strait Islands or Papua and New Guinea travelling in connection with the performance of traditional activities in the Torres Strait and adjacent territory;
- c. a member of a **foreign defence force** departing on a military aircraft or a military ship as part of their military employment, including spouse and/or child of that defence force member;
- d. **crew** of aircraft and vessels (operational and positioning) including medical attendants (Medivac operators' own attendants) on specific Medivac flights;
- e. **transit** (air and sea) passengers who do not undergo Customs and Immigration processing;

- f. **emergency** passengers who land in Australia for reasons beyond the person's control; e.g. illness, mechanical failure or other emergency (includes illness/injury of a person on Medivac flights however, the accompanying passenger is not exempt);
- g. passengers on **single journeys** who depart Australia more than once are only liable to pay PMC once;
- h. **diplomatic and consular representatives** of a country other than Australia, their families, staff and their families; travelling on a diplomatic passport with subclass visa 995 or 403;
- i. passengers departing Australia to an installation in the **Greater Sunrise special regime area** for the purpose of prospecting for petroleum or undertaking petroleum operations;
- j. **Protective Service Officers** (as defined in the *Australian Federal Police Act 1979*) on an aircraft for the purpose of enhancing the security of the aircraft;
- k. travel to an **Indian Ocean Territory** (Christmas and Cocos [Keeling] Islands) unless the passenger intends to depart from there for an overseas destination;
- l. when **travel between the Australian mainland and/or an Indian Ocean Territory** can only be reasonably accomplished by first departing for another country, provided the stay in the other country does not exceed seven days.

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GEN 4.2 AIR NAVIGATION SERVICES CHARGES**1. AIRCRAFT CHARGES**

- 1.1 Airservices Australia is responsible for the provision of airways facilities and services in Australia. The provision of airways facilities and services is managed on a commercial basis and Airservices levies flight-based charges to recover the cost associated with these facilities and services from aircraft operators.
- 1.2 The Department of Infrastructure and Regional Development (DoIRD) is responsible for the recovery of the cost of noise amelioration programs through the mechanism of the Noise Levy Charge. The Bureau of Meteorology (BoM) is responsible for the provision of aviation weather services and recovers the cost of these services from aircraft operators. To avoid duplication of administration and to assist customers in making payments, a single monthly invoice and/or statement covering Airservices charges, BoM charges and the Commonwealth Noise Levy is issued.
- 1.3 This document sets out the basis on which charges are imposed. It also includes other related information which aims to assist customers in understanding the charging arrangements. Airways charges are administered in accordance with the legislation. This advice should be used by customers as a guide only. Details on unit rates of charge and other information are contained in the booklet entitled “*Charges for Facilities and Services Standard Contract Terms*” which can be obtained by contacting the Financial Services Centre, Airservices Australia.

2. CHARGING SYSTEM

- 2.1 Aviation charges:
- a. apply to all flights by an aircraft, both domestic (within an Australian flight information region) and international (to and from an Australian flight information region) except:
 - (1) flights that are notified as maintenance or test flights; and
 - (2) operational missed approaches; and
 - b. include a discount at specified aerodromes for circuit training.
- 2.2 The charges are calculated on each tonne of the maximum takeoff weight as set out in the Aircraft Flight Manual, with any part of a tonne charged on a pro-rata basis.

2.3 The following types of charge may be applicable:

- (1) terminal navigation charges,
- (2) rescue and firefighting charges,
- (3) en route charges.

3. TERMINAL NAVIGATION CHARGE

3.1 Terminal Navigation Charge covers aerodrome control, approach control and terminal navigation aids. Charges applicable to specific locations may be obtained by contacting the Airservices Financial Services Centre at the address shown at *para 10.1.3* or by phoning the number at *para 10.1.5*.

4. RESCUE AND FIRE FIGHTING CHARGES

4.1 The charge for rescue and fire fighting facilities and services for aircraft with a maximum takeoff weight of 2.5 tonnes or greater may be obtained by contacting the Airservices Financial Services Centre at the address shown at *para 10.1.3* or by phoning the number at *para 10.1.5*.

5. EN ROUTE CHARGES

5.1 If all or any part of a flight operates under the IFR, there will be an en route charge for the whole flight in an Australian flight information region. En route charges may be obtained by contacting the Airservices Financial Services Centre at the address shown at *para 10.1.3* or by phoning the number at *para 10.1.5*.

6. DoIRD AND BoM CHARGES

6.1 Details on how the Meteorological Service Charge and the Noise Levy Charge are applied may be obtained from the Financial Services Centre, Airservices Australia.

7. INTEREST

7.1 Interest is payable on the amount of the charge owing from the date it becomes overdue until the date it is paid. The interest is calculated daily and compounded monthly at the rate of 2% pa above the Commonwealth Bank Overdraft Index Rate (monthly charging cycle) current on the first day of each month.

7.2 If overdue amounts are not paid, Airservices may:

- a. give the operator 14 days notice of their intention to withhold services (with a copy to the Civil Aviation Safety Authority); and

- b. withhold those services after that time, having regard to air navigation safety.

8. LIABILITY FOR CHARGES

- 8.1 The liability for charges lies with the Certificate of Registration (COR) holder of the aircraft which incurs the charges, but mechanisms exist to transfer this liability to a third party where this is more appropriate.

9. ASSIGNMENT OF LIABILITY

- 9.1 The buyer and seller of an aircraft should complete an Assignment of Liability of charges payable in respect of the aircraft from the date of delivery of the aircraft to the buyer.
- 9.2 The charges payable in respect of an aircraft on hire or lease for more than 30 days may be assigned to the hirer or lessee.
- 9.3 A form of Assignment of Liability is available from the Financial Services Centre, Airservices Australia.
- 9.4 Notwithstanding, the Financial Services Centre having accepted and Assignment of Liability, the holder of the COR for the aircraft continues to be liable for the charges payable in respect of the aircraft.

10. ADMINISTRATION OF AIRCRAFT CHARGES

10.1 Financial Services Centre

- 10.1.1 The Financial Services Centre administers the charging arrangements for Airservices Australia's airways, rescue and fire fighting charges, BoM meteorological charges and DoIRD Noise Levy charges. The Centre is responsible for:
 - a. the edit and correction of flight data,
 - b. maintenance of debtors' accounts and other records,
 - c. issue of invoices and statements,
 - d. handling of account enquiries,
 - e. receipt of payments, and
 - f. debt recovery action.
- 10.1.2 The Financial Services Centre is located in the Airservices Australia Head Office at 25 Constitution Avenue, Canberra, ACT 2600.

- 10.1.3 All correspondence should be directed to:
The Manager
Financial Services Centre
Airservices Australia
PO Box 231
CIVIC SQUARE ACT 2608
- 10.1.4 Urgent enquiries can also be made to the Financial Services Centre fax number 02 6268 5693 (Dial 61-2 in lieu of 02 if calling from outside Australia).
- 10.1.5 Telephone enquiries should be directed to the Financial Services Centre free-call (Australia wide, except for mobile phones) number 1800 026 147, or, in the Canberra area, to 02 6268 5714.
- 10.2 **Invoices**
- 10.2.1 Invoices are issued for each aircraft and show charges for flights undertaken in the preceding calendar month as well as flights from earlier months which, for any reason, have not already been invoiced.
- 10.2.2 To reduce administrative costs, an invoice for an aircraft will normally be issued only when the total value of flights to be invoiced exceeds \$55, or at least quarterly.
- 10.2.3 If requested by an aircraft operator, this administrative arrangement can be modified for aircraft where monthly invoicing is required irrespective of the value of the invoices.
- 10.3 **Statements**
- 10.3.1 Statements are issued when an invoice has been generated or there are outstanding charges. The statement will contain an amount brought forward (if there are outstanding charges and/or interest from previous periods) and the total charges accrued in the current billing period. Any receipts and/or interest since the previous statement will also be shown along with any adjustments and a reference to the nature of that adjustment.

10.4 Disputed Accounts

- 10.4.1 Where a particular item on an invoice is disputed by the debtor, a note should accompany the remittance identifying the disputed items and reason for dispute. The full amount of the invoice should be paid while the dispute is being resolved as this will prevent interest accruing on the unpaid amounts in the event that the dispute is resolved in favour of Airservices/BoM/DoIRD.

In the event that the dispute is resolved in favour of the debtor, a credit adjustment will be made which will appear on the next statement and a credit note or refund issued.

10.5 Remittances

- 10.5.1 A tear-off remittance advice is provided with each statement, and payment should be forwarded to the Financial Services Centre with this remittance advice. Payment can also be made by direct deposit to the Centre's bank account, provided advice of each payment is given to the Financial Services Centre by facsimile. Operators who wish to make payments by this method should contact the Financial Services Centre, Airservices Australia, for details.

10.6 Receipts

- 10.6.1 Advice of receipts will be contained in each month's statement.

10.7 Credit Notes

- 10.7.1 Credit notes will be despatched to customers on the next working day following a credit being processed and give invoice details, amounts and an explanation of the adjustment.

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