FACILITIES AND PROCEDURES
WALLABY 2021

Effective from 10 SEP 21 to 24 OCT 21

WARNING
Consult AIPAB, AsA SUP/AIC and NOTAM for latest information

<table>
<thead>
<tr>
<th>AIPAB</th>
<th>AMENDED</th>
<th>SIGNED</th>
</tr>
</thead>
<tbody>
<tr>
<td>09 SEP 21</td>
<td></td>
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</tr>
<tr>
<td>07 OCT 21</td>
<td></td>
<td></td>
</tr>
</tbody>
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E-mail: ais.af@defence.gov.au
GEN 0.1 PREFACE

1. NAME OF PUBLISHING AUTHORITY
1.1 FAP Wallaby 21 is issued by AIS-AF under authority of the Defence Aviation Authority (Defence AA).

2. APPLICABLE DOCUMENTS
2.1 FAP Wallaby 21 is prepared in accordance with the Standards and Recommended Practices of the following ICAO documents:
   a. Facilitation - Annex 9
   b. Aerodromes - Annex 14
   c. Aeronautical Information Services - Annex 15
   d. Aeronautical Information Services Manual (Doc 8126-AN/872)
   e. Aeronautical Charts - Annex 4
   f. Aeronautical Chart Manual (Doc 8697-AN/889/2)

3. ADF AIP - DOCUMENTS INVOLVED
3.1 ADF AIP is designed to be used as a complete package and component documents (including FAP Wallaby 21) and charts should not be used without reference to other applicable components of the package.
3.2 The FAP Wallaby 21 is a collation of information from other component documents for the area displayed at Para 4.2 from which information are drawn are:
   a. Airservices Australia En Route Supplement Australia (AsA ERSA),
   b. AsA Departure and Approach Procedures East/West (DAP E/W),
   c. Terminal Australia (TERMA),
   d. FAP ACG North,
   e. General Planning Australia and Flight Information Handbook Australia (GPA/FIHA)

4. LAYOUT
4.1 Purpose. FAP Wallaby 21 provides airfield data and approach procedures for selected licensed aerodromes contained and within close proximity to the Wallaby Exercise, including diversion Aerodromes. Aerodromes having more than one name are usually identified by the city/aerodrome method, and where necessary cross reference is made between alternate names and the name by which the aerodrome is listed. FAP Wallaby 21 also contains details of regional communications facilities and procedures and regional emergency procedures. FAP Wallaby 21 contains that information which aircrew will require access to during pre-flight planning and in flight. It is produced in a bound A5 format suitable for both desktop and cockpit use.
4.2 The following diagram details the area of coverage of FAP Wallaby 21.
Throughout FAP Wallaby 21, the term “should” implies that all users are encouraged to conform with the applicable procedure. The terms “must” and “shall” are synonymous and mean that the applicable procedure is mandatory and supported by regulations or orders.

Note.- The instrument flight procedures published in FAP Wallaby 21 have not necessarily been flight validated.

5. ORDERING PUBLICATION AND AMENDMENT SERVICES

5.1 Publications can be obtained via Unit PUBSO by emailing ais.af@defence.gov.au. Details should include:
   a. User code (if known);
   b. Contact name;
   c. Contact details;
   d. Delivery address;
   e. Product requested;
   f. Quantity; and
   g. Date required.

5.2 Verbal product orders will be accepted under exceptional circumstances by calling the AIS-AF Distribution Coordinator on +61 3 8531 6362.

5.3 Requests for amendments to procedures contained within FAP Wallaby 21 are to be forwarded to the AIS-AF Air Liaison Officer through the originator’s Wing Aviation Safety Officer (WASO) or equivalent. Requests for amendment should be submitted on a Publication Improvement Report and Reply form (AO011), available via Web Forms at http://intranet.defence.gov.au. The originating authority must ensure that all necessary information has been included and is correct in detail.

5.4. Customer Change of Address

5.4.1 All customers shall promptly advise AIS-AF of any change of address. 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.

6. NOTIFICATION TO USERS OF AMENDMENTS

6.1 Product is amended by AIPAB, NOTAM and Airservices AIP SUP and is produced in accordance with the AIS-AF Production Schedule available on the AIS-AF website (DRN only).

6.2 Any rescheduling of the above will be notified via the AIPAB, and/or, in certain circumstances, by NOTAM

6.3 Significant changes to the Preface are indicated by a vertical black line (change bar) and deletions have a “D” added to the vertical line. Amendments to the checklist of pages are not identified by change bars. Amendments to the charts are identified on the lower left hand border of each chart.

7. QUERIES ABOUT DOCUMENTATION

7.1 Contact with AIS-AF is generally to be via PUBSO during working hours (0800 - 1630h AEST, MON-FRI), to the following appointments:
   a. Distribution Distribution Coordinator ☎ +61 3 8531 6362
   b. Technical advice Air Liaison Officer ☎ +61 3 8531 6667 MOB +61 412 814 225 (24 hours)
   c. Feedback Air Liaison Officer ☎ +61 3 8531 6667 MOB +61 412 814 225 (24 hours)

7.2 Written feedback can be submitted via email to ais.af@defence.gov.au or using the online General Customer Feedback survey available on the AIS-AF website (DRN only).

7.3 All e-mail requests are to be forwarded to ais.af@defence.gov.au and marked for the attention of the relevant appointment.

7.4 All urgent after-hours requests are to be directed to the duty officer on +61 412 814 225. As AIS-AF does not maintain a formal after-hours capability, the majority of requests will be dealt with on the next working day. Urgent operational matters will be dealt with in as timely a manner as possible.
8. NON STANDARD PRODUCT REQUESTS

8.1 All requests for products outside the published AIS-AF Production and Delivery Schedule should be discussed with the AIS-AF Air Liaison Officer. This may result in a recommendation to submit a formal request to the Air Warfare Centre via email ‘AirWarfareCentre.Enquiries@defence.gov.au’. Please ensure sufficient lead time (minimum 6 to 8 weeks) is allowed for customised AI products to be designed and published.

GEN 0.2 RECORD OF AMENDMENTS

1. FAP Wallaby 21 consists of a complete book, with two AIPAB amendment checkboxes on the front cover.

GEN 0.3 RECORD OF AIP SUPPLEMENTS

1. FAP Wallaby 21 is amended by AIPAB and NOTAM. ADF users can also refer to the AIS-AF web portal (https://ais-af.airforce.gov.au) to access information on current International AIP Supplements within the AIS-AF area of coverage.

GEN 0.4 CHECKLIST OF PAGES

1. FAP Wallaby 21 consists of a complete book, with two AIPAB amendment checkboxes on the front cover.

GEN 0.5 LIST OF HAND AMENDMENTS

1. The FAP is designed specifically for Military Exercise “Wallaby 21” (between 10 SEP 21 to 24 OCT 21).
2. This book must be amended by reference to AIPAB and NOTAM issued against the parent documents.
3. AIPAB is available from the AIS-AF Intranet site http://dmnet.defence.gov.au/raaf/AirForce/AIS-AF
GEN 0.6 TABLE OF CONTENTS

GEN 0.1 PREFACE ..................................................1
GEN 0.2 RECORD OF AMENDMENTS ..........................3
GEN 0.3 RECORD OF AIP SUPPLEMENTS ..................3
GEN 0.4 CHECKLIST OF PAGES .................................3
GEN 0.5 LIST OF HAND AMENDMENTS ........................3
GEN 0.6 TABLE OF CONTENTS .......................................4
GEN 0.7 TABLES AND CODES ........................................5
GEN 0.8 TERMINAL APPROACH CHARTS ........................20
BRIEFING AND METEOROLOGICAL SERVICES ..............40
FLY NEIGHBOURLY ADVICE ........................................43
INSTRUMENT APPROACH PROCEDURES ....................45
BENING FIELD (YBEG) ............................................45
   FACILITIES
   AERODROME CHART
   RNAV-W (GNSS)
GLADSTONE ..........................................................48
   FACILITIES
   AERODROME CHART
   GNSS ARRIVAL PROCEDURES
   VOR RWY 28
   RNAV (GNSS) RWY 10
   RNAV (GNSS) RWY 28
MARYBOROUGH (QLD) .............................................56
   FACILITIES
   AERODROME CHART
   RNAV-Z (GNSS) RWY 17
   RNAV-Z (GNSS) RWY 35

ROCKHAMPTON ...................................................61
   FACILITIES
   AERODROME CHART
   PAGE 1
   PAGE 2
   APRON CHART
   NOISE ABATEMENT PROCEDURES
   STANDARD INSTRUMENT DEPARTURES (SID)
   SID ROCKHAMPTON THREE DEPARTURE
   (RADAR) RWY 15 & 33
   SID BUDGI TWO DEPARTURE (RNAV)
   SID TARES TWO DEPARTURE (RNAV)
   STANDARD INSTRUMENT ARRIVAL (STAR)
   STAR ABVAS ONE ARRIVAL (RNAV)
   STAR DADBO ONE ARRIVAL (RNAV)
   DME OR GNSS ARRIVAL PROCEDURES
   PAGE 1
   PAGE 2
   VOR RWY 15
   VOR RWY 33
   NDB-A OR VOR-A
   RNAV-Z (GNSS) RWY 15
   RNAV-Z (GNSS) RWY 33

SAMUEL HILL ......................................................83
   FACILITIES
   AERODROME CHART
   RNAV (GNSS) RWY 14

WILLIAMSON .....................................................86
   FACILITIES
   AERODROME CHART
   RNAV (GNSS) RWY 14

HF COMMUNICATIONS ............................................89
MEASURING SYSTEM AND CONVERSION
   TABLES ..........................................................92
PAVEMENT DATA ...................................................99
EMERGENCY PROCEDURES ........................................103
   AIR SEARCH PATTERNS ....................................110
   VISUAL SEARCH .............................................110
   SEARCH AND RESCUE SIGNALS ..........................120
   SURVIVAL ....................................................122
GEN 0.7 TABLES AND CODES

1. GENERAL SYMBOLOGY

1. Symbols used throughout this publication are as follows:
   
   denotes a postal address.

   denotes a telephone number or service.

   * indicates that information is not available or that a runway is not usable in that direction.

   ± denotes that the direction of the RWY slope is unknown.

2. AERODROME & FACILITIES AND LEGENDS

   GOJUPPUM/Taylor INTL (Ichini) (*1) ELEV 33FT
   09 18’07”S 172 49’00”E UTC +7  H24 VAR 30°W
   GOKU
   PVT: Nanji Port Authority.  PO Box 334 Gojuppum, Nanji, Ichini.
   +61 2 339 6464. FAX +61 2 339 6465.

   1. PPR.

   MOVEMENT AREA

   06/24 063 9756 Bitumen PCN 120/R/D/W/T
   16/34 163 12490 Bitumen
   RWY TORA ASDA LDA
   06 3050(10007) 3950(12960)(5.0%) 3110(10204) 3050(10007)
   24 3050(10007) 3650(11976)(5.0%) 3110(10204) 3050(10007)
   Slope 0.3% down to NE. RWY WID 45M. RWS WID 220M. CWY: RWY 06 900M, RWY 24 600M.

   RWY 16 Safe-bar 21.2 BEFAB 56.2 (B) (*1) ----------------BEFAB 56.2 (B) (*1) Safe-bar 21.2 (R) RWY 34
   (100 OVRN) (1360) (1360) (100 OVRN )
   Special LDG  TKOF and TAX PROC apply when hookcable rigged.

   LIGHTING (*1)
   RWY 06 REIL HIAL HIRL VASIS 3  - MEHT 48FT RCLL RTHL
   RWY 24 REIL HIAL HIRL VASIS 3  - MEHT 48FT RCLL RTHL

   NAVIGATION AIDS
   VOR/DME GOJ 113.6/CH83X S09 07.9’ E172 49.1’ (*1)
   VOR/DME BOT 112.5/CH72X S09 07.9’ E172 49.1’

   AIR TRAFFIC SERVICES
   APP  Gojuppum Approach
   ARR  Gojuppum Arrivals
   DEP  Gojuppum Departures
   TWR  Gojuppum Tower
   GND  Gojuppum Ground

   CTAF - AFRU
   124.2
   *1. Outside TWR HRL.

   GROUND SERVICES
   F35. H24. ADI.
   MET  22 2666.
   CAT 5.
   RFF
   OTHER

   The AD OPR does not provide a marshalling service.

   PASSAGEN FACILITIES

   LOCAL TRAFFIC REGULATIONS
   1. Right hand circuits RQ when OPR RWY 07, except as directed by ATC.

   APRONS AND TAXIWAYS
   1. Turning nodes each end and 400(1312) from RWY 25 THR 45(148) WID.

   SURFACE MOVEMENT GUIDANCE
   1. TWY A3 AVBL for ACFT BLW 23,000KG.

   FLIGHT PROCEDURES
   1. In VMC, MIL ACFT can expect straight in visual APCH.

   NOISE ABATEMENT PROCEDURES
   1. Noise Abatement Procedures (NAP) apply. Refer AIP DAP.

   ADDITIONAL INFORMATION
   1. Bird hazard exists.

   CHARTS RELATED TO THE AERODROME
   1. WAC 3470.
   2. Also refer to AIP Departure & Approach Procedures.

   AERODROME OBSTACLES
   1. LIOL HN – TWY 15FT: 315°/M2620M FM ARP infringes inner HZS by 4FT.
3. EXPLANATION

1. Aerodrome Title. Aerodromes having more than one name are usually identified by the city/aerodrome method, and where necessary cross reference is made between alternate names and the name by which the aerodrome is listed. Where applicable a cross reference is provided by listing the alternate aerodrome/aid identification.

2. Aerodrome Position. The position given is that of the Aerodrome Reference Point.

3. Time Conversion. The time conversion indicates the number of hours to be added to UTC to obtain the standard time applicable at the location. Allowances should be made for any daylight saving that may be in force.

4. Operating Hours. The operating hours are indicated by means of the following code:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH</td>
<td>After Hours</td>
</tr>
<tr>
<td>DLY</td>
<td>Daily</td>
</tr>
<tr>
<td>EXC PH</td>
<td>Except Public Holidays</td>
</tr>
<tr>
<td>FRI</td>
<td>Friday</td>
</tr>
<tr>
<td>H+...</td>
<td>MIN past the hour</td>
</tr>
<tr>
<td>H24</td>
<td>Continuous day and night service</td>
</tr>
<tr>
<td>HDS</td>
<td>Hours of Daylight Saving</td>
</tr>
<tr>
<td>HJ</td>
<td>Sunrise to Sunset</td>
</tr>
<tr>
<td>HN</td>
<td>Sunset to Sunrise</td>
</tr>
<tr>
<td>HO</td>
<td>Service available to meet operational requirements</td>
</tr>
<tr>
<td>HR</td>
<td>Hours</td>
</tr>
<tr>
<td>HS</td>
<td>Service available during HR of scheduled operations</td>
</tr>
<tr>
<td>JF</td>
<td>Saturday, Sunday and public holidays</td>
</tr>
<tr>
<td>JO</td>
<td>Monday to Friday (except Public Holidays)</td>
</tr>
<tr>
<td>MON</td>
<td>Monday</td>
</tr>
<tr>
<td>O/R</td>
<td>On Request</td>
</tr>
<tr>
<td>OT</td>
<td>Other Times</td>
</tr>
<tr>
<td>PH</td>
<td>Public Holidays</td>
</tr>
<tr>
<td>PN</td>
<td>Prior notice required</td>
</tr>
<tr>
<td>PPR</td>
<td>Prior permission required</td>
</tr>
<tr>
<td>SAT</td>
<td>Saturday</td>
</tr>
<tr>
<td>SUN</td>
<td>Sunday</td>
</tr>
<tr>
<td>THU</td>
<td>Thursday</td>
</tr>
<tr>
<td>TUE</td>
<td>Tuesday</td>
</tr>
<tr>
<td>WED</td>
<td>Wednesday</td>
</tr>
</tbody>
</table>

Note 1.- Unless noted otherwise, all facilities are operational continuously

Note 2.- Unless noted otherwise, hours are shown in UTC.

5. Magnetic Variation. Variation is shown in degrees magnetic, rounded to the nearest whole number. Magnetic variation will be shown where available.

6. Elevation. AD ELEV is shown in FT. When the elevation is sea level, it will be indicated as 0FT. When the elevation is below sea level, a minus sign will precede the figure.

7. Location Indicator. The ICAO location indicator is shown positioned beneath the Elevation figure.

8. Aerodrome Classification. The aerodrome classification is indicated by means of the following codes:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CERT</td>
<td>Certified Aerodrome</td>
</tr>
<tr>
<td>PUBLIC</td>
<td>AVBL all classes of OPS</td>
</tr>
<tr>
<td>PVT</td>
<td>(PRIVATE) - PPR from Facility Operator</td>
</tr>
<tr>
<td>REG</td>
<td>Registered Aerodrome</td>
</tr>
<tr>
<td>MIL</td>
<td>(MILITARY) - PPR for civil OPS class</td>
</tr>
<tr>
<td>UNCR</td>
<td>Uncertified or Unregistered</td>
</tr>
<tr>
<td>JOINT</td>
<td>Civil/Military Aerodrome</td>
</tr>
</tbody>
</table>

Note.- Specific information noted if known
9. **Movement Area.** Abbreviated runway details are provided as follows:
   a. The runway designation as specified in State AIP.
   b. The alignment (°M) of the centreline of the lower numbered runway.
   c. The runway length (generally the take-off run available for both runway directions) in feet.
   d. The runway surface will be described as, asphalt or bitumen; concrete; grass or clay, or similar.
   e. The ICAO standard method of reporting pavement strength known as Aircraft Classification Number/ Pavement Classification Number (ACN/PCN) has been incorporated at some overseas airfields. For additional information refer to PVMT section and FIHA AD 1.1.

10. **Declared Distances.** When available, declared distances in metres (feet) are tabulated for each RWY. They are:
   a. **TORA (TAKEOFF RUN AVAILABLE)** - The length of RWY declared available and suitable for the ground run of an ACFT taking off. (In most cases, this corresponds to the physical length of the RWY pavement.)
   b. **TODA (TAKEOFF DISTANCE AVAILABLE)** - The length of TKOF run available plus the length of any clearway (CWY) available.
   c. **ASDA (ACCELERATE-STOP DISTANCE AVAILABLE)** - The length of TKOF run available, plus the length of the stopway (SWY), if provided. (Any SWY length included shall be adequate for use by all ACFT which comply with the RWY strength rating.)
   d. **LDA (LANDING DISTANCE AVAILABLE)** - The length of RWY declared available and suitable for the ground run of an ACFT landing (LDG). (In most cases, this corresponds to the physical length of the RWY pavement.)

10.1 **Obstacle-Clear Approach Gradients.**
   10.1.1 The obstacle-clear approach gradient is normally based on the following standard:
   a. the threshold is located at least 60M from the intersection of the obstacle-clear approach surface with the extended RWY centre line: and
   b. obstacle-clear approach gradients of:
      1) 5% for a code 1 RWY or MIL Visual APCH RWY up to 800M length,
      2) 4% for a code 2 RWY or MIL Visual APCH RWY 800 M up to 1200M length,
      3) 3.3% for a code 3 and 4 RWY, and or MIL Visual APPCH RWY 1200M up to 1800M length,
      4) 2.5% for a MIL Visual APCH RWY 1800M and over,
      5) 3.3% for NPA Code 1, 2 or 3 RWY,
      6) 2% for NPA Code 4 and precision APCH RWY.
   (MIL RWYs: 2.0% for 3000M, then 2.5% until outer horizontal surface, then horizontal)
   10.1.2 Any variation to the standard is explained in a note under the relevant declared distances entry.

10.2 **Obstacle-Clear Takeoff Gradients.**
   10.2.1 Areas from the ends of runways, defined in accordance with the table below, are surveyed for obstacles. The obstacle-clear takeoff gradient is based on the greatest vertical angle with the horizontal subtended by an obstacle within the surveyed area. The gradient information is shown in brackets immediately following the TODA information. Liaise with the AD OPR if obstacle information is required.
   10.2.2 Where an existing fence or levee is located very close to the RWY end, the fence or levee may not be taken into account in the assessment of the obstacle-clear takeoff gradients for TODA and STODA purposes. In such cases, information of the height and location of the fence or levee will be provided in a note under the relevant declared distances entry.
   10.2.3 If the survey area is not in accordance with the table below, details of the actual obstacle survey area are provided below the relevant declared distances entry.
10.3 Takeoff Runway Survey Areas.

10.3.1 Slope. The slope on RWY quoted is the difference BTN the MAX and the MNM ELEV along the RCL divided by its length and expressed as a percentage to the nearest one-tenth of a percent. The “down” slope and its direction are tabulated in all cases, eg. “0.8% down to SE”. Where significant slope variations occur, additional data may be shown in notices, eg. “E end level, centre section 0.5% down to W, W end 0.1% down to E”.

10.3.2 Runway Strip Width. RWS is the width FM side to side which contains the RWY, the graded and ungraded portions of the RWS, shown in metres only. The GRADED portion of the RWS is defined by boundary markers and is graded to alleviate damage to an ACFT in the event that it runs off the RWY. The UNGRADED portion of the RWS is free of upstanding objects but may contain depressions, trenches, etc.

10.4 Climb/Descent Gradient Graph. Example: At a speed of 250KT (470KM/H), a gradient of 3% corresponds to a rate of 760FT/MIN (4 M/S).

### CLIMB/DESCENT GRADIENT GRAPH

**EXAMPLE:** At speed of 250KT (470 KM/H) a gradient of 3% corresponds to a rate of 760 FT/MIN (4 M/S)
11. Arresting Systems. Systems other, than those detailed BLW, will be shown as A-Gear and amplified by a note.

a. Tensioned Hookcable Arresting Systems:

1) BAK 12 HOOKCABLE AAS. The BAK 12 AAS is a bi-directional Hookcable AAS. Energy is absorbed by a rotary friction braking system which is connected to the runway hookcable by a nylon tape. MAX tape runout is 365(1200 FT). MAX energy absorption is 98.5 million FT LB. MNM rewind time is 3 minutes (nominal). Cycle rate for fighter type ACFT arrests is 12 ACFT per hour (nominal).

2) BAK 14. The BAK 14 is a spring/pneumatic system used for raising and lowering an AAS hookcable from and into the runway. BAK 14 systems are installed, in conjunction with BAK 12 hookcables, at YSNW, YSRI, YWLM, YAMB, YTBL, YPDN, YPED and YPTN and YPEA. Normally selected up at departure end for arrestable ACFT OPS. ACFT captains are to request "Cable Down" or alternatively request "Approach End Cable Up" if required.

CAUTION: In the event of power and or pneumatic failure, APP/DEP end cable will rise to a height of 100MM (4IN) and remain until failure rectified.

b. Aircraft Arresting Barriers:

1) M34B/243 MEN. Consists of two velocity-sensitive turbine-type rotary hydraulic (fluid turbulence producing) energy absorbers, one installed on each side of the runway, and a multi-element nylon (MEN) net suspended between retractable stanchions. It is a constant run-out, velocity-sensitive system that adjusts automatically to accommodate aircraft of different weights, engaging speeds and off-centre criteria. It has sufficient kinetic energy capacity to arrest jet type aircraft in the 10,000 to 20,000 kg (22,048 to 44,094 pounds) weight range at speeds up to 180 knots. It is capable of safely stopping an aircraft, operating in the system's performance envelope, within a run-out distance of approximately 200 metres (656 feet), depending on system configuration. Engagements should be made as close to centreline as possible and not more than 10.6 metres (35 feet) from the centreline. Maximum engagement speeds (MES) are as follows:

<table>
<thead>
<tr>
<th>Aircraft Weight</th>
<th>MES</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,000 KG</td>
<td>160 KT</td>
</tr>
<tr>
<td>15,000 KG</td>
<td>160 KT</td>
</tr>
<tr>
<td>20,000 KG</td>
<td>135 KT</td>
</tr>
</tbody>
</table>

Warning. The Hawk 127 is not cleared for arrestor barrier engagement with 130 gallon external fuel tanks and/or AAR probe fitted.

Note. - To ensure that the M34B brake cable payout does not occur until the net has deployed over the engaging ACFT, a shear pin is used to connect the net suspension cable to the brake cable at each side of the installation. These pins are intended to fail together shortly after engagement. If, however, the impact forces at engagement are low it is possible for only one pin to shear. This could result in the ACFT being yawed and subsequent damage being caused to it. Although the theoretical MNM engagement speed for both systems is zero KT, it is, for that reason, desirable to keep engagement speeds ABV 50KT for lightweight ACFT (BLW 60000 LB) and 40KT for heavier ACFT. Suffix (R) indicates remote control from control tower available. Barriers are not to be used in winds above 35KT except in the event of an EMERG.

c. Flight Manuals.
When RAAF Flight Manuals are amended, this paragraph will refer RAAF OPR to Flight Manuals for specific speed/weight configuration criteria for individual arresting systems. Other OPR should refer to their respective Flight Manuals.

d. Arresting System Clearance Details.

The following ACFT are cleared to use the respective arresting systems. Safebar engagements are to be made with the canopy closed).

M34B. Hawk 127 (see warning ABV).
MAX weight speed limits vary from 10000 LB/160KT to 25000 LB/100KT to 100000 LB/50KT.

Note 1. - Safebar engagements must be made with the canopy closed.

Note 2. - For M34B systems, the brake cable/brake drum attachment fitting is not designed to disengage itself when MAX payout has been reached. If brake tape payout is exceeded the system will lock and a considerable amount of tape stretch will occur, resulting in ACFT roll back up to 200 FT.
e. **BAK 12 Hookcable.**

1) All hook equipped ACFT providing the weight and speed of the ACFT are within the parameters specified in the ACFT flight manual. For 1200 FT runout systems with synchronised pressure of 2000 PSI at 780RPM, general parameters are:
   i. Maximum engagement AUW is 95,000LB (43180KG).
   ii. Maximum engagement speed at 95,000LB is 160KT.
   iii. Maximum engagement speed is 190KT.
   iv. Maximum AUW at 190KT is 65,000LB (29,550KG).
   v. Minimum engagement AUW is 8,000LB (3,650KG).

f. **Trampling (Roll Over) Clearances BAK 12/14.**

This section is under review. Aircraft captains should refer to the Pilot Operator Handbook or Flight Manual for specific restrictions for each ACFT. In the absence of any reference to trampling in either the Handbook or Manual, trampling is not authorised.

Note.- Close formation trampling of the hookcable is not permitted. MNM time BTN successive ACFT trampling the hookcable is five seconds.

g. **Location of Arresting Systems.**

The arresting systems are shown as located on the RWY. The middle portion of the RWY is indicated by a line and the distance of the arresting system from the end of the RWY (or into the overrun) on the end on which the system is located is indicated (in feet) in brackets under the applicable system.

Caution. Up to 15 minutes notice may be RQ for rigging arresting gear for APCH end engagement.

EG:

- RWY15 M34B (R) BAK 12/14 (*1) ----------------------------------- BAK 12/14 (*1) M34B (R) RWY33 (100 OVRN) (1360) (1360) (100 OVRN)

1) Hookcable normally rigged across DEP end of RWY for arrestable ACFT OPS.
2) Suffix (R) indicates remote control from control Tower available.
3) Suffix (B) indicates the arresting systems allows bi directional engagement.

12. **Supplementary TKOF DIST.** Supplementary Take-Off Distances Available (STODA) are shown for obstacle-clear take-off gradients (within the same defined area) of 1.6%, 1.9%, 2.2%, 2.5%, 3.3% and 5% if the TODA gradient exceeds these figures and the resultant STODA is greater than 800M.
13. Lighting. The lighting facilities are indicated by means of the following code:

- **ABN** - Aerodrome Beacon
- **AFRU + PAL (FREQ)** - Aerodrome Frequency Response Unit plus PAL
- **AT-VASIS** - Abbreviated (Singled Sided) T pattern Visual Approach Slope Indicator System
- **FDL** - Fixed Distance Lighting
- **HBO** - Hazard Beacons
- **HIAL-CAT I** - High Intensity Approach Lights - CAT I
- **HIAL-CAT II or III** - High Intensity Approach Lights - CAT II or III
- **HIOL** - High Intensity Obstacle Lights (flashing white)
- **HIRL** - High Intensity Runway Lights (5 or 6 stages of intensity)
- **HSL** - Hold Short Lights used in conjunction with Land and Hold Short Operations (LAHSO)
- **LIOL** - Low Intensity Obstacle Lights (steady red)
- **LIRL** - Low Intensity Runway Lights (single stage of intensity)
- **MIOL** - Medium Intensity Obstacle Lights (flashing red)
- **MIRL** - Medium Intensity Runway Lights (three stages of intensity)
- **PAL (FREQ)** - Pilot Activated Aerodrome Lighting (with dedicated frequency)
- **PAPI** - PAPI Visual Approach Slope Indicator System
- **PAPI#** - PAPI commissioned by ground survey (not available to RPT jets). Report any anomalies to AD OPR.
- **PTBL** - Portable or temporary lights (flares or battery)
- **RCGL** - Runway Circling Guidance Lights
- **RCCL** - Runway Centre Line Lights
- **REDL** - Runway Edge Lights (Type and/or intensity is unknown)
- **RGL** - Runway Guard Lights (Alternating Flashing Yellow)
- **RLLS** - Runway Lead-in Lighting
- **RTIL** - Runway Threshold Identification Lights (flashing white)
- **RTZL** - Runway Touchdown Zone Lights
- **SALS** - Simple Approach Lighting System
- **SDBY PWR** - Standby Power
- **SFL** - Sequenced Flashing Lights
- **STWL** - Stopway Light(s)
- **T-VASIS** - T pattern Visual Approach Slope Indicator System
- **Taxiways** - Centreline lights are green and edge lights are blue

13.1 Lights may be described by the following abbreviations

- **ALTN** - Alternating
- **B** - Blue
- **FLG** - Flashing
- **G** - Green
- **GP FLG (number)** - Group flashing (number)
- **OCC** - Occulting
- **R** - Red
- **W** - White
- **Y** - Yellow
13.2 Operation of VHF Pilot Activated Lighting.

On departure: Before taxi

On arrival: Within 15 NM of AD, and at or ABV LSALT select the appropriate VHF FREQ:

<table>
<thead>
<tr>
<th>3 SEC</th>
<th>3 SEC</th>
<th>3 SEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 SEC</td>
<td>1 SEC</td>
<td></td>
</tr>
</tbody>
</table>

a. Transmit pulse must be between 1 and 5 SECS.
b. Three pulses must be transmitted within 25 SECS. Ensure that the third pulse ends before the 25th second.
c. Break between transmissions can be more or less than 1 SEC (no limit).
d. Lights to illuminate for a minimum of 30 MINS, if not, keep transmitting 3 SEC pulses and check frequency.
e. When runway lights are about to extinguish, the wind indicator light will flash continuously. REPEAT OPERATING PROCEDURE.

13.3 Aerodrome Frequency Response Unit with PAL option (AFRU + PAL).

a. PAL operation may be provided as an optional function of the AFRU (see CTAF section) on the associated aerodrome CTAF. Aerodrome lighting enabled by AFRU + PAL is AVBL only during night hours or at other times of low natural light levels. During periods of daylight, when the light intensity is above a preset level, the system will not activate the lights.
b. Where a discrete PAL FREQ is also provided, actuation of the aerodrome lights may be effected either by using the PAL system on the discrete PAL FREQ or the AFRU + PAL system on the CTAF/MBZ FREQ.
c. On receipt of the required ACFT transmission the AFRU will operate the aerodrome lighting circuitry (RWY and wind indicator lights). The AFRU will transmit the standard reply (the aerodrome name and MBZ or CTAF) immediately followed by the additional confirming message, "RUNWAY LIGHTS ON". If the lights do not illuminate, the AFRU will transmit the message, "NO RUNWAY LIGHTS". In this case, aircraft captains should key the required transmission again or, alternatively, change to the PAL FREQ and operate the lights via the PAL.
d. AFRU + PAL required transmission is:

<table>
<thead>
<tr>
<th>1 SEC MAX</th>
<th>1 SEC MAX</th>
<th>1 SEC MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 SEC MAX</td>
<td></td>
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</tbody>
</table>

Note.- Transmission to be completed in 5 seconds. If unsuccessful repeat transmission.
e. After actuation, the aerodrome lights will remain illuminated for 30 minutes. After 20 minutes, the windsock lights will flash at 1 second intervals and the AFRU will transmit the message, "RUNWAY LIGHTS 10 MINUTES REMAINING". At any time, keying of the required transmission will reset the lights for a period of 30 minutes.
f. Aerodromes which have the AFRU + PAL option will have the entry "AFRU + PAL" included under the "LIGHTING" heading.

13.4 T-VASIS/AT-VASIS.

a. The T-VASIS consists of twenty light units symmetrically disposed about the RWY centre line in the form of two wing bars of four light units each, with bisecting longitudinal lines of six lights.
b. The AT-VASIS consists of ten light units arranged on one side of the RWY in the form of a single wing bar of four light units with a bisecting longitudinal line of six lights.
c. The cross-bar represents 'on glide-slope' and deviations appear as one, two or three lights ABV or BLW the crossbar. The sensitivity is similar to flying within the 'three-dot-up' or 'three-dot-down' positions of an ILS glidepath.
d. The T-VASIS is designed so that with only the cross-bar lights visible, the glide-slope is 3DEG and the aircraft captain's eye-height over the THR is APPROX 47 FT. The height quoted in FT is the MNM EYE HEIGHT at THR, i.e. the lowest height at which an "on glidepath" indication will be seen. If increased eye-height over the THR is required (e.g. long/ wide bodied ACFT) this can be achieved by flying the approach with the cross-bar and one or more of the 'fly-down' lights visible as required. In this manner variable vertical distances between the aircraft captain's eyes and the THR can be obtained.
13.5 PAPI
a. The PAPI system consists of a wing bar of 4 (or paired single lamp) lights equally spaced located on the left side of the RWY unless it is physically impracticable to do so.
b. The height quoted in FT is the MNM EYE HEIGHT at THR, i.e. the lowest height at which an "on glidepath" indication will be seen.
c. The wing bar of a PAPI is arranged in such a manner that an aircraft captain making an APCH will:
1) when on or close to the APCH slope, see the two units nearest the RWY as red and the two units farthest from the RWY as white;
2) when ABV the approach slope, see the one unit nearest the RWY as red and the three units farthest from the RWY as white; and when further above the APCH slope, see all the units as white; and
3) when BLW the APCH slope, see the three units nearest the RWY as red and the unit farthest from the RWY as white; and when further BLW the APCH slope see all the units as red.

14.1 Distance Measuring Equipment
a. The DME system uses the channels designated in ICAO Annex 10 for operation with the VOR FREQ selected for the same AD. This "pairing" of the VOR and the DME thus permits airborne equipment suitably designed, to display both DME and VOR INFO by the selection of only the VOR FREQ.
b. TACAN has also been installed at a number of MIL and joint user AD and the DME element of these installations is AVBL to civil ACFT equipped with 1000 DME. This element will normally be paired with VOR where both facilities are established at a joint user AD/WI the ICAO Annex 10 collocation DIST RMNTS.
c. The availability of associated VOR and DME INFO is shown in ERSA, ERC, AC and on FLIP Terminal charts in one of the FLW forms.

| VOR/DME  | 112.7 |
| VOR      | 113.7 |
| DME      | 112.7/74X |
| TACAN    | 84 |

14.2 Bearings, Distance and Hours of Aids
Bearings and distance given is from the aid to the ARP, (shown in DEG MAG and NM) unless noted that the bearing and distance is to the appropriate RWY THR. Navigation aids HR of OPS H24 unless otherwise shown.

14.3 Hazard Beacons (HBO)
Hazard Beacons are utilised as an aid to navigation for obstacle avoidance in the vicinity of aerodromes. HBO are either HIOL or MIOL (see Lighting section).
14.4 Navigation Aids. Bearing and distance provided is from the navigation aid to the aerodrome reference point (°M/NM) unless noted otherwise. Navigation aids operate continuously unless noted otherwise. To facilitate programming of electronic navigation equipment, navigation aid positions are shown in degrees, minutes and decimals of minutes. The following table details the relationship between channel numbers and VHF frequencies for use with TACAN/DME installations.

<table>
<thead>
<tr>
<th>MHZ</th>
<th>.00</th>
<th>.10</th>
<th>.20</th>
<th>.30</th>
<th>.40</th>
<th>.50</th>
<th>.60</th>
<th>.70</th>
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</tr>
</tbody>
</table>

15. Air Traffic Services Frequencies

15.1 Air Traffic Control operates these frequencies in various groups and re-transmission applies within each group.

16. Common Traffic Advisory Frequency (CTAF) & Aerodrome Frequency Response Unit (AFRU)

16.1 Common Traffic Advisory Frequency (CTAF).

16.1.1 Frequencies to be used for operations at aerodromes are listed against locations under the heading "CTAF".

16.1.2 Carriage of serviceable VHF radio, and being qualified to use it, are mandatory when operating at, or in the vicinity of, all uncontrolled certified, registered and military aerodromes. However, an aircraft captain may operate an aircraft with an unserviceable VHF radio at, or in the vicinity of, an uncontrolled aerodrome where the carriage of serviceable VHF radio is normally required if a radio failure occurs during the flight or if the purpose of the flight is to take the radio to a place where it can be repaired. The aircraft captain may continue to land at the aerodrome provided the aircraft captain activates the aircraft's anti-collision lights, landing lights and transponder (if any) whilst within the vicinity of the aerodrome and, if arriving at the aerodrome, joins the circuit on the cross-wind leg.

Note.- An aircraft captain should avoid planning to arrive at or depart from an aerodrome for radio repairs during the known hours of scheduled regular public transport (RPT) operations. For aerodromes where there is a UNICOM or CA/GRS, aircraft captains should, by alternative means, where possible, make contact and advise intentions before conducting operations.

16.1.3 An aircraft captain may operate an aircraft that is not equipped with a serviceable aircraft VHF radio, or which is equipped with such a radio but which the aircraft captain is not qualified to use, to or from an uncontrolled aerodrome at which the carriage of radio is normally required if the aircraft is flown:

a. In VMC by day, and
b. Arrives or departs in company with another aircraft which is radio-equipped and flown by a radio-qualified aircraft captain who will allow the latter to make radio calls on behalf of both aircraft. The radio-equipped aircraft should be manoeuvred to keep the no radio aircraft at a safe distance and in sight at all times in order to accurately report its position.
16.1.4 Aircraft captains of inbound traffic should monitor and communicate as appropriate on the designated CTAF from 10 miles to landing. Aircraft captains of departing aircraft should monitor/communicate on the appropriate frequency from start-up, during taxi, and until 10 miles from the airport unless local procedures require otherwise.

16.1.5 Aircraft captains of aircraft conducting other than arriving or departing operations at altitudes normally used by arriving and departing aircraft should monitor/communicate on the appropriate frequency while within 10 miles of the airport unless required to do otherwise by local procedures. Such operations include parachute jumping/dropping, en route, practicing manoeuvres, etc.

16.2 Aerodrome Frequency Response Unit (AFRU)

16.2.1 An aerodrome frequency response unit will provide an automatic response when aircraft captains transmit on the traffic frequency for the particular aerodrome, normally the CTAF. It will assist in indicating inadvertent selection of the incorrect VHF frequency when aircraft captains operate into uncontrolled aerodromes.

16.2.2 At locations where an AFRU is installed, the entry "AFRU" is included in the CTAF heading.

16.2.3 When an ACFT operating within approximately 20 to 30 NM of the AFRU makes a transmission of 2 secs duration or more on the aerodrome FREQ, the AFRU will automatically respond with one of the following types of transmissions:

a. If no other ACFT transmissions have been received within the previous 5 minutes, a pre-recorded voice message comprising aerodrome identification followed by "CTAF"; or

b. If any ACFT transmissions have been received within the previous 5 minutes, a low volume 300 millisecond tone burst.

16.2.4 The AFRU will also detect ACFT transmissions which consist of three sequential carrier bursts within a five second period (i.e. three microphone clicks) and respond with the pre-recorded voice message, regardless of aircraft radio transmission activity in the last 5 minutes. Further information can be found in AIP Book.
17. Ground Services.
   a. Replenishment. The services available indicated by means of the following codes:

   Fuel
   F12 aviation gasoline, grade 80/87 AVGAS 80/8 7 (SG 0.713)
   F18 aviation gasoline, grade 100/130 AVGAS 100/130 (SG 0.72)
   F22 aviation gasoline, grade 115/145 AVGAS 115/145 (SG 0.705)
   F34 aviation turbine kerosene AVTUR 50 with FSII (S-1745) (-47C freeze point), (SG 0.80)
   F35 aviation turbine kerosene AVTUR 50 without FSII (S-1745)(-47C freeze point),(SG 0.80)
   F40 aviation turbine gasoline AVTAG with FSII (S748) (low vapour pressure), (SG 0.80)
   F4X aviation turbine kerosene AVCAT 48 (high flash point) (-46C freeze point), (SG 0.80)
   F45 aviation turbine gasoline AVTAG without FSII (S748) (-58C freeze point), (SG 0.80)

   Lubricating Oil
   O113 aviation piston engine lubricating oil 65 SUS OM-107
   O117 aviation piston engine lubricating oil 100 SUS OM-270
   O123 aviation piston engine lubricating oil (ashless dispersant) 80 SUS OMD-160
   O125 aviation piston engine lubricating oil (ashless dispersant) 100 SUS OMD-250
   O128 aviation piston engine lubricating oil (ashless dispersant) 120 SUS OMD-370
   O133 aviation turbine oil OM-10
   O135 aviation turbine lubricating oil, petroleum base 3cS OM-11
   O136 aviation turbine lubricating oil, petroleum base 5cS (EP) OEP-71
   O138 aviation turbine lubricating oil, petroleum base 9cS OM-71
   O142 general purpose (mineral) lubricating oil OM-12
   O147 instrument synthetic lubricating oil OX-14
   O148 aviation turbine synthetic lubricating oil 3cS OX-9
   O149 aviation turbine synthetic lubricating oil 7.5cS OX-38
   O155 aviation gear (mineral) lubricating oil OEP-70
   O156 aviation turbine synthetic lubricating oil 5cS OX-27
   O160 OX-26
   OX-7 aviation turbine oil 390 3cS
   SUS Saybolt Universal Seconds
   cS Centistokes

   Miscellaneous Fluids
   C365 corrosion preventive compound, hydraulic system OX-15
   H515 mineral hydraulic oil OM-15
   H536 hydraulic oil OX-50
   H576 mineral hydraulic oil OM-33
   SKD5 Skydrol 500B
   S735 inhibited ethylene glycol AL-3
   S737 isopropyl alcohol AL-11
   S738 denatured ethyl alcohol AL-8
   S745 glycol alcohol de-icing, defrosting fluid AL-5
   S746 isopropyl nitrate avpin
   S747 methyl alcohol AL-9
   S748 fuel system biocide & icing inhibitor (FSII) AL-31
   S1745 fuel system icing inhibitor, high flash type (FSII) AL-41
   ADI 50/50/1 methanol/water/inhibitor anti-detonant injection fluid (METHMIX)AL-37
   MMX45 45/55/0 methanol/water thrust augmentation fluid AL-28
   MMX50 50/50/0 methanol/water thrust augmentation fluid
   MMX60 80/40/0 methanol/water thrust augmentation fluid
   WTA demineralized water thrust augmentation fluid

   Aviation Breathing Oxygen
   HPOX High Pressure Oxygen
   LHOX Low and High Pressure Oxygen
   LOX Liquid Oxygen
   LPOX Low Pressure Oxygen
   OXRB Oxygen Replacement Bottles (type of aircraft specified)

   Note.- Due to changes without notice, accuracy of REPLEN entries under “Ground Services”, cannot be guaranteed.
b. Power Units.

**Electric.**

<table>
<thead>
<tr>
<th>Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>28VDC Battery Cart 120/208VAC 80KVA</td>
</tr>
<tr>
<td>E2</td>
<td>28VDC 2.2KW 120/208VAC 45KVA</td>
</tr>
<tr>
<td>E3</td>
<td>28VDC 7.5KW 120/208VAC 15KVA</td>
</tr>
<tr>
<td>E4</td>
<td>28VDC 10KW 120/208VAC 75KVA</td>
</tr>
<tr>
<td>E5</td>
<td>28VDC 15KW 120/208VAC 90KVA</td>
</tr>
<tr>
<td>E6</td>
<td>Rectifier starting 28VDC 124/208VAC 30KVA 60W/30KW Peak</td>
</tr>
<tr>
<td>E7</td>
<td>Underground Power, 28VDC 15KW 120/208VAC 60KVA 120/208VAC 50KVA</td>
</tr>
<tr>
<td>E8</td>
<td>28VDC 10KW, 120/208VAC 60KVA 120/208VAC 60KVA</td>
</tr>
<tr>
<td>E9</td>
<td>28VDC 45 KW</td>
</tr>
<tr>
<td>E10</td>
<td>28VDC 14KW</td>
</tr>
<tr>
<td>E11</td>
<td>28VDC 15KW</td>
</tr>
<tr>
<td>E12</td>
<td>28VAC 15KW</td>
</tr>
<tr>
<td>E13</td>
<td>28VAC 15KW</td>
</tr>
<tr>
<td>E14</td>
<td>28VDC 22.5KW</td>
</tr>
<tr>
<td>E15</td>
<td>28VDC 25KW</td>
</tr>
<tr>
<td>E16</td>
<td>28VDC 45KW</td>
</tr>
</tbody>
</table>

**Air.**

<table>
<thead>
<tr>
<th>Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Low pressure air starter (40PSI)</td>
</tr>
<tr>
<td>A2</td>
<td>PRESAIR Compressed air replenishment (3000PSI or higher available)</td>
</tr>
</tbody>
</table>

**c. Other Units.**

**Air Starting Units.**

<table>
<thead>
<tr>
<th>Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GTC-85</td>
<td>40psi/1.5lb per SEC (Palouste, LPAS Mk 2A)</td>
</tr>
<tr>
<td>MA-1</td>
<td>150 Air HP, 115lb/MIN 50 psia</td>
</tr>
<tr>
<td>MA-1A</td>
<td>82lb/MIN (1123 cfm) at 130× air inlet temperature, 45 psia (MIN) air outlet pressure</td>
</tr>
</tbody>
</table>

**Electrical Starting Units.**

<table>
<thead>
<tr>
<th>Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>90G-20P</td>
<td>120v/MIN at 45 psi</td>
</tr>
<tr>
<td>A/M32A-60AA</td>
<td>150 ± 5 lb/MIN (2055 ± 68 cfm) at 51 ± 2 psia, AC120/208V 400 cycle, 3 phase, 75KVA, 0.75 pf, 4 wire, DC28V 200 amp, 5.6KW</td>
</tr>
</tbody>
</table>

**Combined Air and Electrical Starting Units.**

<table>
<thead>
<tr>
<th>Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD WRNG</td>
<td>Aerodrome Warning</td>
</tr>
<tr>
<td>AWIS *</td>
<td>Aerodrome Weather Information Service</td>
</tr>
<tr>
<td>METAR/SPECI</td>
<td>Routine and Special Aerodrome Observations</td>
</tr>
<tr>
<td>DMSU</td>
<td>Defence Meteorological Support Unit</td>
</tr>
<tr>
<td>DWSO</td>
<td>Defence Weather Service Office</td>
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<tr>
<td>MO</td>
<td>Meteorological Office</td>
</tr>
<tr>
<td>MWO</td>
<td>Meteorological Watch Office</td>
</tr>
<tr>
<td>TAF CAT</td>
<td>TAF Category - Refer to AIP Book for details</td>
</tr>
<tr>
<td>TTF</td>
<td>Trend Forecast</td>
</tr>
<tr>
<td>WATIR</td>
<td>Weather and Terminal Information Reciter</td>
</tr>
<tr>
<td>WS WRNG</td>
<td>Windshear Warning</td>
</tr>
</tbody>
</table>

* AWIS can be either on broadcast or phone or both and is indicated in the FAC section by the publication of the phone number the frequency or both. Some AWIS on broadcast require a one second pulse or three one second pulses to activate.
e. **Rescue Fire Fighting Services.** RFF FACILITIES are allocated a CAT within the range of CAT 1 to CAT 10 with minimum water quantity and RFF vehicle requirements as per the table. Note that the figures below refer to quantities and discharge rate for water and different minimum quantities and discharge rates apply to other extinguishing agents. Categories are allocated to give a reasonable chance of rescue at a serious accident, with the probability of survivors, involving an ACFT within the group. Military users refer DI(AF)OPS for specific requirements/conditions applicable to Military airfields.

<table>
<thead>
<tr>
<th>CAT</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNM water quantity RQ</td>
<td>230</td>
<td>670</td>
<td>1200</td>
<td>2400</td>
<td>5400</td>
<td>7900</td>
<td>12100</td>
<td>18200</td>
<td>24300</td>
<td>32300</td>
</tr>
<tr>
<td>MNM discharge rate RQ (L/MIN)</td>
<td>230</td>
<td>550</td>
<td>900</td>
<td>1800</td>
<td>3000</td>
<td>4000</td>
<td>5300</td>
<td>7200</td>
<td>9000</td>
<td>11200</td>
</tr>
<tr>
<td>MNM number of RFF vehicles RQ (CIV only)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

17.1 **Airservices RFFS-ICAO/CASA Standard**

17.1.1 This chart indicates the (ICAO) "minimum" usable amounts of extinguishing agents applicable to each RFFS category.

<table>
<thead>
<tr>
<th>Category</th>
<th>Vehicle</th>
<th>Water</th>
<th>Discharge Rate</th>
<th>Complementary Agent (Dry Chemical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>1</td>
<td>5400</td>
<td>3000 l/m</td>
<td>180KG</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>7900</td>
<td>4000 l/m</td>
<td>225KG</td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td>12100</td>
<td>5300 l/m</td>
<td>225KG</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
<td>18200</td>
<td>7200 l/m</td>
<td>450KG</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>24300</td>
<td>9000 l/m</td>
<td>450KG</td>
</tr>
</tbody>
</table>

17.2 **Airservices Water Rescue Service (WRS)**

a. Airservices Australia RFFS provides a WRS at Cairns, Mackay, Brisbane, Gold Coast, Sydney, Hobart and Adelaide aerodromes. This service consists of rescue boats which provide a first response to an ACFT incident in water areas to deploy flotation platforms, pending the arrival of a larger, second stage response under an aerodrome AEP.

b. The WRS does not constitute a part of RFFS category however, any subsequent non-availability of the complete WRS will generate notification processes compatible with a contingency plan involving other emergency Agencies (and ATS) at that aerodrome location.

17.3 **Dedicated Emergency Frequency**

17.3.1 To enhance the safe management of emergency situations involving aircraft, a nationally approved ARFF Emergency Frequency of 131.0 MHz is available for direct communication between an Aircraft Flight Crew and the ARFF Incident Commander. ATC shall advise Flight Crews and/or ARFF when to operate on the 131.0 frequency. For ARFF locations without ATC, use of the CTAF is appropriate.

17.4 **Other**

a. Customs, Immigration. Where indicated in State AIP, details of customs, immigration and quarantine services will be provided.
18. Passenger Facilities

18.1 The following codes are used for the display of PUBFAC data in ERSA:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>PUBLIC TELEPHONE</td>
</tr>
<tr>
<td>LG</td>
<td>PASSENGER LOUNGE</td>
</tr>
<tr>
<td>TX</td>
<td>TAXI</td>
</tr>
<tr>
<td>RF</td>
<td>REFRESHMENT</td>
</tr>
<tr>
<td>HC</td>
<td>HIRE CAR</td>
</tr>
<tr>
<td>WC</td>
<td>TOILETS</td>
</tr>
<tr>
<td>BU</td>
<td>BUS TO TOWN</td>
</tr>
<tr>
<td>ME</td>
<td>MAINTENANCE</td>
</tr>
<tr>
<td>AC</td>
<td>ACCOMMODATION</td>
</tr>
<tr>
<td>RC</td>
<td>RENTAL CAR</td>
</tr>
</tbody>
</table>

a. Where relevant and available other brief information, e.g. telephone numbers, is included alongside the facility.
b. In many instances services such as taxi or hire car are not available at the aerodrome itself, but need to be contacted by telephone after arrival. Where availability of refreshments is indicated there is usually some limitation on the hours, and may vary from full meal service to a drink vending machine. Buses are often scheduled to meet RPT aircraft only.

AIRSERVICES ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF PUBFACDATA.

19. Certified Air/Ground Radio Service (CA/GRS)

19.1 A CA/GRS is an aerodrome radio information service on the CTAF. The service is an information service, not an air traffic service. Aircraft captains retain full responsibility to decide whether to accept and use the information provided. A CA/GRS provides the following information:

a. Confirmation of frequency selection by aircraft captains, by means of the operator's response to an aircraft captain's broadcast when taxiing at an aerodrome or inbound to an aerodrome.
b. Known, relevant traffic on the CTAF and on the manoeuvring area of the aerodrome to an aircraft when taxiing for departure or inbound to an aerodrome.
c. Weather conditions at the aerodrome. The weather information which may be advised is runway favoured by wind or for noise abatement, runway surface conditions, wind direction and speed, visibility and present weather, estimated cloud base, surface temperature, and 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 CA/GRS OPR HR or on request to the CA/GRS QNH provided by a CA/GRS or AAIS may be used to reduce DAP IAL MDA in accordance with AIP ENR 1.5, QNH Sources.
d. Other local information.
e. Emergency services call-out, if requested by the aircraft captain in an emergency.

19.2 At those aerodromes where a Certified Air/Ground Radio Service is provided, the abbreviation "CA/GRS" is included in the aerodrome entry, together with the designated broadcast area and frequency, the AAIS frequency and any location specific procedures, service's hours of operation and callsign.

20. UNICOM

20.1 UNICOM (Universal Communications) is a service provided on specific frequencies to enhance the value of information normally available about a non controlled aerodrome. UNICOM is not provided by Airservices Australia.

20.2 At locations where a UNICOM has been established, the entry giving details about the service, such as the callsign, hours of operation or any particular service provided, will be shown beneath the Ground Services entry.

20.3 UNICOM operators are required to obtain a licence from The Australian Communications Authority and frequency band approval must come from Airservices Australia, prior to the entry being placed in this document.

21. WAC Chart Reference

21.1 The WAC Chart on which the AD can be found.

22. Aerodrome Obstacle Chart Type A Charts

22.1 Aerodrome operators are responsible for Type A Chart information, (and the currency of this information), listed under aerodromes in FAC section. The Charts will be shown with an "Edition Number" and "Date"; eg, RWY 12/30, Edition 6 - July 2002. The date shown is the date of the last survey.
GEN 0.8 TERMINAL APPROACH CHARTS

1. TERMINAL APPROACH CHARTS CRITERIA

Note. - AsA AIP Approach Plates are extracts from AsA DAP East and West. They are not amended by AIS-AF action. Refer to AsA NOTAM for latest information.

1.1 Design Criteria. With the exception of Airborne Radar Approach procedures, the instrument procedures contained in this document are designed in accordance with the criteria listed in ICAO Document 8168 Volume II (PANS OPS 86), which includes the operational restrictions listed below. TACAN or GPS Arrival procedures are designed to an Australian standard consistent with PANS OPS criteria.

1.2 Chart Identification. Australian civil procedures are identified ‘AIP Australia’ near top or bottom left corner of chart. Australian Military procedures are identified ‘RAAF AIS’ below header at top right corner of chart and shall only be available to Military operators specifically authorised by their respective command authorities.

1.3 Aircraft Performance Category. The following categories, based upon VAT, (except for CAT H) determine landing minima for aircraft:

CAT: A  speeds up to 90KT IAS.
B  speeds from 91KT to 120KT IAS.
C  speeds from 121KT to 140KT IAS.
D  speeds from 141KT to 165KT IAS.
E  speeds from 166KT to 210KT IAS.
H  (helicopters)

Note. - \( V_{at} \) is the indicated airspeed at the threshold which is equal to the stalling speed \( V_{so} \) multiplied by 1.3 or the stalling speed \( V_{s1g} \) multiplied by 1.23. Both \( V_{so} \) and \( V_{s1g} \) apply to aircraft in the landing configuration at the maximum certificated landing weight. If both \( V_{so} \) and \( V_{s1g} \) are available for an aircraft, the higher resulting \( V_{at} \) must be used. The aircraft captain should maintain the maximum practical obstacle clearance. The minimum obstacle clearance requirements are:

Categories A and B - 300FT;
Categories C and D - 400FT; and
Category E - 500FT.

Note. - The circling area is determined by drawing an arc centered on the threshold of each usable runway and joining these arcs by tangents. The radii are 1.68NM for Category A, 2.66NM for Category B, 4.20NM for Category C, 5.28NM for Category D, and 6.94NM for Category E. Runways less than 1,000M long are not considered usable for Categories C, D, and E:

1.68NM=3,111M
2.66NM=4,926M
4.20NM=7,778M
5.28NM=9,779M
6.94NM=12,853M

Note. - In IAL procedures, the missed approach is designed to provide a minimum obstacle clearance of 100FT to an aircraft climbing along the specified missed approach path at a gradient of 2.5% (152FT/NM) from the MAPT (non-precision) or DA/RH (precision) from which the missed approach procedure commences. If this missed approach climb gradient cannot be achieved the DA, MDA or RH should be increased, or other action taken to achieve the required obstacle clearance along the specified missed approach flight path.

1.3.1 In executing a missed approach, aircraft captains must follow the missed approach procedure specified for the instrument approach flown. In the event that a missed approach is initiated prior to arriving at the MAPT, aircraft captains must fly the aircraft to the MAPT and then follow the missed approach procedure. The MAPT in a procedure may be:

a. the point of intersection of an electronic glide path with the applicable DA; or
b. a navigation facility; or
c. a fix; or
d. a specified distance from the Final Approach Fix (FAF).
1.4 Handling Speeds

**SPEEDS FOR PROCEDURE IN KNOTS IAS**

<table>
<thead>
<tr>
<th>ACFT CAT</th>
<th>V_{at}</th>
<th>Range of Speeds for Initial and intermediate Approach</th>
<th>Range of Final Approach Speeds</th>
<th>Max Speeds for Visual Manoeuvring (Circling)</th>
<th>Max Speeds for Missed Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&lt; 91</td>
<td>90-150 (110°)</td>
<td>70-100</td>
<td>100</td>
<td>110</td>
</tr>
<tr>
<td>B</td>
<td>91-120</td>
<td>120-180 (140°)</td>
<td>85-130</td>
<td>135</td>
<td>150</td>
</tr>
<tr>
<td>C</td>
<td>121-140</td>
<td>160-240</td>
<td>115-160</td>
<td>180</td>
<td>240</td>
</tr>
<tr>
<td>D</td>
<td>141-165</td>
<td>185-250</td>
<td>130-185</td>
<td>205</td>
<td>265</td>
</tr>
<tr>
<td>E</td>
<td>166-210</td>
<td>185-250</td>
<td>155-230</td>
<td>240</td>
<td>275</td>
</tr>
<tr>
<td>H</td>
<td>N/A</td>
<td>70-120</td>
<td>60-90</td>
<td>N/A</td>
<td>90</td>
</tr>
</tbody>
</table>

*Maximum speed for reversal procedures*

Table 1.1: Handling Speeds

1.5 Minimum Sector Altitude. 25NM and 10NM MSAs provide 1,000FT obstacle clearance from all obstructions within 5NM of the aircraft. An aircraft within 25NM or 10NM of the facility may use the applicable MSA, and deviation from the track being flown is permitted to facilitate entry to the instrument approach. In instances where the 25NM MSA has been divided into sectors, and the appropriate Sector MSA is lower than the 10NM MSA, the Sector MSA may be used for tracking to the aid provided aircraft tracking can be maintained within the sector.

Note. - ADF - Radar Terrain Clearance Charts depict radar control charts. As a result, some altitudes may vary from altitudes found on other approach charts. The altitudes are calculated to provide 1,000FT and 3NM clearance from all known obstacles. Distances and bearings are measured from the ARP, unless otherwise stated. These charts are not based on aircraft interpreted nav aids and are only to be used for monitoring ATC altitude assignments.

1.6 Holding. Unless otherwise specified, holding procedures are subject to the following limitations:

a. **Speed.** Indicated airspeed must not exceed
   1) up to and including FL140 - 230KT, or
   2) above FL140 - 170KT for holding where the approach is limited to Cat A and B aircraft only;
   3) above FL140 up to and including FL200, 240KT; and
   4) above FL200, 265KT.

Note: Above the highest MSA in turbulent conditions, speeds may be increased to the lesser of 280KT or M0.8 subject to ATC approval in CTA.

b. **Outbound timing** begins abeam the fix or on attaining the outbound heading, whichever comes later.

c. **Time/Distance outbound.** The outbound leg must be no longer than:
   1) up to and including FL140 - 1MIN or the time or distance limit specified on the chart;
   2) above FL140 - 1.5MIN or the time or distance limit specified on the chart.

d. **Turns.** All turns in nil wind should be at a bank angle of 25° or Rate One, whichever requires the lesser bank.

e. **Wind allowance.** Allowance should be made in heading and timing to compensate for the effects of wind to ensure the inbound track is regained before passing the holding fix inbound. Full use should be made of indications available from the aid and estimated or known winds.

---

**Note:** The above table provides a summary of handling speeds for procedure in knots IAS. Each category (A to H) is further divided into subcategories for different altitude ranges, with specified maximum speeds for initial and intermediate approach, final approach, visual manoeuvring, and missed approach. The table also includes a note on the maximum speed for reversal procedures.
1.7 **QNH Sources.** Where instrument approach charts are identified by a shaded background to either the minima titles for IAL plates or the published minima for DME or GPS arrival procedures, landing, circling and alternate minima have been calculated assuming the use of forecast terminal QNH. These minima may be reduced by 100FT whenever an actual aerodrome QNH is set. Approved sources of actual QNH are ATC, ATIS, AWIS and CASA-approved meteorological observers. An actual aerodrome QNH obtained from an approved source is valid for a period of 15MIN from the time of receipt.

*Note.* - **METAR QNH does not meet this requirement.**

1.7.1 Where the forecast area QNH is used, the minima used must be increased by 50FT.

*Note.* - **ADF** - This requirement does not apply to Airservices Australia DAP procedures as the correction has already been applied.
1.8 TRADITIONAL CHART LEGEND

### GENERAL
- AERODROME REFERENCE POINT
- JET BARREL
- PARACHUTE DROPPING ZONE
- ARRESTOR GEAR BI-DIRECTIONAL
- TACAN MARKER BOARD
- HELIPORT

### AERODOMES
- LOCALIZER
- GLIDEBATH
- FLY-BY WAYPOINT
- FLY-OVER WAYPOINT
- BASIC RADIO FACILITY
- FAN MARKER
- FINAL APPROACH FIX (FAF) - non precision
- FINAL APPROACH POINT (FAP) - precision
- INTERMEDIATE FIX (IF)
- INITIAL APPROACH FIX (IAF)
- VISUAL REPORTING POINT
- REPORTING POINTS (REFER ERC)
- RADIAL/BEARING LINE AND VALUE
- PROHIBITED, RESTRICTED DANGER AREA

### RUNWAYS
- HOLDING POSITION
- TAXWAY/APRON
- CLOSED RWAY
- UNPAVED RWAY
- CLOSED TWY
- DISPLACED THRESHOLD
- SWY (Feet)
- RUNWAY
- OTHER RUNWAYS
- RUNWAY IN PROFILE

### RADIO FACILITIES

### PROCEDURE INFORMATION
- APPROACH AID
- MANDATORY ALTITUDE
- ADVISORY ALTITUDE
- ROUTE IDENTIFIER
- PROCEDURE TRACK
- MISSED APPROACH
- ADDITIONAL PROCEDURE TRACK
- VISUAL DEPARTURE TRACK
- TRANSITION TRACK WITH LSALT
- HOLDING PATTERN 1 MINUTE
- HOLDING PATTERN 2 MINUTE

### OBSTRUCTIONS
- LIGHTING
- SPOT ELEVATION
- HIGHEST ON CHART
- STANDARD BeACON
- HAZARD BEACON
- MARINE LIGHT
- CIRCLING GUIDANCE LIGHT
1.9 TRADITIONAL PROFILE FORMAT

1.10 TRADITIONAL LANDING MINIMA FORMAT

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Aircraft Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>ILS</td>
<td></td>
<td>390</td>
<td>306 - 800</td>
<td></td>
</tr>
<tr>
<td>LOC</td>
<td></td>
<td>540</td>
<td>456 - 2900</td>
<td></td>
</tr>
<tr>
<td>CIRCLING</td>
<td>690</td>
<td>630 - 2000</td>
<td>770</td>
<td>683 - 2400</td>
</tr>
</tbody>
</table>

Non Precision Straight-in

Precision Straight-in

Minimum Descent Altitude (MDA) (FT)

Decision Altitude (FT)

MISSED APPROACH OBSTACLE ASSESSMENT SURFACE

Shaded title boxes have minima calculated using forecast QNH. See FLIP FIHA ENR "QNH Sources"

1.10.1 Displaced Thresholds. When a displaced threshold is promulgated by NOTAM, straight-in approaches are authorised to circling minima only.
1.11 TRADITIONAL CHART FORMAT

1.11.1 Traditional Chart Header

ARP Coordinates (Deg/Min)
S32 47 70 E151 50 07
PANS-OPS, WGS 84 Coordinate Datum

Aerodrome
ICAO Location Indicator
Procedure Name
ARA RWY 12
WILLIAMTOWN (YWLM)

1.11.2 Traditional Chart Footer

CHANGES: NEW
10 NOV 20
Effective Date

Publishing Agency
AIS-AF
AUSTRALIA

Country
ICAO Location Indicator
Procedure Name

WILLIAMTOWN (YWLM)
ARA RWY 12
1.12 ACE CHART LEGEND - PAGE 1

**GENERAL**
- AERODROME REFERENCE POINT
- JET BARRIER
- PARACHUTE DROPPING ZONE
- ARRESTOR GEAR BI-DIRECTIONAL
- TACAN MARKER BOARD
- HELIPORT

**AERODROMES**

**RUNWAYS**
- CLOSED RWY
- PAVED RWY
- UNPAVED RWY
- DISPLACED THRESHOLD
- SWY (Fw)

**RADIO FACILITIES**
- LOCALISER
- GLIDE PATH
- FLY-BY WAYPOINT
- FLY-OVER WAYPOINT
- BASIC RADIO FACILITY
- FAN MARKER
- FINAL APPROACH FIX (FAF) - non-precision
- FINAL APPROACH POINT (FAP) - precision
- INTERMEDIATE FIX (IF)
- INITIAL APPROACH FIX (IAF)
- VISUAL REPORTING POINT
- REPORTING POINTS (REFER ERC)
- RADIAL LINE AND VALUE
- LEAD RADIAL
- LEAD BEARING
- PROHIBITED, RESTRICTED DANGER AREA

**PROCEDURE INFORMATION**

**APPRAOCH AID**
- MANDATORY ALTIMETRY
- ADVISORY ALTIMETRY

**OTHER AIDS**
- ROUTE IDENTIFIER
- DISTANCE NOT TO SCALE
- PROCEDURE TRACK
- MISSED APPROACH
- ADDITIONAL PROCEDURE TRACK
- VISUAL DEPARTURE TRACK
- TRANSITION TRACK WITH LSALT
- HOLDING PATTERN

**NOTES:**
1. HOLDING PATTERNS (INCLUDING DME LIMITS) ARE NOT DRAWN TO SCALE ON CHARTS.
2. DUE TO CHANGES IN MAGNETIC VARIATION AND DISPLACED NAVIGATION AIDS, SECTOR ENTRY DIAGRAMS SHARING INFORMATION MAY DIFFER BY UP TO 1 DEGREE FROM THE FINAL APPROACH TRACK.
A "*" portrayed with approach lighting letter identifier indicates sequenced flashing lights (SFL) installed with the approach lighting system, e.g. P. Negative symbology, e.g. ❌ indicates Pilot Activated Lighting (PAL).
1.14 ACE PROFILE FORMAT

![Diagram of ACE Profile Format]

**1.15 ACE LANDING MINIMA FORMAT**

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-ILS 12</td>
<td>370</td>
<td>341</td>
<td>1200m</td>
<td>(VIS -800 WITH ACTUAL QNH)</td>
</tr>
<tr>
<td>S-LOC 12</td>
<td>560</td>
<td>529</td>
<td>2000m</td>
<td></td>
</tr>
<tr>
<td>CIRCLING</td>
<td>690</td>
<td>659 2000m</td>
<td>710 679 2400m</td>
<td>810 779 4000m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1070 5000m</td>
<td>1039</td>
<td></td>
</tr>
</tbody>
</table>

*Shaded title boxes have minima calculated using forecast QNH. See FLIP ENR "QNH Sources"*

1.16 **Displaced Thresholds.** When a displaced threshold is promulgated by NOTAM, straight-in approaches are authorised to circling minima only.
1.17 ACE CHART FORMAT

1.17.1 AIS-AF ACE Instrument Approach Chart Header

```
<table>
<thead>
<tr>
<th>TACAN EDN</th>
<th>APCH CRS</th>
<th>RWY LDG</th>
<th>THR ELEV</th>
<th>AD ELEV</th>
<th>PANS-Ops, WG-84</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel 10</td>
<td>167°</td>
<td>8999</td>
<td>61</td>
<td>67</td>
<td>TACAN RWY 18</td>
</tr>
</tbody>
</table>
```

1.17.2 AIS-AF ACE SID/STAR Chart Header

```
STAR RUSSL ONE ECHO (RNAV)
EDINBURGH (YPED)
```

1.17.3 AIS-AF ACE Chart Footer

```
CHANGES: MSA, EDITORIAL
25 MAR 21
Publishing Agency
AIS-AF
MILITARY USE ONLY
```

1.18 AIS-AF Chart Aerodrome Lighting

```
<table>
<thead>
<tr>
<th>RWY</th>
<th>APPROACH</th>
<th>THR</th>
<th>RUNWAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>T-VASIS (6) 3.00° 50FT</td>
<td>GREEN</td>
<td>HIRL (6)</td>
</tr>
<tr>
<td>29</td>
<td>T-VASIS (6) 3.00° 51FT</td>
<td>GREEN</td>
<td>MIRL (3)</td>
</tr>
</tbody>
</table>
```

1.18.1 Distance/Altitude Scale. A DME distance/altitude table is provided on procedure charts where runway approach minima are published, distance and azimuth facilities are suitably located and a nominal 5.24% (3° or 318FT per NM) profile can be accommodated. Gradients listed on the chart profile view for non precision approach procedures indicate the profile resulting from the limiting altitudes in the final segment to a nominal 50FT threshold crossing height unless otherwise indicated.
<table>
<thead>
<tr>
<th>MHz</th>
<th>.00</th>
<th>.10</th>
<th>.20</th>
<th>.30</th>
<th>.40</th>
<th>.50</th>
<th>.60</th>
<th>.70</th>
<th>.80</th>
<th>.90</th>
</tr>
</thead>
<tbody>
<tr>
<td>108</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>109</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
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<td>36</td>
</tr>
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<td>110</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>40</td>
<td>41</td>
<td>42</td>
<td>43</td>
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</table>
The nomograph below gives the Climb/Descent rate for entering arguments of gradient (%, ft/Nm, Degrees) and ground speed.
1.21 ALTITUDE CORRECTION VERSUS TEMPERATURE

-20°C
-15°C
-10°C
-5°C
0°C
5°C
10°C
15°C
20°C

Aerodrome Elevation
500ft
1000ft
1500ft
2000ft
2500ft
3000ft
3500ft
4000ft
4500ft
5000ft
5500ft
6000ft
6500ft
7000ft

Sea Level
HT Above Aerodrome
4000ft
4500ft
5000ft
5500ft
6000ft
6500ft
7000ft

Correction (added to procedure altitudes)

Sea Level Equivalent Temperature
ISA Deviation
ISA-15°
ISA-20°
ISA-25°
ISA-30°
ISA-35°

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1.22 ALTITUDE CORRECTION VERSUS TEMPERATURE

The diagram illustrates the relationship between altitude correction and temperature. The x-axis represents sea level equivalent temperature with ISA deviation, while the y-axis shows the aerodrome elevation with heights above aerodrome (HA). The graph includes lines for different altitudes, indicating how altitude correction changes with temperature at various heights.
# 1.23 Gradient to Rate Table

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<thead>
<tr>
<th>Gradient</th>
<th>Ground Speed (KT)</th>
<th>Climb Rate (FT/MIN)</th>
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**Airservices Australia DAP-IAL Chart Legend**

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<th>Symbol</th>
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<td><img src="image1.png" alt="Symbol" /></td>
<td>Navigation Aid</td>
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<tr>
<td><img src="image2.png" alt="Symbol" /></td>
<td>Obstacle and Group Obstacles</td>
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<tr>
<td><img src="image3.png" alt="Symbol" /></td>
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<td><img src="image4.png" alt="Symbol" /></td>
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<td><img src="image5.png" alt="Symbol" /></td>
<td>Winch or Auto Tow Ops</td>
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<td><img src="image6.png" alt="Symbol" /></td>
<td>Parachute Ops</td>
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<tr>
<td><img src="image7.png" alt="Symbol" /></td>
<td>Model Aircraft or UAV Ops</td>
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<td><img src="image8.png" alt="Symbol" /></td>
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<td><img src="image9.png" alt="Symbol" /></td>
<td>Aerodrome Beacon</td>
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<td><img src="image10.png" alt="Symbol" /></td>
<td>Restricted Area or Airspace Boundary</td>
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<tr>
<td><img src="image11.png" alt="Symbol" /></td>
<td>Spot Elevation (Not necessarily indicating highest terrain in immediate area)</td>
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<td><img src="image12.png" alt="Symbol" /></td>
<td>Initial Approach Fix</td>
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<tr>
<td><img src="image13.png" alt="Symbol" /></td>
<td>FINAL Approach Fix (Non-Precision) or FINAL Approach Point (Precision)</td>
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<td><img src="image14.png" alt="Symbol" /></td>
<td>Fly-By Waypoint</td>
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<tr>
<td><img src="image15.png" alt="Symbol" /></td>
<td>Fly-Over Waypoint</td>
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**Instrument Landing System or VHF Localizer**

- ![Symbol](image16.png)

**Aerodrome Runways**

- ![Symbol](image17.png)

**Track Discontinuity**

- ![Symbol](image18.png)

**Runways**

- Sealed
- Displaced Threshold
- Unsealed
- Apron & Taxiway

**Aerodrome Reference Point**

- ![Symbol](image19.png)

**T-VASIS**

- ![Symbol](image20.png)

**AT-VASIS**

- ![Symbol](image21.png)

**PAPI**

- ![Symbol](image22.png)

**Wind Direction Indicator**

- LIT
- UNLIT

**Helicopter Landing Site**

- ![Symbol](image23.png)

**Hydrant Fuel**

- Jet A

**Arrester Gear**

- ![Symbol](image24.png)

**High Intensity Approach Lighting**

- ![Symbol](image25.png)
Airservices Australia DAP-IAL Chart Legend cont’d...

8 NOV 2018

AD ELEY 539

AERODROME CHART
ALBURY, NSW (YMAY)

Chart Effective Date
Chart Name
Height AMSL of highest point on the movement area
Co-ords of ARP
Location Name
Airport Identifier

DME Arc
DME Dist/DME Identi.
Bearing to NDB
Lead DME Dist/DME Id

ON CROSSING LR
320° ZZ, ACF may
descend to 3000FT
or above

FAP (Precision)
FAF (Non-Precision)

Marker
Turn Point
(UBT or ALT)

Missed Approach Track
(Cashed)

LGK NDB 231
IZZ ILS/DME 109.1

VOR/DME 113.1
NDB 250

Colocated Radionavigation Aids

BEARINGS ARE MAGNETIC
ELEVATIONS ARE IN FEET AMSL

SIGNIFICANT OBSTACLE AND TOPOGRAPHICAL
DETAIL SHOWN ON PLAN VIEW
OBSTACLES SHOWN ARE NOT EXHAUSTIVE.

holding at LGK NDB

PROC TURN (080°/260°)
RO TO JOIN PROC
FROM HOLD.

25NM MSA between R-190° ZZ
through North to R-030° ZZ

Navigation Aid on which 25NM MSA
is based.

Final Approach Track

VOR/DME

NDB

LOC

25 NM MSA

2000

5000

R-190° ZZ

25 NM MSA

10 NM MSA 2500

10 NM CIRCLING AREA

25NM MSA

2000

R-030° ZZ

5000

VOR/DME
Airservices Australia DAP-IAL Chart Legend cont’d...

### RNAV (GNSS) NON PRECISION AND APV APPROACH PROCEDURES

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**MISSING APPROACH:**
- TRACK DCT TO SNBSH - THEN CEASE TWIN, TRACK 100° - CLIMB TO 1700 FT.
- MISSED Approach Holding (Holding) Fix
- MISSED Approach Point Fix
- FINAL Approach Fix
- INTERMEDIATE Approach Fix
- INITIAL Approach Fix

**Threshold Crossing Height**
- 100°
- 1900

**RNNAV (GNSS) APPROACH PROCEDURES**

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<tr>
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<th>C</th>
<th>D</th>
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<tr>
<td>LNNAV</td>
<td>350 (318-1.5)</td>
<td>550 (518-2.9)</td>
<td>600 (587-24)</td>
<td>750 (737-4.0)</td>
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<tr>
<td>CIRCLING</td>
<td>(1087-4.4)</td>
<td>(1237-6.0)</td>
<td>(1337-7.0)</td>
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<tr>
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<td>LNNAV IS REPLACING S1 GNSS MINIMA</td>
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<td>LNAV/NAV HEIGHT ABOVE THRESHOLD (HAV) (FT) AT DECISION ALTITUDE (DA) (FT)</td>
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<td>REQD VIS (KM)</td>
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**DECISION ALTITUDE (DA) (FT)**
- STRAIGHT-IN MINIMA
- LNAV/VNAV MINIMA

**AIRCRAFT PERFORMANCE CATEGORY**
- LNAV/VNAV

**SPECIAL ALTERNATE WEATHER MINIMA AVAILABLE TO SUITABLY EQUIPPED AIRCRAFT (SEE AIP ENG 1.5 PARA 6.2)**
- MINIMUM DECENT ALTITUDE (MDA) (FT)

**HEIGHT ABOVE AERODROME (HAA) (FT) AT MINIMUM DESCENT ALTITUDE (MDA)**
- MNVR VFR (KM)

**CHARTS WITH SHADED BACKGROUND TO TITLES HAVE MINIMA CALCULATED USING FORECAST QNH (SEE AIP ENG 1.5 PARA 5.3)**
### MINIMA TABLE

<table>
<thead>
<tr>
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<td>S-I ILS (CAT II)</td>
<td>RA 101 DA</td>
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<td>560</td>
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<td>S-I ILS (CAT I)</td>
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<td>297</td>
<td>547</td>
<td>750 (737-4.0)</td>
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<td>S-I LOC (2.5% MDA)</td>
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<td>550</td>
<td>850 (837-5.0)</td>
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<td>CIRCLING</td>
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<tr>
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</table>

- **MINIMUM DESCENT ALTITUDE (MDA) (FT)** (RNP-Precision)
- **REQUIRING CEILING (FT) AND VIS (KM)**
- **MINIMUM DESCENT ALTITUDE (MDA) (FT)** (RNP-Precision)
- **REQUIRED VIS (M)** WHEN RVR MEASURING CAPABILITY AVBL.

**CHARTS WITH SHADED BACKGROUND TO TITLES HAVE MINIMA CALCULATED USING FORECAST QNH**

**AIRPORT RUNWAY LIGHTING**

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<th>RWY</th>
<th>VASI</th>
<th>HIRL</th>
<th>MSL</th>
<th>VASI</th>
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<tr>
<td>01</td>
<td>3.0°</td>
<td>RCLL</td>
<td>CL</td>
<td>RCLM</td>
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<tr>
<td>02</td>
<td>3.0°</td>
<td>RCLL</td>
<td>CL</td>
<td>RCLM</td>
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<td>3.0°</td>
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**RUNWAY MAGNETIC DIRECTION**

**MEDIUM INTENSITY RUNWAY CENTERLINE LIGHTING**

**RUNWAY TOUCHDOWN ZONE LIGHTING**

**RUNWAY CIRCLING GUIDANCE LIGHTS**

---

Airservices Australia DAP-IAL Chart Legend cont’d.
BRIEFING AND METEOROLOGICAL SERVICES

1. PRE-FLIGHT

1.1 Defence Meteorological Office (Defence MO) provide information for Military Exercise “Wallaby 21”.

a. Defence MO
   Phone: +61 2 6128 4355
         +61 2 6262 7316
         1800 203 860 (Australia only)
   Internet access: http://www.bom.gov.au/defence
   (Access details available from Defence MO)

2. IN-FLIGHT INFORMATION SERVICES

2.1 Automatic broadcast services

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<thead>
<tr>
<th>Outlet</th>
<th>VHF</th>
<th>METAR Menu</th>
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<tbody>
<tr>
<td>Bellenden Kerr</td>
<td>119.75</td>
<td>Amberley, Brisbane, Cairns, Hamilton Island, Mackay, Rockhampton, Townsville</td>
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<tr>
<td>Point Lookout</td>
<td>119.75</td>
<td>Amberley, Brisbane, Gold Coast, Canberra, Melbourne, Rockhampton, Sydney, Williamtown</td>
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<tr>
<td>Mt Blackwood</td>
<td>119.85</td>
<td>Amberley, Brisbane, Cairns, Hamilton Island, Mackay, Rockhampton, Townsville</td>
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<td>Mt Isa</td>
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<td>Alice Springs, Amberley, Brisbane, Cairns, Mt Isa, Tindal, Townsville</td>
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<td>Mt Mowbullan</td>
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<td>Amberley, Brisbane, Gold Coast, Mackay, Rockhampton, Sunshine Coast, Sydney</td>
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</table>
2.2 Automatic Broadcast Services are an essential part of the In-Flight Information Service:

a. International flights are catered for by the Sydney HF VOLMET service. (Refer FAC section)

b. Flights within 90NM of a Primary Control Zone and 30NM of a General Aviation Control Zone area, are catered for by the Automatic Terminal Information Services (ATIS). (Refer FAC section)

c. Flights operating within Australia, in particular, flights operating in control area, are catered for by an Automatic En Route Information Service (AERIS).

d. Aircraft operating to an aerodrome at which AWS is installed may be catered for by AWIS.

3. THE ATS IN-FLIGHT INFORMATION SERVICE

3.1 This consists of three elements:

a. ATC initiated FIS;

b. Automatic Broadcast Services; and

c. an on-request service.

4. ON REQUEST IN-FLIGHT INFORMATION SERVICE

4.1 The aircraft captain is responsible for requesting the information necessary to make operational decisions.

4.2 An on-request Flight Information Service (FIS) is available to aircraft in all classes of airspace on ATC VHF and AusFIC HF (Domestic and International) frequencies using the callsign “FLIGHTWATCH”. Broadcast information (as described earlier) is available from ATIS and on the AERIS network to supplement the on-request service.

4.3 Aircraft captains should ensure they prefix any request for FIS on VHF with the callsign “FLIGHTWATCH”. When operating on HF also include the frequency, for example:

“FLIGHTWATCH, ROMEO JULIET DELTA, SIX FIVE SIX FIVE, REQUEST ACTUAL WEATHER Halls Creek”

Note: This helps to identify the service required and your location.

4.4 Requests will be dealt with on a “first come-first served” basis.

4.5 Aircraft captains should be mindful that flight information services provided on HF by the FIS may be delayed while communications for traffic information services are being relayed between air traffic control and aircraft captains of IFR flights.

5. HAZARD ALERTS

5.1 Hazard Alerts contain information, assessed by ATS to have an immediate and detrimental effect on the safety of an aircraft, that could assist aircraft captains to avoid hazardous situations.

Hazard Alerts will be:

a. broadcast on the appropriate ATS FREQ as necessary. Broadcasts will normally be made on receipt, H + 15 and H + 45 or until the availability of an updated FIS product (MET or NOTAM) has been broadcast; and

b. directed to those aircraft maintaining continuous communications with ATS at the time the hazard is assessed that are within one hour flight time of the hazardous conditions.

6. CANCELLATION OF SARWATCH (FULL REPORTING)

6.1 The preferred method for aircraft captains using full reporting procedures to cancel SARWATCH is via radio. When two-way radio communications are not available, aircraft captains wishing to cancel SARWATCH may do so by telephoning the appropriate ATC Centre:

<table>
<thead>
<tr>
<th>Centre</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brisbane ATC Centre</td>
<td>07 3866 3868</td>
</tr>
<tr>
<td>Melbourne ATC Centre</td>
<td>03 9235 2039</td>
</tr>
</tbody>
</table>

7. CANCELLATION OF SARTIME

7.1 Except when a SARTIME for Departure has been nominated to ATC for an intermediate arrival and departure, all SARTIMES nominated to Airservices will be held by CENSAR. For those SARTIMEs that will be held by CENSAR, aircraft captains must show CENSAR as the unit responsible for a location when submitting flight notifications.

7.2 The preferred method to cancel a SARTIME is via telephone to CENSAR on 1800 814 931. When telephone facilities are not available you may use ATS frequencies.

7.3 Aircraft captains are encouraged to nominate a suitable time period for a SARTIME that will provide sufficient time for the flight to take place and to reach suitable facilities for cancellation in the event that radio contact is not available.

7.4 Whenever possible a single SARTIME should be nominated to encompass a number of flights that have short time intervals, rather than nominating a SARTIME for each flight stage. Nomination should be by flight notification direct to the FIS and CENSAR.
8. UPDATE OF SPFIB/AVFAX PRODUCTS
8.1 Aircraft captains in receipt of NAIPS SPFIB or AVFAX briefings may quote the briefing identification number from the top of the first page of the briefing to obtain an update to the NOTAM and the latest MET INFO when airborne, through FLIGHTWATCH. The number is available from the first page of the briefing text. This will ensure that only the route, area and location NOTAM held are updated and will avoid repetition. For example: “FLIGHTWATCH, ALPHA BRAVO CHARLIE, REQUEST UPDATE ON SPFIB (OR AVFAX) BRIEFING NUMBER NINER ZERO ZERO ZERO ONE (90001).”

9. FAILURE OF GROUND STATION EQUIPMENT
9.1 In the unlikely event of failure of groundstation SSB equipment, an alternative SSB FREQ should normally be adequate to ensure that ACFT are provided with HF communications.

10. FLIGHTWATCH HF ORGANISATION
10.1 Australia is divided into six HF Network Areas known as Regional Domestic Air Route Areas (RDARA). Details of the HF FREQ organisation is shown on PCA. All FREQ quoted are suppressed carrier FREQ, and the upper sideband mode is used. These HF FREQ are operated from Brisbane.

11. ATS AREA FREQUENCIES AT UNCONTROLLED AERODROMES
11.1 These are shown on En Route and Terminal charts.
11.2 HF facilities are remotely operated; proximity to these may affect frequency selection. The location of HF outlets and the frequencies operated from each outlets are shown on the Flightwatch HF Organisation diagram.

12. USE OF MOBILE TELEPHONES IN AIRCRAFT
12.1 In the event of an emergency, and when other conventional means of communication are either inadequate or not available, mobile telephones may be used for contact with Air Traffic Control Centres and Terminal Control Units (TCUs) and with Australian Search and Rescue (AusSAR). Telephone numbers for the individual ATC locations and the SAR Hotline are listed below:

- Adelaide ATC Centre 08 9236 7988
- Brisbane ATC Centre 07 3866 3686
- Melbourne ATC Centre 03 9338 4032
- Perth ATC Centre 08 9277 1096
- Sydney ATC Centre 02 9556 6564
- SAR Hotline 1800 815 257
FLY NEIGHBOURLY ADVICE

1. FN 6 - GREAT BARRIER REEF MARINE PARK (GBRMP)

1.1 The GBRMP is located within an area of the Great Barrier Reef extending from abeam Cape York to approximately 10NM North of Fraser Island, from sea level to 3000FT AMSL. The Marine Park is a declared World Heritage Area and is administered by the Great Barrier Reef Marine Park Authority (GBRMPA) and managed by the Queensland Parks and Wildlife Service.

1.2 The GBRMP is managed in four geographical sections:
   - Far Northern (Cape York - Murdoch Point)
   - Cairns (Murdoch Point - Clump Point)
   - Central (Clump Point - Cape Conway)
   - Mackay/Capricorn (Cape Conway - 10NM North of Fraser Island)

1.3 The GBRMP contains nearly 1,000 rocky islands and cays, many being sensitive seabird breeding sites of national and international significance.

1.4 Aircraft captains are requested to not fly below 1500FT within one (1)NM of sites occupied by nesting seabirds.

1.5 Arrangements exist with military and commercial aircraft operators with respect to the avoidance of sensitive areas.

43
1.6 Aircraft captains are specifically requested to note the following significant nesting sites and to not fly below 1500FT AMSL within one (1) NM of these sites:

<table>
<thead>
<tr>
<th>Far Northern Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combe Islet</td>
</tr>
<tr>
<td>Tydeman Cay</td>
</tr>
<tr>
<td>Davie Cay</td>
</tr>
<tr>
<td>Night Island</td>
</tr>
<tr>
<td>Quoin Island</td>
</tr>
<tr>
<td>Raine Island</td>
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<tr>
<td>Moulter Cay</td>
</tr>
<tr>
<td>Wallace Island</td>
</tr>
<tr>
<td>Pelican Island</td>
</tr>
<tr>
<td>Magra Island</td>
</tr>
<tr>
<td>Bushy Island</td>
</tr>
<tr>
<td>Stapleton Island</td>
</tr>
<tr>
<td>Sandbank number 7</td>
</tr>
<tr>
<td>Sandbank number 8</td>
</tr>
<tr>
<td>Milman Island</td>
</tr>
<tr>
<td>McCarthur Island</td>
</tr>
<tr>
<td>MacLennan Island</td>
</tr>
<tr>
<td>Saunders Island</td>
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</table>

<table>
<thead>
<tr>
<th>Cairns Section</th>
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<tbody>
<tr>
<td>Sister Island</td>
</tr>
<tr>
<td>Stephens Island</td>
</tr>
<tr>
<td>Low Isles</td>
</tr>
<tr>
<td>West Hope Island</td>
</tr>
<tr>
<td>Three Isles</td>
</tr>
<tr>
<td>Rocky Islets</td>
</tr>
<tr>
<td>Eagle Islet</td>
</tr>
</tbody>
</table>

1.7 Central Section - Hinchinbrook Planning Area (please see map over page) Aircraft captains are requested to avoid:

a. flying below 1500FT within the Hinchinbrook Planning Area;
b. landing within the Hinchinbrook Island Dugong Protection Area A; or
c. landing within 500m of any island

1.8 Michaelmas Cay, situated approximately 030DEG MAG/20NM Cairns, is ranked as the most important seabird breeding site within the Cairns Section.

1.9 Aircraft operating upwind of a seabird breeding site are likely to cause greater impact than those downwind, therefore, distance from a site may need to be increased when operating upwind to avoid disturbing birds.

1.10 For advice on sensitive areas within the GBRMP and restrictions imposed under the Great Barrier Reef Marine Park Act 1975, aircraft captains should contact the relevant Queensland Parks and Wildlife Service, Coastal Management Program Regional Office prior to operating within the GBRMP.

- Far Northern Regional Office (Cairns) 07 4052 3096;
- Northern Regional Office (Townsville) 07 4722 5211; or
- Central Coast Regional Office (Rockhampton) 07 4936 0511.

1.11 An Environmental Restricted Area has been established within 1NM RAD of Michaelmas Cay S16 36 23.44 E145 58 22.04 - SFC-3000FT AMSL.

1.12 MIL ACFT - Hinchinbrook Channel: In VMC conditions, flights not below 1500FT. In inclement weather, flights to be conducted at the MNM ALT commensurate with terrain clearance and separation from CLD.

Note: While flights in inclement weather may be as low as 200FT ABV SFC level, ACFT should avoid built-up areas.
### BENING FIELD (YBEG)

**ELEV 1040FT**

**UNCR:**

**MOVEMENT AREA**

07/25  066  1700(5577)  Gravel

**RWY WID 23M**

**AIR TRAFFIC SERVICES**

<table>
<thead>
<tr>
<th>FIA</th>
<th>Townsville Approach</th>
<th>126.8P</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIA</td>
<td>Brisbane Centre</td>
<td>120.55</td>
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</table>
### RNAV-W (GNSS)
#### BENING FIELD (YBEG)

<table>
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<tr>
<th>PIA (BN CEN)</th>
<th>CTAF</th>
<th>ELEVATIONS IN FEET</th>
<th>BEARINGS ARE MAGNETIC</th>
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<tr>
<td>120.55</td>
<td>126.7</td>
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**R737A NOTAM**

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<th>TLV FL110</th>
<th>TA 1000</th>
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</thead>
<tbody>
<tr>
<td>4400</td>
<td>4270</td>
<td>3660</td>
</tr>
<tr>
<td>3600</td>
<td>3320</td>
<td>3000</td>
</tr>
<tr>
<td>2880</td>
<td>2700</td>
<td>2470</td>
</tr>
</tbody>
</table>

**MINIMUM ALT**

- MSA - YBEG APR
- 3100
- 3600

**SECTIONS OF PATHS**

- 270°
- 10 NM
- 500°
- 3600

**NOTAMS**

- BEGWA
- BEGWB

**MAP**

- BEGWA
- BEGWB
- BEGWC
- 4400
- MDA
- 2800

**MISSING APPROACH**

- TURN RIGHT, TRACK 050° TO BEGWA, CLIMB TO 4400' FT

**ELEVATIONS**

- 1040

**CIRCLING**

- 2470

**NOTES**

1. CAUTION: NO RUNWAY LIGHTING
2. UNCERTIFIED AERODROME NOT SUBJECT TO NOTAM, CTC RANGE CONTROL (07 4775 8601) PRIOR TO OPS.
3. MAX IAS INITIAL: 210 KNOTS

**GEOGRAPHIC COORDINATES**

- 05 NOV 20

**AIS-AF**

**MILITARY USE ONLY**
GLADSTONE ELEV 59
AVFAX CODE 4023
QLD UTC +10 YGLA
235211S 1511322E VAR 10 DEG E CERT
AD OPR Gladstone Airport Corporation, PO Box 7200, Kin Kora, QLD, 4680. Email: admin@gladstoneairport.com.au. PH 07 4977 8800. ARO Duty 07 4977 8812 (H24). Fax 07 4978 1314.

REMARKS
1. AD charges apply, refer to Gladstone Airport conditions of use document. CTC AD OPR by phone/email, 0830-1630 Local.
2. For CHTR OPS 48 HR PN. CTC AD OPR by phone/email. 0830-1630 Local.
3. This AD is a Security Controlled Airport. All pilots and operators must possess and display a current Aviation Security Identification Card (ASIC) when airside.
5. PN for GA access outside 0900-2030 Local. CTC ARO by phone.

HANDLING SERVICES AND FACILITIES
VIVA: Phone 0427 239 293 24HR. Email: gladstonears@outlook.com. Refuelling operating hours 0600-1800 Local MON-SUN, 30 MIN PN required for JET A1. AH call-out fees apply 1830-0600 Local. Swipe Bowser AVGAS. VIVA Fuel and Fly2Sky Card, VIVA Carnet Card and Credit Cards (VISA and MC).

RESCUE AND FIREFIGHTING SERVICES
1. CAT 6 as per hours of NOTAM.
2. 131.0 MHz AVBL HO.

APRONS AND TAXIWAYS
1. TWY A4 and A5 and A East of TWY A4 - PCN 42/F/B/1400/T.
2. TWY A1 and A West of TWY A4 - PCN/16/F/B/1000/T.
3. TWY A2, A3 and B5 unavailable to ACFT above 5,700KG MTOW.
4. TWY B1 and ACFT storage APN only AVBL with AD OPR approval.

AERODROME OBSTACLES
1. TWR 381FT AMSL BRG 228 MAG 1,541M FM ARP.
2. Lit chimneys:
   a. 501FT AMSL BRG 342 MAG 2,234M FM ARP.
   b. 504FT AMSL BRG 341 MAG 2,025M FM ARP.
   c. 505FT AMSL BRG 341 MAG 2,130M FM ARP.
3. Aerial 2,084FT AMSL BRG 287 MAG 15,677M FM ARP.
   Note: For information regarding obstacles please contact the AD OPR

METEOROLOGICAL INFORMATION PROVIDED
1. TAF CAT B, METAR/SPECI.
2. AWIS Phone 07 3564 3715 - Report faults to BoM.
3. AWIS FREQ 126.85 - Report faults to AD OPR.

PHYSICAL CHARACTERISTICS
10/28 101 64a PCN 42 /F /B /1400 (203PSI) /T Grooved WID 30 RWS 150
Check APRONS AND TAXIWAYS for additional pavement information.

Information may be continued on the next page: PTO
AERODROME AND APPROACH LIGHTING

RWY 10/28  LIRL(1)  PAL+AFRU 118.8  SDBY PWR AVBL
RWY 10  PAPI(1)  PAL+AFRU 118.8  3.0 DEG49FT  SDBY PWR AVBL
RWY 10  RTIL(1)  PAL+AFRU 118.8  SDBY PWR AVBL
RWY 28  PAPI(1)  PAL+AFRU 118.8  3.0 DEG52FT  SDBY PWR AVBL

(1) PAL+AFRU requires three one-second pulses to activate (see INTRO para 23.5).
1. RWY 10/28 edge light spacing: 60M. LIRL white-coloured.
2. RWY 10 HiRL edge lights stages 4-6 AVBL by pilot request only white-coloured,
yellow-coloured for the last 600M. Contact ARO Duty CTAF 118.8 0500-2030 Local.
   Phone 07 4977 8812 (H24) 20mins PN required.

OTHER LIGHTING

HBN  To NE, SE & W of AD
1. Secondary PWR switchover time: 15 SEC.
2. TWY LGT: Blue Edge.

ATS COMMUNICATIONS FACILITIES

FIA  BRISBANE CENTRE  119.55 On ground
On ground COMMS may be available with ATS dependant on ACFT location, building shielding and
railway activity.

RADIO NAVIGATION AND LANDING AIDS

VOR  GLA  116.3  235154.9S  1511215.9E (1)
   105/1 NM to ARP. Possible excessive needle fluctuations BTN 275 and 300 radials BLW
   10,000FT. Possible minor needle fluctuations on VOR RWY 28 APCH at and BLW 1,000FT.

LOCAL TRAFFIC REGULATIONS

1. THR - green; RWY ends - red; taxi guidance beyond RWY THR; pavement ends - blue.
2. ACFT are required to use entire width of RWY to execute 180DEG turns.
3. Skid mounted ACFT are not permitted to park on sealed or asphalt aprons without AD OPR
   approval.
4. Due to limited PRKG non SKED ACFT ABV 5,700KG MTOW and Jet ACFT RQ AD OPR
   approval on 48 HR notice.
5. Parking on the RPT APN Bays 1-4 is restricted to RPT ACFT or ACFT approved by the AD
   OPR.

FLIGHT PROCEDURES

Right hand circuits required RWY 28.

CTAF - AFRU 118.8

ADDITIONAL INFORMATION

1. High Intensity Lighting in vicinity of railway site on APCH to RWY 10.
2. Bird hazard exists. Species-specific NOTAM will be issued during periods of increased
   activity.
3. Bird hazard (lorikeets) ACT in VCY of THR RWY 28, particularly at dusk.

CHARTS RELATED TO THE AERODROME

1. WAC 3235.
3. Also refer to AIP Departure and Approach Procedures.
### GLADSTONE

<table>
<thead>
<tr>
<th>RWY</th>
<th>(CN)</th>
<th>TORA</th>
<th>TODA</th>
<th>ASDA</th>
<th>LDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>(3)</td>
<td>1885 (6184)</td>
<td>1945 (6381) (4.3%)</td>
<td>1885 (6184)</td>
<td>1780 (5840)</td>
</tr>
<tr>
<td>28</td>
<td>(3)</td>
<td>1920 (6299)</td>
<td>1980 (6496) (5.75%)</td>
<td>1920 (6299)</td>
<td>1720 (5643)</td>
</tr>
</tbody>
</table>

1. Caution: Fence 2.3FT ABV and at RWS end, and Transient OBST up to 8.3FT ABV and at RWS END are not taken into account in determining TODA, GRAD and STODA.
2. Reduce TORA, TODA, ASDA and STODA by 45M HN.
3. Physical distance BTN RWY ends is 1965M.
4. RWY 10 DTHR 60M and RWY 28 DTHR 120M.
5. OBST lights (group of LGT towers on coal loading gantry 250M long) 214FT AMSL PSN BRG 334 MAG 4,300M FM ARP. Infringes inner HZS by 15FT.
6. Reduce TORA, TODA, ASDA and STODA by 80M HN.

### SUPPLEMENTARY TAKEOFF DISTANCES

| RWY10- | 1063(3487)(1.9) | 1386(4547)(2.2) | 1610(5282)(2.5) | 1893(6211)(3.3) |
| RWY28- | 822(2697)(2.5) | 1900(6234)(3.3) | 1972(6470)(5.0) |

### TAXIWAY INTERSECTION DECLARED DISTANCES

- RWY10- TKOF from TWY A1; RWY remaining 1349(4426) reduce all DIST by 536(1759)
- RWY10- TKOF from TWY A4; RWY remaining 989(3245) reduce all DIST by 896(2940)
- RWY28- TKOF from TWY A4; RWY remaining 869(2851) reduce all DIST by 1051(3448)
- RWY28- TKOF from TWY A5; RWY remaining 1009(3310) reduce all DIST by 911(2989)
1. **RIGHT HAND** circuits required RWY 28.

**CAUTION:**

HIGH INTENSITY LIGHTING IN VICINITY OF RAILWAY ON APPROACH TO RWY 10.

Changes: RWY WID.

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GNSS ARRIVAL PROCEDURES
GLADSTONE, QLD (YGLA)

REFERENCES WAYPOINT GLA VOR
VOR: POSSIBILITY OF EXCESSIVE NEEDLE FLUCTUATIONS BELOW 10,000FT BETWEEN R-275° AND R-300°

NO CIRCLING
SOUTH RWY 10/28

AD ELEV 50

GLADSTONE, QLD (YGLA) VOR

MAP TURN Max IAS 210KT.

NO CIRCLING SOUTH RWY 10/28

Changes: MINIMA, SECTOR C STEP ALT, SECTOR D 10NM FIX.

GLADG01-166

© Airservices Australia 2021
**NOTES**

1. **MAX IAS:**
   - **INITIAL:** CAT C 210KT.
   - **CAT C** 210KT.

2. **NO CIRCLING STH OF RWY 10/28.**

3. **COLOUR:** SEE SPEC NOTICES.

4. **PROC OVERLIES FACING ISLAND (YFLD) RNAV (GNSS).**
   - **125**. **ACFT SEPARATION NOT ASSURED.**

**Changes:** CAT C CIRCLING MM.
USE QNH

GLADSTONE, QLD (YGLA)

25 MAR 2021

RNAV (GNSS) RWY 28

NOTES

1. MAX IAS: INITIAL - 210KT.
2. NO CIRCLING STH OF RWY 10/28.
3. COLOUR: SEE SPEC NOTICES.
4. PROC OVERLIES FACING ISLAND (YFLD) RNAV (GNSS) 125. ADFT SEPARATION NOT ASSURED.

Changes: CAT C CIRCLING MMN.

© Airservices Australia 2021
MARYBOROUGH (QLD) ELEV 38
AVFAX CODE 4021
QLD UTC +10 YMYB
253048S 1524254E VAR 10 DEG E CERT
AD OPN Fraser Coast Regional Council, PO Box 1943, Hervey Bay, QLD, 4655.
PH 1300 794 929. ARO 0419 671 405 or 0448 484 708.

REMARKS
1. AD Charges: See Fees and Charges on website www.frasercoast.qld.gov.au or CTC AD OPN.
2. The operation of ACFT is restricted to prepared RWYS, TWYS and APN.

HANDLING SERVICES AND FACILITIES
Maryborough Aviation Services (MAS) – 2100-0700 UTC JO, AH 30MIN PN.
Phone 07 4122 3730, AH 0434 104 601.
AVGAS - IOR self serve bowser H24 - payment via IOR Aviation tag for account holders or via the Fuelcharge APP.

APRONS AND TAXIWAYS
1. TWY B not AVBL to ACFT over 5,700KG MTOW.
2. TWY C grass only. May not be AVBL in wet weather.

AERODROME OBSTACLES
Towers:
   a. Lit 207FT AMSL, BRG 244 MAG 1.51NM FM ARP, infringes HZS by 160FT APRX.
   b. Lit 203FT AMSL, BRG 259 MAG 1.49NM FM ARP, infringes HZS by 165FT APRX.
   c. Lit 233FT AMSL, BRG 254 MAG 2.12NM FM ARP, infringes HZS by 195FT APRX.

METEOROLOGICAL INFORMATION PROVIDED
1. TAF CAT D, METAR/SPECI.
2. AWIS Phone 07 3564 3726 - Report faults to BoM.
3. AWIS FREQ 133.55 (requires one-second pulse to activate) - Report faults to AD OPN.

PHYSICAL CHARACTERISTICS
12/30 118 29c Unrated. Grassed grey silt clay WID 30 RWS 90
17/35 163 52a PCN 10 /F /B /580 (84PSI) /U Sealed shoulders 7.5 M each side

AERODROME AND APPROACH LIGHTING
RWY 12/30 PTBL
RWY 17/35 LIRL PAL 120.6
RWY 17/35 PAPI(1) PAL 120.6 3.0 DEG42FT
RWY 17/35 PTBL
   (1) Left side - ACT by PAL
RWY edge light spacing: 17/35: 90M.

OTHER LIGHTING
TWY LGT: Blue edge on RPT TWY leading onto APN.

ATS COMMUNICATIONS FACILITIES
FIA BRISBANE CENTRE 124.6 On Ground

LOCAL TRAFFIC REGULATIONS
1. EMERG and GEN HEL to park on southern edge of Bay 1. PN RQ if in group.
2. ACFT parking in front of AVGAS bowser restricted to refuelling ACFT only.

CTAF 126.55

ADDITIONAL INFORMATION
1. Bird hazard exists.
2. Model ACFT OPR WI 500M RAD of PSN 253340.2S 1524503.7E BRG 137 MAG 3.6NM FM Maryborough (YMYB) SFC to 1,000FT AGL.

CHARTS RELATED TO THE AERODROME
1. WAC 3340.
2. Also refer to AIP Departure and Approach Procedures.
MARYBOROUGH (QLD)

<table>
<thead>
<tr>
<th>RWY</th>
<th>(CN)</th>
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<tr>
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<td>(3)</td>
<td>1587</td>
<td>5207</td>
<td>1587</td>
<td>1587</td>
</tr>
</tbody>
</table>

Slope 0.2% down to NW. RWY WID 30 RWS WID 90

SUPPLEMENTARY TAKEOFF DISTANCES

Rwy12- 940(3084)(3.3)
Rwy30- 896(2940)(2.2)
Rwy17- 1035(3396)(1.6) 1287(4222)(1.9) 1425(4675)(2.2) 1521(4990)(2.5) 1653(5423)(3.3)
Rwy35- 1114(3655)(1.6) 1307(4288)(1.9) 1445(4741)(2.2) 1547(5075)(2.5)
23 MAY 2019

MARYBOROUGH, QLD (YMYB)

AERODROME CHART

AWIS 133.55  FIA 124.6  CTA 126.55  PAL 120.6

Bearings are Magnetic
Elevations in FEET AMSL

AIRSERVICES

152 43 00E 152 42 00E

ELEV 30

ELEV 31

GA APRON (GRASS)

RPT APRON (SEALD)

GA APRON (SEALD)

TAXIWAY : BLUE EDGE (RPT TWY TO APRON ONLY)

RL : PAL 120.6, PTBL

PAPI 3.0° 42FT LIRL

PAPI 3.0° 42FT LIRL

CTAF

AWIS

1. AWIS ACTIVATED BY 1 SEC TRANSMISSION
2. TWY B NOT AVBL TO ACFT ABV 5700KG MTOW.
3. TWY C GRASS ONLY-MAY NOT BE AVBL IN WET WEATHER.

Changes: Editorial.

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MYBAD01-159

58
**USE QNH**

**25 MAR 2021**

**MARYBOROUGH, QLD (YMYB)**

**AWS** 133.55  **CTAF** 126.55  **PAL** 120.6

**LNAV/VNAV ROMNTS:**
- YMYB QNH and TEMP RG
- PROC TEMP RANGE -5°C to +61°C

**Bearings are Magnetic**

**Elevations in FEET AMSL**

<table>
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<tr>
<th>203</th>
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<th>314</th>
<th>427</th>
<th>205</th>
</tr>
</thead>
</table>

**AWIS** 164.95  **FIA** 124.6

**TR IN TURN TIME**

**MIN ALT TIME LMT**

**10°**

**AD ELEV 38**

**NOTES**

1. MAX IAS: INITIAL 210KT.
2. CAUTION: HOLDING NOT ABOVE 2000FT DUE TO OVERLYING PROC AT YHBA.
3. PROC OVERLAID BY PROC AT YHBA. PRESCRIBED MAX ALTITUDES ENSURE SEPARATION.

**MISSING APPROACH:**

- TRACK OCT TO MBHN, THENCE TRACK 163°. CLIMB TO 2000FT.

**REMPLACED 183FT WITH 207FT LIT OBST, RELOCATION.**

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REMARKS
1. AD Charges: Current schedule of fees and conditions of use can be obtained from AD OPR or www.rockhamptonairport.com.au.
2. Customs AD by prior approval for each flight.
3. This AD is a Security Controlled Airport.
4. For airside access CTC AD OPR. OPR hours 0500-2000 Local. Call-out fee will apply AH.

HANDLING SERVICES AND FACILITIES
CALTEX - L. D and H. M. Day: 2100-0900 UTC DLY, AH 1 HR PN. Phone 0411 163 210, 07 4927 3181, AH 4922 5429. JET A1.
SHELL: 2100-0900 UTC DLY, AH 1 HR PN. Phone 0411 163 210, 07 4927 3181, AH 4922 5429. AVGAS - self serve bowser. AVGAS, JET A1.

RESCUE AND FIREFIGHTING SERVICES
1. Refer current NOTAM for ARFF HRS of OPS.
2. 131.0 MHz AVBL HO.

AERODROME OBSTACLES
1. Lit (HN) building 200FT AMSL, BRG 069 MAG 2NM FM ARP. Infringes inner HZS.
2. Towers:
   a. Unlit 895FT AMSL, BRG 016 MAG 6.88NM FM ARP. Infringes outer HZS.
   b. Unlit 2,123FT AMSL, BRG 056 MAG 6.2NM FM ARP. Infringes HZS.
   c. Marked and lit (HN) 410FT AMSL, BRG 208 MAG 2.8NM FM ARP. Infringes COS.
   d. Lit (HN) 568FT AMSL, BRG 184 MAG 4.3NM FM ARP. Infringes outer HZS.
   e. Lit (HN) 340FT AMSL, BRG 094 MAG 1.0NM FM ARP. Infringes inner HZS.
   f. Lit (HN) 144FT AMSL, BRG 034 MAG 0.83NM FM ARP. Infringes inner HZS.
   g. Lit (HN) 2,114FT AMSL, BRG 054 MAG 6.2NM FM ARP. Infringes outer HZS.
   h. Lit (Red) Communications TWR 2,086FT AMSL, BRG 055 MAG 6.2NM FM ARP. Infringes outer HZS.
3. Masts:
   a. At hospital - lit by steady red LGT (HN) 284FT AMSL, BRG 073 MAG 1.1NM FM ARP. Infringes inner HZS.
   b. Lit (HN) 2,084FT AMSL, BRG 054 MAG 6.2NM FM ARP. Infringes outer HZS.
   c. Lit (HN) 283FT AMSL, BRG 097 MAG 1.09NM FM ARP. Infringes inner HZS.
4. Primary IWI lit by steady red light (HN). Infringes TNS (E side).

METEOROLOGICAL INFORMATION PROVIDED
1. TAF CAT A, METAR/SPECI, AD WRNG.
2. AWIS Phone 07 3564 3734 - Report faults to BoM.

PHYSICAL CHARACTERISTICS
04/22 043 39a PCN 20/F/C/1000 (145PSI)/T WID 23 RWS 80
15/33 148 84a PCN 72/F/C/1400 (203PSI)/T Grooved. WID 45 RWS 300
1. BAK 12 bi-directional, removable, hook cable, 100MM high, installed 487 (1600) FM THR 33, rigged for MIL OPS only. Notified by TWR/NOTAM.
2. CAUTION: Permanent concrete energy-absorber housings 0.3 (1) high located each side of RWY 14 (46) FM RWY edge.

AERODROME AND APPROACH LIGHTING
RWY 15/33 MIRL(1) PAL+AFRU 118.1 SDBY PWR AVBL
RWY 15/33 PAPI(2) PAL+AFRU 118.1 3.0 DEG70FT SDBY PWR AVBL
RWY 15/33 RTIL(3) PAL+AFRU 118.1 SDBY PWR AVBL
   (1) AFRU+PAL outside TWR HR. AFRU+PAL requires three one-second pulses to activate (See INTRO para 23.5).
   (2) Both sides
   (3) AFRU+PAL outside TWR HR. AFRU+PAL requires three one-second pulses to activate (See INTRO para 23.5). Non-standard RTIL configuration RWY 15. RWY 15 RTILS located 75M in front of threshold.
1. RWY 15/33 edge light spacing 60M.
2. AFRU/PAL lighting status confirmed on AFRU/PAL FREQ. PAL cycle 30MIN. Last 10MIN Primary IWI flashing continuously.

OTHER LIGHTING
ABN ALTN 6 WG On TWR – AVBL with AFRU+PAL. OPS continuous HN.
1. Secondary PWR switchover time: 1 SEC during LVP; 15 SEC other times.
2. TWY LGT: Green CL on A, B, E, F, J and K.
3. Blue edge lighting on RWY 15/33 turning node.
4. RWY guard lights on RWY 15/33 TWY intersections.
ATS COMMUNICATIONS FACILITIES

<table>
<thead>
<tr>
<th>FACILITY</th>
<th>FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIA</td>
<td>119.55</td>
</tr>
<tr>
<td>APP</td>
<td>123.75</td>
</tr>
<tr>
<td>ATIS</td>
<td>116.9 128.5</td>
</tr>
<tr>
<td>SMC</td>
<td>121.8</td>
</tr>
<tr>
<td>TWR</td>
<td>118.1</td>
</tr>
</tbody>
</table>

1. TWR HR:
   a. MON-FRI: 2030-1035 UTC
   b. SAT: 2030-0930 UTC
   c. SUN: 2100-1035 UTC

Phone: 07 4931 5205. BN CEN: 07 3866 3224.

Note: TWR HR may change at short notice, check status of airspace with ATS or Rocky ATIS.

2. Rocky TWR provides combined TWR and APP CTL services within Class D airspace 4,500FT AMSL and BLW DRG TWR HR. CTC TWR for CLR.

3. Outside TWR HR:
   a. Rockhampton Class D airspace becomes Class E ABV 700FT AGL and Class G at and BLW 700FT AGL.
   b. Rocky APP provides ATS:
      (i) Within the lateral boundary of the CTR on ground, Class G SFC to 700FT AGL and Class E ABV 700FT AGL to an upper level of 1,000FT AMSL.
      (ii) Within the CTA steps Class E ABV 1,000FT AMSL to an upper level of 4,500FT AMSL.
      (iii) Within the CTA steps Class C ABV 4,500FT AMSL to an upper level of 8,500FT AMSL.

Note: Outside TWR HR, CTC Rocky APP for a CLR and on ground reports in this airspace.

RADIO NAVIGATION AND LANDING AIDS

<table>
<thead>
<tr>
<th>AID</th>
<th>FREQUENCY</th>
<th>IDENT</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>DME</td>
<td>RK</td>
<td>116.9/116X</td>
<td>232258.1S 1502818.0E</td>
</tr>
<tr>
<td>NDB</td>
<td>RK</td>
<td>257</td>
<td>232215.3S 1502831.1E Range 65 (HN 65)</td>
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<tr>
<td>VOR</td>
<td>RK</td>
<td>116.9 232258.1S 1502817.5E 1502817.5E</td>
<td></td>
</tr>
</tbody>
</table>

(1) Antenna ELEV 58 FT

LOCAL TRAFFIC REGULATIONS

1. Circuit training for ACFT ABV 5,700KG permitted 2100-1200 UTC.
2. TWY B, J and K - ACFT TAX with engines overhanging TWY edge must avoid using power above idle thrust to prevent shoulder erosion and ENG damage.
3. TWY A and APN edge TAX lane BTN TWY A and TWY K restricted to 36M MAX wingspan.
4. ACFT ABV 5,700KG MTOW RQ pavement concession to use light ACFT TWYs and refuelling areas.
5. RPT APN is a Security Restricted Area. Access for non RPT operators by permission from Airport Management only.
6. All SVY, practice IAL and NAVAID training within RK Class D airspace, requires prior notice to TWR on 07 4931 5205.
7. A340-600, A380-800 and B777-300 ACFT OPS: ACFT should exercise caution during turns as normal CLR to TWY edge may not be AVBL. Pilots should apply judgemental oversteer when negotiating TWY to TWY and RWY to TWY turns. Where the aircraft’s ground manoeuvring cameras are not AVBL, the pilot should request marshalling assistance from the company’s agent.
8. Primary PRKG bays on the RAAF APN are marked for standard type F/A-15E. ACFT type designators are not marked at the stop lines. PRKG on this APN is only AVBL by prior permission from airport management.
9. Parallel TWY separation for RWY 15/33 is for code D ACFT. Simultaneous OPS on RWY 15/33 and TWY J not permitted for code E ACFT. Code F ACFT OPS on RWY 15/33 or TWY J only permitted when autonomous on RWY 15/33 or TWY J.
10. Parallel TWY separation for TWY J and RPT APN TWY is restricted to code C separation. Simultaneous OPS not permitted if one ACFT is greater than 36M wing span.
11. ACFT ABV MTOW 22,000KG to execute turns at RWY ends or turning node.
12. ACFT ABV 5,700KG CTC AD OPR 48HRS prior for PRKG approval.
13. For TFC management, ACFT issued a ROCKHAMPTON TWO DEPARTURE (RADAR) should not enter the departure RWY until an assigned departure heading is obtained, or, an instruction to report lined up is issued.

Information may be continued on the next page: PTO
FLIGHT PROCEDURES

1. Flying Training in D706 and Radio Failure Procedures

1.1. ATC Requirements

ACFT proceeding to, from or operating within D706 up to 4,500FT AMSL shall:

a. Do so in accordance with the Airways Clearance issued (see below).
b. Report when established in D706.
c. Report on 118.1 at the OPS NORMAL time/s nominated by Rockhampton Tower.
d. Report on 118.1 when ready to DEP D706 for an Airways Clearance.

1.2. Operating Clearance.

A CLR to “Track to and operate within the Training Area not above A045”, will mean:

a. Enter the Training Area (D706) tracking direct to the Stanwell Power Station.
b. Operate within D706 not above A045, leaving and re-entering CTA as required.

c. Radio Failure

IF an ACFT is unable to report arrival in D706 or make a nominated OPS NORMAL call, THEN the ACFT must:

a. Remain within D706 until 10 minutes after either,
   (i) the missed Arrival Report Time, or
   (ii) the expiry of the OPS NORMAL Time,
b. Squawk SSR Code 7600.
c. Attempt to contact Rocky Tower by mobile.
d. Make “blind” transmissions of intentions.
e. Listen out on ATIS for any instructions.
f. Return to Rockhampton tracking via Gracemere Hill at 1,500FT.
g. From Gracemere Hill, make a visual APCH to the preferred RWY via:
   (i) Straight-in for RWY 04, or
   (ii) Right Base for RWY 15, or
   (iii) Left Base for RWY 33 or 22,
h. On final, look for a light signal from the tower.
i. Proceed in accordance with the light signal from the tower.

Note: In the event of a missed APCH, make a Left Circuit for the same or appropriate alternative runway.

2. Low Visibility Procedures

a. LOW VIS TKOF are not supported by manual RV assessments.
b. Transmissometers are not installed.
c. ARO will assist pilots to access RWY for RV assessments.
d. RWY 15/33 is capable of supporting TKOF with RWY VIS not less than 800M.
e. Procedure AVBL for LVP from AD OPR.

3. Operations outside TWR HR

a. Rocky APCH 123.75 will be the primary means for communications BTN pilots operating in Class C and E airspace in the VCY of Rockhampton AD.
b. TAX, LDG or TKOF clearances will not be issued. Pilot in command has sole responsibility for ACFT ground movement and avoidance of other ACFT and OBST.
c. TAX advice and arrival reports to ATC shall be made on 123.75. Advice of other traffic on the manoeuvring area will be provided.
d. Rockhampton CTAF 118.1 will remain the primary means for communications BTN pilots operating on or in the VCY of Rockhampton AD in Class G airspace.
e. The serviceability of APCH navigation aids at Rockhampton will be monitored by Brisbane Centre.
f. Current wind, QNH and temperature will be provided by Rocky Approach to departing ACFT on first contact, and to arriving ACFT. Cloud cover, visibility and other meteorological phenomena from the current METAR or SPECI will be provided to ACFT inbound to Rockhampton on request.
3.1. **IFR Departures**
   a. Include RWY and preferred DEP procedure with, or prior to, TAX report to Rocky APCH. Rocky APCH may negotiate an alternative DEP if RQ for traffic reasons.
   b. TAX, LDG or TKOF clearances will not be issued. Pilot in command has sole responsibility for ACFT ground movement and avoidance of other ACFT and OBST.
   c. ATC will instruct ACFT TAX for DEP to report “ready” at the RWY HLDG point for DEP instructions. For TFC management, ACFT SHOULD NOT enter the DEP RWY until:
      (i) if in receipt of a SID (RADAR) - assigned DEP heading obtained;
      (ii) if not in receipt of a SID (RADAR) - an airways CLR obtained; OR
      (iii) an instruction to REPORT LINED UP is issued.
   d. ACFT must commence TKOF within three (3) minutes of issue of DEP instructions; otherwise new instructions must be obtained.

3.2. **IFR Arrivals**
   On receipt of current Rockhampton weather information, advise Rocky APCH of intended LDG RWY and preferred approach procedure.

3.3. **Outside TWR HR**
   ACFT in the circuit are to operate as follows:
   RWYs 15 and 22 - Right hand CCTS;
   RWYs 04 and 33 - Left hand CCTS.

CTAF - AFRU 118.1
Outside TWR HR.

**NOISE ABATEMENT PROCEDURES**
Noise Abatement Procedures (NAP) apply. Refer AIP DAP.

**ADDITIONAL INFORMATION**
1. Hang gliding at Mt Helen 155/28NM FM Rockhampton AD, HJ JF. MAX 4,000FT AMSL.
2. Significant bird hazard exists:
   a. Waterfowl (ibis, duck, pelican and cormorant) hazard significantly increases on airfield and in vicinity after period of rainfall.
   Note: *Increased in the undershoot of RWY 33.*
   b. Seasonally migratory species increase in the terminal airspace in spring to summer (SEP-JAN).
   c. Flying-fox, micro-bat and waterfowl risk increased after sunset due to increased activity and decreased detectability.
   Note: *Flying fox hazard increased before first light and in the vicinity of the AD.*
   d. Check the Bird Watch reports and NOTAM for real-time wildlife hazard information.
3. Weather balloon launch APRX 2315 FM 250M NNE APR. Launches may occur at other times.

**CHARTS RELATED TO THE AERODROME**
1. WAC 3235.
3. Also refer to AIP Departure and Approach Procedures.
ROCKHAMPTON

<table>
<thead>
<tr>
<th>RWY</th>
<th>(CN)</th>
<th>TORA</th>
<th>TODA</th>
<th>ASDA</th>
<th>LDA</th>
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</thead>
<tbody>
<tr>
<td>04</td>
<td>(2)</td>
<td>800 (2625)</td>
<td>860 (2821) (1.6%)</td>
<td>800 (2625)</td>
<td>1200 (3937)</td>
</tr>
<tr>
<td>22</td>
<td>(2)</td>
<td>1200 (3937)</td>
<td>1260 (4134) (1.6%)</td>
<td>1200 (3937)</td>
<td>800 (2625)</td>
</tr>
</tbody>
</table>

Minor penetration of RWY 04/22 inner horizontal surface in vicinity of control tower by apron floodlighting, microwave tower, control tower lightning conductor rods and MET building.

Slope Level. RWY WID 23 RWS WID 80

15  | (4)   | 2628 (8622) | 2928 (9606) (1.6%) | 2628 (8622) | 2568 (8425) |

1. RWY 15 DTHR 60M.
2. From RWY 15 THR TORA is 2568M. For 2628M TORA from RWY 15, taxi to E side of THR lights and line up Northern side of THR.

33  | (4)   | 2568 (8425) | 2688 (8819) (1.6%) | 2568 (8425) | 2568 (8425) |

1. CAUTION: Primary IWI lit by steady red light (HN) infringes transitional SFC (E side).
2. BAK 12 bi-directional, removable, hook cable, 100MM high, installed 487 (1600) FM THR 33, rigged for MIL OPS only. Notified by TWR/NOTAM.
3. CAUTION: Permanent concrete energy-absorber housings 0.3 (1) high located each side of RWY, 14 (46) FM RWY edge.

Slope 0.1% down to SE. RWY WID 45 RWS WID 300 Graded 150

TAXIWAY INTERSECTION DECLARED DISTANCES

<table>
<thead>
<tr>
<th>RWY15- TKOF from TWY A</th>
<th>RWY remaining 1693(5554) reduce all DIST by 935(3068)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RWY15- TKOF from TWY B</td>
<td>RWY remaining 1400(4593) reduce all DIST by 1228(4029)</td>
</tr>
<tr>
<td>RWY33- TKOF from TWY A</td>
<td>RWY remaining 902(2959) reduce all DIST by 1666(5466)</td>
</tr>
<tr>
<td>RWY33- TKOF from TWY B</td>
<td>RWY remaining 1191(3907) reduce all DIST by 1377(4518)</td>
</tr>
<tr>
<td>RWY33- TKOF from TWY J</td>
<td>RWY remaining 2176(7139) reduce all DIST by 382(1286)</td>
</tr>
</tbody>
</table>
AERODROME CHART - Page 2

ROCKHAMPTON, QLD (YBRK)

1. OUTSIDE TWR HRS
   RWY 15 & 22 - RIGHT HAND CIRCUITS
   RWY 04 & 33 - LEFT HAND CIRCUITS

2. OUTSIDE TWR HRS, AFRU+PAL ACTIVATES ALL LIGHTING.

3. OUTSIDE TWR HRS, FOR ONGROUND COMS RK APP 123.75.
**Parking Position Information**

<table>
<thead>
<tr>
<th>STAND</th>
<th>Co-ordinates</th>
<th>Elev (ft)</th>
<th>Capacity</th>
<th>Hydrant Fuel</th>
<th>Docking System</th>
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<tbody>
<tr>
<td>1A</td>
<td>23 22 38.35S 150 28 38.11E</td>
<td>30</td>
<td>B738</td>
<td>JET A1</td>
<td>NIL</td>
</tr>
<tr>
<td>1B</td>
<td>23 22 38.04S 150 28 37.76E</td>
<td>30</td>
<td>C17</td>
<td>JET A1</td>
<td>NIL</td>
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<tr>
<td>1C</td>
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<td>NIL</td>
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<td>JET A1</td>
<td>NIL</td>
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<td>JET A1</td>
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Changes: ACFT STANDS COORDS, ELEV, CAPACITY & DOCKING SYSTEM UPDATE.

BRKAP01-167

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NOISE ABATEMENT PROCEDURES

30 MAY 2013

NOISE ABATEMENT PROCEDURES

ROCKHAMPTON

1 - PREFERRED RUNWAYS
1.1 - LANDING - RWY 33
1.2 - TAKE-OFF - RWY 15

2 - PREFERRED FLIGHT PATHS
2.1 - ARRIVING AIRCRAFT

(a) LANDING RWY 33
   - make a straight-in approach or overfly for a LEFT base.
   From the South
   From other directions

(b) LANDING RWY 15
   - track for a RIGHT base.
   From the South and West
   From the North
   From the East

(c) LANDING RWY 04
   - track for a RIGHT base.
   From the South
   From the North, East and West

(d) LANDING RWY 22
   - overfly for a RIGHT base.
   From the South
   From the North, East and West

2.2 - DEPARTING AIRCRAFT

(a) DEPARTING RWY 33
   - turn LEFT.
   To the West and South
   To the North and East
   - no restrictions.

(b) DEPARTING RWY 15
   - turn RIGHT.
   To the North and West
   To the South and East
   - no restrictions.

(c) DEPARTING RWY 22
   - turn LEFT.
   To the South and East
   To the North and West
   - turn RIGHT.

(d) DEPARTING RWY 04
   - all aircraft are to turn LEFT.

3 - TRAINING FLIGHTS

See AIP/ERSA
For TFC management, ACFT SHOULD NOT enter the DEP RWY until an assigned DEP heading obtained OR an instruction to REPORT LINED UP is issued.

COMMUNICATIONS FAILURE PROCEDURE

On recognition of communications failure

- Squawk 7600
- Maintain last assigned vector for two minutes, and
- CLIMB IF NECESSARY TO MINIMUM SAFE ALTITUDE, to maintain terrain clearance, then proceed in accordance with the latest ATC route clearance acknowledged.
BUDGI TWO DEPARTURE

RWY 15
- GRAD 3.3%
- Track 148°
- AT or ABV 1300FT turn RIGHT, intercept 174° to BUDGI, thence as cleared

RWY 33
- GRAD 3.4% to 2500FT, thence 3.3%
- Track 328°
- AT 1300FT turn LEFT, track DCT to GIXOX
- Cross GIXOX AT or BLW 7000FT
- Turn LEFT, track 136° to ADLUR
- Turn RIGHT, track 156° to BUDGI, thence as cleared

Changes: RWY 15, 33 TURN ALT, DEP NUMBER.

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24 MAY 2018

NOT TO SCALE

TARES
S22 41 06
E149 58 26
ATIS
YBRK
ARP

BRKDP03-155

Changes: DEP NUMBER, INITIAL TURN ALT.

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16 AUG 2018

STANDARD INSTRUMENT ARRIVAL (STAR)
ABVAS ONE ARRIVAL (RNAV)
ROCKHAMPTON, QLD (YBRK)

APPROACHES:

ABVAS

AOA

RWY 15

- From ABVAS track 149° to RELEM
  - Cross RELEM AT or BLW 6000FT
  - Turn LEFT, track 078° to BASOB
  - Track via RNAV-Z RWY 15

RWY 33

- From ABVAS track 149° to RELEM
  - Cross PAVDU AT or ABV 8000FT
  - Turn RIGHT, track 151° to POPEX
  - Turn RIGHT, track 194° to LALIS
  - Track via RNAV-Z RWY 33

COMMUNICATIONS FAILURE: PROCEDURE IN IMC

- Squawk 7600, comply with vertical navigation requirements, but not below MSA.
- Track via the latest STAR clearance to the nominated runway, then fly the most suitable approach in accordance with ERS A EMERG Section 1.5.

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ARIVAL: DADBO ONE

RWY 15
- From DADBO track 331° to DADIS
- Turn LEFT, track 274° to GOKUN
- Track via RNAV-Z RWY 15

RWY 33
- From DADBO track 305° to SARUS
- Track via RNAV-Z RWY 33

COMMUNICATIONS FAILURE: PROCEDURE IN IMC
- Squawk 7600, comply with vertical navigation requirements, but not below MSA.
- Track via the latest STAR clearance to the nominated runway, then fly the most suitable approach in accordance with ERSA EMERG Section 1.5.
DAE ELEV 36

GLA TO RK

NO CIRCLING BEYOND 4 NM EAST OF RWY 15/33.

SECTOR A

ATIS

VOR/NDB

TURN RIGHT,
TRACK 315°.
CLIMB TO 3500FT.

MAPtMDA

0

6 334 21

16

8

1500

2460

3000

4000

0

613 334 21

NM FM VOR

14 13 12 11 10 9 8 7 6 5 4 3 2 1 2 1 0 0

ALT (3° APCH PATH)

5000 4690 4370 4050 3730 3410 3100 2780 2460 2140 1820 1500 1190 1080 870 840

MAPtMDA

0

613 334 21

16

8

1500

2460

3000

4000

0

613 334 21

NM FM VOR

14 13 12 11 10 9 8 7 6 5 4 3 2 1 2 1 0 0

ALT (3° APCH PATH)

5000 4690 4370 4050 3730 3410 3100 2780 2460 2140 1820 1500 1190 1080 870 840

SECTOR B

ATIS

VOR/NDB

TURN LEFT,
TRACK 315°.
CLIMB TO 3500FT.

MAPtMDA

0

6 334 21

16

8

1500

2460

3000

4000

0

613 334 21

NM FM VOR

14 13 12 11 10 9 8 7 6 5 4 3 2 1 2 1 0 0

ALT (3° APCH PATH)

5000 4690 4370 4050 3730 3410 3100 2780 2460 2140 1820 1500 1190 1080 870 840

Changes: AFRU+PAL.

© Airservices Australia

BRKDG01-154
Bearings are Magnetic
Elevations in FEET AMSL

airservices

ALT (3° APCH PATH)

NM FM VOR

3200

850

810

970

910

111213

352038304150447047905000

ROCKHAMPTON, QLD (YBRK) Page 2

1 MAR 2018

DME or GNSS ARRIVAL PROCEDURES

ROCKHAMPTON, QLD (YBRK) Page 2

SECTOR C

CIRCLING MINIMA

A, B: 850-2.4

C: 1080-4.0

D: 1080-5.0

NM FM VOR

3.0

16

3000

1600

3500

13.7 13 12 11 10 9 8 7 6 5 4 3

0 1.3 1 0.8

ALT (3° APCH PATH) 5000 4790 4470 4150 3830 3520 3200 2880 2560 2240 1930 1600 1290 1080 970 850

Brkdg 02-154

MAP

VOR/DME

RK

VOR/DME 116.9

NO CIRCLING BEYOND 4 NM EAST OF RWY 15/33.

AD ELEV 36

* NO CIRCLING BEYOND 4 NM EAST OF RWY 15/33.

Ad ELEV 36

°

55°

230°

NM MSA 3200

ATIS

116.9 128.5

TWR 118.1

CTAF+AFRU (AH) 118.1

FIA BN CEN 119.55

RK APP 123.75 (AH)

AFRU+PAL (AH) 118.1

Bearings are Magnetic.
Elevations in FEET AMSL

Changes: AFRU+PAL.

© Airservices Australia
USE QNH

ROCKHAMPTON, QLD (YBRK)

23 MAY 2019

Airservices

NDB-A or VOR-A

ATIS
116.9 128.5

TWR
118.1

CTAF+AFRU (AH)
118.1

FIA
BN CEN 119.55

RK APP 123.75 (AH)

AFRU+PAL (AH)
118.1

Bearings are Magnetic
Elevations in FEET AMSL

Holding at NDB or VOR

TR IN

TIME

288°

Lev 1

320°

NO

CIRCLING

3. PROC PARTIALLY IN
NON-CONTROLLED
AIRSPACE.

Rockhampton, QLD (YBRK)

1. MAX IAS:
HOLDING: 210KT.
INITIAL:
CAT A&B 140KT.
CAT C&D 210KT.

2. NO CIRCLING
BEYOND 4 NM
EAST OF RWY 15/33.

Notes:

1. MAX IAS:
HOLDING: 210KT.
INITIAL:
CAT A&B 140KT.
CAT C&D 210KT.

2. NO CIRCLING
BEYOND 4 NM
EAST OF RWY 15/33.

3. PROC PARTIALLY IN
NON-CONTROLLED
AIRSPACE.

Changes: YPAN, CO-ORD FORMAT.

© Airservices Australia 2019

80
**NOTES**

1. MAX IAS: INITIAL: 210KT.
2. NO CIRCLING BEYOND 4 NM EAST OF RWY 15/33.
3. HOLDING NOT CONTAINED IN CTA.

Changes: LNAV/VNAV RQMENTS, LNAV/VNAV MINIMA, TCH 50FT, Editorial.

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SAMUEL HILL (YSMH)

22 44'28"S  150 39'17"E UTC+10 VAR 9°E

UNCR:

MOVEMENT AREA
06/24  058  700(2297) Sealed
14/32  134 1205(3953) Gravel
Slope 0.2% down to SE. RWY WID 32M.

RWY TORA TODA ASDA LDA
06  700(2297) 730(2395)(5.27%) 700(2297) 700(2297)
24  700(2297) 730(2395)(32.33%) 700(2297) 700(2297)

Slope 0.3% down to NE. RWY WID 30M. RWS WID 60M. CWY RWY 06 30M. CWY RWY 24 30M.

SUPPLEMENTARY TKOF DIST
RWY 06 - 607(1991)(1.6%) 638(2093)(1.9%) 644(2113)(2.0%) 658(2152)(2.2%) 670(2198)(2.5%)
695(2280)(3.3%) 725(2379)(5.0%)
RWY 24 - 139(456)(1.6%) 304(997)(1.9%) 346(1135)(2.0%) 418(1371)(2.2%) 501(1644)(2.5%)
606(1988)(3.3%) 655(2149)(5.0%)

AIR TRAFFIC SERVICES
FIA Brisbane Centre 119.55 Rockhampton and Moura areas

GROUND SERVICES
MET 1. METAR/SPECI.
2. AWIS PH 07 3564 3736.
WILLIAMSON (YWIS)

WILLIAMSON  ELEV 106FT

22 28'24"S  150 10'42"E  UTC+10  VAR  9°E

UNCR: DCSO Rockhampton.  68 Western Street, Rockhampton, QLD 4700.

FAX: 07 4935 5024.

1. PPR.

2. Contact range control on 07 4935 5000 prior to DEP to CFM FREQ RQMNTS.

3. CAUTION: This AD is not subject to routine serviceability inspection or NOTAM advice of unserviceabilities. Additional AD data is AVBL F/M the CTC telephone numbers above or for MIL Aircrew http://drnet.defence.gov.au/ARMY/FORCOMD/Headquarters/AviationBranch/AvnAwDir/Pages/OPAW.aspx.

4. AVFAX CODE 4419.

MOVEMENT AREA

14/32  143  1800(5906)  Asphalt  PCN 33/F/C(1100)(160PSI)/T (*1)

RWY  TORA  TODA  ASDA  LDA

14  1800(5906)  1860(5102)  1800(5906)  1800(5906)
32  1800(5906)  1860(5102)(4.01%)  1800(5906)  1800(5906)

Slope 0.5% down to NW. RWY WID 30M. RWS WID 150M. CWY RWY 14 60M. CWY RWY 32 60M.

SUPPLEMENTARY TKOF DIST

RWY 14  - 823(2700)(1.6%)  1169(3901)(1.9%)  1264(4147)(2.0%)  1387(4551)(2.2%)  1497(4911)(2.5%)  1630(5348)(3.3%)  1757(5764)(5.0%)

RWY 32  - 1345(4413)(1.6%)  1473(4833)(1.9%)  1509(4951)(2.0%)  1573(5161)(2.2%)  1653(5423)(2.5%)  1792(5879)(3.3%)

*1. RWY 14 TODA gradient 357.77% due uncontrolled road and trees.

AIR TRAFFIC SERVICES (*1)

FIA  Brisbane Centre  119.55  Rockhampton and Moura areas

CTAF  126.7  Williamson

GROUND SERVICES

1. METAR/SPECI.
2. AVIS  07 3564 3747 - Report faults to BoM.

LOCAL TRAFFIC REGULATIONS

1. Apron PRKG AVBL E of middle of RWY 14/32. PRKG area unsealed and ill defined. Access in wet weather may be RESTR due to flooding of TWYs.

2. MAX RAD 180° turns MUST be taken at turning nodes with back-and-fill turns (3 point turns) being taken across WID of RWY.

3. Apron access requires movement over concrete culverts with grades of more than 2 degrees. Apron access is not AVBL for C-17 ACFT.

4. Restriction: C-17 ACFT not permitted to conduct 180° turns on RWY; ACFT shall conduct STAR turns at turning nodes only.

ADDITIONAL INFORMATION

1. Kangaroo hazard exists, particularly around dawn and dusk.

CHARTS RELATED TO THE AERODROME

1. WAC 3235.
2. MIL Aerodrome Obstruction Chart Type A: NOV 2019.

AERODROME OBSTACLES

1. OBSTR: High terrain 2.2NM N of AD.
AERODROME CHART
WILLIAMSON (YWIS)

FIA (EFS) 119.55 4000FT
CTAF 126.7

ELEV 77
ELEV 106
S22 28
S22 28.5

NOTES
1. ANIMAL HAZARD EXISTS
2. NO LIGHTING AVAILABLE
3. HIGH TERRAIN TO NORTH AND SOUTH-EAST OF AD
4. CONTACT RANGE CONTROL ON (07) 4955 5033 PRIOR TO DEP TO CONFIRM FREO
RQMTN.
5. AWIS PH 07 3664 5747

LIGHTING
RWY
14
32

APPROACH
N.L.
N.L.

THR
N.L.
N.L.

RUNWAY
NIL
NIL

WIND DIRECTION INDICATOR

CHANGED: EDITORIAL
25 MAR 21

AIS-AF
MILITARY USE ONLY

WILLIAMSON (YWIS)
AERODROME CHART
1. ADF MODERNISED HIGH FREQUENCY COMMUNICATIONS SYSTEM (MHFCS)

1.1 The ADF MHFCS is a high frequency (3-30MHz) radio network providing communication services for the operational control and support of ADF and allied aircraft, marine craft and land units. Visiting military aircraft may use either the ADF or RNZAF system when contact with Australian/New Zealand based military authorities is required. Neither system provides a civil or military Air Traffic Control Service.

1.2 The ADF MHFCS is centrally controlled by the Defence Communications Station Canberra (DCSC) at the Network Management Facility (NMF) located in Canberra, ACT, Australia.

1.3 The ADF MHFCS consists of four Transmit and Receive Nodes located at:

<table>
<thead>
<tr>
<th>Location</th>
<th>Telephone</th>
<th>FAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXMOUTH, WA</td>
<td>S22 12 00.0, E114 18 00.0</td>
<td></td>
</tr>
<tr>
<td>DARWIN, NT</td>
<td>S12 13 12.0, E130 35 24.0</td>
<td></td>
</tr>
<tr>
<td>TOWNSVILLE, QLD</td>
<td>S19 16 48.0, E146 15 00.0</td>
<td></td>
</tr>
<tr>
<td>RIVERINA, NSW</td>
<td>S35 00 36.0, E146 15 00.0</td>
<td></td>
</tr>
</tbody>
</table>

Note: These nodes are remotely controlled from the NMF.

1.4 DCSC provides 5 continuously monitored Voice Contact Net (VCN) frequencies from each of the four nodes as follows:

<table>
<thead>
<tr>
<th>VCN CIRCUIT</th>
<th>ASSIGNED FREQUENCY</th>
<th>DIAL FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCN 1</td>
<td>22869.5kHz</td>
<td>22868kHz</td>
</tr>
<tr>
<td>VCN 2</td>
<td>5879.5kHz</td>
<td>5878kHz</td>
</tr>
<tr>
<td>VCN 3</td>
<td>9048.5kHz</td>
<td>9047kHz</td>
</tr>
<tr>
<td>VCN 4</td>
<td>15963.5kHz</td>
<td>15962kHz</td>
</tr>
<tr>
<td>VCN 5</td>
<td>12173.5kHz</td>
<td>12172kHz</td>
</tr>
</tbody>
</table>

1.4.1 Emission: 3K00J3E (Offset - subtract 1.5kHz from assigned)

1.4.2 Discrete frequencies are available as required and allocated after initial contact on the VCN.

1.4.3 Telephone patch facilities between aircraft and ground appointments are available as required, after initial contact on VCN.

1.4.4 Continuous monitoring of military distress frequency 5696KHz.

1.4.5 SELCAL. Available to suitably equipped aircraft/vessels.

1.5 Hours of Operation
DCSC - H24

1.6 Mode Of Operation
DCSC is capable of operating independent side band (ISB) or AM modes however, the normal mode of operation is Upper Side Band (USB) or suppressed carrier.

1.7 Callsign
DCSC uses the following self evident callsign: “Canberra Control”.

1.8 Telephone/FAX contact numbers:

<table>
<thead>
<tr>
<th>Location</th>
<th>Telephone</th>
<th>FAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCSC</td>
<td>+61 2 6263 8126</td>
<td>+61 2 6263 8143</td>
</tr>
</tbody>
</table>
2. RNZAF AIR OPERATIONS COMMUNICATIONS CENTRE AUCKLAND (AOCCAK)

2.1 AOCCAK is a high frequency (3-30MHz) station providing HF communications services to RNZAF, RAAF and other allied aircraft. Visiting military aircraft may use either the ADF or RNZAF system when contact with Australian/New Zealand based military authorities is required. Neither system provides a civil or military Air Traffic Control Service.

2.2 AOCC Auckland is located at RNZAF Whenuapai, Auckland, New Zealand (S36 28 12.0 E174 22 12.0).

2.3 AOCCAK provides 4 General Purpose Net (GPN) frequencies, which consist of the following (note station hours of operation are currently not 24/7):

<table>
<thead>
<tr>
<th>Assigned Frequency</th>
<th>Dial Frequency</th>
<th>Normal Hours (UTC)</th>
<th>24 Hours Operations (UTC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3033.4kHz</td>
<td>3032kHz</td>
<td>0900-1000 1900-2100</td>
<td>0900-2100</td>
</tr>
<tr>
<td>5688.4kHz</td>
<td>5687kHz</td>
<td>1900-1000</td>
<td>Continuous</td>
</tr>
<tr>
<td>8975.4kHz</td>
<td>8974kHz</td>
<td>1900-1000</td>
<td>Continuous</td>
</tr>
<tr>
<td>11236.4kHz</td>
<td>11235kHz</td>
<td>1900-1000</td>
<td>Continuous</td>
</tr>
<tr>
<td>13207.4kHz</td>
<td>13206kHz</td>
<td>2100-0900</td>
<td>2100-0900</td>
</tr>
</tbody>
</table>

2.4 Emission 2K80J9W (Offset - Subtract 1.4KHz from assigned).

2.5 Discrete frequencies are available as required and allocated after initial contact on the GPN.

2.6 Telephone patch facilities between aircraft and ground appointments are available in emergencies or at supervisor's discretion.

2.7 SELCAL. Available to suitably equipped aircraft/vessels.

2.8 Hours of Operation
AOCCAK: 1900UTC - 1000UTC daily.

2.9 Mode Of Operation
AOCCAK is capable of operating Independent Side Band (ISB), the normal mode of operation is Upper Side Band (USB) or suppressed carrier.

2.10 Callsign
AOCCAK uses the following self evident callsign: “Air Force Auckland”.

2.11 AOCCAK Telephone number:

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>TELEPHONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AOCCAK</td>
<td>+64 9 417 7831</td>
</tr>
</tbody>
</table>

3. MILITARY HF COMMUNICATIONS

3.1 In addition to that which DCSC supplies, the following HF nets are available:

a) RAAF Butterworth. Aircraft transiting to/from Butterworth may relay message traffic via DCSC. Aircraft requiring HF contact with Butterworth are to make prior arrangement through DCSC.

b) PNGDF General Purpose Network

<table>
<thead>
<tr>
<th>Location</th>
<th>C/S</th>
<th>Frequencies</th>
<th>HR of Ops</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port Moresby</td>
<td>P2A2</td>
<td>5746(P) LGG 7496(S) LGH 3175(S) LGF</td>
<td>H24</td>
</tr>
<tr>
<td>Lae</td>
<td>P2A3</td>
<td>5746(P) LGG 7496(S) LGH 3175(S) LGF</td>
<td>2200-0700 JO</td>
</tr>
</tbody>
</table>
4. AIR-TO-AIR COMMUNICATIONS - CIVIL

4.1 Interpilot air-to-air communications in Australian FIRs may be conducted on frequency 123.45MHz. Communications between aircraft on this frequency are restricted to the exchange of information relating to aircraft operations. Communications are to be established by either a directed call to a specific aircraft or a general call, taking into account conditions pertaining to the use of the particular channel. As target aircraft may be guarding more than one frequency, the initial call should include the distinctive channel identification “INTERPILOT” or identification of the air-to-air frequency.

4.2 The following examples illustrate the application of the calling procedures.

a) Qantas 2, SPEEDBIRD 15, INTERPILOT, DO YOU READ?; or
b) ANY AIRCRAFT VICINITY 10S 135E, QANTAS 5, 123.45, OVER.

5. AIR TRAFFIC SERVICES DATALINK SERVICES

5.1 HF SELCAL Check

5.2 For aircraft departing Australian airspace, a SELCAL check is not mandatory. However, flight crews wishing to satisfy themselves with HF performance should perform a SELCAL check after departure, but prior to being transferred to CPDLC. The primary HF frequency will be advised with the transfer instruction. The HF operator will confirm the primary and secondary HF frequencies on first contact.

6. TIME SIGNALS

6.1 Signals emanate from radio stations in United States of America - Fort Collins, Colorado (WWV) and Kauai Island, Hawaii (WWVH). Voice transmissions on WWV use a male voice and WWVH a female voice.

6.2 Frequencies:

<table>
<thead>
<tr>
<th>STATION</th>
<th>FREQUENCY</th>
<th>POWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>WWV</td>
<td>20,000KHZ</td>
<td>2.5KW</td>
</tr>
<tr>
<td>WWV &amp; WWVH</td>
<td>15,000KHZ</td>
<td>10KW</td>
</tr>
<tr>
<td>WWV &amp; WWVH</td>
<td>10,000KHZ</td>
<td>10KW</td>
</tr>
<tr>
<td>WWV &amp; WWVH</td>
<td>5,000KHZ</td>
<td>10KW</td>
</tr>
<tr>
<td>WWV</td>
<td>2,500KHZ</td>
<td>2.5KW</td>
</tr>
<tr>
<td>WWVH</td>
<td>2,500KHZ</td>
<td>5KW</td>
</tr>
</tbody>
</table>

6.3 Modulation: Signals are broadcast on double sideband amplitude modulation

6.4 Time: UTC.

6.5 Details of Signals: Voice announcement of time every minute. 5 MIN interruption HR+15. Station ID is made by voice announcement approx on H and H+30. Time and frequency signal may also be heard via telephone by calling +1 808 335 4363 for WWVH (Hawaii) or +1 303 499 7111 for WWV (Colorado) and internet: http://tf.nist.gov

1. CONVERSION TABLES

1.1 Fuel weight tables:

a. To convert: multiply by the factor in the balloon when moving in the direction of the arrow, or divide by that factor if converting in the opposite direction.

b. Fuel SG (0.8 AVTUR and 0.72 AVGAS) is based on ISA temperature at MSL. Therefore, fuel weights will be approximate for other than 15 DEG Celsius.
1.2 General conversions:

<table>
<thead>
<tr>
<th>TO CONVERT</th>
<th>INTO</th>
<th>MULTIPLY BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>CELSIUS</td>
<td>Fahrenheit</td>
<td>1.8 and add 32</td>
</tr>
<tr>
<td>Centimetres</td>
<td>Inches</td>
<td>0.394</td>
</tr>
<tr>
<td>Feet</td>
<td>Metres</td>
<td>0.3048</td>
</tr>
<tr>
<td>Fahrenheit</td>
<td>Celsius</td>
<td>Subtract 32 &amp; multiply by 0.555</td>
</tr>
<tr>
<td>IMP Gallons</td>
<td>US Gallons</td>
<td>1.200</td>
</tr>
<tr>
<td>IMP Gallons</td>
<td>Litres</td>
<td>4.546</td>
</tr>
<tr>
<td>Inches</td>
<td>Centimetres</td>
<td>2.540</td>
</tr>
<tr>
<td>Kilograms</td>
<td>Pounds</td>
<td>2.2046</td>
</tr>
<tr>
<td>Kilometres</td>
<td>Nautical Miles</td>
<td>0.540</td>
</tr>
<tr>
<td>Kilometres</td>
<td>Statute Miles</td>
<td>0.621</td>
</tr>
<tr>
<td>Kilopascals</td>
<td>Pound/Square Inch</td>
<td>0.145</td>
</tr>
<tr>
<td>Litres</td>
<td>IMP Gallons</td>
<td>0.220</td>
</tr>
<tr>
<td>Litres</td>
<td>US Gallons</td>
<td>0.284</td>
</tr>
<tr>
<td>Metres</td>
<td>Feet</td>
<td>0.3046</td>
</tr>
<tr>
<td>Metres</td>
<td>Yards</td>
<td>1.094</td>
</tr>
<tr>
<td>Pounds</td>
<td>Kilograms</td>
<td>0.4536</td>
</tr>
<tr>
<td>Pound/Square Inch</td>
<td>Kilopascals</td>
<td>6.895</td>
</tr>
<tr>
<td>Nautical Miles</td>
<td>Kilometres</td>
<td>1.852</td>
</tr>
<tr>
<td>Nautical Miles</td>
<td>Metres</td>
<td>1.802</td>
</tr>
<tr>
<td>Nautical Miles</td>
<td>Statute Miles</td>
<td>1.151</td>
</tr>
<tr>
<td>Statute Miles</td>
<td>Kilometres</td>
<td>0.609</td>
</tr>
<tr>
<td>Statute Miles</td>
<td>Nautical Miles</td>
<td>0.968</td>
</tr>
<tr>
<td>US Gallons</td>
<td>IMP Gallons</td>
<td>0.833</td>
</tr>
<tr>
<td>US Gallons</td>
<td>Litres</td>
<td>3.79</td>
</tr>
<tr>
<td>Yards</td>
<td>Metres</td>
<td>0.914</td>
</tr>
</tbody>
</table>

1.3 Conversion - Feet to Metres:

<table>
<thead>
<tr>
<th>FEET TO METRES</th>
<th>0</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT</td>
<td>0</td>
<td>30.5</td>
<td>61.0</td>
<td>91.4</td>
<td>121.9</td>
</tr>
<tr>
<td>1000</td>
<td>304.8</td>
<td>335.3</td>
<td>365.8</td>
<td>396.2</td>
<td>426.7</td>
</tr>
<tr>
<td>2000</td>
<td>609.6</td>
<td>640.1</td>
<td>670.6</td>
<td>701.0</td>
<td>731.5</td>
</tr>
<tr>
<td>3000</td>
<td>914.4</td>
<td>944.9</td>
<td>975.4</td>
<td>1006.0</td>
<td>1036.0</td>
</tr>
<tr>
<td>4000</td>
<td>1219.0</td>
<td>1250.0</td>
<td>1280.0</td>
<td>1311.0</td>
<td>1341.0</td>
</tr>
<tr>
<td>5000</td>
<td>1524.0</td>
<td>1555.0</td>
<td>1585.0</td>
<td>1615.0</td>
<td>1646.0</td>
</tr>
<tr>
<td>6000</td>
<td>1829.0</td>
<td>1859.0</td>
<td>1890.0</td>
<td>1920.0</td>
<td>1951.0</td>
</tr>
<tr>
<td>7000</td>
<td>2134.0</td>
<td>2164.0</td>
<td>2195.0</td>
<td>2225.0</td>
<td>2256.0</td>
</tr>
<tr>
<td>8000</td>
<td>2438.0</td>
<td>2469.0</td>
<td>2499.0</td>
<td>2530.0</td>
<td>2560.0</td>
</tr>
<tr>
<td>9000</td>
<td>2743.0</td>
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For headwind component

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#### NOTE:
These figures are approximate only, as temperature and fuel grade will change volume/weight ratio.

### 1.7 Conversions - US Gallons and Litres to LBS:

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#### NOTE:
These figures are approximate only, as temperature and fuel grade will change volume/weight ratio.
1.8 Conversions - Fahrenheit to Celsius:

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PAVEMENT DATA

1. GENERAL

1.1 The systems used to describe pavement strengths in countries within the coverage of ADF FLIP are explained below. Aircraft operations above the maximum weights and tyre pressures determined below are not permitted unless a pavement concession has been obtained.

2. CARE OF PAVEMENTS.

2.1 Pilots should avoid running aircraft wheels close to edges of pavements or on to the shoulders of either runways or taxiways.

2.2 Tight turns on runways should be avoided and turning nodes, where provided, should be used. Locked wheels, in particular, should be avoided.

3. PAVEMENT CLASSIFICATION NUMBER/AIRCRAFT CLASSIFICATION NUMBER SYSTEM.

3.1 An aircraft may use a pavement if its calculated Aircraft Classification Number (ACN) is less than the published Pavement Classification Number (PCN). The system is used for aircraft over 5700KG (12500LB).

4. PCN.

4.1 The parameters published to specify the strength of a pavement suitable for use by aircraft above 5,700KG maximum all up mass are:

a. Pavement Classification Number (PCN)

b. The pavement type:
   R Rigid Pavement
   F Flexible Pavement

c. The subgrade strength in four standard categories:
   A High Strength
   B Medium Strength
   C Low Strength
   D Ultra-low Strength

d. The maximum allowable tyre pressure category
   W High - no pressure limit
   X Medium - pressure limited to 1.50 MPa (218 PSI)
   Y Low - pressure limited to 1.00 MPa (145 PSI) [International Usage]
   Y1 Low - pressure limited to 1.00 MPa (145 PSI)
   Y2 Low - pressure limited to 0.80 MPa (116 PSI)
   Z Very Low - pressure limited to 0.50 MPa (73 PSI)

   1 MPa = 1,000 kPa

e. The method by which the pavement has been evaluated:
   T by Technical Evaluation
   U from Aircraft Experience

5. ACN.

5.1 The ACN for an aircraft is calculated using aircraft ACN graphs for a particular tyre pressure, pavement type and substrength. ACN graphs for most ADF aircraft types are listed in Flight Information Handbook Australia (FIHA).

6. LOAD CLASSIFICATION NUMBER (LCN) SYSTEM.

6.1 The LCN system expresses the designed strength of a pavement. To operate an aircraft on a pavement using this system without requiring a pavement concession an aircraft’s calculated LCN must be less than the pavement’s published LCN.

6.2 The LCN value for an aircraft is calculated using LCN graphs. LCN graphs for most ADF aircraft types are listed in FIHA.
7. UNRATED PAVEMENTS.

7.1 Omission of pavement strength indicates that the RWY is unrated.
7.2 Aircraft shall not be operated on unrated pavements unless the pilot is satisfied that it is safe to do so.

8. ADF- INFORMATION PUBLISHED FOR RATED MILITARY PAVEMENTS.

8.1 The aircraft pavement rating system used in Australia for ADF aerodromes is know as ADF-Aircraft Pavement Strength Evaluation Manual (previously known as RAAF Evaluations). This system is on the detailed analysis of all pavements at defence aerodromes and provides a separate rating for each pavement area at the aerodrome.

8.2 The ratings are to be used for the control of all aircraft operations at ADF aerodromes. The airfield data shown in Figure 3 shall be used for determining pavement suitability for aircraft operations.

Note: The information contained in Figure 3 was provided by the Defence Estate Organisation and addresses only pavement strengths of the main runways and associated taxiways and aprons. the full RAAF ratings provide data for pavements of lesser strength. No account is taken of the operational limitations imposed on aircraft by consideration of factors such as runway lengths or widths, airspace or by obstacles.

8.3 To determine the maximum mass for operations with unlimited frequency (tones) at which an aircraft can operate at one of the airfields listed in Figure 3 proceed as follows:

a) Identify the required aircraft type on the table.

b) Read horizontally across the table to the required airfield and read off the maximum allowable gross mass.

c) "+" indicates that the aircraft can operate at its maximum mass with no limitation on the frequency of operations.

d) "0" indicates that the aircraft cannot operate at the airfield without restrictions on the frequency of operations because either:

1) the aircraft minimum mass exceeds the permissible mass; and/or
2) the aircraft tyre pressure exceeds the maximum allowable.

e) "264.5" indicates that the aircraft mass must be limited to 264.5 tones when operating without restrictions on the frequency of operations on the high strength pavements at this aerodrome.
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# EMERGENCY PROCEDURES

## 1. RECOMMENDED PROCEDURES FOR ANY EMERGENCY PHASE

### 1.1 Emergency SSR Codes - EMERGENCY 7700 - RADIO FAILURE 7600

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<thead>
<tr>
<th>Circumstances</th>
<th>Phraseologies * Denotes pilot transmission</th>
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<tr>
<td>1. Distress message</td>
<td>a. MAYDAY [MAYDAY, MAYDAY] followed as necessary by: (i) (station addressed) (ii) (aircraft identification) (iii) (nature of distress condition, e.g. FUEL or EMERGENCY DESCENT) (iv) (intentions) (v) (position, level and heading) (vi) (any other useful information).</td>
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<td>2. Acknowledgement of distress message</td>
<td>a. ROGER MAYDAY</td>
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<tr>
<td>ATC acknowledgement of MAYDAY call</td>
<td>b. MAYDAY [(type of emergency)] ACKNOWLEDGED</td>
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<tr>
<td>ATC acknowledgement of MAYDAY on frequency transfer</td>
<td>c. STOP TRANSMITTING MAYDAY</td>
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<tr>
<td>Imposition of radio silence</td>
<td>d. EMERGENCY DESCENT AT (significant point or location) ALL AIRCRAFT BELOW (level) WITHIN (distance) OF (significant point or navigation aid) [LEAVE IMMEDIATELY] [(specific instructions as to direction, heading or track, etc.).]</td>
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<td>Cancellation of distress condition</td>
<td>e. CANCEL DISTRESS (information)</td>
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<td>Termination of distress and radio silence</td>
<td>f. DISTRESS TRAFFIC ENDED</td>
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<td>3. Urgency message</td>
<td>a. PAN PAN [PAN PAN, PAN PAN] followed as necessary by: (i) (station addressed) (ii) (aircraft identification) (iii) (nature of the condition e.g. MEDICAL PRIORITY REQUIRED or WEATHER DEVIATION REQUIRED) (iv) (intentions) (v) (position, level, heading) (vi) (any other useful information).</td>
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<tr>
<td>ATC acknowledgement of PAN call</td>
<td>b. ROGER PAN</td>
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<tr>
<td>ATC acknowledgement of PAN on frequency transfer</td>
<td>c. PAN [(type of emergency)] ACKNOWLEDGED</td>
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If no answer to distress/urgency call/message, use the following appropriate frequencies, broadcasting before changing to the next selected frequency.

- **a)** Any other aeronautical en route frequency.
- **b)** 121.5MHz or 243.0MHz (RT): International and Military emergency.
- **c)** 5696 USB DCSA HFCS distress frequency.
- **d)** 4125, 5215 and 8291 kHz (RT, USB): Australian coastal/ship.
- **e)** 3023.5 and 5680 kHz. World-wide A/G frequencies.
- **f)** 2182 kHz (RT): International small ships. DF available.
2. NOTIFICATION OF EMERGENCY USING DATALINK

2.1 Depending on the nature of the emergency condition experienced, flight crew should notify ATS of the circumstances by the most efficient means (voice or data link).

a) If a CPDLC MAYDAY or PAN message is received by the ground system, the controller will respond with the free text uplink message ROGER MAYDAY (PAN). The controller 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 data link is considered to be the best communications medium for the situation).

b) If the emergency situation no longer exists, the aircraft captain should cancel the ADS emergency mode (if activated).

3. IMPOSITION OF SILENCE

3.1 Only the ACFT in distress or the unit in control of distress communications is permitted to impose silence on any station which interferes with distress communications. The call should be addressed to ALL STATIONS or one station only, depending on circumstances. The call used should be as follows: “STOP TRANSMITTING; MAYDAY”

4. ALERTING SURVEILLANCE UNIT (MILITARY OPS ONLY)

4.1 If in an emergency within coverage of a surveillance unit and unable to make radio contact with any ATS unit and outside civil controlled airspace, the surveillance unit can be alerted as follows:

a) Switch transponder to emergency, squawk mode 3A, Code 7700.

b) Continue attempts to make communications and monitor the appropriate frequencies (see communications failure instructions for appropriate frequencies).

c) Fly applicable pattern shown below

4.2 If adopting this procedure:

a) Fly at best endurance speed.

b) Complete at least two patterns before resuming heading.

c) Make turns as tight as practicable.

d) Attempt to maintain VMC to facilitate interception by a shepherd aircraft.

e) At night or in VMC, turn on navigation and anti-collision lights.

5. COMMUNICATION FAILURE

5.1 In the event of communications failure, MAINTAIN TERRAIN CLEARANCE THROUGHOUT ALL PROCEDURES.
6. INDICATIONS BY AN AIRCRAFT:

6.1 In Flight
a) during the hours of daylight: by rocking the aircraft's wings; and
Note. - This signal should not be expected on the base and final legs of the approach.
b) during the hours of darkness: by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

6.2 On the Ground
a) during the hours of daylight: by waggling the aircraft's ailerons or rudder; and
b) during the hours of darkness: by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

6.3 IF VFR in Class G Airspace
a) Remain IN VMC.
b) Broadcast intentions (assume transmitter is operating and prefix calls with “TRANSMITTING BLIND”).
c) Remain VFR in Class G Airspace and land at the nearest suitable aerodrome.
d) Report arrival to ATS if on SARTIME or reporting schedules. SAR telephone number 1800 815 257.

6.4 If in Controlled/Restricted Airspace or if IFR in any Airspace
a) Squawk 7600.
b) Listen out on ATIS and/or voice modulated NAVAIDS.
c) Transmit Intentions and normal position reports (assume transmitter is operating and prefix calls with “TRANSMITTING BLIND”).

AND

d) If in VMC and certain of maintaining VMC
Stay in VMC and land at the most suitable aerodrome. (Note special procedures if proceeding to a Class D).

OR

If in IMC or uncertain of maintaining VMC

e) if no clearance limit received and acknowledged, proceed in accordance with the latest ATC route clearance acknowledged and climb to planned level.
f) If a clearance limit involving an altitude or route restriction has been received and acknowledged:
   1) Maintain last assigned level, or minimum safe altitude if higher, for three (3) minutes, and/or
   2) hold at nominated location for three (3) minutes, then
   3) proceed in accordance with the latest ATC route clearance acknowledged and climb to planned level.
g) If receiving an ATS surveillance service:
   1) Climb to MSA/LSASLT, and,
   2) if being vectored, maintain last assigned vector for two (2) minutes, then
   3) proceed in accordance with the latest ATC route clearance acknowledged.
h) If holding:
   1) Fly one more complete holding pattern, then
   2) proceed in accordance with the flight plan or the latest ATC clearance acknowledged.

Note 1.- Initial and subsequent actions by the aircraft captain at the time of loss of communications will depend largely on the aircraft captain's knowledge of the destination aids, the air traffic/air space situation and meteorological conditions en route and at the destination. Publishing procedures that cover all radio failure circumstances is not possible. The above procedures ensure that Air Traffic Services and other traffic should be aware of the aircraft captain's most likely actions. Aircraft captains should follow these procedures unless strong reasons dictate otherwise.

Note 2.- In determining the final level to which a aircraft captain will climb after radio failure, ATC will use the level provided on the flight notification, or the last level requested by the aircraft captain and acknowledged by ATC.
7. DESTINATION PROCEDURES

7.1 Track to the destination in accordance with flight plan (amended by the latest ATC clearance acknowledged, if applicable).

7.2 Commence descent in accordance with standard operating procedures or flight plan.

7.3 Descend to the initial approach altitude for the most suitable approach aid in accordance with the published procedures.

7.4 Carry out the approach to the prescribed circling minima.

Note 1.- The most suitable approach aid is normally the destination primary tracking aid; however, when the primary tracking aid has no approach procedure or the pilot is in receipt of ATIS or directed information (e.g. voice modulated navigation aid) that another destination aid is required for the approach, that aid may be used.

Note 2.- If an approach time has been given by ATC and acknowledged, adhere to this time.

Note 3.- When within 25NM of the destination, the pilot may track direct to the most suitable approach aid.

Note 4.- At Sydney during Independent Visual Approaches, refer to Sydney INTL entry in ERSA FAC section.

8. ACTIONS AT MINIMA

8.1 If visual at the minima at an uncontrolled aerodrome, continue to land provided that a safe landing can be accomplished. If visual at the minima at a controlled aerodrome continue to land provided that a clearance to land is received via a voice modulated NAVAID and/or light signal from the Tower.

8.2 If not visual at the minima, depart for a suitable alternate aerodrome.

8.3 If insufficient fuel is carried to divert to a suitable alternate, the pilot may hold or carry out additional approaches until visual.

8.4 Class D Communications failure procedures are shown at each Aerodrome entry in the Facilities section.

<table>
<thead>
<tr>
<th>LIGHT SIGNAL</th>
<th>Meaning to ACFT in Flight</th>
<th>Meaning to ACFT in Airfield</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEADY GREEN</td>
<td>Authorised to land if pilot satisfied no collision risk exists</td>
<td>Authorised to take-off if pilot satisfied no collision risk exists</td>
</tr>
<tr>
<td>STEADY RED</td>
<td>Give way to other aircraft and continue circling</td>
<td>Stop</td>
</tr>
<tr>
<td>GREEN FLASHES</td>
<td>Return for landing</td>
<td>Authorised to taxi if pilot satisfied no collision risk exists</td>
</tr>
<tr>
<td>RED FLASHES</td>
<td>Airfield unsafe - do not land</td>
<td>Taxi clear of landing area in use</td>
</tr>
<tr>
<td>WHITE FLASHES</td>
<td>No significance</td>
<td>Return to starting point on airfield</td>
</tr>
</tbody>
</table>
9. SPEECHLESS RADAR APPROACH PROCEDURES.

<table>
<thead>
<tr>
<th>SITUATION</th>
<th>TRANSMISSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot request for Speechless Radar approach when microphones are unserviceable (carrier wave only available).</td>
<td>Pilot transmits four (4) separate and distinct unmodulated transmissions of one second duration</td>
</tr>
<tr>
<td>Pilot responses to subsequent control questions:</td>
<td>Pilot transmits four (4) separate and distinct unmodulated transmissions of one second duration</td>
</tr>
<tr>
<td>A. affirmative or acknowledgment,</td>
<td>A. one distinct transmission</td>
</tr>
<tr>
<td>B. negative,</td>
<td>B. two separate and distinct transmissions</td>
</tr>
<tr>
<td>C. say again</td>
<td>C. three separate and distinct transmissions</td>
</tr>
<tr>
<td>Pilot indication of a further and pertinent unserviceability or an emergency</td>
<td>Five (5) separate and distinct transmissions</td>
</tr>
<tr>
<td>Pilot indication of abandoning the aircraft</td>
<td>A single continuous transmission as long as practicable. Where possible the transmitter key is to be locked on.</td>
</tr>
<tr>
<td>Controller requires pilot to indicate when an instruction has been completed</td>
<td>WHEN (condition or instruction is completed) MAKE A TWO (2) SECOND TRANSMISSION</td>
</tr>
</tbody>
</table>

10. COMMUNICATION AND NAVAID FAILURE

10.1 In the event of complete failure of communications and NAVAIDs, MAINTAIN TERRAIN CLEARANCE and proceed as follows:

a) If VFR in Class G Airspace
   1) Remain VMC.
   2) Broadcast intentions (assume transmitter is operating and prefix calls with "TRANSMITTING BLIND").
   3) Remain VFR in Class G Airspace and land at the nearest suitable aerodrome.
   4) Report arrival to ATS if on SARTIME or reporting schedules.

b) If in Controlled / Restricted Airspace or if IFR in any Airspace
   1) Squawk 7600.
   2) Listen out on ATIS and/or voice modulated NAVAIDS.
   3) Transmit intentions and normal position reports (assume transmitter is operating and prefix calls with "TRANSMITTING BLIND").
   4) If practicable leave/avoid controlled/restricted airspace and areas of dense traffic.
   5) As soon as possible establish visual navigation.
   6) Land at the most suitable aerodrome. (note special procedures if proceeding to a Class D - see above).
   7) Report arrival to ATS.

11. EMERGENCY CHANGE OF LEVEL IN CONTROLLED AIRSPACE

11.1 When an aircraft in controlled airspace is required to make a rapid change of flight level or altitude because of technical trouble, severe weather conditions, or other reasons, the change will be made as follows using urgency message format, stating level changes involved and diversions, if applicable:

a) Squawk SSR Code 7700.

b) Transmit: PANPAN, PANPAN, PANPAN, then:
   1) agency being called;
   2) aircraft identification;
   3) nature of urgency problem;
   4) intention of person in command;
   5) present position, flight level or altitude and heading; and
   6) any other useful information.
12. PRE/POST IMPACT ACTIONS

12.1 PRE IMPACT
12.1.1 Activate Crew Impact Instruction. If no prescribed drill, check:
   a) preparation of aircraft for impact;
   b) positioning of personnel;
   c) ACTIVATE ELT (See separate section following);
   d) crew procedure for directing evacuation of aircraft in orderly manner; and
   e) ready availability to crew members of charts showing emergency and distress communication facilities,
      i.e. location, callsign, frequency of:
      1) aeronautical stations
      2) DF stations
      3) coast radio stations guarding international distress frequencies

12.1.2 Instruct passengers that they will be required to:
   a) recognise the absolute authority of the aircraft captain;
   b) apply safety apparatus as instructed;
   c) prepare for impact shock as instructed;
   d) don protective clothing;
   e) make an orderly exit from the aircraft; and
   f) remain near the aircraft after the evacuation (at sea, secure life rafts and set sea anchor).

12.1.3 Immediately prior to impact, set radio apparatus for continuous operation unless the additional risk of fire
   is too great.

12.2 POST IMPACT
12.2.1 Activate post impact instructions. If no prescribed drill, check the following:
   a) account for all personnel;
   b) account for all distress facilities;
   c) tend to the injured;
   d) try to attract attention (radio, flares, smoke, mirrors, etc.);
   e) display appropriate visual rescue signals;
   f) keep personnel together;
   g) utilise passenger resources, i.e. skill, knowledge, effort, etc.;
   h) delegate duties as equitably as possible;
   i) conserve resources, i.e. water, food, manpower, facilities;
   j) maintain passenger morale; and
   k) ensure ELT is activated.
   l) collect all food/water and useful equipment from the aircraft.

13. INADVERTENT ACTIVATION OF ELT
13.1 If the ELT has inadvertently been activated for more than 10 SEC contact Search and Rescue on
   1800 815 257.

14. ACTIVATION OF ELT
14.1 An Emergency Locator Transmitter (ELT) is a valuable search aid if an aircraft is forced down. However to
   obtain maximum benefit from the beacon and to assist search aircraft, it is necessary to observe a few guidelines
   for activation of the ELT.

14.2 If in water and the beacon is buoyant, the ELT should be activated in the water and allowed to float to the
   end of the lanyard with the aerial vertical. Do not hoist the ELT up a mast. The performance of an ELT may be
   degraded if it is raised above the water surface.

14.3 Lives may depend on the correct use of your ELT The manufacturer’s instructions should be studied
   thoroughly, and kept in the aircraft emergency kit.

14.4 If you are forced down, the following procedures are recommended:
   a) ACTIVATE ELT IMMEDIATELY;
   b) Where the ELT is permanently installed in the aircraft, activate the beacon in situ;
   c) Where the ELT is not permanently installed in the aircraft, select an elevated site clear of trees, boulders
      etc. and reasonably close to the aircraft;
   d) Place the beacon on the ground on an earth mat. If an earth mat is not available, place the ELT on the
      wing of the aircraft or another metal reflective surface;
   e) Secure the ELT with rocks, sticks, tape etc. so that the aerial will remain vertical;
   f) Avoid anything touching the antennae as this will degrade ELT performance;
   g) Remain clear of the ELT. Obstacles near the ELT will distort the radiation pattern;
g) An ELT which is damaged or under wreckage may still transmit some signal. Always activate the ELT.

h) **DO NOT SWITCH OFF THE ELT UNLESS RESCUE IS NO LONGER REQUIRED.** and

i) To avoid confusing COSPAS/SARSAT and direction finding equipment, avoid activating two or more ELTs within 1NM of each other.

*Note.*—In many cases, using an earth mat will increase the effective range of a portable ELT by 50%. A simple and effective earth mat can be made by using household aluminium foil to make a 120cm square, folded, and taped to the unit. To use the earth mat, unfold and place it flat on the ground, securing edges with dirt or rocks. **Activate the ELT and place it on the mat.**

15. **EMERGENCY LOCATOR TRANSMITTER (ELT) CHARACTERISTICS**

15.1 The following characteristics pertain to ELTs:

a) Frequency 406 MHz (digital) and 121.5 MHz (analog) and, in some instances, 243 MHz.

b) 121.5 and 243 MHz modulation.

1) Continuous carrier continuously modulated at the rate of three swept tones per second, no pauses;

2) Some older marine beacons transmit the carrier on for one second then off for one second, modulation three swept tones per second. This results in the tones being received in even spaced groups of three with a distinct one-second pause between groups; and

3) Some foreign marine beacons vary from the above; e.g., there is a European beacon pulsing in groups of two tones.
15.2 Reports.  
a) Report all beacons received;  
b) State characteristics;  
c) When giving signal heard/strength fade positions, include ACFT level and squelch disabled (MAX hash) information. This is necessary for plotting;  
d) Advise if signal commenced/ended gradually or abruptly; and  
e) Do not alter squelch setting unless requested.  

Note.- Rescue Co-ordination Centres can demonstrate the above signals on request.

16. AIR SEARCH PATTERNS

16.1 GENERAL - This section is included to assist aircraft captains of aircraft engaged in air search operations. The information is necessarily brief and the SAR Centre recommends that a full preflight briefing be obtained whenever time and/or circumstances permit.

16.2 VISUAL SEARCH - Visual search patterns are divided into six main groups, which are described briefly below. In the diagrams “S” represents track spacing, i.e, the distance in nautical miles between successive tracks flown by the search aircraft and will be specified by the RCC as part of the briefing or by the assessed visual range of the day.

16.3 Trackline Search - (See DIAGRAM 1)  
1) A trackline pattern is most often used in an initial reaction. It is very suitable for use by an aircraft available at, or near, the time of a reported distress. The assumptions made are that survivors will be found on, or close to, the planned route of the missing craft, that the distressed craft is easily discernible, or that survivors will be capable of signalling should an aircraft be seen or heard. It provides a rapid and reasonably thorough coverage of a missing craft’s planned route, and the immediately adjacent area.

![SEARCH OBJECT'S TRACK LINE](image1)

![SEARCH OBJECT'S TRACK LINE](image2)

**DIAGRAM 1 - TRACKLINE PATTERN**
16.4 Parallel Track Search - (See DIAGRAM 2)
16.4.1 Search legs are aligned parallel to the major axis of the search area. The pattern is best used in rectangular or square areas. It is a very suitable pattern for a search conducted over water.

16.5 Creeping Line Search - (See DIAGRAM 3)
16.5.1 The creeping line pattern differs from the parallel track pattern in that the search legs are parallel to the minor axis.
16.6 Square Search - (See DIAGRAM 4)

16.6.1 The aircraft is flown to make good the tracks shown in the diagram. Turns may be to the left, or right, depending upon the observer positions. The first two tracks are flown for a distance equal to “S”, the third and fourth for a distance equal to twice “S”, the fifth and sixth for 3 x S, and so on.

16.6.2 The final track to the start point should be the same as the initial search track. Observations should start at a distance of “S” before reaching the most probable position to avoid leaving an unscanned portion near the start point. Observers should be briefed to pay particular attention to the scanning of the areas outwards of each turn to avoid leaving unscanned areas during the turns.

16.6.3 A square search should be planned so that whenever possible the approach to the most probable position (MPP), and the first leg, is made into wind
16.7 Sector Search - (See DIAGRAM 5)

16.7.1 This pattern is employed when the position of distress is known within close limits and the area to be searched is not extensive. It is simple to execute and provides greater navigational accuracy than a square search. The track spacing reduces towards the centre, resulting in a greater probability of detection in the area where the target is most likely to be located. Radius of search, angular displacement and mean track spacing (MTS) are specified with the briefing.

![Diagram 5 - Sector Search](image-url)

**DIAGRAM 5 - SECTOR SEARCH**
16.8 Contour Search - (See DIAGRAM 6 AND DIAGRAM 7)

16.8.1 This procedure requires an aircraft to be flown at selected contour levels, adjacent to the side of the mountain, starting at the highest selective level.
16.9 Electronic Search - (See DIAGRAM 8)

16.9.1 Electronic searching is used to search for survivors who may have activated a VHF (or VHF/UHF) locator transmitter. An aircraft equipped with a VHF receiver may locate a survival transmitter using procedures which are based on the assumption that an undistorted radiation pattern is approximately circular. A search meter may be used to assist a search operation and is basically a signal strength meter which can be plugged into an aircraft VHF receiver.

16.9.2 The following procedures should be used during initial aural search without a searchmeter:

a) Set the aircraft receiver to its most sensitive condition - squelch disabled;

b) Note and report the position at which the signal is first heard (SH) and fades (SF) and do not change altitude or the condition of the radio;

c) After the signal has faded select a heading estimated to take the aircraft through the radiation pattern, but ignore any beacon signals received during the turn; and

d) Continue chording the radiation pattern until it is possible to establish a cocked hat for the probable position of the beacon, (DIAGRAM 8) ELECTRONIC SEARCH (See DIAGRAM 8)
16.10 Carry out a final homing (DIAGRAM 9)

16.10.1 The final homing procedures without a searchmeter are:

a) Track towards the estimated centre of the radiation pattern. Set the aircraft receiver to its most sensitive condition and descend, if possible, to be between 1000 and 2000FT above ground level in the estimated centre. When the signal from the beacon is very strong and very clear, check on the adjacent frequencies of 121.45 or 121.55 MHz;

b) Traverse the area bounded by the cocked hat, listening for the beacon on the adjacent frequency;

c) On hearing the signal on the adjacent frequency, select and fly a heading which results in a stronger signal. As the signal increases in strength, check further off frequency and descend as required. At this stage it is most important that each track should be a straight line. Helicopter aircraft captains should avoid any tendency to orbit a suspected site;

d) The accuracy of the homing will usually depend upon how far off frequency the signal can be heard. Observers will find that a signal being received on, for example, 121.3 or 121.7 MHz (over land) will rise to a sharp peak only as the search aircraft passes over the beacon site at 500FT above ground level. Where the terrain is heavily timbered such as rain forest, helicopter aircraft captains should descend to lower levels and tune further off frequency to achieve greater accuracy. Information gained during straight and level flight only is most important and is the only data that should be used; and

e) Where the signal is irregular it is usually because the beacon is located amongst obstacles such as trees, rocks, wreckage etc. The resultant radiation pattern is no longer circular and the signal heard/signal fade principles no longer apply.

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[Diagram 9 - Final Homing]
16.10.2 The following procedures should be used during aural search with a searchmeter:

a) Set the aircraft receiver to its most sensitive condition-squelch disabled.
b) Plug the searchmeter into the SAR outlet;
c) Fly as high as practicable for aircraft type and weather conditions;
d) On receiving the emergency signal, advise the Rescue Co-ordination Centre (RCC) of position, heading and indicated airspeed.
e) The radiation pattern from a beacon can either be approximately circular (regular) or lobular (distorted). Where the signal received from the beacon is constant the following procedures should be used:

1) Fly a heading which will result in an increase in the reading on the search meter. Maintain this heading at a constant altitude and airspeed, (DIAGRAM 10);

2) Note the time and aircraft position at each half division on the searchmeter;
3) Continue Point 1) until readings on the searchmeter decrease. Select two positions of equal reading and return to the mid position;
4) On arriving at the mid position, turn 90° and note the readings on the searchmeter. If the meter readings decrease turn 180° and proceed to determine two further positions of equal signal strength then return to the mid position;
5) When it becomes apparent that the beacon is close, descend, if possible, to an altitude giving approximately 2000FT clearance above terrain within approximately 10 NM of the search aircraft;
6) By continuing the boxing-in technique it should be possible to estimate the position of the beacon to within an area of 24 square miles; and

![Diagram 10 - Searchmeter Procedures](image-url)
7) The beacon site may be located with greater accuracy by detuning the VHF receiver to 121.45 or 121.4 whilst close to the beacon and noting the position on the ground over which there is maximum searchmeter deflection. The receiver may also be detuned to 121.55 or 121.6. With the search aircraft 500FT above ground level and the receiver tuned to 121.3 or 121.7, the signal will only be heard within 200-300 metres of the beacon site, (DIAGRAM 11).

Note 1.- Where the signal from the beacon is broken and distorted, it is probably because the beacon is amongst obstacles such as wreckage, trees, rocks, etc. which cause the signal to be absorbed or reflected, forming lobes.

Note 1.- With the search aircraft flying along the track indicated in DIAGRAM 12, the searchmeter needle would rise and fall, corresponding with the passage of the aircraft through successive lobes where the signal could be heard. In between the lobes there would be receiver noise and no signal. Provided the aircraft is several thousand feet above terrain, it may be assumed that the signal is being received direct from the beacon rather than by reflection from surrounding terrain. Thus by following a lobe the search aircraft will be guided direct to the beacon, (DIAGRAM 13)
f) When the ratio between the beacon signal and the background hash begins to favour the latter, alter heading until only a clear signal can be heard. The signal from the beacon should be continuous with clarity improving as the search aircraft approaches the beacon.

g) Once a heading has been established, note the searchmeter readings. The readings will increase as the aircraft approaches the beacon site, reaching a maximum when about to overfly. The position of the beacon may be located with greater accuracy by progressively detuning the VHF receiver to 121.3 or 121.7MHz.

16.11 Overwater Searches

16.11.1 The principles of an overwater search using a searchmeter are similar to those used for a regular pattern. However, the following differences should be noted:

a) The radiation pattern from a beacon transmitting overwater will generally be much larger than if the beacon was on land. This could be up to 90NM to an aircraft flying at 10000FT, and 180NM at 30000FT.

b) Some older marine beacons have an interrupted carrier.

c) Where a search aircraft is operating at an altitude of 10000FT or less and has a searchmeter reading of more than four, the aircraft captain should check on the adjacent frequency of 121.45 or 121.55. If the signal can be heard on that frequency, albeit faintly, the search aircraft will be within 15 NM of the beacon.

16.12 Mountainous Terrain

16.12.1 A beacon which is activated in mountainous terrain may be likened to an electric light bulb illuminated in a model of the same area. The aircraft captain of an aircraft flying in areas where the light is reflected would be able to receive signals which are reflected. From positions where the light could be seen direct, signals would be received directly from the beacon or, conversely, where there were no reflections and the light could not be seen, there would be no signals. Signals radiating from a beacon in rough country are absorbed, reflected and reinforced to form isolated patches of strong signal which tend to hinder rather than assist the location of the beacon.

16.13 To avoid possible confusion from reflected signals, it is essential that the search aircraft should conduct a homing from an altitude above all terrain in the general area. This does not apply to search aircraft flying in valleys or behind mountains in order to ascertain where the beacon signal cannot be heard.
17. SEARCH AND RESCUE SIGNALS

17.1 Third Party Emergency Reporting
   a) Remain in the vicinity or as directed otherwise and keep the aircraft, surface craft or distressed personnel in sight.
   b) Turn on automatic emergency radio equipment, unless:
      1) accurate position fixing is possible, and
      2) two way communications exist with Air Traffic Services (ATS).
   c) Report the following information as applicable to the responsible ATS:
      1) TYPE of aircraft or surface craft;
      2) LOCATION of distress incident in latitude and longitude, geographical point or bearing and distance from some fixed point; and
      3) DETAILS regarding the number of personnel concerned, whether known to be afloat and the apparent physical condition of survivors.
   d) Alert coast and ship stations by transmitting on international distress frequencies 2182, 4125, 6215 or 8291 kHz.
   e) Transmit to any frequency which will enable other craft to home to the distress location.
   f) Call to surface craft to render assistance by use of manoeuvres set out below, or otherwise by communication on 2182, 4125 kHz or 156.8MHz (VHF channel 16).
   g) Attempt to establish communication with the aircraft in distress when requested by Air Traffic Control.
   h) Before departing from the area, turn off automatic emergency radio equipment.

17.2 Assistance of Surface Craft
   17.2.1 To direct a surface craft to distress incident:
      a) circle the vessel at least once;
      b) fly across the bow of the vessel at low level while rocking the wings, opening and closing the throttles or changing propeller pitch if possible; and
      c) head in the direction required.
   Note. - Visual signals by the surface craft:
   ACKNOWLEDGE - red and white vertical striped flag or flashing of a series of 'T's by light.
   UNABLE TO COMPLY - square blue and white checkered flag signal or the flashing of a series of 'N's by light.

17.2.2 When assistance is no longer required fly across the stern of the vessel at low level, rocking the wings, opening and closing the throttles or changing propeller pitch if possible.

17.3 Emergency Management Australia (EMA)
   17.3.1 During relief operations mounted in time of floods, bushfires or other disasters, ground/air signals may be used to indicate requirements.
   17.3.2 Aircraft engaged by the relevant State Emergency Service to survey the area, will be briefed to watch for emergency signals. Aircraft captains of other aircraft, not involved in the relief operation, should report sightings to the nearest ATS unit.
   17.3.3 Aircraft captains need to be aware of the importance of indicating the actual signal seen (e.g., Civil Emergency Signal No 3), as an attempt to interpret, the signal may be confusing to those receiving the message.

17.4 Ground/Air Emergency Signals in Use For Australian Civil Emergencies

<table>
<thead>
<tr>
<th>No</th>
<th>Message</th>
<th>Code Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Require Footing</td>
<td>FF</td>
</tr>
<tr>
<td>2</td>
<td>Require Evacuation</td>
<td>III</td>
</tr>
<tr>
<td>3</td>
<td>Power Failure</td>
<td>VI</td>
</tr>
</tbody>
</table>
Note 1.- Aldis lamp signals
Red flashes indicate not understood
Green flashes indicate message understood.

Note 2.- Air Ground Signals
The following signals by aircraft mean that the signals have been understood
a) During the hours of daylight - rocking the aircraft’s wings
b) During the hours of darkness - by flashing the aircraft’s landing or navigation lights on or off twice.

Lack of the above signal indicates that the message has not been understood.

Note 3.- The “GROUND - AIR VISUAL SIGNAL CODE FOR USE BY SURVIVORS” conforms to ICAO and NATO standards.

17.5 Visual Distress Signals - Small Vessels
17.5.1 Either of the two signals shown below may be displayed by small vessels. The signals are for use ONLY in the Australian Search and Rescue Area. The signal sheet is rectangular, coloured international orange, with black symbols.
18. SURVIVAL

18.1 INTRODUCTION

18.1.1 Alone and injured, people have survived in almost impossible circumstances. The determination to beat the situation and the will to survive are the survivor's strongest weapons. Military SAR will not give up searching for downed aircrew.

18.1.2 The peacetime priorities of survival are listed below:

a) **PROTECTION**: The elements of protection are:
   1) First Aid - breathing must be restarted within 3 minutes;
   2) Clothing;
   3) Shelter - in harsh weather a shelter will be required in less than 3 hours; and
   4) Fire.

b) **LOCATION**: Most survivors are located within 3 days.

c) **WATER**: In Australia's arid centre water must be found within 3 days.

d) **FOOD**: Survival without food for at least 30 days is possible. Therefore, food is the lowest priority. Food information is contained in the JUNGLE SURVIVAL section.

18.1.3 Basic survival rules are outlined in the following sections:

a) Location;

b) First Aid;

c) Desert Survival;

b) Sea Survival;

e) Jungle Survival; and

g) Cold Weather Survival.

18.1.4 Rapidly adapt to the new situation - **DO NOT WASTE TIME**. Even if SAR is expected quickly develop a plan of action that will assist SAR and improve living conditions. Start working to beat the situation as soon as possible.

18.2 LOCATION

18.2.1 **Safety Equipment** - When moving always carry location aids and protect them from deterioration. Do not fire pyrotechnics until SAR is sighted. Consider the best use of aids:

a) survival radios/beacons,

b) signal mirror,

c) day/night flares,

d) rockets,

e) strobe,

f) signal panels, and

g) sea dye marker.

18.2.2 **Improvised Aids**.

a) Improve rescue chances by constructing fires and ground signals.

b) **Signal Fires**:
   1) Initially use campfire.
   2) 3 fires 30M apart in line or triangle.
   3) Burn greenery or wreckage to produce smoke during the day.

**Ground Signals** - Ground signals should be 1 M wide and 6 M long and must contrast with environment by using angles, colour, reflective material and shadow.

---

122
18.3 First Aid

FIRST AID KITS IN AIRCRAFT: LOW CAPACITY AIRCRAFT LESS THAN 30 PAX

### RECOMMENDED CONTENTS

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Item</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>First Aid Manual</td>
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<td>4&quot; Scissors</td>
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</tbody>
</table>

18.3.1 **FIRST AID - ADULTS**

a) Reassure the casualty.
b) Always monitor ABC/ level of consciousness in every case.
c) Give Oxygen.
d) Aviation Rescue Fire Fighting provide: First Aid response, Oxygen & Defibrillation.

18.3.2 **The Chain of Survival**

a) Early access to emergency services
b) Early CPR to buy time for defibrillation
c) Early Defibrillation to revert heart back to a normal rhythm
d) Early advanced life support for drug administration and advanced airway management
18.3.3 DRABCD:

Danger
Ensure the area is safe for yourself, others and the patient.

Response
Check for response

Send for Help
Dial Triple Zero (000) immediately

Airway
Check and clear airway

Breathing
Look, listen and feel for breathing

CPR
30 compressions to 2 breaths at 100 compressions/min

Defibrillation
If Automated External Defibrillator (AED) is available, follow voice prompts. Monitor pulse, respirations and maintain ABC

18.3.4 Head Injury
a) Lay with injured side down, if possible
b) Do not give drugs, water or food

18.3.5 Stop Bleeding
a) Apply direct pressure to wound with gloved hands/bandages;
b) If direct pressure insufficient, may use a broad bandage to apply constrictive pressure at top of efflected limb;
c) Do not remove embedded objects. Use a ring pad around protrusions;
d) Elevate the limb - unless broken;
e) Tourniquets not used.

18.3.6 Chest Injury
a) Cover sucking chest wounds with a non porous bandage sealed on three sides (acts as one way valve).
If casualty becomes worse, remove the non porous bandage;
b) Immobilise unstable chest by circumferential bandaging - firm not tight;
c) Posture casualty: Half sitting with injured side down, if possible;
d) Do not give pain killers

18.3.7 Wounds
a) Use clean/sterile dressings
b) Do not remove embedded objects, use a ring pad around protrusions
c) Do not touch or replace internal organs. Cover with a sterile, wet pad (or gladwrap), do not apply pressure.

18.3.8 Fractures
Support and Immobilise
a) Arms: Splint and strap to body;
b) Legs: Splint and strap together.

18.3.9 Burns
Cool and Cover
a) Cool with water - 20 minutes
b) Do not remove material from wound
c) Cover with wet, sterile / non stick dressing (or gladwrap)

18.3.10 Shock
Casualty looks pale, skin feels cold and clammy
a) Lay conscious casualty on back, elevate legs
b) Maintain normal body temperature
c) Rest, reassure, no alcohol or drugs

18.3.11 Minor Wounds
Treat all minor wounds including scratches and cuts (prevent infection)

18.3.12 Dehydration
Dark / pungent urine requires an increase in fluid intake
a) Rest in shade and cool
b) Drink fluids (water is best) - not alcohol/caffeine
18.4 ACUTE CARE
18.4.1 Snake Bite:
Victim must remain calm. Use Pressure Immobilisation Technique.
   a) Firmly bandage whole limb. Start atop bite site then bandage limb upwards;
   b) Bandage firm but not so tight as to cut off circulation;
   c) Do not allow casualty to move - must remain still;
   d) Splint the limb, immobilising as you would a fracture;
   e) Monitor ABC / level of consciousness & circulation to effected limb.
18.4.2 Carbon Monoxide (CO) Poisoning:
   a) Remove casualty to fresh air - Casualties skin colour may sometimes look normal;
   b) If available, give concentrated oxygen;
   c) Symptoms may include: Headache, nausea, drowsiness, confusion.
   d) CO is a colourless, odourless, tasteless gas.

18.5 DESERT SURVIVAL
18.5.1 Immediate Action:
   a) Activate ELT immediately; and
   b) Rest in solid shade 0.3M above ground. (Do not use aircraft interior, if no shade is available then erect a shelter).
18.5.2 Desert Survival Rules:
   Note.- With temperatures above 30° C most of the body’s water loss is through sweating. The body sweats to cool itself. Survivors must reduce body heat gains to minimise sweating and then procure water at night. Night temperatures may be cold.
   a) Rest in shade 0.3M above or below ground. Avoid gaining heat from ground conduction or hot air layer above ground;
   b) Do essential work when sun down and temperature has dropped to about 20° C;
   c) Stay fully clothed. A single loose layer of clothing minimises heat gains and maximises sweat cooling;
   d) Ration water to stay hydrated. Check colour of urine. Dehydrating will impair performance and does not decrease water consumption;
   e) Eat only carbohydrates and only if water is available. Avoid greasy or fatty foods;
   f) Do not travel unless sure of water. Walking in sun instead of resting in shade will at least halve survival time.
18.5.3 Water Procurement:
Sterilise all water sources except plastic bag procurement methods. Instructions for setting up water procurement devices are contained with water transpirator bags.
   a) TRANSPIRATOR BAGS: Best water procurement device, set up immediately;
   b) DESERT STILL: Set up at night;
   c) DEW/RAIN;
   d) PLANTS: Unreliable source, look for damp patches on trees and insect life; and
   e) GROUND WATER: Some indicators are terrain, birdlife, vegetation, animal tracks and insects. Water may exist in rock pools in hills as well as underground, in low lying creek areas.

18.6 SEA SURVIVAL
18.6.1 Immediate Action:
   a) Secure and deploy raft;
   b) Activate ELT immediately;
   c) Gather useful equipment and board raft (dry if possible);
   d) Roll call - locate missing persons;
   e) Cut adrift, tie rafts together on 8 M line and secure one man to raft.
   f) Check raft, adjust sea anchor length to half distance between waves, and in cold weather inflate floor and canopy;
   g) Retrieve, secure (to prevent loss if capsized) and inventory equipment;
   h) Develop a plan of action
   i) Elect a leader, allocate duties.
   j) Allocation Of Duties - A fully loaded liferaft is cramped and uncomfortable. Rotate duties, exercise, keep occupied and work as a team to minimise discomfort. Allocation of duties should include, lookouts with location aids, raft maintenance, maintaining water devices and food procurement. Plan pyrotechnic operations to avoid damaging raft.
   k) Plan pyrotechnic operations to avoid damaging raft.
18.6.2 Essential Rules For Sea Survival - If Short Of Water
a) Ration water to stay hydrated. Check colour of urine, dehydration impairs performance and does not decrease water consumption. Hold reliable water sources in reserve;
b) In hot areas wear clothes dampened during day and remain in shade. This will halve water loss by minimising sweating. Protect eyes and skin against sun. Do not exit raft to swim;
c) Fish should not be eaten if short of water, sun dry until rain provides sufficient water. Fish that have an unusual shape, features or skin instead of scales should not be eaten;
d) Avoid seasickness. Use seasick tablets, seasickness will wear off.
e) Do not drink seawater, urine or the blood of sea birds.
18.6.3 Keep Raft Dry - Avoid immersion, foot and raft sores by regularly changing position.
18.6.4 Discourage Predators - Do not trail attractive items. Discard waste well away from raft at night.
18.6.5 Travel - A small amount of control is possible by adjusting raft for wind or currents. Deploy sea anchor to travel with the current or retrieve it to travel with the wind.

18.7 JUNGLE SURVIVAL
18.7.1 Immediate Action
a) Orientate and rendezvous with crew. (Stay fully clothed when moving in jungle);
b) If wreckage is hidden, move to nearby clearing to assist SAR; and
c) activate ELT immediately
18.7.2 Essential Rules For Jungle Survival
a) Protection, water and food will be readily available in the jungle but location by SAR will be difficult.
b) Set up location aids. Select sites to give location aids best possible ranges. Build fires with smoke to penetrate canopy (refer to Improvised Aids in LOCATION section);
c) Sterilise water and animal food. Boil water for 5 minutes or use sterilising tablets. Discard animal food that shows any sign of disease. Always cook animal food to kill parasites
d) If food is not recognised as safe, apply edibility test:
  1) Discard stinging plants, fungi, plants with milky sap or with the smell of almonds or peaches;
  2) Discard food that irritates sensitive skin areas such as inside of elbow after 5mins;
  3) Chew a teaspoon quantity and spit out, discard if reaction occurs in 5 minutes;
  4) Eat a teaspoon quantity and discard if reaction occurs in 4 hours; and
  5) Eat two teaspoons quantities—plant is safe if no reaction occurs in 4 hours.
e) Do not travel unless habitation seen nearby or search scaled down. Travel rate can be as slow as 500M/HR. Creeks and ridgelines will give fastest travel. Leave messages at crashsite and camp and blaze trail if travelling.
18.7.3 Shelters
a) A shelter will be required in rain or if overnighting.
b) Two taut separated layers of parachute or natural thatching at 60° will provide a waterproof shelter.
c) A single taut layer of parachute at 45° will provide a shower proof shelter.
d) Keep off the ground to avoid insects and parasites.

18.8 COLD WEATHER SURVIVAL
18.8.1 Immediate Action
a) Adjust clothing—protect hands and head.
b) Shelter from high winds. (Aircraft interior will provide wind proof shelter but little thermal protection).
18.8.2 Essential Rules For Cold Weather Survival
a) A drop in body core temperature will mentally effect the survivor, impairing work. The onset is difficult to detect and shivering should be taken as the first warning that heat losses must be minimised. Dressed only in flying clothing, survival chances are good, if a thermal windproof shelter is constructed quickly.
b) Keep clothing dry. Heat loss from wet clothing is 20 times greater than dry.
c) Remove clothing before commencing work to avoid sweating;
  1) Do not let snow melt on clothing.
  2) Keep feet dry by preventing snow entering boots.
  3) Loosen clothing to trap air.
  4) Use a windproof layer to stop wind chill.
d) Construct a shelter. If rescue is delayed then the windproof shelter used in the immediate action must be improved with insulation to provide thermal protection.
   1) 25 CM of snow will provide good insulation.
   2) Rafts, sound proofing or branches will provide insulation from ground.
   3) A one man snow cave can be built in one hour.
   4) In bad weather without a windbreaker an enclosed shelter is more useful than a fire.

e) Maintain location aids.
   1) Keep battery powered equipment warm.
   2) The insulation of a snow shelter will prevent survivors hearing SAR aircraft. Windproof ground
      signals should be constructed and kept free of snow.

f) Do not travel unless habitation seen nearby or search scaled down. Travel is strenuous and as slow
   as 4KM/day. Crevasses and avalanches are hazards in ice and mountainous country.

18.8.3 Medical Hazards - When outdoors, work in pairs. Observe partner to detect onset of cold injuries.

a) Hypothermia. (Lowering of body core temperature). Hypothermia can occur in above zero temperatures.
   The symptoms are incoherence, slowing down, stumbling and weakness. These symptoms may be
   mistaken for fatigue. To treat hypothermia protect casualty from wind change wet clothing for dry and use
   body warmth and insulation to warm.

b) Frostbite. The symptoms are tingling numbing sensation with waxy white appearance. Gently rewarm
   areas using body heat if nothing else is available. If deep frostbite has occurred leave frozen until
   rescued.

c) Carbon Monoxide Poisoning. Ventilate shelters where a stove is used with two
   6 CM holes in door and roof. Do not light fires inside enclosed shelters.

d) Snow Blindness. Prevent too much light entering eyes by using sunglasses or eyeshields. Keep eyes
   covered to recover from snow blindness.

e) Dehydration. Cold will decrease thirst sensation. Check frequency and colour of urine to avoid
   unintentional dehydration. To maintain body core temperature drink warm water.

18.8.4 Shelters - The Lean-to with fire and reflector will provide good protection in wooded temperate
   conditions. An improvised igloo can be made by covering branches, rafts etc., with a parachute and covering with
   25 CM of snow, letting set and then removing the core. The A-Frame must be modified with 25 CM of snow cover to
   provide thermal protection. The quickest shelter to build without a shovel is the snow cave. Probe before building to
   check snow depth. Smooth walls to prevent dripping and construct a cold sump. Stay dry when digging. A snow
   trench may be constructed with a saw in hard snow.

19. INTERCEPTION OF CIVIL AIRCRAFT

19.1 ACTION BY INTERCEPTED AIRCRAFT

19.1.1 The following procedures and visual signals apply over the territory and territorial waters of Australia in
   the event of interception of an aircraft.

19.1.2 An aircraft which is intercepted by another aircraft must immediately:
   a) follow the instructions given by the intercepting aircraft, interpreting and responding to visual signals in
      accordance with the table at Section 19.5 - Visual Signals for Use in the Event of Interception;
   b) notify, if possible, the appropriate ATS unit;
   c) attempt to establish radio communication with the intercepting aircraft, or with the appropriate intercept
      control unit, by making a general call on the emergency VHF frequency 121.5MHz and repeating this call
      on the emergency UHF frequency 243.0MHz, if practicable, giving the identity and position of the aircraft
      and nature of the flight;
   d) if equipped with SSR transponder, select code 7700, unless otherwise instructed by the appropriate ATS
      unit; and
   e) if equipped with ADS-B or ADS-C, select the appropriate emergency functionality, if available, unless
      otherwise instructed by the appropriate ATS unit.

19.2 RADIO COMMUNICATIONS DURING INTERCEPTION

19.2.1 If radio contact is established during interception but communication in a common language is not
   possible, attempts must be made to convey instructions, acknowledgement of instructions and essential information
   by using the following phrases and pronunciations and transmitting each phrase twice.
Phrases for use by INTERCEPTED aircraft

<table>
<thead>
<tr>
<th>Phrase</th>
<th>Pronunciation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALL SIGN (callsign)²</td>
<td>KOL SA-IN (callsign)</td>
<td>My callsign is (callsign)</td>
</tr>
<tr>
<td>WILCO</td>
<td>VILL-KO</td>
<td>Understood. Will comply</td>
</tr>
<tr>
<td>CAN NOT</td>
<td>KANN NOTT</td>
<td>Unable to comply</td>
</tr>
<tr>
<td>REPEAT</td>
<td>REE-PEET</td>
<td>Repeat your instruction</td>
</tr>
<tr>
<td>AM LOST</td>
<td>AM LOSST</td>
<td>Position unknown</td>
</tr>
<tr>
<td>MAYDAY</td>
<td>MAYDAY</td>
<td>I am in distress</td>
</tr>
<tr>
<td>HIJACK³</td>
<td>HI-JACK</td>
<td>I have been hijacked</td>
</tr>
<tr>
<td>LAND (place name)</td>
<td>LAAND (place name)</td>
<td>I request to land at (place name)</td>
</tr>
<tr>
<td>DESCEND</td>
<td>DEE-SEND</td>
<td>I require descent</td>
</tr>
</tbody>
</table>

1 Syllables to be emphasised are printed in bold letters.
2 The call sign required to be given is that used in radiotelephony communications with air traffic services units and corresponding to the aircraft identification in the flight notification.
3 Circumstances may not always permit, nor make desirable, the use of the phrase "HIJACK".

19.2.2 The phrases shown in the table below should be used by the intercepting aircraft and transmitted twice in the circumstances described in the preceding paragraph.

19.2.3 If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by visual signals, the intercepted aircraft should request immediate clarification while continuing to comply with the visual instructions given by the intercepting aircraft.

19.2.4 If instructions received by radio from any sources on conflict with those given by the intercepting aircraft by radio, the intercepted aircraft should request immediate clarification while continuing to comply with the radio instructions given by the intercepting aircraft.

19.2.5 The visual signals for use in the event of interception are detailed in section 19.3 below.

Phrases for use by INTERCEPTING aircraft

<table>
<thead>
<tr>
<th>Phrase</th>
<th>Pronunciation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALL SIGN</td>
<td>KOL SA-IN</td>
<td>What is your call sign?</td>
</tr>
<tr>
<td>FOLLOW</td>
<td>FOL-LO</td>
<td>Follow me</td>
</tr>
<tr>
<td>DESCEND</td>
<td>DEE-SEND</td>
<td>Descend for landing</td>
</tr>
<tr>
<td>YOU LAND</td>
<td>YOU LAAND</td>
<td>Land at this aerodrome</td>
</tr>
<tr>
<td>PROCEED</td>
<td>PRO-SEED</td>
<td>You may proceed</td>
</tr>
</tbody>
</table>

1 Syllables to be emphasised are printed in bold letters.
### 19.3 VISUAL SIGNALS FOR USE IN THE EVENT OF INTERCEPTION

#### 19.3.1 Signals Initiated by Intercepting Aircraft and Responses by Intercepted Aircraft

<table>
<thead>
<tr>
<th>Series</th>
<th>INTERCEPTING Aircraft Signals</th>
<th>Meaning</th>
<th>INTERCEPTED Aircraft Signals</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>DAY</strong> or <strong>NIGHT</strong> - Rocking aircraft and flashing navigational lights at irregular intervals (and landing lights in the case of a helicopter) from a position slightly above and ahead of, and normally to the left of, the intercepted aircraft (or to the right if the intercepted aircraft is a helicopter) and, after acknowledgment, a slow level turn, normally to the left, (or to the right in the case of a helicopter) on to the desired heading.</td>
<td>You have been intercepted. Follow me.</td>
<td><strong>DAY</strong> or <strong>NIGHT</strong> - Rocking aircraft, flashing navigational lights at irregular intervals and following.</td>
<td>Understood, will comply.</td>
</tr>
<tr>
<td>Notes:</td>
<td>1. Meteorological conditions or terrain may require the intercepting aircraft to reverse the positions and direction of turn given above in Series 1. 2. If the intercepted aircraft is not able to keep pace with the intercepting aircraft, the latter is expected to fly a series of race track patterns and to rock the aircraft each time it passes the intercepted aircraft.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td><strong>DAY</strong> or <strong>NIGHT</strong> - An abrupt break-away manoeuvre from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft.</td>
<td>You may proceed.</td>
<td><strong>DAY</strong> or <strong>NIGHT</strong> - Rocking the aircraft.</td>
<td>Understood, will comply.</td>
</tr>
<tr>
<td>3</td>
<td><strong>DAY</strong> or <strong>NIGHT</strong> - Lowering landing gear (if fitted), showing steady landing lights and overflying runway in use or, if the intercepted aircraft is a helicopter, overflying the helicopter landing area. In the case of helicopters, the intercepting helicopter makes a landing approach, coming to hover near to the landing area.</td>
<td>Land at this aerodrome.</td>
<td><strong>DAY</strong> or <strong>NIGHT</strong> - Lowering landing gear (if fitted), showing steady landing lights and following the intercepting aircraft and, if after overflying the runway in use or helicopter landing area, landing is considered safe, proceed to land.</td>
<td>Understood, will comply.</td>
</tr>
</tbody>
</table>
19.4 PROCEDURES FOR AIRCRAFT OPERATING IN AN AIR DEFENCE IDENTIFICATION ZONE

19.4.1 General. The following general rules and procedures apply to enable identification of air traffic entering any designated ADIZ under the control of Australia.

19.4.2 An ADIZ is airspace of defined dimensions within which identification of all aircraft is required.

19.4.3 When a flight is intended to operate within an ADIZ, the aircraft captain, unless exempted in accordance with paragraph 19.4.4, must:

a. lodge a flight plan covering flight within the ADIZ with the appropriate ATS unit at least 60MIN before entry into the ADIZ;

b. report position to ATS when passing each position reporting point within the ADIZ;

c. report position to ATS at ADIZ boundary with a geographical reference (e.g., 15NM east of...) or, if the departure point is within 100NM of the ADIZ boundary, report departure;

d. report departure if departing from a point in the ADIZ;

e. maintain a continuous listening watch on the communications frequency of the appropriate ATS unit or on another frequency as directed until the flight is through the ADIZ;

f. not deliberately deviate from tracks and altitudes filed in the flight plan unless prior ATC clearance is obtained, or, outside controlled airspace, notification is given to the appropriate ATS unit; and

g. activate transponder when within 100NM of the ADIZ and when operating within the ADIZ.

19.4.4 The following flights over Australia and its territorial waters are exempted from compliance with the requirements of paragraph 19.4.3:

a. a flight originating within a ADIZ which maintains a steady outbound track;

b. a flight which remains within 10NM of the point of departure;

c. aircraft performing published approach, holding or recovery procedures; and

d. a flight conducted in accordance with special procedures arranged with the Area Air Defence Commander.

<table>
<thead>
<tr>
<th>Series</th>
<th>INTERCEPTED Aircraft Signals</th>
<th>Meaning</th>
<th>INTERCEPTING Aircraft Response</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td><strong>DAY</strong> or <strong>NIGHT</strong> - Raising landing gear (if fitted) and flashing landing lights while passing over runway in use or helicopter landing area at a height exceeding 300M (1,000FT) but not exceeding 600M (2,000FT) (in the case of a helicopter, at a height exceeding 50M (170FT) but not exceeding 100M (330FT)) above the aerodrome level, and continuing to circle runway in use or helicopter landing area. If unable to flash landing lights, flash any other lights available.</td>
<td>Aerodrome you have designated as inadequate.</td>
<td><strong>DAY</strong> or <strong>NIGHT</strong> - If it is desired that the intercepted aircraft follow the intercepting aircraft to an alternate aerodrome, the intercepting aircraft raises its landing gear (if fitted) and uses the Series 1 signals prescribed for intercepting aircraft. If it is decided to release the intercepted aircraft, the intercepting aircraft uses the Series 2 signals prescribed for intercepting aircraft.</td>
<td>Understood, follow me.</td>
</tr>
<tr>
<td>5</td>
<td><strong>DAY</strong> or <strong>NIGHT</strong> - Regular switching on and off of all available lights, but in such a manner as to be distinct from flashing lights.</td>
<td>Cannot comply</td>
<td><strong>DAY</strong> or <strong>NIGHT</strong> - Use Series 2 signals prescribed for intercepting aircraft.</td>
<td>Understood</td>
</tr>
<tr>
<td>6</td>
<td><strong>DAY</strong> or <strong>NIGHT</strong> - Irregular flashing of all available lights.</td>
<td>In distress</td>
<td><strong>DAY</strong> or <strong>NIGHT</strong> - Use Series 2 signals prescribed for intercepting aircraft.</td>
<td>Understood</td>
</tr>
</tbody>
</table>
19.4.5  Flight plans lodged in accordance with paragraph 19.4.3 must include details of:
   a. tracks and altitudes to be flown while operating in the ADIZ;
   b. estimated elapsed times for each route segment in the ADIZ, including the segment in which the ADIZ boundary is crossed;
   c. position reporting points, departure and landing points; and
   d. estimated time at the commencing point of the first route segment for which details are required in accordance with sub-para b.

19.4.6  Reporting points published in aeronautical charts must be used plus those required by the Area Air Defence Commander.

19.4.7  Aircraft captains must immediately notify ATS of any deviation from flight plan beyond the following tolerances:
   a. estimated time of commencing the ADIZ route segments - ±5MIN;
   b. over land area - ±10NM from track;
   c. over oceanic areas - ±20NM from track.

    Note: The five (5) minutes expressed in sub-para a. will be used in considering action under sub-section, but aircraft captains must report predicted deviations of greater than two (2) minutes.

19.4.8  In the event of failure of two-way radio communication, the aircraft captain must proceed in accordance with the normal radio failure procedures.

19.5 Special Requirements

19.5.1  Special requirements may be published relative to a particular ADIZ. Flights exempted in accordance with paragraph 19.4.4 will not be exempted from the special requirements unless so specified.

19.6 Non-Compliance

19.6.1  Significant deviations from the requirements for flight in an ADIZ must be reported immediately to ATS and details and reasons for the deviation must be reported at the first point of landing, for transmission to the Area Air Defence Commander.

19.7 Diversion of Aircraft for Defence Operations

19.7.1  The Regional Air Defence Commander may, through ATS, direct the flight of aircraft in the interests of national security. Messages initiating such requirements will be prefaced by 'MILITARY OPERATIONS REQUIRE...'.

