Australian Government

Department of Climate Change, Energy, the Environment and Water

Australian Antarctic Division

AAD STANDARD OPERATING PROCEDURE
OPERATIONS MANUAL

Volume 5 – Aviation standard operating procedures

File [CM] ref: Container: 18/527 Record No: CD19/19 (V10)	**Responsible Officer:** Director Aviation	**Authorising Officer:** Branch Head Operations and Logistics	**Authorisation Date:** 20 Aug 2025
			Review Date: July 2026
Location of Electronic Copies: AAD Intranet, CM			
Location master hard copy: Director Aviation, Assistant Director Aviation Operations, Operations Management Centre Conference Room			

Document History			
Document Revision No.	**Date**	**Author**	**Approved By**
Initial document	June 2007	Adrian Pate	Aviation Manager
V1.1	June 2010	Matt Filipowski	Aviation Manager
V1.2	June 2011	Matt Filipowski	Aviation Manager
V1.3	June 2012	Aaron Read	Operations Manager
V1.4	June 2013	Aaron Read	Operations Manager
V1.5	June 2014	Aaron Read	Operations Manager
V1.6	June 2015	Stephen Wall	Aviation Manager
V1.7	July 2016	Jeff Hadley	Snr Operations Officer
V1.8	November 2016	Jeff Hadley	Snr Operations Officer
V2	Aug 2017	Aaron Read	Aviation Manager
V3	July 2018	Aaron Read	GM Support and Operations
V4	July 2019	Aaron Read	GM Support and Operations
V4.1	September 2019	Aaron Read	GM Support and Operations
V5.0	June 2020	Aaron Read	GM Operations and Safety
V5.1	Oct 2020	Aaron Read	GM Operations and Safety
V6.0	July 2021	Aaron Read	GM Operations and Safety
V7.0	August 2022	Aaron Read/Matt Ryan	GM Operations and Safety
V8.0	July 2023	Aaron Read/Matt Dunne/Matt Ryan	GM Antarctic Operations and Logistics
V9.0	July 2024	Aaron Read/Matt Dunne/Steve Wall	Brach Head Operations and Logistics
V10.0	June 2025	Aaron Read/James Cairns/Matt Ryan/James Rylands/Marc Ware/Stu Rutherford	Brach Head Operations and Logistics

Revision History		
Version	**Date**	**Changes**
V1.1	June 2010	Minor Edits
V1.2	June 2011	Minor Edits
V1.3	June 2012	New format and New Intra-continental Aviation Manual
V1.4	June 2013	Aviation SAR guidelines incorporated into Vol 2 Emergency Response SOP
V1.5	June 2014	Minor Edits
V1.6	June 2015	Minor edits and formatting Remote Pilot Aircraft (RPA) Procedures Aviation Survival Kits Inclusion of Appendix 1 - Air Task Risk Assessment Inclusion of Appendix 2 – Unmanned Aircraft
V1.7	July 2016	Minor edits and formatting Remote Pilot Aircraft (RPA) Procedures updated Field landing sites procedure update
V1.8	November 2016	Addition of field landing site assessment requirement- 2. (b) (iv)Page 18
V2	Aug 2017	Format – header numbering added, Updates to UAS section, fuel depot/cache and Field landing procedures, Part C emergency food.
V3	July 2018	Update to BoM, Clothing requirements for air travel added, update to Aircraft survival kits. Changed the order of Chapter 8 Specific AAD requirements and added Checklist as Appendix C for Pilot environmental briefing, Post Aviation Operations Debrief, Fuel Cache Establishment and Pilot handover. Removal of COMNAP RPA checklists.
V4	July 2019	Style review applied to the whole document and addition of revision flow process. Add the Acronyms page & reviewed Chapter 13.
V4.1	Sept 2019	Change to UAS Pre-season report (inclusion of compass calibration check)
V5.0	July 2020	Minor edits with new CASA regulations change, essential crew & hot passenger helicopter procedures, Antarctic clothing when in aircraft, Chapter 13 UAS rewritten to conform with Department's SOPs and Policies.
V5.1	Oct 2020	Minor changes to essential crew & typo corrections.

V6.0	July 2021	Minor edits and typos. Addition of an overview of the proposed SMS Bowtie risk assessment system. Streamlining of recreational drone processes. ATRA addition of Performance class 3 & UAS AVCRM JHA.
V7.0	Aug 2022	Minor edits and typos. Removal of all reverence to DAWE, replace with DCCEEW—Update Aviation structure/positions. Updated Statement on SMS regarding Bowtie and the regulations. Remove Ch 13 UAS into a standalone SOP. Updated wording/content in Air Task Risk Assessment. Updates to format/layout of Post Aviation Operations Debrief. New Appendix I -*Station Aviation Readiness Checklist*
V8.0	July 2023	Minor edits and typos. Updating section 5.1 Aviation Safety Management System to reflect current practice and Addition of SMS statement 5.1.1 inline was CASA Audit finding 824067 Implementation of a Safety Management System recommendation. Add a location for Operations Manual Volume 5 UAS - Standard Operating Procedure. Add helicopter contact list
V9.0	July 2024	Minor edits and typos. Added 2.1.1 -Aviation structure Update Section 4 & include minimum trained support staff at Aviation hubs & Aviation reporting requirements. Add BARS description in Section 5. Amend Appendix I to -*Station Rotary Aviation Readiness Checklist.* New Appendix J -*Station Fixed Wing Aviation Readiness Checklist*
V10.0	June 2025	Minor edits and typos, improved wording around OMC interface. Aviation SMS chapter relocated from the Intracontinental Aviation Manual into this document Sections added on Air Transport/Airwork categories and performance classes for aircraft Safety Culture implementation for aviation reporting Task Specialists approval requirements added Requirement for helicopter EFS added

Acronyms

36SQN – RAAF No. 36 Squadron (C17A)

86WG – RAAF No.86 Wing

AAD – Australian Antarctic Division

AAP – Australian Antarctic Program

AAT – Australian Antarctic Territory

ADF – Australian Defence Force

AFIM –Antarctic Flight Information manual

AGL – Above Ground Level

AGSO – Aircraft Ground Support Officer

AMSA – Australian Maritime Safety Authority

AOC – Air Operators Certificate

AROC - aeronautical radio operator's certificate

ASAC – Antarctic Science Advisory Committee

ASH – Aeronautical Services Handbook

ASPA – Antarctic Specially Protected Area

AT(EP) Act – Antarctic Treaty (Environmental Protection) Act 1980

ATRA – Air Task Risk Assessment

ATSB –Australian Transport Safety Bureau

BARS – Basic Aviation Risk Standard

BGAN – Broadband Global Area Network

BoM – Bureau of Meteorology

BVLOS - Beyond Visual Line-Of-Sight

CASR – Civil Aviation Safety Regulation

CASA – Civil Aviation Safety Authority

COMNAP – Council of Managers of National Antarctic Program (s)

CM -Content manger

DC3T – Basler Aircraft BT-67

DHC6 – de Havilland Canada Twin Otter

ERSA – En-Route Supplement Australia

ETA – Estimated Time of Arrival

EVLOS – extended visual line of sight

FAA – Federal Aviation Administration (US)

FPV – First Person View

FROL – Flight Radiotelephone Operator Licence

FTO – Field Training Officer

GPS – Global Positional System

HF – High Frequency

HLA – Helicopter Landing Area

HLO – Helicopter Landing Officer

HUET – Helicopter Underwater Escape Training

ICAO – International Civil Aviation Organisation

IEE – Initial Environmental Evaluation

IHIS – Reporting system for Environmental hazards or Incidents

IFR – Instrument Flight Rules

LAF – Local Area Forecast

LIDAR – Light Detection and Ranging

MTOW – Maximum Take-Off Weight

OPSC – Operations Coordinator

OMC – Operations Management Centre

PAX - Passenger

PSLA – Prepared Ski Landing Area

PSR – Point of Safe Return

QPQ – Quid Pro Quo

RPS – Remote Pilot Station

SAGSO – Senior Aircraft Ground Support Officer

SAR – Search and Rescue

SIGMET - **SIG**nificant **MET**eorological Information

SIRUS – Reporting System for WHS hazards or incidents

SOCG – Season Operations Co-ordinator Group

SOP – Standard Operating Procedure

TAF – Terminal Area Forecast

UAS – Unmanned (Uncrewed) Aerial Systems

UAV – Unmanned (Uncrewed) Aerial Vehicle

USAP – United States Antarctic Program

USLA – Unprepared Ski Landing Area

VFR – Visual Flight Rules

VHF – Very High Frequency

XO – Executive Officer (RAAF)

Table of contents

1 Introduction

The Australian Antarctic Division (AAD) aviation facilities in the Australian Antarctic Territory (AAT) are owned and operated by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) – Australian Antarctic Division.

The aviation manuals have been prepared primarily to satisfy the obligations required by the Civil Aviation Safety Authority (CASA) and in accordance with the Civil Aviation Safety Regulations Sub Part 139, in particular, Parts 139.050 and 139.095 and the *Manual of Standards Part 139 – Aerodromes.* This document describes the overarching standard operating procedures (SOP) for aviation.

Effective 22 August 2020, the revised Part 139 (Aerodromes) Manual of Standards 2019 (Part 139 MOS) established a single certification framework for regulated aerodromes (certified). Non-certified aerodromes are unregulated.

The effect of this change in governance for the Australian Antarctic Division is as follows: -

a) Wilkins Aerodrome is the only certified aerodrome within the Australian Antarctic program, and
b) All Ski Landing Areas, which CASA no longer regulates, will be operated and maintained as outlined by the AAD's standards for management and safety, principally the Intra- Continental Aviation Manual, in conjunction with the supporting Aviation manuals and SOPs.

The purpose of the manuals is two-fold. Firstly, they provide aviation staff with a comprehensive reference for use in the day-to-day operations of aviation facilities. Secondly, they offer aviation users and the Civil Aviation Safety Authority information about the standards and procedures applied in operating Aviation facilities safely and efficiently.

The Civil Aviation Safety Authority requires that the Australian Antarctic Division operate and maintain its aviation facilities in accordance with the procedures set out in the aviation manuals. This SOP ensures that documented procedures are an accurate reflection of both current and best practices. It is regularly amended to reflect changing standards, operational practices, aviation facilities or personnel.

The SOP and manuals refer only to the position titles of key personnel. Refer to the master contact list for key personnel's names, position titles and contact details.

1.1 Purpose of this document

The AAD Aviation standard operating procedures (SOPs) contain operational policies and procedures for the safe conduct of Australian Antarctic Program (AAP) aircraft operations.

1.2 Key messages

The SOPs contained in this volume of the operations manual provide a framework for managing people, equipment and activities in remote and potentially dangerous environments. In planning activities with this document, it is essential that you seek clarification from the Director Aviation, Operations and Logistics Branch if:

- there is any confusion at all in understanding these SOPs
- you believe that expeditioners are misinterpreting any of these SOPs
- you wish to seek a variation to any of these SOPs.

These SOPs have been written to provide a clear and consistent framework for all Antarctic and sub-Antarctic operations. However, it is also understood that some flexibility needs to be offered for specific circumstances where standard operating procedures do not fit non-standard conditions or events. A variation to any Aviation SOPs may be provided for a justified reason. All variations to any of these SOPs must be discussed with and agreed to by the Director Aviation, Operations and Logistics Branch.

Feedback on the SOPs and this document will always be welcomed.

1.3 Audience

This document is intended for use by AAP personnel. It focuses on the needs of aircraft operators, stations, Field and Voyage Leaders, Operations Coordinators, Senior and aircraft ground support officers (S/AGSOs) and head office personnel involved in aviation operations.

1.4 Relationship to other documents

This SOP is to be read in conjunction with the *AAD Operations manual*:

- *Volume 1: Station and field standard operating procedures*
- *Volume 2: Emergency response*
- *Volume 3: Telecommunications standard operating procedures*
- *Volume 4: Ship operations standard operating procedures*
- ***Volume 5: Aviation standard operating procedures (this document)***
- *Volume 5A: UAS standard operating procedures*
- *Volume 6: Fuel transfer standard operating procedures*
- *Volume 7: Watercraft standard operating procedures*
- *Volume 8: COVID-19 Framework*
- *Volume 9: Supply Chain*
- *Volume 10: Traverse standard operating procedures*

Where an aircraft operator's manual conflicts with this SOP, the operator's manual takes precedence; however, a risk assessment should be done to ensure activities proceed safely.

Table 1.1 Documents supporting this SOP

Serial	Document name	Description	Location
1	*AAD Operations manual volumes 1–10*	The *Operations manual* is divided into ten volumes that define the standard operating procedures for major operations undertaken by the Australian Antarctic Division	AAD intranet
2	Aviation facilities log book	Logs of all inspections and maintenance activities that occur on all Ski Landing Areas	Wilkins Aerodrome office, offices at Casey and Davis Plateau Ski Landing Areas

Serial	Document name	Description	Location
3	Field landing area and fuel cache data base	Describes hazards and procedures for completing everyday tasks at Ski Landing Areas	Field landing and fuel cache database
4	*AAD Field Manual*	Aide-memoire for field and survival training	Issued to every participant in the AAP
5	Aviation training database	Lists training status of all aviation personnel	Training management system
6	AAD incident reporting database	Lists incidents and safety concerns raised by AAD personnel and capture mitigating management actions	AAD intranet Environmental hazards or incidents are reported via IHIS. WHS hazards or incidents are reported via SIRUS. For any field locations without intranet access, staff are to fill out a hard copy and email to aviation.operations@aad.gov.au for lodging into SIRUS/IHIS.
7	*Antarctic Flight Information Manual* (AFIM)	COMNAP The equivalent of Enroute Supplement of Australia (ERSA) includes procedural information	Wilkins Aerodrome Manager computer, electronic copies supplied to Senior AGSO's COMNAP website www.comnap.aq AAD Intranet
8	Contractors' ground handling manual and operations manual	Procedures for operating, parking and loading aircraft	Electronic copies supplied to all Aviation staff (either via CM or USB/External Hard drive)
9	*CASA Manual of Standards*, Part 139	Prescribes standards for both the physical properties and the operating procedures of an aerodrome	Current version is available from CASA (www.casa.gov.au)
10	*Wilkins Aerodrome Manual*	Describes the operations at Wilkins Aerodrome	AAD intranet Wilkins operation building Electronic/hard copies CASA AAD Intranet

Serial	Document name	Description	Location
11	*Intra- continental Aviation Manual*	Describes the operations at the AAP Intra-continental facilities (Casey, Davis and Mawson stations)	Wilkins Aerodrome Manager computer, electronic copies supplied to all Aviation expeditioner staff AAD Intranet
12	*Aviation Facilities SOP*	Defines responsibilities and details processes at AAD Antarctic Aviation facilities	Wilkins Aerodrome Manager computer, electronic copies supplied to all Aviation expeditioner staff AAD Intranet
13	*Wilkins runway procedures*	Describes the maintenance procedures for Wilkins Runway (winter snow clearing through to operation testing)	Wilkins Aerodrome Manager computer, electronic copies supplied to all Wilkins expeditioner staff AAD Intranet CASA
14	AAD Aviation *Drug and alcohol management plan*	Sets out AAD policies on drug and alcohol management	Wilkins Aerodrome Manager computer, electronic copies supplied to all Aviation expeditioner staff AAD Intranet
15	*Flight Path Guidelines: Avoiding Wildlife in East Antarctica*	Details flight paths for fixed and rotary wing aircraft to avoid concentrations of wildlife.	CM, Digital Map Data (supplied by AAD Data Center) & Flight Path Guidelines: Avoiding Wildlife in East Antarctica
16	*Helicopter ground support manual Edition 4* or later version	Detailed description of procedures for ground support of helicopters	Wilkins Aerodrome Manager computer, electronic copies supplied to Senior AGSO's
17	*Helicopter Resources Pilots Operation Safety Manual Edition 6 rev 15 or later version*	Detailed description of procedures for the operations of Helicopter Resources helicopters	CM

Serial	Document name	Description	Location
18	*Air transport of dangerous goods manual – AAD Rev 5* or later version	A detailed description of the dangerous goods procedures for AAD aviation operations	Wilkins Aerodrome Manager computer, electronic copies supplied to Senior AGSO's AAD Intranet
19	AAD Aviation Process - Intercontinental Flights	A detailed description of the processes and procedures required for transport of expeditioners, cargo and communication pathways for flights the A319 and C17 flights	CM
20	*Aeronautical services handbook* (ASH)	The Bureau of Meteorology operational manual for the provision of aviation meteorological services in Australia	Bureau of Meteorology registered users' website: http://reg.bom.gov.au/general/reg/ash/ASH.pdf (requires BoM username and login)
21	*Helicopter Resources Safety Video*	BK117 Helicopter Safety Briefing video	CM & AAD Intranet
22	*Helicopter Resources- Mustang Suit Video*	MAC 200/300 Aviation Immersion Suit donning/doffing instructional video	CM & AAD Intranet
23	*Aviation Process- Intercontinental flights*	Detailed description of process for AAD flights at Hobart airport	CM
24	*WHS-AV- STD-01 General Aviation Standard*	DCCEEW has produced the HSW General Aviation Standard, Workplace Health & Safety (HSW) Contractor and Vendor Management Standard and Risk Management Standard.	CM
25	*Environmental Impact Assessment – Australian Antarctic Program Aviation Operations 2025-2030 (IEE)*	Detailed information on the AAD Aviation environmental approval and its conditions that allow the Aviation to operate inside the AAT.	CM & AAD Intranet

2 Master contact list

2.1 Australian Antarctic Division

(Season 2025–2026)

Australian Antarctic Division		
Director Aviation **Aviation Safety Officer** Marc Ware	Telephone:	+61 3 6232 3157
	Mobile:	+61 499 409 998
	Email:	Marc.Ware@aad.gov.au
Assistant Director Aviation Operations Aaron Read	Telephone:	+61 3 6232 3436
	Mobile:	+61 419 657 660
	Email:	Aaron.Read@aad.gov.au or Aviation.Operations@aad.gov.au
Assistant Director Aviation Compliance and Assurance Matt Donoghue	Telephone:	+61 3 6232 2281
	Mobile:	+61 486 388 277
	Email:	Matt.Donoghue@aad.gov.au
Aviation Liaison Officer (on call during summer season)	Instant Message	Signal (or similar) group details are established prior to each operating season
	Telephone:	+61 3 6232 3436
Intercontinental Flight Lead	Telephone:	+61 437 566 149
Wilkins Aerodrome Reporting Officers (WAM, 2IC, APO)	Iridium Voice (Primary):	+8816 2146 1961 (all phones)
	Iridium Voice Secondary:	+ 8816 3143 5433
	Iridium Voice (Mess):	+ 8816 4140 5110
	Email (Primary):	Wilkins.Manager@aad.gov.au
	Instant Messaging	Signal or similar
	HF Voice:	5400MHz
	Marine VHF (Primary):	Ch. 19
	Marine VHF (Secondary):	Ch. 10
	Airband VHF (Primary):	129.7MHz
	Airband VHF (Secondary):	121.1MHZ
	Airband VHF (AWIB)	133.5MHz

Ski Landing Area sites	Description	Details
Davis (S/AGSO)	Iridium Voice (Primary):	+ 8816 4149 6698
	Instant Messaging	Signal or similar
	Marine VHF (Primary):	Ch. 10
	Marine VHF (Secondary):	Ch. 21
	Airband VHF (Primary):	129.7MHz
	Airband VHF (AWIB)	133.0MHz
Casey (S/AGSO)	Iridium Voice (Primary):	+ 8816 4141 7570
	Instant Messaging	Signal or similar
	Marine VHF (Primary):	Ch. 10
	Marine VHF (Secondary):	Ch. 20
	Airband VHF (Primary):	129.7MHz
	Airband VHF (AWIB)	133.0MHz
Mawson (no dedicated Aviation staff)	N/A	As per Intercontinental Air Transport Communications Network V23.1 or later
	Instant Messaging	Signal or similar
	Marine VHF (Primary):	Ch. 10
	Airband VHF (Primary):	129.7MHz
Macquarie Island (S/AGSO)	N/A	As per Intercontinental Air Transport Communications Network V23.1 or later
	Instant Messaging	Signal or similar
	Marine VHF (Primary):	Ch. 10
	Airband VHF (Primary):	129.7MHz

UAS – RPA, Rec Drones	Description	Details
Assistant Director Aviation RPAS Operations and Development Doug Thost- (DCEEW Deputy Remote Pilot)	Telephone:	+61 3 6232 3545
	Mobile:	+61 498 650 673
	Email:	Doug.Thost@aad.gov.au or Drones@aad.gov.au

2.1.1 AAD Aviation Section Structure

The Kingston based Aviation Section is divided into four main streams (Compliance, Planning, Operations and RPAS). The streams functions and key group email addresses are described below.

Aviation.Compliance@aad.gov.au - for all Aviation compliance, risk and assurance, including procurement functions within the existing aviation contracts or any future RFI & RFT's:

- *WHS/Safety*
- *Member Dept SME Aviation panel*
- *Aviation Environment*
- *Legislative compliance*
- *Certification training (qualifications)*
- *Security*
- *Aviation Contract Management*
- *Aviation Section Procurement*

Aviation.Planning@aad.gov.au – for all Aviation planning (both in & out season) communications, including stakeholder interfaces:

- *Aviation Operations Planning (Fixed & Rotary)*
- *Interface for Ops & Strategic Planning*
- *Aircraft configuration changes (Science)*
- *Training – Future functional requirements & changes*
- *Aircraft configurations and capabilities (payloads, cargo, range, etc.)*

Aviation.Operations@aad.gov.au – for all Antarctic & Hobart-based Aviation communications:

- *Aviation Operations Management*
- *Operations (incl. Runways/Ski Landing Areas/Heliports)*
- *Personnel/Recruitment & seasonal training*

Drones@aad.gov.au – for all UAS planning and operations (both in & out season), including stakeholder interfaces:

- *UAS planning, operations and development*

Aviation.Reporting@aad.gov.au – for all email-based reporting from the various Aviation SOPs:

- *All email-based reporting requirements as detailed in table 4.2*

Aviation.Accounts@aad.gov.au – for all invoicing and account related matters

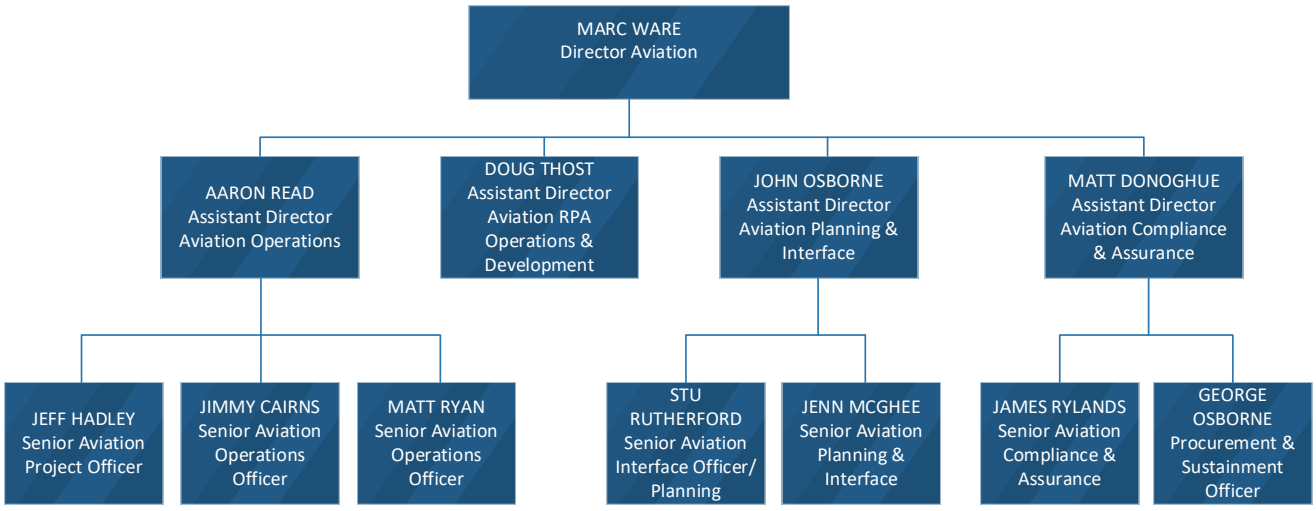

Figure 2.1 – Aviation Section Organisation Chart

2.2 Fixed-wing aircraft contractors

2.2.1 Skytraders

Director of Operations Derek Hayden	Telephone: Mobile: Email:	(03) 9335 5522 0402 909 095 derek.hayden@skytraders.com.au
Chief Pilot Capt. Jorn Gronset	Telephone: Mobile: Email:	(03) 9335 5522 0400 882 723 Jorn.gronset@skytraders.com.au
Deputy Chief Pilot Capt. Dan Colborne	Telephone: Mobile: Email:	(03) 9335 5522 0428 888 240 dan.colborne@skytraders.com.au
Aircraft VH-VHD (A319-115LR)	Iridium	+ 8816 2346 1037

2.2.2 ADF

ADF		
COMASC OPSD	Telephone:	+61 418 121 427
	Email:	Comasc.opsd@defence.gov.au
ADF AAD Liaison Officer	Telephone:	+61 407 409 309
	Email:	HQJOCLO.OPSD@defence.gov.au
36SQN Operations	Email:	36sqn.ops@defence.gov.au
86 Wing Executive Officer	Telephone: Email: (ATTN XO 86WG)	(07) 3328 2673 billy.trotter@defence.gov.au
36SQN Executive Officer	Telephone: Email: (ATTN XO 36SQN)	(07) 5362 2719 michael.day@defence.gov.au
Aircraft- C-17A		
A41-2xx (Stallion xx)	Iridium (Primary)	Specific Iridium number and/or Instant Messaging (IM) platform contact details will be advised prior to each mission. IM may be used for informal communication between WAM and Aircrew
	AMCC (Secondary)	amcc.executions@defence.gov.au

2.2.3 Kenn Borek Pty Ltd

President Brian Crocker	Telephone: + 1-403-291-3300 Facsimile: + 1-403-717-4207 Mobile: + 1-403-700-3300 Email: bcrocker@borekair.com
Chief Pilot Richard Cameron	Office: + (1) 403 291 3300 Ext: 142 Cell: + (1) 403 710 8449 Email: rcameron@borekair.com
Operations Manager Allen Moore	Office: + (1) 403 291-3300 ext. 141 Cell: + (1) 403 816 4430 Email: amoore@borekair.com

Aircraft	Iridium
DHC6 - C-GKCS (AAD contracted aircraft)	+ 8816 414 92298
DC3T- C-GJKB (AAD contracted aircraft)	+ 8816 2146 8082
DC3T- C-GAWI (Polar 5)	+ 8816 414 80092
DC3T- C-GEAI	+ 8816 414 42635
DC3T- C-GHGF (Polar 6)	+ 8816 514 27045
DC3T – C – GGCX (PRIC)	+ 8816 234 85874

2.3 Rotary aircraft contractors

2.3.1 Helicopter Resources

Helicopter Resources	Base Manager Hobart Peter Arthur	Telephone: 03 6215 7000 Mobile: + 61 407 373 577 Email: bmh@helires.com.au	
Helicopter Resources	Chief Pilot Dave Lomas	Telephone: 03 6215 7000 Mobile: + 61 437 575 312 Email: cp@helires.com.au	
Aircraft	**Registration**	**A/C Sat phone**	**Sat Phone**
BK117	VH-FPX	0011 8816 214 68547	+61 410 648 536
BK 117	VH- FPZ	0011 8816 214 53353	+61 410 646 271
BK 117	VH- AD2	0011 881621412556	+61 405 896 872
BK 117	VH- AD3	0011 881621412201	+61 485 898 096

2.4 Aviation contacts

Civil Aviation Safety Authority	Telephone: Website:	131 757 http://casa.gov.au
Dangerous Goods Inspector (VIC/TAS) Tara Ahearn	Telephone: Mobile: Email:	(03) 9518 2719 0400 247 596 tara.ahearn@casa.gov.au
Australian Transport Safety Bureau (ATSB) Incident reporting	Telephone: Email:	1800 011 034 atsbasir@atsb.gov.au
Aviation Search and Rescue (AMSA) H24 Joint Rescue Coordination Centre (JRCC)	Telephone: Outside Australia: Email:	1800 815 257 +61 2 6230 6899 rccaus@amsa.gov.au

2.5 Access to Antarctic Flight Information Manual publications

Access to AFIM Publications		
AFIM Amendments and Updates Executive Secretary - COMNAP Michelle Rogan-Finnemore	Telephone:	+643 369 2169
	Website:	https://www.comnap.aq/air-operations
	Email:	sec@comnap.aq

2.6 Bureau of Meteorology

Antarctic Meteorology Services Team Lead	Email: EPS_MA_OAS_Mgr@bom.gov.au
Forecasting offices	Telephone: Davis: 0011 672 106681 Casey: 0011 672 108881 Mawson observation office: 0011 672 107730 Macquarie Island observation office: 0011 672 109930 Hobart: + 61 3 6221 2067 Email: antforecasters@bom.gov.au **Emergency Out of hours phone number: 03 9669 4010** Once this group receives a call they will contact the Antarctic groups of the BoM. Email: operator@bom.gov.au

3 Air transport in the Antarctic

3.1 Introduction

Air transport is integral to the overall AAD logistics and operations system. This system provides a safe, efficient and cost-effective service to satisfy the approved requirements of the Australian Antarctic program (AAP). Aircraft support a wide range of activities and tasks in Antarctica. These include transporting cargo and passengers between stations, field camps and ships; providing airborne platforms for remote sensing and survey tasks; conducting ice reconnaissance for shipping; conducting marine- and land-based wildlife surveillance; search and rescue operations; and evacuating injured personnel.

3.2 Advantages and limitations of aircraft

Aircraft have a variety of inherent capabilities and limitations. They can cover comparatively vast distances quickly, within expected parameters. Their routes are not restricted by terrain, they can provide comprehensive area coverage for search, surveillance and data gathering, and the tempo of operations is generally necessary for short response times.

Aircraft have some limitations; understanding them is necessary to take full advantage of their capability.

Cost: Aircraft are only to be used for approved activities. The AAD Director Aviation holds specific information relating to aircraft contracts.

Cargo: All aircraft have restrictions on the amount and types of cargo they can carry. All aircraft have approved payload capacities, and the weight of cargo carried has a proportional effect on the range of the aircraft. Loads carried externally by helicopter have an additional impact as the aircraft's speed is reduced. The size of doors and the cabin area is important considerations. Freight must be packaged so that it can be restrained without damage to the aircraft or cargo. Carriage of dangerous goods may or may not be allowed. At minimum, to be approved for carriage, dangerous goods must have specialist packaging and documentation. Some dangerous goods cannot be carried in any aircraft (see *Intra-Continental Aviation Manual* and *Air Transport of dangerous goods manual – AAD Rev 5 or later*).

Weather: High wind, low cloud, wind direction, snow accumulation, visibility, ice, surface definition and temperature can individually or collectively restrict aircraft operations. Aircraft can also be damaged by strong winds when on the ground. There is a risk on sea ice that the ice itself may be 'blown out'. Aircraft must be adequately restrained. Consider flying fixed-wing aircraft to safer areas if extreme conditions are forecast. Wind-blown debris poses a threat to parked aircraft.

3.3 Aircraft types

The AAD charters various fixed- and rotary-wing aircraft operated by a combination of short- and long-term (multi-season) contractors. Aircraft operators provide aircrew, aircraft and maintenance personnel and equipment. A senior pilot is appointed by each contractor to coordinate these assets and to liaise with the AAD as the company's representative.

The AAD provides the infrastructure to support aircraft operations. This includes prepared Ski Landing Areas, sea ice Ski Landing Areas (Davis only), helipads, fuel, aircraft ground support officers (AGSOs), communications, ground transport, essential services, limited workshop and storage facilities, and emergency equipment.

Aside from Australian registered wheel-equipped aircraft (A319 and C17), wheel/ski equipped aircraft from various nations use these Ski Landing Areas to support other national scientific programs. Aircraft types commonly seen include LC-130 (Ski Hercules C130, maximum take-off weight [MTOW] 135,000 lb.), Basler (Turbine DC3 of approximately 28,000 lb. MTOW) and Twin Otter (12,500 lb. MTOW). The AAD anticipates that all civil wheel/ski equipped aircraft (of any nationality) will always carry fewer than 40 personnel.

3.4 Description of operations

The AAD typically operates aircraft in Antarctica from mid-October to mid-March during the austral summer. Intra-continental aircraft operate between stations, providing operational and field project support.

The primary area of operations is between Casey, Davis, Mawson and adjacent field locations. Intercontinental operations are via Wilkins runway (using A319 and C17 aircraft) and the United States Antarctic Program (USAP) McMurdo station, with LC-130 & Basler aircraft flying the intra-continental connections to the Casey and Davis Ski Landing Areas. Additional flight paths and aircraft may be used in support of other national Antarctic programs.

Intra-continental aircraft (Basler & Twin Otter) usually deploy via South America, Antarctic Peninsula, the South Pole and then into the Australian Antarctic Territory (AAT). The aircraft are based primarily out of Casey and Davis stations. Throughout the season, the flying program is integrated with the shipping schedule and other operational plans to meet the overall objectives of the AAP.

Helicopters are regularly used for ship-to-shore operations at Davis, Mawson and Macquarie Island and can also be based for more extended periods over summer at Casey and Davis. Helicopters support Ski Landing Area operations at the Davis Plateau when the sea ice becomes unusable because of sea ice break-out or surface degradation. Helicopters or fixed-wing aircraft may be based at field locations to support larger field projects if required.

3.5 Regulatory framework

Antarctica is not a recognised state. Virtually all nations conducting activities in Antarctica are signatories of the Antarctic Treaty, which entered into force on 23 June 1961. The treaty establishes the legal framework for the management of Antarctica.

Antarctica is administered through meetings of the consultative member treaty nations. Decisions from these meetings are carried out by member nations (concerning their own national programs and operations) in accordance with their national laws.

Australian laws apply to Australian activities and nationals within the AAT. States, individuals, and groups from non-members of the Antarctic Treaty do not recognise that the AAT may be present in Antarctica. Australian law has no jurisdiction over these parties.

The airspace over the AAT, MacDonald, Heard and Macquarie Islands and the airspace that extends from the AAT to continental Australia are subject to the authority of the Civil Aviation Safety Authority (CASA). Responsibility for international marine and aviation search and rescue (SAR) within most of the AAT rests with Australian Maritime Safety Authority (AMSA). AMSA's role in Antarctic SAR is primarily coordination and monitoring. An agreement between AMSA and AAD on SAR responsibilities is in place.

Aircraft operated by other national programs or private operators in Antarctica may not recognise the regulatory authority of Australia's CASA and may not comply with relevant regulatory requirements and conventions. The Council of Managers of National Antarctic Programs (COMNAP) has produced the *Antarctic Flight Information Manual* (AFIM), which describes the operating procedures for the various national Antarctic programs.

The AAD has an agreement with Air Services Australia to provide backup communications support on their behalf to AAD chartered aircraft transiting between Australia and Antarctica.

3.6 Landing areas

There are different types of landing surfaces available to aircraft operating within the AAP:

Ice runways (Wilkins): Designated areas for large (>60 t MTOW), wheel-equipped aircraft operations. Ice runways must have a published instrument or visual approach procedure and be located near a surface camp with support facilities, including weather reporting, shelter, first aid, food, and communications and require grooming continually. The AAD currently operates Wilkins Runway, 65 km southeast of Casey Station.

Skiways: Designated areas for large (>60 t MTOW), ski-equipped aircraft operations. Skiways must have a published instrument or visual approach procedure and be located near a surface camp with support facilities, including weather reporting, shelter, first aid, food, and communications and require grooming continually. The AAD currently has **no** skiways in use.

Prepared Ski Landing Areas (PSLAs): Casey and Davis's stations are serviced by PSLA, established and maintained by the AAD. The CASA regulatory framework no longer regulates these. however, has only made minor changes to its previous regulated operations. Specific details relating to each PSLA can be found in *Intra-continental Aviation Manual*. Generally, they are sited as close to the station as possible on suitable sea or glacial snow/ice. They may also be established to support a large field camp.
The AGSOs choose locations of station PSLAs and they must conform to dimensional and other requirements that are specified in the *Intra-continental Aviation Manual* or as confirmed by crew of the critical aircraft planned to operate at the site. Mawson is supported by personnel from Davis as required throughout the summer season.

Unprepared Ski Landing Areas (USLA): An USLA is any location that an aircraft pilot determines to be suitable for landing. Generally, they are sited to meet the needs of the AAD. USLAs must be sited considering hazards such as crevassing, sastrugi, wind shear, fog and the potential for premature sea ice break-out.
They must also be of consistent surface texture.

The AAD may provide nominal facilities or personnel with minimal aviation training. When AAD personnel are on the ground, say for the pickup or resupply of a field party, limited meteorological observations and limited ground markers may be provided to assist the pilot if requested by the aircrew.

Helicopter landing areas: Helicopters can land on various surface types, including all the areas outlined above, plus dedicated helipads at stations and helidecks on vessels. They can also land on any surface the pilot in command deems suitable to land on, similar to USLAs.

Field landing site and fuel cache database: The AAD has a historical record of sites used by either fixed- or rotary-wing aircraft. It is available to all aviation contractors and a good source of information for both season planning and while staff are on station. The database incorporates data from Field Landing Site Reports, which are completed by the pilot-in-command and/or the Field Training Officer inspecting the field landing site. On return to station the completed and signed form must be handed to the Operations Coordinator or Station Leader, who updates the database (see Appendix C: Fixed Wing Field Landing Site Report and Appendix D: Helicopter Field Landing Site Report).

Table 3.1 provides the details of each established landing area.

Table 3.1 Established landing areas

Location	Tasmania	Wilkins	Casey	Davis		Mawson	
Type of runway/ Ski Landing Area	Mainland runway	Plateau ice runway	Plateau prepared Ski Landing Area.	Sea ice prepared Ski Landing Area (varying sites)	Plateau prepared Ski Landing Area (site may vary)	Sea ice unprepared Ski Landing Area (varying sites)	Plateau unprepared Ski Landing Area Rumdoodle area (various sites)
Role	Hobart International Airport	Intercontinental Runway services the AAT	Service Casey Station	Service Davis Station in the early season	Service Davis Station in mid/late season	Service Mawson Station in the early season	Service Mawson Station in mid/late season
Surface	Pavement	Natural surface -Ice	Snow, groomed when necessary	Sea ice, groomed when necessary	Snow, groomed	Sea ice, unprepared	Blue ice, unprepared
Staff		6–8 crew	2–4 AGSOs	2–4 AGSOs		N/A	
Maintenance	n/a	Snow clearing and friction improvement works required prior to any flights. Only open for short periods during Oct-March	Groomed as required, markers checked	Groomed as required. Markers checked.	Groomed as required, markers checked.	Markers may be required subject to pilot request.	Markers may be required subject to pilot request.
Distance to station	n/a	65 km	10 km	750 m – 8 km	Approx. 40 km	1–6 km	20 km
Travelling time	9 h return (to Wilkins)	4.5 h to Hobart	5.1 h (to Davis station)	2.4 h (to Mawson station) 5.1 h (to Casey station)		2.4 h (to Davis station)	
Transport to station	n/a	Over-snow vehicle	Over-snow vehicle (20 min)	Over-snow vehicle (10 min – 1 h)	Helicopter (20 min)	Over-snow vehicle (15 mins)	Over-snow vehicle (approx. 1 h)

3.7 Meteorological information provided

Under the Convention for International Civil Aviation 1947 (the Chicago Convention), the Bureau of Meteorology (the Bureau) is the designated meteorological authority for Australia. It is required to ensure that aviation weather services are provided in accordance with international standards. Annex 3 to the Chicago Convention — Meteorological Service for International Air Navigation — deliver the standards and recommended practices for aviation meteorological services. These apply to both domestic and international aviation within Australia and the Australian Antarctic Territory.

More specifically, the Bureau provides Australian Antarctic program aviation users with observations, forecasts, warnings and advisories. Due to the irregular nature of Antarctic flying, aviation services are only provided by request through the Antarctic Meteorology Services Team Lead.

Volcanic ash advisories, high-level turbulence and icing warnings (SIGMET) are issued as required from the Bureau's National Operations Centre in Melbourne for inter-continental flights within the Melbourne and Brisbane flight information regions.

Aircraft ditching, search and rescue, flight planning, pilot briefings, route, aerodrome and area forecasts and station observations are issued as required by the Bureau's Antarctic meteorology offices at Casey, Davis and Hobart for all Australian Antarctic program flights. Flights under international program contracts, such as Intercontinental flights to McMurdo or Mario Zucchelli, are generally undertaken with meteorological support of the contracting national program.

Two to three Bureau observers are available year-round at each station. Forecasters are available as required year-round from Hobart, and a minimum of four forecasters are deployed across Casey and Davis stations each summer. A forecaster is typically deployed with a vessel when substantial helicopter operations are planned from ship to shore, such as during the Macquarie Island resupply.

Satellite imagery, model data, and surface and upper-air observations are all critical elements of aviation meteorology. Aviation forecasters may choose to refrain from issuing aviation products if their confidence is compromised by lack of timely and/or accurate weather information. Several automatic weather stations are installed and maintained by the AAD and the Bureau at remote locations to support aviation weather services. However, automatic instruments cannot report hazardous weather elements such as blowing snow, surface contrast and horizon definition, ice crystals or freezing fog. As these parameters are particularly critical to flying safety, the AAD and Bureau have agreed to a schedule of manual observation requirements for aircraft at key landing sites (Table 3.2). Certified AGSOs routinely make off-station manual aviation weather observations.

Real-time observations can be obtained during descent/approach by contacting AGSO personnel.

Table 3.2 Manual meteorological observation requirements for established landing area

	Wilkins	Mawson	Davis	Casey	Outbound flights with a 'point of safe return' (PSR)
A319	5 h prior to scheduled takeoff	N/A	N/A	N/A	5 h prior to scheduled takeoff until aircraft passes PSR
C17A	5 h prior to scheduled takeoff	N/A	N/A	N/A	5 h prior to scheduled takeoff until aircraft passes PSR
LC130	4 h prior to scheduled takeoff	N/A	4 h prior to scheduled takeoff	4 h prior to scheduled takeoff	4 h prior to scheduled takeoff until aircraft passes PSR
Basler	2 h prior to scheduled takeoff	2 h prior to scheduled takeoff	2 h prior to scheduled takeoff	2 h prior to scheduled takeoff	2 h prior to scheduled takeoff until aircraft passes PSR
Twin Otter	2 h prior to scheduled takeoff	2 h prior to scheduled takeoff	2 h prior to scheduled takeoff	2 h prior to scheduled takeoff	2 h prior to scheduled takeoff until aircraft passes PSR
Helicopter	2 h prior to scheduled takeoff	2 h prior to scheduled takeoff	2 h prior to scheduled takeoff	2 h prior to scheduled takeoff	2 h prior to scheduled takeoff until aircraft passes PSR

Notes:

1. Continual automated meteorological observations occur at Wilkins, Casey and Davis stations throughout the operational season. See *Intra-Continental Aviation Manual* and Season Conops documents for further detail.
2. Automated observation can be used for alternate landing sites provided they have a ceilometer and visibility meter/or webcam instruments (e.g. a flight to Davis may have Wilkins and/or Casey Ski Landing Area as alternate and manual observations are not necessary).
3. At the discretion of the forecaster, manual observations may be deemed unnecessary when forecasters are on-site at the Local Area Forecast (LAF)/Terminal Area Forecast (TAF) location.
4. Weather observations on sub-Antarctic islands start 2 hours before planned take off from either the ship or island, whichever occurs first.

4 Flight planning and control

4.1 Command and control

Due to the dispersed nature of aircraft operations and the competing demands for aircraft resources, clear lines of communication and clearly defined responsibilities must be in place to control aircraft operations.

All aircraft movements must be for an approved activity and be initiated by a task approval process to ensure the necessary conditions have been achieved prior to the departure of any aircraft. Approved activities are those identified through the seasonal planning process and delivered in-season through the Operations Management Centre (OMC).

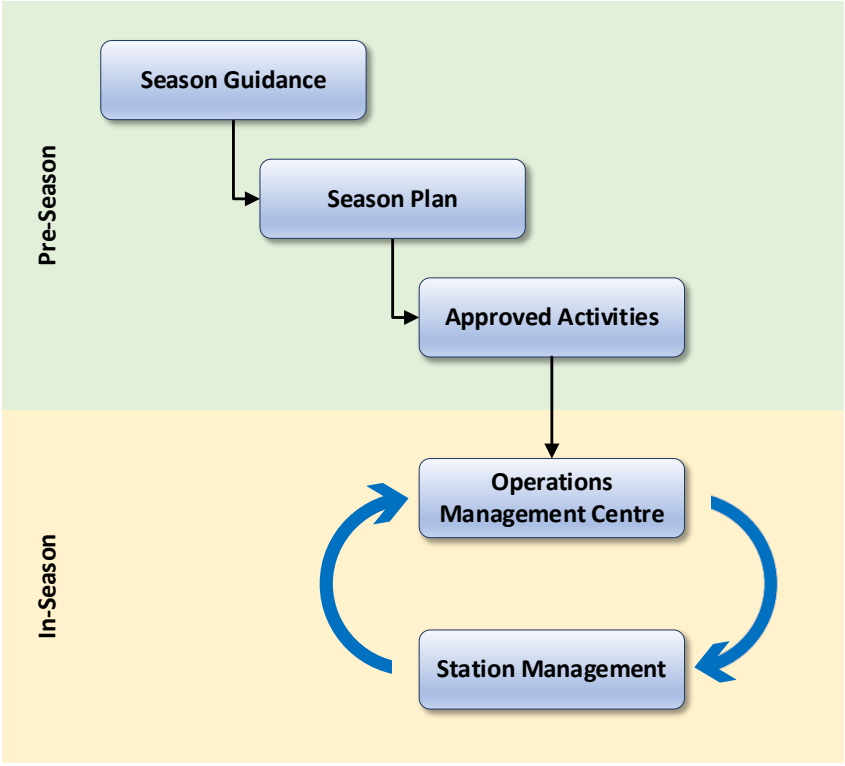

Figure 4.1 Approved activities development and management.

Most tasks are initiated in the pre-season planning phase at Kingston. Once formulated and signed off, the season plan is handed over to the OMC for execution. Unplanned flight operations may also arise during the season, either;

1. Planned flights from Hobart and directed by the OMC and handed to station management to coordinate, or
2. originate from station. In this case the requirement for any unplanned aviation activity needs to be reported back to the OMC who will assess the need and approve or not.

Aircraft are tasked by an appointed air tasking officer, usually the Operations Coordinator, Station Leader, Voyage Leader or Field Leader. Tasking Officers are only able to be appointed and approved by **Director Aviation** and must have undertaken the appropriate briefings and training to undertake Air Task Risk Assessments. The minimum requirements for their experience are outlined below (Section 4.3).

Aircraft tasking must be approved by the tasking officer at the departure point in consultation with personnel at the destination and the aircraft pilot(s) undertaking the task. The approval process will normally occur at a regular operations briefing where advice can be provided to the tasking officer by the Bureau of Meteorology, senior pilots and other operational / project staff involved.

4.1.1 Inter-Continental flight process

Operations Management Center (OMC) are responsible for all Inter-Continental pre-flight planning between Wilkins/Station/Aircrews, this may be undertaken through a combined instant messaging group.

OMC is to issue flight notifications (confirmed or delayed by no later than -16 hours) before passing the flight coordination to the Aviation Liaison Officer.

If a flight delays within -16 to 0 hours, then the Aviation Liaison Officer issues a delay notification and passes the flight coordination back to OMC for rescheduling.

Period	Task	Responsibility
1 week prior	Aviation Flight Comms plan to C17 Captain - C17 AAD / ADF – Op SD Comms Plan	Aviation Liaison Officer
1 week prior	Establish Instant messaging group with Aircrew, WAM, Aviation Liaison Officer.	Aviation Liaison Officer
4 days prior	Confirm with Pilot in Command (PIC) and WAM that the flight remains on schedule. Liaise with WAM and SL/OPSC confirming locations can support flight. OMC Send out flight status email notification initiating external stakeholder support arrangements - ABF, AQIS/Biosecurity	OMC/WAM/ SL/OPSC
C17 Checked bag pick up (if required) 4-3 days prior to departure	*Liaise with ADF/Ops Cargo/OSG and make decision if checked baggage pickup required (enables time MALT to load bags on L pallet when numbers over 10 pax) on C17. This will usually be 2 out of 3 checked bags. The 3rd bag and all cabin baggage will be weighed at airport during check-in process.*	Aviation Liaison Officer
1 day prior	Prior to contact with PIC, confirm with WAM/SL/OPSC readiness/availability. Via phone/instant messaging	OMC
1 day prior	PIC confirms departure time/delay (go/no go). To be done no later than **16 hours** prior to departure. Via phone/instant messaging	OMC
1 day prior	Manage/reorganise flight/s due to delay. Liaise with WAM/PIC/Cargo/HBA Ops/OPSC/SL	OMC
1 day prior	Confirmation/delay/reschedule notification distributed via SMS and email notification. • If delayed ***outside*** of business hours advise OMC on call watchkeeper who will update expeditioners/bus If delayed ***inside*** business hours advise OSG who will update expeditioners/bus.	OMC
No less than 16 hours prior to departure	Aviation Liaison Officer confirm flight timings with Hobart ABF on call officer 03 62301222	OMC
16 hours prior	Hand flight control over to Aviation Liaison Officer	OMC
16 hours prior	Confirm timing with ABF on call officer	Aviation Liaison Officer
1 day prior	Check Safety Culture for any NOTOC. CBC will take the NOTOC to Airport, unless advised for Aviation Liaison Officer to collect.	Aviation Liaison Officer
1 day prior	Receive Northbound Manifest from Station Supply Officer (SSuP).	Aviation Liaison Officer /SSuP
1 day prior	Receive Northbound briefing attendance register and add to safety culture.	Aviation Liaison Officer

3 hours prior	PIC confirms departure time/delay upon receiving TAF via phone with Aviation Liaison Officer – trigger to proceed or delay (less than 2 hours pax wait at airport). If delayed; • advise WAM via phone/instant messaging • notify OMC Watcher Keeper on call of delay via phone if ***outside*** of business hours (03 6232 3435) • notify OSG on call of delay via phone if ***inside*** of business hours (03 6232 3385) • Notify ABF On Call Officer (03 6230 1222)	Aviation Liaison Officer/Aircrew/OMC/OSG
Day of flight	Flight delayed (for any reason). Aviation Liaison Officer to send delay notification with a TBC. Aviation hands flight back to OMC to reschedule flight.	Aviation Liaison Officer
Day of flight	Rescheduled notifications. Confirm with Pilot (PIC) in Command and WAM /SL/OPSC on revised flight timing. Send out revised email / text notification. Hand flight back to Aviation Liaison Officer by 16 hours prior	OMC

Figure 4.2 Inter Continental flight process.

4.2 Aviation Reporting

The AAD has both internal (management, environmental, operational, contractual and safety) and external (CASA, BARS) reporting obligations and responsibilities for regulatory, compliance and assurance purposes.

The AAD is introducing Safety Culture as a conduit for the Senior AGSO and the Operations Coordinator to send a number of Aviation documents more efficiently. Safety Culture will allow certain documents to be uploaded at the Aviation Facilities or Station via a mobile phone app or desktop program, without the requirement to scan, rename files and email. For example; the Ski Landing Area Condition, Serviceability Reports and Aviation Ski Landing Area Sea Ice Measuring Report can be reported via one template and the Pre-Flight/DG, Post Operations Aviation Debriefs and Air Task Risk Assessments can be reported by via another template.
The templates are tailored to separate documents required to be completed by a Senior AGSO and those by the Operations Coordinator. Individuals will be provided with Safety Culture login details specific to their role (i.e. Casey SAGSO, Davis OPSC, etc.). Instruction and training on how to access and report through the platform will be provided prior to deployment.

Outlined below are the key aviation deliverables and time frames for documents that must be returned to the Aviation Section by the Kingston appointed responsible tasking officer at each operating node (Station Leader, Field Leader, Voyage Leader or Operations Coordinator). These are to be delivered electronically by the advised reporting method. Either via an appointed Safety Culture reporting template, or via email to *Aviation.Reporting@aad.gov.au* .

Any hard copies (i.e. completed booklets) to be retained in a dedicated location on station, reported to the aviation section. The complete collection of hard copies is to be RTA'd to the Aviation section in Kingston at the first available opportunity in the following season.

Description	Timeline for delivery
Pre-planning Aviation activities (such as the Daily Routines) - identifying planned operations for the following day	Distributed by 1800 the day prior
Daily Operations Activity Report (daily sitrep) – confirming what planned aviation operations were completed or not	Daily by COB
Air Task Risk Assessment (ATRA) - (Vol 5 Aviation SOP: Appendix A)	Within 36 hrs of completion
Post Operations Aviation Debriefs - (Vol 5 Aviation SOP: Appendix E)	Prior to next aircraft tasking or within 36 hrs of completion (whichever comes first)
Passenger Manifests (names, weights) – NOTOC booklet (or via Radio Comms Log)	Within 36 hrs of completion
Cargo Manifest (cargo weights and DG) – NOTOC booklet or other	Within 36 hrs of completion
Ski Landing Area Condition and Serviceability Reports – (Intra-continental Manual: Appendix B & C)	Within 36 hrs of completion
Field Landing Area Reports - uploaded to Field Landing Database (Vol 5 Aviation SOP: Appendix C & D)	Within 36 hrs of completion
Fuel Cache Records - uploaded to Field Landing Database	Within 36 hrs of completion
Pilot Handover Checklists - (Vol 5 Aviation SOP: Appendix G & H)	Within 36 hrs of completion
Pre-Flight Briefing attendance and DG declarations – all passengers are required to be given a pre-flight briefing (Intra-continental Manual: Appendix I)	Within 36 hrs of completion
Fuel Cache Establishment Checklist - (Vol 5 Aviation SOP: Appendix F)	Within 36 hrs of completion
Pilot Environmental Briefing Checklist - (Vol 5 Aviation SOP: Appendix B)	Within 36 hrs of completion
Aviation Operations Log (or similar) –record of all aviation activities and flight hours per project (as required by the Finance and Environmental sections for their annual reporting responsibilities and also aids Aviation contract management). For every flight the log must include critical information, including date, project ID, description of activity, aircraft rego, air task risk assessment number, departure time, arrival time, people on board. This is typically captured in the Operations Coordinators Log	Weekly
Flight Hours Report – breakdown of all aircraft flight hours by project. This is typically captured in the Operations Coordinators Log	Weekly
FLAG reports - (Dynamic terrain assessments)	Pre-season/in season as required
Station Aviation Readiness Checklist - (Vol 5 Aviation SOP: Appendix I and J) Note: station should complete as much as possible prior to any asset arriving and send to the inbound aircrew. The Checklist should then be fully completed once the aircraft and crew have arrived.	Once any aviation asset arrives at any station each season -see note
End of Season Reports – End of season reports are to be provided to Aviation (including Station Leaders, Operations Coordinators, Field Leaders, Wilkins Aerodrome Manager, Senior Air Ground Support Officers, Aviation Contractors).	Post - season

Table 4.2. Minimum Aviation Operations Reporting Requirements

More information on the above required documents can be found in this **Vol 5 Aviation SOP**, the ***Intra-continental Aviation Manual*** *or the* ***Station Operations Coordination SOP***.

4.2.1 Report naming conventions

When scanning and emailing various reports back to Aviation, please use the naming conventions below to standardize the file names. This is critical for record management.

In essence we need names to reflect;
- Where (identify the station or location of the report)
- What (what the document is and who it applies to)
- When (a date in the following format: dd.mm.yyyy)

Examples:
- Casey - ATRA JKB - 12.11.2022
- Davis - ATRA Helos - 05.12.2022 or if a specific helo Davis - ATRA FPX - 05.12.2022
- Casey SLA - Serviceability Report - 01.11.2022
- Casey - Manifest FBJKBAAP050a - 30.11.2022
- Davis - NOTOC FTOAAP040 - 25.11.2022

When reporting via Safety Culture, follow any naming conventions provided in the examples within the template. This will ensure standardisation of the report files and effective analytics.

If uploading any .PDF files as reporting or supporting documents into a Safety Culture template, unless otherwise instructed, use the same naming conventions as required for email reporting.

4.3 Ski Landing Area Aviation Support Staff

All aviation operations must be supported by appropriately qualified, trained and experienced personnel filling the key positions on Station (or field) as part of the template for the particular operations approved in the Season Plan.

Key support staff required for aviation operations include;
- Air Ground Support Officers (AGSO),
- Communications Operator (CO),
- BoM Forecaster, and
- Operations Coordinator (OPSC).

Air Ground Support Officers (AGSO)

Minimum requirement: a minimum of 2 AGSOs are required to support Aviation operations at any location an aviation asset is permanently based for greater than 7 calendar days. When operating Casey or Davis plateau Ski Landing Areas a minimum of 4 AGSOs are required. For all other operations the Aviation section will determine the number of AGSOs required for any location based on the nature of the planned operations.

Minimum Qualifications and Experience: an AGSO position description and qualifications/experience is outlined in the *Intra-continental Aviation Manual*.

Training: As this role is classified as a Safety Sensitive Aviation role (SSA) by the AAD's Drug and Alcohol Management Plan (DAMP), there are various online training modules required for completion and are assigned by the AAD training unit (i.e. DAMP, Aviation Safety Management Systems, Human Factors Awareness).

Communications Operator (CO)

Minimum requirement: a minimum of 1 communications operator is recommended to support Aviation operations at any location an aviation asset is permanently based for greater than 7 calendar days. It is essential that the number of comms operators employed is appropriate for the scope of the tasking and allows for correct fatigue management/shifts. If a dedicated CO is unavailable, then a suitably qualified and trained person will be required to fill the role during aviation operations.

Minimum Qualifications: it is essential that the individual(s) selected for this role have an Aeronautical Radio Operator Certificate (AROC) as required by CASA to communicate with an aircraft.

Suggested practical experience, currency and proficiency: individual(s) selected for this role require suitable aviation experience and currency in order to understand flight following requirements and how to correctly react (missed Ops Normal, Pan, Mayday, SAR, MEDEVAC etc) whilst providing correct aeronautical readbacks and relaying of weather information. The individual needs to understand METAR/Weather Forecast/Obs coding, understand how AAD tracking systems work and how to use them (Comnap tracker, Tracplus, Inreach, Shout Nano, etc), flight following reporting requirements, Comms recording (Comms log, OPSC Log, and voice recording). They need to be competent on AAD Comms consoles (and alternate comms if/when comms falls over). Preferably the individual needs experience in commercial or military aviation as aircrew, ATC, emergency services or as a Comms operator in a Rescue Coordination Centre (or equivalent). It is essential the individual(s) selected for this role at Casey have experience, recency and proficiency in International ATC operations in order to communicate with Air Services Australia and take direction from Air Traffic Control (Melbourne Centre or Brisbane Radio).

Training: As this role is classified as a Safety Sensitive Aviation role (SSA) by the AAD's Drug and Alcohol Management Plan (DAMP), there are various online training modules required for completion and are assigned by the AAD training unit (i.e. DAMP, Aviation Safety Management Systems, Human Factors Awareness).

Dedicated to this role: when aviation operations are being conducted, it is expected that a dedicated Communications Operator is covering the communications console (aviation communications cannot be undertaken remotely). If the Communications Operator role is being filled by other station personnel, it is essential that the individual(s) selected are released from their primary Station role, cleared by their supervisor and SL. It is essential that individual(s) selected to backfill this role receive specific Comms Operator training from a qualified and current Comms Operator in Antarctic operations, and are familiar with the Comms Operators Manual.

Senior Pilot Briefing: Communications Operators are required to receive a briefing from the Senior Pilot (station-based helicopter and/or fixed wing aircraft) prior to commencing flying operations for the season. This is to ensure communication requirements and schedules are clearly understood by all.

Other Aviation Compliance Tasks: individual(s) selected for this role must undertake the requirements set out in the *Station Operations Coordination SOP* for logging all aviation activities, recording POBs, flight departure/arrival times and flying hours, etc.

BoM Forecaster

Minimum requirement: Recommended a minimum of 1 BoM Forecaster is on station to support Aviation operations where an aviation asset is permanently based for greater than 7 calendar days, however field locations and stations may need to be supported by additional BoM resources remotely. It is essential that the number of forecasters available is appropriate for the scope of the tasking and allows for correct fatigue management/shifts.

Operations Coordinator (OPSC)

Minimum requirement: An Operations Coordinator is recommended to support aviation operations at any location an aviation asset is permanently based for greater than 7 calendar days. In the absence of a this dedicated OPSC, the minimum reports (as shown in Table 4.2) must be fulfilled by the Station Leader or other suitably experienced/trained person (i.e. FL or VL).

Qualifications: individual(s) selected for this role are recommended to have an Aeronautical Radio Operator Certificate (AROC) to provide a basic aviation knowledge and CASA authority to directly communicate with an aircraft.

Note: Aviation are currently investigating a number of competency-based courses which will ensure OPSC (or tasking officers) to have the skills and knowledge required to better understand flight planning and risk management considerations involved in authorising flights.

Training: As this role is classified as a Safety Sensitive Aviation role (SSA) by the AAD's Drug and Alcohol Management Plan (DAMP), there are various online training modules required for completion and are assigned by the AAD training unit (i.e. DAMP, Aviation Safety Management Systems, Human Factors Awareness).

Suggested practical experience, currency and proficiency: individual(s) selected for this role are recommended to have suitable aviation experience and currency in the operation or coordination of aircraft. OPSCs are also required to coordinate a wide range of non-aviation activities on and off stations, as outlined in the *Station Operations Coordination SOP*. OPSCs require the necessary aviation knowledge and experience to coordinate and understand the requirements for ground support, flight operations, payload and range limitations, comms operations, and SAR requirements, in addition to understanding the assurance and compliance requirements. SLs (or delegate) undertaking / coordinating aviation operations in the absence of a dedicated OPSC will need the requisite training as outlined in the *Station Operations Coordination SOP* in order to meet regulatory and compliance requirements and deliver the required reporting.

Other Aviation Compliance Tasks: individual(s) selected for this role must undertake the requirements set out in the *Station Operations Coordination SOP* for logging all aviation activities, recording POBs, flight departure/arrival times and flying hours, etc. As a minimum for aviation compliance and assurance, OPSC are required to provide the reports as scheduled in the Table 4.2 above.

5 Risk assessment

All Australian Government employees must ensure the proper use of government property, including aviation assets. Aircraft are only to be used for specific pre-approved operations. **They are not to be used for purely recreational purposes.**

A tasking officer may choose to allow personnel who have no task specific role on a flight to join a flight providing:

- The aircraft has an assigned approved task to undertake
- The risk is acceptable to the tasking officer after undertaking a flight risk assessment
- The person carried does not affect the outcome of the task (e.g. an additional person would not necessitate an extra flight, increase the duration or risk of the flight or negatively impact any possible search and rescue (SAR) response).

Contact the Aviation Liaison Officer for further clarification.

5.1 Air Task Risk Assessments

Only the tasking officer can complete the Air Task Risk Assessment and shall not delegate this responsibility without Director Aviation approval.

The tasking officer and the senior pilot must complete a written Air Task Risk Assessment (Appendix A) for **all tasks** with input from other staff as required. The tasking officer is responsible for completing the air task risk assessment form and must advise the Station Leader or Voyage Leader of any risks identified outside SOPs. Senior pilots must provide relevant job safety assessments for the task. The tasking officer must consider any other factors that may affect the safety of the task or lead to adverse impacts on the season flying program. See the *Intra-Continental Aviation Manual* for detailed information.

A task involving multiple, similar flights may be covered under one air task risk assessment form. Notwithstanding, a completed form addressing identified risks must be documented and available for individual flights. Examples of some of the factors that may vary, and need to be addressed are:

- Route changes, including additional risks associated with additional landings
- Pilot changes (e.g. previous task experience levels)
- Changes in Ski Landing Area status
- Location of other aircraft for SAR response
- Aviation crevasse probing — see AAD Field guidelines — helicopter crevasse probing and AAD Field guidelines — fixed-wing crevasse probing

Addition of dangerous goods or changes in cargo.

5.2 Post Aviation Operations Debrief

The tasking officer and the senior pilot must undertake a Post Aviation Operations Debrief (Appendix E) at the first suitable opportunity post aviation operations and prior to undertaking further aviation operations on a subsequent day. The debrief will pertain to the days ATRA's (separate debriefs for rotary and fixed wing) and documented in plain English covering any adjustments/amendments required prior to next Aviation Operation. This is an essential closed loop process to assure that no critical information is missed from the previous days' flying activities before authorising the next available days' flying activities.

5.3 Aviation Safety Management System

Due to the low number of passengers and flights at AAD aviation facilities (less than 1000 passenger movement & less than 200 aircraft movements annually), the AAD is not required under the regulations to have a fully compliant Aviation SMS.

The Australian Antarctic Division's aviation program deals with safety and risk management through a suite of Standard Operating Procedures and risk assessment in accordance with the AAD Risk Management Policy and has largely been managed internally by the Australian Antarctic Division.

As a part of the Australian Government's Department of Climate Change, Energy, the Environment and Water (DCCEEW), which has oversight of a much broader aviation program than that of the AAP alone.

The Department (DCCEEW) has produced the HSW General Aviation Standard (WHS-AV- STD-01 General Aviation Standard), Workplace Health & Safety (HSW) Contractor and Vendor Management Standard and Risk Management Standard. The AAD Antarctic Operations Branch has developed an Aviation SMS Commitment for the interim in line with the DCCEEW Standards and AAD SMS Manual.

It is proposed that the Department develop an Enterprise Aviation Safety Policy in line with Part 5 of Civil Aviation Safety Regulation 1998 (CASR) (currently being developed) and International Civil Aviation Organisation (ICAO) Safety Management System, encompassing an Aviation Risk Framework that clearly articulates the Aviation safety policy and objectives, safety risk assessment and management, safety assurances including safety performance indicators (SPIs), safety performance targets (SPTs), and safety promotion.

5.3.1 Aviation SMS Commitment

Safety and Risk are one of our core business functions. We are committed to developing, implementing, maintaining and constantly improving strategies and processes to ensure that all our aviation activities take place under the appropriate allocation of organisational resources aimed at achieving the highest level of safety performance and meeting regulatory requirements while delivering our services.

All levels of management and all employees are accountable for delivering this highest level of safety performance, starting with Branch Head Antarctic Operations and Logistics.

We are committed to:

- Support the management of safety through the provision of all appropriate resources, which will result in an organisational culture that fosters safe practices, encourages adequate safety and risk reporting and communication, and actively manages safety and risk with the same attention to results as the attention to the results of the other management systems of the organisation;
- Ensure the management of safety and risk is a primary responsibility of all managers and employees;
- Clearly define for all staff, managers and employees alike their accountabilities and responsibilities for the delivery of the organisation's safety performance and the performance of our safety and risk management system;
- Establish and operate hazard identification and risk management processes, including a hazard reporting system, to eliminate or mitigate the safety risks of the consequences of hazards resulting from our operations or activities to achieve continuous improvement in our safety performance;
- Ensure that no action will be taken against any employee who discloses a safety or risk concern through the hazard reporting system unless such disclosure indicates, beyond any reasonable doubt, gross negligence or a deliberate or wilful disregard of regulations or procedures;
- Comply with and, wherever possible, exceed legislative and regulatory requirements and standards;
- Ensure that sufficient skilled and trained human resources are available to implement safety and risk strategies and processes;
- Ensure that all staff are provided with adequate and appropriate aviation safety information and

training, are competent in safety matters, and are allocated only tasks commensurate with their skills;
- Establish and measure our safety and performance against realistic safety and risk performance indicators and safety and risk performance targets;
- Continually improve our safety performance through continuous monitoring and measurement, regular review and adjustment of safety and risk objectives and targets, and diligent achievement of these; and
- Ensure externally supplied systems and services to support our operations are delivered, meeting our safety and risk performance standards.

5.3.2 Basic Aviation Risk Standard

In 2023 the Department of Climate Change the Environment, Energy and Water (DCCEEW) released WHS-AV-STD-01 Work Health & Safety – Aviation Standard. This Standard describes the minimum mandatory work health and safety (WHS) requirements for effective management of aviation activities to prevent injuries and fatalities utilising the Flight Safety Foundation Basic Aviation Risk Standard (BARS).

This Standard specifically applies to situations where the department uses contracted aircraft, including helicopters and aircraft chartered by other organisations, to undertake essential work for the department. It applies to all workers, including employees, contractors and subcontractors, and to businesses and functions within the department that undertake aviation activities including:

- aerial transport operations – passenger transport in chartered aircraft
- aerial application operations (fixed-wing or rotary-wing aircraft) – including application of chemicals for weed or pest control, aerial baiting, aerial incendiary dropping, and fire suppression operations
- aerial shooting operations – feral animal culling and sampling (rotary-wing aircraft)
- aerial surveillance and spotting operations (fixed-wing and rotary-wing aircraft)
- helicopter external sling load operations (HESLO)
- remotely piloted aircraft systems (RPAS)
- emergency operations.

DCCEEW is now a Flight Safety Foundation Basic Aviation Risk Standard (**BARS**) Member Organisation. BARS provide clear advice on steps which must be taken to manage WHS risk for each aviation activities. For some activities these standards should be read together with other WHS standards, departmental policies (e.g., the National Firearms Policy) and guidance documents.

BARS audits are carried out by trained and accredited BARS auditors working under a registered BARS Audit Company.

The BARS Program is made up of a suite of risk-based aviation industry Standards with supporting Implementation Guidelines. All Standards are developed and presented in the Bow-Tie model for easy understanding and include a set of controls and defences for the identified risks.

One specific outcome of the BARS for AAD Aviation operations in Antarctica is the requirement to enhance safety by operating twin engine helicopters when flying over hostile terrain, hence the AAD has transitioned its contracted Helicopters from AS350 B3 to BK117s.

Note: If single engine helicopter operations are required, contact Aviation Liaison Officer to facilitate approval processes, noting this will take several weeks to complete and obtain the necessary approval.

The BARS utilise the bowtie model of risk management (Figure 5.1), which provides a way to effectively communicate complex risk scenarios utilising a bowtie-shaped diagram to clearly differentiate between proactive and reactive risk management. Threats are identified by historical events in the contracted aviation sector and associated operating environment which are constantly updated by the BARS program.

Figure 5.1. Bowtie model of risk analysis. On the left of an identified event are the hazards and preventative measures, on the right of the event are the recovery measures and consequences.

5.4 Safety Management Responsibility

5.4.1 Aviation Safety Officer

The Head of Division of the AAD has appointed the Director Aviation (see the Master Contacts List at the front of this manual) as the Aviation Safety Officer (ASO) for all AAD Aviation operations.

The ASO has an open line of communication to the AAD's Branch Head Operations and Logistics for any safety related matters.

5.4.2 Role of ASO

The role of the ASO includes:

1. The development and maintenance of SMS documentation
2. Conducting and overseeing hazard identification and risk assessments
3. Developing and overseeing risk treatments and controls
4. Conduct or supervise all aviation related AAD incident investigations
5. Chairing the Aviation Safety Committee (ASC)
6. Maintaining records for the ASC membership and activities
7. Informing all Aviation staff and users about the role of the SMS and key appointments
8. Documenting and distributing the findings of all safety meetings to Aviation staff and users.

5.4.3 Safety Committee

The ASC is to include the following:

1. The ASO or delegate
2. Wilkins Aerodrome Manager
3. The SAGSO of each AAD aviation facility/operation (Season Report)
4. Senior Pilot from each of the operators as nominated by contractor

The Committee is to meet as required but not less than annually. Generally, this will occur as a part of the post-season debrief or as part of pre-season planning.

5.4.4 Role of Committee

The role of the Committee in conjunction with the ASO includes:

1. Monitoring the overall effectiveness of the SMS particularly with respect to the interface between AAD aviation facilities and other areas such as aircraft operators and Station operations
2. Conducting hazard identifications and risk assessments
3. Reviewing the incident reporting system for effectiveness
4. Reviewing the effectiveness of the training system
5. Sponsoring audits of the operation and investigations of incidents
6. Reviewing SMS documentation

The requirements of the role are further detailed in the appropriate sections of this document.

5.5 Risk Management Process

The ASO through the WAM, SAGSO or the Tasking Officer will ensure that all planned activities at each AAD aviation facility are in accordance with relevant SOP's or they must be subject to an AAD risk assessment (RA) in accordance with the DCCEEW Enterprise Risk Management Framework (ERMF), which can be found on the AAD's Intranet.

The ASO and WAM, SAGSO, or the Tasking Officer are responsible for ensuring all visitors to AAD aviation facilities are made aware of relevant hazards and control measures.

5.6 Hazard Reporting

All aviation safety related reports will be recorded and evaluated by the ASO and investigated by the ASC if appropriate. Reports are to be raised through SIRUS (the Departmental Incident reporting system) accessible via intranet.

As part of all aviation site inductions and training the ASC will ensure that Aviation staff and any visitors are made aware of the incident reporting system. Additionally, the ASO is responsible for developing a culture where Aviation staff do not hesitate to raise incident reports. Additionally, Aviation staff members who have raised a report are to receive feedback on the action taken to address the concerns reported.

Staff members will not be penalised for raising incident reports. If Aviation staff wish to maintain anonymity staff reports should be raised through an AAD WHS representative or Station Leader.

All Aviation operations staff are to be advised of any corrective action resulting from reports.

5.7 Training

The ASO is responsible for ensuring that Aviation staff receive induction and ongoing training where necessary to ensure that:

1. They understand how the SMS operates
2. They are aware of the role they play in the SMS
3. They understand that the aim of the SMS is to improve safety - not to attribute blame

The ASO is responsible for maintaining a record of all training received by Aviation staff. Training records are to be kept for a period of not less than three years.

The ASC is responsible for evaluating the effectiveness and appropriateness of Aviation staff training annually.

5.8 Auditing and Inspections

The ASO is responsible for ensuring that procedural and compliance audits are carried out annually on all aviation facilities. The audits can include input from:

1. Serviceability Inspections
2. Technical Inspections
3. External Inspections and Audits and
4. Internal Inspections and Audits

The results of audits will be considered by the ASC to determine appropriate follow up action if required. Observations from audits are also to be logged into the incident reporting system so that progress against corrective actions can be monitored. Audit results are to be promulgated to Aviation operations staff.

The requirements for inspections are summarised in the table below:

Inspection Type	When Conducted	Scope	Conducted By	Report
Serviceability	Daily when there is planned aircraft movement	Pavements Movement Areas Markers and Aids Emergency Preparedness Support Facilities	Wilkins/Ski Landing Area Reporting Officer	Entered into Inspection and Maintenance Log. Serviceability Inspection and/or Runway Condition Report promulgated.
Internal Audit	Annually	Infrastructure Facilities Procedures Equipment	Arranged by Assistant Director Aviation Operations	Sent to aircraft operators who use the facility regularly. Filed for three (3) years.
Safety	Planned annually	OLS Runway properties Runway lights Communications equipment Medical equipment Key plant and engines	Arranged by Assistant Director Aviation Operations	Sent to Aviation Section.

5.9 Aviation Incident Investigations

All incidents involving departmental aviation activities must be reported by department employees to their supervisor or manager and logged in SIRUS (the department's online incident reporting system) as soon as possible after becoming aware of an incident involving an aviation services provider.

The ASO is to conduct or supervise investigations into all incident reports raised on any AAD Aviation operations.

The investigation of all aviation incidents must consider the requirements of the relevant BARS, AAD SOPs, the DCCEEW WHS Aviation Standard and any associated departmental standards, procedures, and guidelines.

The department may also have a legislative obligation to report some incidents to the ATSB.
For further information refer to the Air services Australia's Aeronautical Information Publication (https://www.airservicesaustralia.com/aip).

The WHS Hotline must be contacted on 1800 571 313 (press 1 for notifiable incident) immediately upon becoming aware of any serious aviation incidents to enable any mandatory safety regulator notifications to be made in accordance with those legislative obligations (e.g. ATSB notification).

Incidents that have resulted in a death, a Notifiable Serious Injury or illness, or a Notifiable Dangerous Incident must be reported to Comcare. Reports to Comcare may only be completed by the WHS Manager or such other person as authorised by the AAD Head of Division.

5.10 Documentation and Data Control

The SMS documentation as a part of this Manual is to be made available to all staff and users of AAD aviation facilities. The ASO is responsible for all record keeping as part of the SMS. Incident reports will also be maintained in the Departmental Incident reporting system for not less than three years. The ASC is to review the SMS and related records annually.

5.11 System Evaluation

The ASC is to evaluate the effectiveness of the SMS annually. Aviation staff and aircraft operators using AAD aviation facilities are to be given an opportunity to have input into the evaluation of the Aviation SMS.
The outcomes of any review or evaluation are to be made available to all Aviation staff.

The Branch Head Operations and Logistics is to ensure that the SMS is provided with adequate resources to carry out the evaluation process.

6 Aviation Antarctic survival clothing

6.1 In flight Inter-continental flight survival clothing

All expeditioners are issued AAD survival clothing that must be worn at prescribed times or carried in the red survival bag and kept accessible when not required.

Minimal personal survival clothing (as shown on AAD *Survival Card*) must be worn and balaclava, goggles, mittens/gloves must be immediately accessible for use at the following times: -

- On a flight when a pilot announces that expeditioners are required to change into Antarctic survival clothing. Minimum personal survival clothing (as shown on AAD *Survival Card)* consisting of approved base-layer thermals, power-stretch mid layer and/or fleece mid layer (dependent on personal comfort levels) *plus* outer shell and approved footwear (with the exclusion of boot chains while inside the aircraft) must be donned and worn until clear of the aircraft.
- When departing Antarctica, minimal personal survival clothing must be worn (with the exclusion of boot chains while inside the aircraft) while boarding the aircraft, during take-off and until the pilot announces that Antarctic survival clothing may be removed. Thereafter items may be removed and stored in the red survival bag which must be kept accessible at all times.

Pilots and crew are required to wear approved AAD clothing.

Minimal personal survival clothing is not required when boarding or landing at a non-Antarctic arrival or departure point.

6.2 In flight Intra-continental flight survival clothing

6.2.1 Station flights

For intra continental flights between stations the following clothing procedures are to be applied.

Minimal personal survival clothing (as shown on AAD *Survival Card*) must be worn and balaclava, googles, mittens /gloves must remain on your person, immediately accessible for use at the following times: -

- When boarding and exiting an aircraft, upon ascent and descent, and on flights below 2000 feet.
- At other times during a flight a minimum of approved base-layer thermals, power-stretch mid layer and/or fleece mid layer *plus* outer shell and approved footwear must be worn to suit aircraft internal temperatures and personal comfort levels. Additional Antarctic survival clothing and equipment as shown on AAD *Survival Card* must be within arm's reach at all times.

6.2.2 All other flights

For all other intra- continental flights, the following clothing procedures are to be applied:

Minimal personal survival clothing (as shown on AAD *Survival Card, with the outer shell comprising either insulated workwear or windproof shell)* must be worn and balaclava, googles, mittens /gloves must remain on your person, immediately accessible for use at the following times: -

- When boarding and exiting an aircraft, upon ascent and descent, and on flights below 2000 feet.
- At other times during a flight a minimum of approved base-layer thermals, power-stretch mid layer and/or fleece mid layer *plus* outer shell and approved footwear must be worn to suit aircraft internal temperatures and personal comfort levels. Additional Antarctic survival clothing and equipment as shown on AAD *Survival Card* must be within arm's reach at all times (*with the outer shell comprising either insulated workwear or windproof shell*).

Note if insulated workwear is worn, AAD windproof shell must be carried in your survival bag.

6.3 Aircrew survival clothing

During operations in Antarctica Aircrew are to wear the minimum clothing as prescribed below: -

- Base layer thermals,
- Flight suit (type approved by AAD),
- Warm sturdy boots (type approved by AAD).

In addition to the clothing required to be worn pilots must have accessible in the cabin of the aircraft: -

- Warm jacket (down or Insulated workwear type),
- Warm gloves,
- Beanie or balaclava.

Aircrew must carry in their personal survival kits: -

- Spare thermals,
- Spare socks,
- Additional warm layers (fleece pants and jackets),
- Neck gaiter,
- Snow goggles,
- Micro Spikes,
- Outer shell pants or insulated workwear,
- Cold weather survival boot rated -60° C (Baffin Workhorse).

When exiting the aircraft in areas assessed as having evidence of crevassing present Aircrew are to wear over their flight suit at least one of the following jackets: -

- Down Jacket,
- Waterproof shell jacket,
- Insulated workwear.

Passengers are required to wear the minimum clothing standards prescribed by the AAD and carry additional items required in their personal survival kits. If a pilot is not satisfied with the way a passenger is dressed for a flight they may request, they put on additional clothing or refuse to transport them.

7 Aviation survival kits

Only applicable for operations in the Antarctic (not the sub-Antarctic). One- or two-person aviation survival kits have been developed for all aircraft operations. Each two-person kit comprises a minimum of two parts (A and B) and may contain up to three parts (C):

- Part A — cooking / rations (red soft-shell bag)
- Part B — shelter / sleeping / survival (yellow soft-shell bag)
- Part C — additional rations (navy soft-shell bag — emergency food rations for 12 days/2 people or 24-person days).

FTO's must check the contents of all aviation kits prior to commencement of each season to ensure compliance with the inventory listed on the bags.

Additional Part C's are allocated to the station field stores '**as emergency/contingency food**' for land-based travel and are clearly labelled, these kits should not be mixed with Aviation kits (Davis x 4, Casey x 4, Mawson x 6).

A limited number of one-person kits have been designed for helicopter use and comprise of a combination of parts A and B.

Flight planning and air task risk assessments will determine the need for the inclusion of aviation survival kits in aircraft. Depending on the air task, aviation survival kits will be required in all aircraft to cover passengers as following the decision matrix in Table 7.1. Aircrew may use their own Aviation Survival Kits provided they meet the same standard as AAD supplied Aviation Survival Kits.

Table 7.1 Decision matrix for aviation survival kits

Operational window	Parts A and B	Part C	Field/survival packs
Outside station operating areas	Required	Required	Required
Operating between established aerodrome, prepared Ski Landing Areas or camp/refuge that has food rations	Required	Not required	Required
Within station operating areas	Required if no field packs are loaded for Pax/crew	Not required	Required if no aviation survival kits are loaded for Pax/crew
Short-range ship-to-shore flights with watercraft search and rescue coverage	Required to cover aircraft crew only	Not required	Not required

8 Specific AAD requirements

Where contractor manuals or other legislation have more stringent requirements or require implementation of additional measures, the more conservative requirements apply.

8.1 Field landing sites

All planned risk mitigations must be put in place prior to landing at any field landing site. All procedures specifically listed below must be followed.

Note: there are some differences between fixed- and rotary-wing operations to field landing sites.

Terrain that is subject to crevassing caused by movement in the underlying ice sheet is termed 'dynamic terrain'.

The Antarctic ice sheet covers 98 per cent of the continent, and dynamic terrain can be found throughout that area. It is particularly prevalent in:

- coastal locations with zones of high ice velocity and relatively thin ice thickness
- areas of expected high shear strain, such as the edge of glaciers, the boundaries of ice shelves and regions of steep and changing slope
- the tidal flexure zone of the ice shelf grounding line
- areas of spreading ice typically seen on ice shelves but also over topographic features.

Before any expeditioner is permitted to travel to dynamic terrain, the Station Leader must activate the site assessment outlined in the Station and Field SOP, chapter 4.

Rotary and fixed wing operations to dynamic terrain are governed by the same rules as apply to other activities on that type of terrain. However, extensive planning and a low-light aerial reconnaissance must be conducted, after which the further steps set out under the Remote Field Operation SOP (Vol 1 chapter 4) must be followed where necessary.

8.2 Fuel caches

Fuel caches are where aviation fuel is either left temporarily for a relative short period (i.e. established during a season for a specific task and then completely removed within that season), or left for more than one season.

Actions to minimise the risks and impacts specific to drummed fuel stock caches.

On station

1. Fuel drums must be co-located in designated areas at stations. At Mawson, drums must be stored to minimise any spills or drum failure resulting in run-off into Horseshoe Harbour.
2. Station stockpiles must be marked by brightly coloured barricades or canes as appropriate, and/or be located in areas where vehicles do not routinely operate.
3. The bottom row of stockpiled drums must be held in position with wedges or fabricated drum stands to prevent collapse as stacks are created.
4. Stockpiles must be managed so that drums of the same year of manufacture are grouped and the oldest fuel is used first.
5. Fuel drums must be colour-coded so their year of manufacture is readily distinguishable.
6. The condition of the drum containers in the drum stock must be checked periodically.
7. Bungs must be re-inserted in used drums.

In the field

1. Prior to commencing establishment of a new fuel cache, approval in writing must be obtained from the Aviation Director via aviation.operations@aad.gov.au
2. A register of Australian fuel caches must be maintained on the AAD field landing database, and must include GPS coordinates and the number and age of full and empty drums.
3. Old aviation fuel must be removed as a priority from Antarctic special protected areas (ASPAs) and no new aviation fuel depots or caches may be established in ASPAs.
4. The tasking officer must ensure any new caches that are established follow a documented process (**Appendix F. Fuel cache establishment checklist**) that assesses:
   i. the environmental values of the proposed site and surrounding area
   ii. the features of the local landscape, with particular emphasis on slope, aspect, water flows, susceptibility to high winds and heavy snowfalls, and proximity to lakes, vegetation and wildlife
   iii. any particular challenges for clean-up presented by the location, landscape, and surrounding area (e.g. the area's accessibility and its susceptibility to damage from machinery or recovery equipment)
   iv. the prospect of timely removal of drums once emptied or expired.
5. Caches on ice and snow must be marked using bamboo canes or similar.
6. Caches must be secured to prevent dispersal by wind before removal from the site.
7. Drums must be stored on their sides to prevent water damage to fuel.
8. Unused drums must be removed from field caches within six years of the date of manufacture of the drum (see *Intra-Continental Aviation Manual* for colour reference).

8.3 Fixed wing operations

1. Any surface that has had minimal surface preparation must be considered as an unprepared Ski Landing Area.

2. Operations to unprepared Ski Landing Areas must be planned by AAD using the most appropriate aircraft available to minimise risks to the AAP to the maximum extent possible, particularly
   i. for the first landing of the season
   ii. after significant environmental events where there is doubt about the surface conditions
   iii. at high altitudes (generally above 5000 ft.) on the plateau

   This may include AAD planning an initial flight by helicopter, or, if multiple types of fixed-wing aircraft are available, using the aircraft with the highest available amplitude and frequency tolerance. Under these circumstances,
   i. only the pilots, engineer/s and any other persons required for a safety reason may be carried
   ii. ideally the aircraft must be at minimal weight
   iii. the surface must be assessed to the maximum extent possible (this may include the use of ski drags to assess texture and crevassing or data loggers)
   iv. a Field Training Officer (FTO) must be present for the aerial reconnaissance flight for any new unprepared Ski Landing Area or for an unprepared Ski Landing Area that has not been re-inspected after 6 weeks. Where an FTO is not available, a risk assessment must be conducted.

3. Ski drags must not be planned with passengers on board. This activity carries additional risks, including aircraft being operated near single engine minimum control speed and uncertainty as to the exact height of surface obstacles. If passengers must be carried on a ski drag, approval is required from the Director Aviation or Assistant Director Aviation Operations.

4. Basler flights between Casey and Davis stations must be planned as non-stop given the marginal payload increase gained by landing at an unprepared Ski Landing Area (i.e. Bunger Hills). This reduces the requirement for fuel replenishment, avoids an unnecessary landing and reduces risk to the AAP. Flights planning to use an unprepared Ski Landing Area between Casey and Davis stations must use the process at point 2.

5. Mawson, particularly the plateau Ski Landing Area, is prone to extreme katabatic winds. Aircraft parked on the ground have been damaged or destroyed in the past. Specific approval from the Director Aviation or Assistant Director Aviation Operations is required for parking aircraft overnight at either the sea ice or plateau Ski Landing Areas.

6. The AAD no longer maintains a fixed-wing search and rescue drop capability for AMSA.

8.4 Rotary wing operations

1. Passengers may not be carried at the same time as an external load without prior approval from the Director Aviation (except when essential crew are carried see point 2).

2. Essential crew (Field Training Officer, aircraft ground support officer or helicopter engineer with at least a wilderness first aid ticket) must be carried when conducting external load operations under the following circumstances:
    i. where sling load operations require a maximum of one trip to an unmanned location (minimum 2 crew) (if more trips are required then at least two people must be deployed to site for the duration of operation).
    ii. a single helicopter operating within 1 hr. of station search and rescue (SAR) to an unmanned location (minimum 2 crew).
    iii. two helicopters operating beyond 1 hr. of station SAR to an unmanned location (minimum 3 crew between two helicopters).
    iv. sling load operations to an unmanned location using the TALON Auto-Loc device, remote hook, or where the line will be released does not require essential crew as long as the pilot does not land. In the event the load cannot be automatically connected/disconnected the pilot is to return to station rather than land.
    v. sling load operations to a dynamic site requires the pilot and essential crew member to have completed the Dynamic Terrain Awareness Training.

3. In certain situations, AAD personnel may be carried on non-passenger flights as a ‘Task Specialist’ when deemed essential for the completion of an operation.

    The designation of ‘Task Specialist’ status is subject to conditions which vary depending on the operational objective and risk profile. The allocation must be authorised under the aircraft operators’ internal exposition and not be in contradiction of any AAD processes, department standards, or relevant regulations.

    Each designation of ‘Task Specialist’ status to an AAD personnel requires an induvial risk assessment with approval issued from the appropriate delegate. Noting, any risk with a revised rating of ‘High’ or above, or requires the removal of a BARS control/s, or carries a potentially fatal risk outcome – will require approval from the department Deputy Secretary as the appropriate delegate.

Before acting as a 'Task Specialist', individuals must obtain written approval from the AAD Aviation Director for the specific task. Approvals are not transferable to others or withstanding post task completion.

4. Lone pilot operations cannot be conducted to unmanned locations. Minimum personnel (i.e. suitably trained for the destination and operation) must be carried under the following circumstances:
    i. a single helicopter operating within 1 hr. of station search and rescue (SAR) to an unmanned location (minimum 2 people).
    ii. two helicopters operating beyond 1 hr. of station SAR to an unmanned location (minimum 3 people between two helicopters).
    iii. helicopter operations to a dynamic site requires the pilot and essential crew member to have completed the Dynamic Terrain Awareness Training.

5. Routes for external load operations must be planned to minimise the environmental impact of either accidental loss or deliberate jettison. In particular, when helicopters are transiting from Davis Station to the Davis Plateau Ski Landing Area with external loads they must fly via the designated sling route. When planning for helicopter sling loading:
    i. Cargo handling equipment and methods must be fit for purpose.
    ii. Route planning must consider the potential need for cargo to be jettisoned. In particular, actively avoid flying over lakes and other especially vulnerable areas.
    iii. No more than eight full drums must be carried per sortie.

6. Under normal circumstances, station emergency helipads may not be used for busy ship/shore operations. These pads have been located to facilitate patient transfer to/from the medical facility. They are in areas that can be difficult to isolate from other station activity and crowd control can be very difficult. This, combined with continuous lift/drop of external loads and personnel requirements at the station helipads, make concurrent operations from both locations impractical and potentially unsafe. These conditions are particularly evident at Casey and Macquarie Island.

7. Avoid flying 'abbreviated' approaches to Davis (e.g. multiple short sling load operations in support of fixed wing or Vestfold Hills operations) because aerials to the north and north-east of the main helipad area pose additional risk to helicopters.

8. The Davis Station Leader (or suitably experienced and trained delegate) must brief the senior pilot – helicopters of the location of field parties before helicopter operations start. A significant number of short duration helicopter flights with underslung loads can occur in the Vestfold Hills over the summer season, coincident with a high level of field activity in the same area. Although a remote possibility, a jettisoned sling load may pose a threat to personnel on the ground.

9. The wintering Station Leader must ensure that helipads have been cleared of snow and obstacles before the arrival of dedicated summer Aviation Ground Support staff and helicopters. A condition report must be communicated to the senior pilot before arrival of helicopters on station, see Appendix I. Station Rotary Aviation Readiness Checklist.

10. Immersion suits and life jackets must be worn by all passengers and aircrew on flights over water when in Antarctica and the sub- Antarctic. Dry suits reduce the shock of immersion in very cold water. Passengers may need to hold their breath before a door can be opened in a submerging cabin; the reduction in cold shock provided by a dry suit potentially increases the amount of time breath can be held as well as time of useful consciousness in the water before rescue. In the instance of a medical evacuation the attending Polar Medical Unit Doctor may provide an exemption for the wearing of an immersion suit and life jacket by a medical patient and attending medical staff depending on the medical condition of the patient.

11. Embarking or disembarking a helicopter with the engine running and rotors turning has created potentially dangerous situations in the past where unescorted passengers with little or no previous experience of helicopter operations have embarked/disembarked an aircraft resulting in: -

    - expeditioners exposing themselves to a tail or main rotor injury,
    - loads not being properly secured,
    - doors, lockers and panniers being damaging and/or not securely closed,
    - damaged headsets,
    - seatbelts being left flapping outside of aircraft,
    - loads or loose items being affected by downwash because they were not appropriately secured away from the aircraft on arrival or departure, and
    - passengers being too close to aircraft on departure or arrival.

    Through the air task risk assessment process, it may be determined that the benefit of conducting 'rotors turning' or 'hot embarking/disembarking' operations justifies the additional risk, in which case the following conditions apply: -

    - a suitably experienced and trained expeditioner to act as an escort must be on board or on location to assist expeditioners to embark or disembark,
    - persons undertaking the role of passenger escort must have completed an AAD approved 'Work Safely Around Aircraft' training, and
    - the Senior Helicopter Pilot must be confident that the person undertaking any escorting operations is competent and has received all necessary training and briefings.

    If the above conditions cannot be met, either: -

    - the pilot may, if it is safe to do so, reduce the rotor speed and exit the cabin to assist passengers to embark and disembark, or
    - shut down the helicopter prior to passengers embarking or disembarking.

    The Pilot in Command retains the ultimate responsibility to ensure that all passengers, cargo seatbelts, doors and cargo compartments are secure before departure and can therefore object to the use of an escort if he or she is not confident in the escort's competency, regardless of what experience, training or briefings an expeditioner has.

12. Operations from a ship's helideck must be limited to a single helicopter. No obstacles, including other parked helicopters, are permitted on the helideck unless part of an approved and certified cargo container storage position outside the obstacle clearance zone.

13. Pilots conducting operations at Heard or Macquarie Island must hold a current helicopter underwater escape training (HUET) certification. It is recommended that essential crew involved in regular overwater flights where floats are not fitted or are disabled, also complete the HUET training. This requirement will be determined by the Director of Aviation.

8.5 Rotary and fixed wing operations

1. The AAD (usually the tasking officer) must ensure that a record of passengers carried is available on the ground for every flight. This can be accomplished by names being transmitted by the pilot to AAD communication operators to record.

2. Station Leaders must consider the consequences of fatigue to aviation activity when allocating accommodation. Every effort must be made to allocate single rooms in quiet areas to aviation personnel permanently based at a station throughout summer (aircraft engineers, AGSOs, Operations Coordinators, pilots, Bureau Forecasters and Communications Operators).

3. The use of expeditioners with little or no previous training or experience for Aviation Ground Support activities should only be considered when it is impossible or highly impractical to use dedicated aviation trained staff (AGSOs or aircraft engineers). Expeditioners must only be used for aviation ground support after appropriate briefing and training has been documented in the air task risk assessment form. Any expeditioner conducting Aviation Ground Support Activities must have undertaken DAMP training and screening in order to perform Safety Sensitive Aviation Activities. The use of personnel other than AGSOs or aircraft engineers to perform Ground Support activities should be communicated to the Aviation Liaison Officer.

4. Passengers in aircraft operating above 10,000 feet must use continuous flow oxygen to reduce the potential risk of ill-effects due to altitude.

5. Blasting may be conducted at station quarries during summer months. The Station Leader/Operations Coordinator must ensure that aviation contractors are made aware of any planned blasts and that there is no conflict between planned blasts and aviation operations.

6. The tasking officer must ensure that all required procedures pertaining to aircraft operation are in place before LIDAR operation at Davis.

7. A planning risk assessment may require participants in projects involving flight over extended open water to undergo helicopter underwater escape training.

8. The Davis Station Leader should contact the Russian, Indian and Chinese programs in the Larsemann Hills as soon as practical after arrival at Davis. The primary purpose is to brief foreign program representatives on AAD safety and environmental requirements for any planned aircraft visits to Davis. Discussions should discover any planned use of aircraft (including unmanned aircraft) and to provide detail on AAD aviation plans. Any visits to other nations Antarctic programs must be authorised by OMC Chief of Operations.

9. The AAD will provide documentation about any planned visits by foreign aircrew to stations prior to the planned arrival date.

10. Specific approval from the Director Aviation is required prior to any planning/use of aircraft not contracted to the AAD, including foreign aircraft.

11. Aircrew changeout, of either fixed or rotary-wing crews, conducted during the season must complete the applicable ‘Pilot Handover Checklist’ located in Appendix G / Appendix H. The completed checklist must be sent to aviation.reporting@aad.gov.au.

8.5.1 Intracontinental flight categories

All Intracontinental rotary and fixed wing aircraft movements will fall into either “Transport” or “Aerial Work” categories.

1. ***Air Transport*** category refers to aircraft intended for the regular transport of passengers and/or cargo, including transport of dangerous goods, this will apply to most Intracontinental aircraft movements.
2. ***Aerial Work*** category refers to specific work operation such as external load operations or task specialist operations such as survey work. When aircraft are operating under Aerial Work category regular passengers are not permitted on the flight. An Aerial Work passenger may only be carried if they have a direct function that is required for the flight to take place/ and/or performed by the aircraft. Examples include essential crew who must be carried when conducting external load operations (see section 8.4) or aircraft operating with external survey equipment suspended from aircraft with the equipment operator required onboard to control the equipment. A risk assessment may be required for Aerial Work Operations. The aircraft operators must also hold the relevant approval from their national regulator for the specific task.

8.5.2 Aircraft Performance Class

In aircraft performance, Class 1 (PC1) refers to a category of aircraft operations where, in the event of a critical engine failure, the aircraft can safely continue the flight to an appropriate landing area, unless the failure occurs very early in the takeoff or landing phase. For both fixed and rotary wing operations this means that the aircraft is designed and operated to maintain safe flight even with a major engine failure, allowing for continued flight or landing within a designated area. Class 3 (PC3) refers to operations where a forced landing must be performed if an engine fails at any point during the flight. This means the aircraft cannot sustain flight after an engine failure and must be capable of a safe forced landing.

Specifically, in the context of helicopter operations, a PC1 helicopter must be able to either land on the rejected take-off area or continue to a suitable landing area. This class essentially ensures that the helicopter has adequate performance to maintain safe flight or achieve a safe landing even with a single engine inoperative.

9 Types of air tasks

All types of AAD aircraft movements fall into one of the following categories. These categories affect the arrangements for control of the particular task.

9.1 Inter-continental flights

The A319 or C17 flies between Hobart and the Wilkins Aerodrome, 65 km SE of Casey Station, to ferry station personnel and/or cargo. Flights are posted on the AAD website and planned before commencement of each season. They are controlled by the OMC and Aviation Liaison Officer with advice from the Casey Station Leader and the Wilkins Aerodrome Manager.

A detailed specific Hobart airport process is captured in *Aviation Process- Intercontinental flights located in CM.*

9.2 Intra-continental flights

Ferry flights: Kenn Borek-operated DHC-6 (Twin Otter) and/or BT 67 (Basler) generally ferry from Canada via South America, Rothera and South Pole into the AAT. Operations generally commence in late October and are completed mid-to late February, returning to Canada via a similar route. A ferry permit (from Transport Canada) is only required for the DHC-6 as this airframe requires an internal fuel tank.

Inter-station flights: Any flight that lands at a different station from its origin is considered an inter-station flight. The timing, routes and load composition of these flights is controlled centrally through OMC.

Local flights: Flights that do not impact on any station other than their origin, such as flights deploying or resupplying field camps or science projects, are considered local flights. Operations Planning creates these tasks, which include a window during which the task should occur, a priority for completion, objectives/restrictions on the route and load composition for the flight. The Station Leader is responsible for the detailed scheduling of the flight and determining exact load composition for each flight.

Special flights: Flights that impact upon other nations' Antarctic programs, or that have significant importance or risks associated with them fall into this category. These flights will generally take precedence over inter-station and local flights. They will be controlled by the OMC, although Station Leaders may be tasked to oversee them.

QPQ flights: Flights that utilise other nations' Antarctic programs assets and aircrews as part of the approved season plan, have varied unique risks associated with them. These flights will generally take precedence over inter-station and local flights as the period of time allocated for these assets are limited and difficult to amend. They will be managed and controlled by the OMC, although Station Leaders may be tasked to oversee them. They may require amended minimum training requirements due to the limited time allocated to the AAP. As a result, they may have additional restrictions placed on their tasking (E.g. Cargo only flights, no PAX). Please contact OMC or Aviation Liaison Officer with any questions.

10 Aviation operations planning

For the most efficient air transport system, all aircraft movements must conform to a central plan aimed at achieving the goals of the Australian Antarctic program (AAP). The season plan is produced prior to the start of each season and articulates what support is allocated to science projects and support activities. The plan requires the input of many parties including supported projects, the aircraft operator, and all sections within the Operations and Logistics Branch.

10.1 Season Plan

The Season Plan is developed by the Operations Planning section in consultation with the Antarctic Operations Committee (AOC). The Season Plan is developed in accordance with the Integrated Planning Guidance (IPG) provided by the Integrated Planning Policy (IPP) Section based on guidance from Strategy and Policy Branch and the Head of Division (HoD). It is produced prior to the start of the season so all stakeholders can see the tasks that the AAD is proposing for the season and signed off by HoD prior to season commencement. This program may also indicate priorities for tasks over periods of high activity or when conflicts might happen because of weather delays. The Season Plan may also identify opportunistic tasks that could take advantage of additional flying resources if they become available.

The Season Plan may alter as situations in Antarctica change. Any amendment to the Season Plan must be approved by Chief of Operations (OMC). The Season Plan, once signed off is handed over to the Operations Management Centre to execute.

The Season Plan should identify the extent and timing of aircraft support required by projects. It provides aviation operations staff with the aviation objectives for the season and drives the flying schedule.

10.2 Flight schedules

Tasking officers implement the Season Plan and manage all inter-station and local flights. Flights are coordinated through the flight schedule, which is recorded in ETA for flights that are transporting people to or from station overnight. Flights dedicated to cargo or passengers that are round trip flights and do not have a net impact on station populations are generally not entered into ETA. The flight schedule details the timing of flights and identifies which passengers will be carried on each flight.

Inter-station flights are allocated against a date on the schedule. If the flight does not occur on this date due to poor weather or other reasons, the task will be reviewed and rescheduled to the next earliest practical opportunity.

Flight schedules provide guidance as to a prioritised list of flights to occur over a set period, however daily tactical decisions about which flights occur to capitalise on suitable weather conditions may not adhere directly to the planning schedule. The local tasking officer manages this process as necessary and reports all planned and actual flights though the OPSC Log, Daily Routines and Operations Activity Reports (see Table 4.2).

10.3 Aircraft Contractor Pre-Season Assurance Checks

All aircraft contactors (both fixed wing & rotary) are required to complete and submit a pre-season assurance check form, prior to the aircraft being deployed to the program. The forms cover a range of compliance & recency requirements including, contractor readiness, contractual conditions, regulatory & standards requirements, insurance, aircraft serviceability, crew recency, AAD training, etc.

The forms are conducted on Safety Culture, with each of the contractors using their unique AAD login (issued & managed by AAD WHS).

Aviation Compliance will manage the annual assurance and assessment of the returned checklists.

The checklist forms can be conducted & assessed progressively over an extended period, provided the checklist forms are returned to the AAD completed and satisfy all requirements no later than 14 days prior to the contractor's first aircraft or personnel being deployed to the program.

Final approval to operate is issued by the Director Aviation, which must be obtained prior to contractors deploying into the program.

11 Antarctic aviation ground operations

11.1 Preparation and planning

For detailed information on specific landing areas, see ***Intra-Continental Aviation Manual, Aviation Facilities SOP and Wilkins Aerodrome Manual.***

11.2 Work health and safety

Facility supervisors (Wilkins Manager, Wilkins (Winter) Aerodrome Manager or Senior Aviation Ground Support Officers) are responsible for maintaining all WHS standards, to: -

- ensure that inductions are provided to all aviation personnel before authorisation to start machinery operations,
- ensure that work, health and safety rules and procedures are adhered to at all times,
- inform the Aviation team of their responsibility to identify and report existing or potential hazards and ensure that the issues are addressed. Environmental hazards or incidents are reported via IHIS. WHS hazards or incidents are reported via SIRUS
- take all steps to rectify existing hazards and mitigate potential hazards reported by the team,
- conduct daily work briefings with the team, prior to work commencing, ensuring every team member understands the days tasks, priorities and work conditions,
- conduct regular toolbox safety meetings for the aviation team at least monthly. Ensure minutes are taken and distributed including any corrective actions required,
- during the summer operational period ensure fatigue management timesheets are completed and sent to the Station Leader fortnightly and timesheets are included in monthly and end-of-season reports. Copies must be forwarded to the aviation section,
- ensure adherence to fatigue management guidelines, and
- ensure adherence to the AAD drug and alcohol management policy (DAMP).

11.3 Wilkins

The aviation wintering team open the Wilkins Aerodrome for any fixed-wing aircraft at the beginning of the summer season. This operation is supervised by the Station Leader in Antarctica, with technical advice from the Assistant Director Aviation Operations at Kingston.

All preparation and planning for deployment from Casey to Wilkins Aerodrome is supervised by the Wilkins Aerodrome Manager (WAM) who reports directly to the Station Leader while in Antarctica. The WAM must liaise with the Casey Operations Coordinator and Station Leader for all in-season logistical and other support needed once summer operations commence.

Any and all requests for technical information or advice must be directed to the Assistant Director Aviation Operations.

See ***Wilkins Aerodrome Manual and Wilkins Runway Procedures*** for further detail on management of Wilkins Aerodrome.

11.4 Casey

Early season aviation requirements may necessitate early construction of the Casey Ski Landing Area at the end of the winter period and prior to the arrival of AGSOs. In this instance, Ski Landing Area construction and operation are directly supervised by the Casey Station Leader until the Senior Aviation Ground Support Officer (SAGSO) has arrived at Casey.

Once the SAGSO has arrived at Casey, they assume responsibility for the operation of the Ski Landing Area and report to the Station Leader or Operations Coordinator.

Any and all requests for technical information or advice must be directed to the Aviation Liaison Officer. See ***Intra-Continental Aviation Manual*** for further detail on management of Ski Landing Areas.

11.5 Davis

All Ski Landing Areas are directly supervised by the Davis Station Leader until the Senior Aviation Ground Support Officer (SAGSO) has arrived at Davis.
Once the SAGSO has arrived at Davis, they assume responsibility for the operation of the Davis Ski Landing Area and report to the Station Leader or Operations Coordinator.

Any and all requests for technical information or advice must be directed to the Aviation Liaison Officer. See ***Intra-Continental Aviation Manual*** for further detail on management of Ski Landing Areas.

11.6 Mawson

All Ski Landing Areas (unprepared) are directly supervised by the Station Leader.

Any and all requests for technical information or advice must be directed to the Aviation Liaison Officer. See ***Intra-Continental Aviation Manual*** for further detail on management of Ski Landing Areas.

12 Helicopter operations

Refer to the latest version of ***Helicopter ground support manual*** when carrying out any helicopter operations, especially when sling loading (available upon request from aviation.operations@aad.gov.au). Aviation Ground Support Officers (AGSOs) complete Working Safely around Aircraft and External Load training.

12.1 Preparing helipads or helicopter landing sites

The AGSO or other nominated person on station is responsible for the preparation of a helipad. Technical advice on the required layout of the helipads may be sought via the Aviation Liaison Officer, helicopter pilots or helicopter engineers.

Access to a helipad, once established and ready for operations, is restricted. Expeditioners must seek approval from an AGSO or aircrew if they require access to the helipad. Station maps must clearly show no-go areas and/or signs must be placed where practical.

The helicopter pilot is ultimately responsible for ensuring that a helipad is safe to use but helipads must also be maintained to a common standard.

12.2 Cargo basket and racks

Some helicopters are fitted with an external storage area. While loads contained in them are external loads, they may not be jettisoned. Therefore, all cargo in external storage, including Dangerous Goods, must be packaged correctly, manifested via NOTOC and restrained. Confirm the maximum load for external baskets and racks with the pilots. Permission from the pilot must be sought to carry cargo on the skids.

12.3 Cargo hook

The cargo hook is suspended on cables under the belly of the helicopter. There are both manual and electrical releases for the cargo hook that can be operated by the pilot from the cockpit. There is also a manual release on the cargo hook itself that can be operated by the hook-up person. The operation of the hook must be checked by the pilot before sling loading. The maximum load on the BK-117 cargo hook is 1200kg, however the maximum planned load should not exceed 900kg. The hook is fitted with a load cell that weighs the load when it is lifted into the hover.

12.4 Lifting Equipment Serviceability & Certification

All lifting equipment is periodically checked for serviceability by accredited persons. Using the inspection RGBY colour code system, the last check date can be determined by the colour of the inspection tag on the item.

All lifting items (i.e. Swivels, Slings, Cargo Nets, 4 Legged Strops, Longlines, Remote Hooks, etc.) must be in good working order and free from any damage.

All items must be stamped or tagged with the item's safe Working Load Limit. Noting, synthetic slings may have the tag covered for protection. The straight pull lifting capacity can be determined by the colour of the sling (i.e. green 2T, yellow 3T, etc.) All other relevant information contained on the covered tags can be obtained from the aviation contractor's equipment register.

12.5 Ship to shore operations

The Voyage Leader must inform the ship's master of any intended helicopter operations. Ship based Aviation operations should be tasked from where the helicopters are based, usually the ship rather than station. In this instance the Voyage Leader is the responsible tasking officer for aircraft, or Operations Coordinator if allocated to the voyage.

A pre-flight briefing must be held before flight operations start. Any personnel who are directly involved in helicopter operations must attend the briefing. They may include the ship's master, chief officer, bosun, chief engineer, voyage management, chief pilot, HLO, meteorology officer and Senior AGSO.

12.6 Over water helicopter flights

An aircraft must have an emergency floatation system installed and serviceable for any flights over water, which at any time are operating beyond autorotational distance from land, or ice which is deemed suitable for conducting a forced landing.
The emergency floatation system must be suitable for the operational conditions, ensuring the aircraft can maintain floatation for a duration sufficient to allow successful egress of all personnel to be made in the event of inadvertent water landing.

12.7 Passenger briefing

Passengers who will be flying ashore from the ship must attend a passenger briefing by the senior pilot, potentially with assistance from the aircrew and AGSOs. Passengers who do not attend a briefing and sign the required form must not fly.

The briefing consists of watching a safety video, followed by a walk around the aircraft to familiarise passengers with fitting of seat belts, headsets, life jackets, opening and closing doors etc. A video demonstration of how to fit immersion suits must also be watched if the flight path is over water. All passengers must try on an immersion suit so they know the size they will require on the day of flying.

Flights are scheduled based on the availability of appropriate suit sizes. Passengers may not use water activated floatation devices.

13 Uncrewed aircraft systems (see Volume 5A)

Operations Manual Volume 5A UAS - Standard Operating Procedure
AAD Intranet

Located in CM CD22/34

Appendix A. Air Task Risk Assessment

Australian Government
Department of Climate Change, Energy, the Environment and Water
Australian Antarctic Division

00000

Air Task Risk Assessment

Task Date: ..... Registration: ..... Pilot in Command: .....
Trip Leader (if required): .....

Task Profile and Route (include crew and passenger names maybe via a manifest):

.....
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.....
.....

Risk Management

1. *Aircraft Tasking Considerations (reverse side) items reviewed ..... Yes/No*
2. *Senior Pilot **and other personnel providing support to the flight** have provided a 'Plain English' summary of major task risks in the planning meeting ..... Yes/No*
3. *Task risks identified and mitigators noted in table. . . . . Yes/No*
4. *Senior Pilot confirms forecast weather, particularly at destination, meets **legal** requirements for visual flight? ..... Yes/No*
5. *Are there any flight categories and/or other limitations (e.g., Dangerous goods, survey, Ice reconnaissance operations, aerial photography, etc. or other Airwork with no non essential persons on board). If yes please specify: ..... Yes/No*
6. *Task planning complies with Specific AAD requirements as detailed in AAD SOP's and manuals ..... Yes/No*
7. *Are personnel providing ground support to aircraft appropriately trained, licensed and DAMP compliant (e.g. Fuel Depot, sling loading, crevasse probing) ..... Yes/No*
8. *Ski Landing Area Condition Report acknowledged by Senior Pilot and Authorising Officer (including destination if other than departure point) ..... Yes/No*
9. Flight category: Air Transport/Aerial Work (including transport of aerial work passengers)
   - **For Air Transport Flights;** will the route be over hostile terrain (terrain where a suitable forced landing area is not available) ..... *Yes/No*
   - **If YES, confirm that the on-route phase can be conducted in PC1. If this is not possible an alternative route must be planned .....***PC1 Requirements; Confirmed/Amend Route*
10. Is Field Landing Site classified as "Dynamic" ..... Yes/No
    - If Yes- Assessment of site as per SOP (Vol 1 Chapter 4) ..... Yes/No
    - Date of last site visit ..... / /
    - Date of site expiry ..... / /

Identified Hazards / Risks	*Mitigators Implemented / In place*

Authorising Officer accepts risks: Yes/No

Aircraft Captain: ..... Signature: ..... Date: .....

Authorising Officer: ..... Signature: ..... Date: .....

Aircraft Tasking Considerations

- □ ***<u>Note presence of multiple 'increased risk' factors (contributed to many previous Antarctic aviation accidents);</u>***
  - *Marginal and/or deteriorating weather –identified by aircraft operator, BoM or AAD tasker*
  - *Last minute decision to undertake task*
  - *Unscheduled flight*
  - *Ship movements influencing tasking*
  - *Task occurs at very start or end of season*
  - *Undue pressure to achieve outcome (e.g. Long weather delay, medivac, VIP, ship delay)*
  - *Fixed wing operation to remote, unprepared, unmanned surface (e.g. Bunger Hills)*
  - *Helicopter external load operations*
- □ ***SAR – adequate aviation or other assets. SAR aircrews consulted***
- □ ***Aircraft equipment serviceability***
- □ ***Ground support: normal forecast and observations available, foreign Ski Landing Area information available, AGSO, comms in place. (if not, items addressed in air task form)***
- □ ***PAX names recorded***
- □ ***Fatigue: justification noted in air task form for tasks exceeding normal AAD 12 hour maximum***
- □ ***Survival equipment – suitable for operation***
- □ ***Field training: aircrew, engineers and passengers meet AAD requirements***
- □ ***Oxygen: full time for planned flight over 10,000'***
- □ ***If AAD project risk assessment provided, all mitigators in place***
- □ ***Pilot briefed on project environmental requirements***
- □ ***DC3T (Basler) flights between Casey and Davis should not be planned via Bunger Hills.***
- □ ***Special dispensations/exemptions are required for ferry, survey, extended crew flight/duty times, extended helicopter ship/shore fly off distance tasks.***
- □ ***Kingston consulted if any task requirements unclear (e.g. SAR requirements)***

HELICOPTER SPECIFIC

- □ ***Hot refueling – justification noted on air task form***
- □ ***PAX escort organised if required***
- □ ***Is Task operationally more sound with one machine***
- □ ***Carriage of essential crew is required when conducting sling load operations under the following circumstances:***
  - *i. where sling load operations require a maximum of one trip to an unmanned location (minimum 2 crew- if more trips are required then at least two people must be deployed to site for the duration of operation).*
  - *ii. a single helicopter operating within 1 hr. of station search and rescue (SAR) to an unmanned location (minimum 2 crew).*
  - *iii. two helicopters operating beyond 1 hr. of station SAR to an unmanned location (minimum 3 crew between two helicopters).*
  - *iv. Essential Crew can consist of FTO, AGSO or Helicopter Engineer (min level of training Wilderness First Aid training)*
- □ ***Lone pilot operations cannot be conducted to unmanned locations. Minimum personnel (i.e. suitably trained for the destination and operation) must be carried under the following circumstances:***
  - *a single helicopter operating within 1 hr. of station search and rescue (SAR) to an unmanned location (minimum 2 people).*
  - *two helicopters operating beyond 1 hr. of station SAR to an unmanned location (minimum 3 people between two helicopters)*
- □ ***Performance Class 1 is a helicopter with performance such that, in the case of critical power-unit failure, it is able to land on the rejected take-off area, or safely continue the flight to an appropriate landing area, depending on when the failure occurs (ICAO Annex 6, Part III).***

ADDITIONAL TASKING CONSIDERATIONS & CONTROLS

POSSIBLE HAZARDS

External Pressures

Ill-defined intent, aims, objectives or limitations

Over familiarity with supported personnel

Poor communications, Mission creep, amendments (informal and formal)

'Get-home itis'

Aircraft

Number involved in task

Support requirements i.e. SAR, Ski Landing Areas, fuel

Performance limitations of aircraft

Procedural limitations

Configuration of aircraft

Crew

Suitability/Recency/Currency/Experience

Pre and post fatigue levels/Task duration

Distractions

Fitness Level of anticipation and possible effects on judgement/performance

Environment

Current and forecast weather (reliability of forecast?)

Lighting/sun angle/visibility

Comfort level/Circadian rhythm

Obstacles/crevasses/sea ice thickness

Load

Pax training

Dangerous Goods

Loading procedure and restraint

Justification of Pax carried e.g.; external load, non-trained expeditions

POSSIBLE CONTROLS

Reject task

Clarify aims and objectives of task

Determine what needs to be developed/ changed to control the hazard

Adjust or limit the time of the task to achieve more favourable weather, lighting or crew rest

Adjust or limit flight routes

Adjust or limit the load

Minimise the number of personnel exposed to the hazard

Minimise the duration of personnel exposure to the hazard

Conduct Air OPS meetings well in advance of flights and involve all effected personnel

Avoid last minute changes to task

Confirm support requirements for task

Confirm the launch authority responsibility for the task

Make plans for possible contingencies

Gather information to minimise uncertainties

Conduct a reconnaissance

Rehearse procedures

Ensure equipment is sufficient and serviceable for the task

Determine what equipment is available to control hazards

Identify maps and survival equipment needs

Conduct additional training

Communicate hazards and possible controls with supported party

Confirm and review all applicable procedures and regulations

Conduct thorough pre and post task briefing to examine hazards and the effectiveness of controls

Appendix B. Pilot environmental briefing checklist

Please use the following checklist as a guide to meeting the Aviation Initial Environmental Evaluation (IEE) requirements for providing pilots with a face-to-face environmental briefing.

Authorising Officer: ..... Signature: ..... Date: .....

Checklist

☐ Have the pilots been provided with copies of all relevant Aviation SOPs and the **Aviation Initial Environmental Evaluation (IEE) 2025-30** by their company?

☐ Have the pilots been presented the **Aviation Environmental Management Training** module? (details recorded in AAD training unit)

☐ Have the current AAD provided .KMZ files containing suggested flight paths, wildlife buffers, and ASPAs relevant to the area of operations been uploaded to the pilots EFB or aircraft navigation system?

☐ Do the pilots understand their responsibilities in relation to:

- AAD environmental policy/culture and personal accountabilities
- Antarctica's conservation values
- Process for suggesting environmental improvement and logging incidents
- Housekeeping and environmental management practices generally
- Processes for cleaning/checking of personal gear, cargo etc. for contaminants
- Environmental obligations arising from aviation contracts
- Aircraft biosecurity inspection requirements
- Procedure for removing wildlife from Ski Landing Areas
- Flight paths to avoid wildlife disturbance
- Use of fuel spill kits
- Antarctic special protected area (ASPA) locations, and permit and management plan requirements
- Environment protection legislation and its practical implementation
- Possible offences under the AT(EP) Act arising from the use of aircraft
- Set up etc. of field fuel depots

Name	Role	Signature

Appendix C. Fixed-wing field landing site report

<table>
<tr><td colspan="2">Name:
(if the location has no name, create a unique identifier)</td><td colspan="3">Date Landed:

Time Landed:</td></tr>
<tr><td colspan="2">Location:
(including distance and direction from a known point)</td><td colspan="3">Markers:
(if any, specify type and placement)</td></tr>
<tr><td colspan="2">Landing Site

Threshold Coordinates:
(dd mm.mmm)

S _ _ _ ° _____ '
E _ _ _ ° _____ '</td><td colspan="3">Landing Site

End Coordinates:
(dd mm.mmm)

S _ _ _ ° _____ '
E _ _ _ ° _____ '</td></tr>
<tr><td colspan="2">Threshold Elevation (feet ASL):</td><td colspan="3">End Elevation (feet ASL):</td></tr>
<tr><td>Length (feet):</td><td colspan="2">Orientation (°True):</td><td colspan="2">Prevailing Wind (°True):</td></tr>
<tr><td>Surface Type/ Snow conditions at time of assessment:
☐ Soft/powder
☐ Sticky
☐ Hard
☐ Blue Ice</td><td colspan="2"></td><td colspan="2">Slope:
(see explanation below)
☐ Level
☐ Minor (0 – 0.5%)
☐ Moderate (0.5 – 1%)
☐ Significant (>1%)</td></tr>
<tr><td colspan="5">Identified Hazards (evidence of crevassing? specify location, width and depth, snow coverage)</td></tr>
<tr><td colspan="5">Site Description (describe what you see at the site as if from an aerial view, sun angle, time of day)</td></tr>
<tr><td colspan="5">Restrictions / Recommendations (visibility, wind, aircraft weight, etc.)</td></tr>
<tr><td colspan="5">Fuel Depot (record the details of any cached fuel on site, numbers, colours, number of empties etc.)</td></tr>
<tr><td colspan="2">Form completed by:
(FTO/Pilot/AGSO)</td><td colspan="3">Signature:

Date:</td></tr>
<tr><td colspan="5">Field Training Officers ONLY</td></tr>
<tr><td colspan="2" rowspan="2">FTOs:
(Please print names of both FTOs that cleared site)
1.
2.</td><td colspan="3">Date and Time Cleared:</td></tr>
<tr><td colspan="3">Clearance Endurance:
(How long before site needs re-clearing?)</td></tr>
<tr><td colspan="2">Clearance completed by:
(Name of FTO)</td><td colspan="3">Signature:

Date:</td></tr>
</table>

Diagram **Grid North** ↑

Reference notes:

- 1 nautical mile = 6076 feet
- To convert degrees minutes seconds to degrees decimal minutes:
  Divide number of seconds by 60, which provides decimal portion of minutes. Example:
  S80^{o} 35’ 40”: Decimal minutes = minutes + (seconds/60)
  Decimal minutes = 35 + (40/60) = 35.667
  Latitude (Deg Decimal minutes) = S80^{o} 35.667’
- To calculate Slope as %:
  Divide the difference in Threshold Elevations by the Total length and multiply by 100 (Note: Elevation and Length must be in the same units, i.e. feet):
  (Ski-way Threshold elevation – Ski-way End elevation) / (Total Length of Ski-way) x 100
- ASL = Above Sea Level
- This form must be filled out by the Senior FTO and/or Senior Pilot on the mission and provided to the Operations Coordinator / Station Leader along with photos of the site (aerial and ground – specify direction of photo e.g. looking WSW).
- Once a site is cleared the form must be signed by the FTO responsible for the clearance.
- Once Cleared form can be used to keep record of inspection for visits through the season or if not dynamic site
- The Operations Coordinator / Station Leader must update the Landing Site Database as soon as practicable with the details included in this report.

Appendix D. Helicopter field landing site report

Name: (if the location has no name, create a unique identifier)	**Date Landed:** **Time Landed:**
Location: (including distance and direction from a known point)	**Markers:** (if any, specify type and placement)
Landing Site **Coordinates:** (dd mm.mmm) S _ _ _ °_____ ' E _ _ _ °_____ '	**Elevation (feet ASL):** **Prevailing Wind (° True):**
Dimensions:	**Surface Type/ Snow conditions at time of assessment:** ☐ Soft/powder ☐ Sticky ☐ Hard ☐ Blue Ice
Identified Hazards (evidence of crevassing? specify location, width and depth, snow coverage)	
Site Description (describe what you see at the site as if from an aerial view, sun angle, time of day)	
Restrictions / Recommendations (visibility, wind, aircraft weight, etc.)	
Fuel Depot (record the details of any cached fuel on site, numbers, colours, number of empties etc.)	
Form completed by: (FTO/Pilot/AGSO)	**Signature:** **Date:**
Field Training Officers ONLY	
FTOs: (Please print names of both FTOs that cleared site) 1. 2.	**Date and Time Cleared:** **Clearance Endurance:** (How long before site needs re-clearing?)
Clearance completed by: (Name of FTO)	**Signature:** **Date:**

Reference notes:

- 1 nautical mile = 6076 feet
- To convert degrees minutes seconds to degrees decimal minutes:

  Divide number of seconds by 60, which provides decimal portion of minutes. Example:

  S80^{o} 35’ 40”: Decimal minutes = minutes + (seconds/60)

  Decimal minutes = 35 + (40/60) = 35.667

  Latitude (Deg Decimal minutes) = S80^{o} 35.667’
- ASL = Above Sea Level
- This form must be filled out by the Senior FTO and/or Senior Pilot on the mission and provided to the Operations Coordinator / Station Leader along with photos of the site (aerial and ground – specify direction of photo e.g. looking WSW).
- Once a site is cleared the form must be signed by the FTO responsible for the clearance.
- Once Cleared form can be used to keep record of inspection for visits through the season or if not dynamic site
- The Operations Coordinator / Station Leader must update the Landing Site Database as soon as practicable with the details included in this report.
- Recommended dimensions; 15 x 36 m for 2 helicopters and 15 x 15 for 1 helicopter with or without fuel depots.
- Recommended marking of are with at least 4 x bamboo canes; if fuel depot additional canes required.

Appendix E. Post aviation operations debrief

Please use the following to debrief pilots following a day's aviation operations. A debriefing is required to be undertaken at the first suitable opportunity post aviation operations and prior to undertaking further aviation operations on a subsequent day. Complete this document in plain English.

Date of operations: _____ /_____ /_____

Air Task Risk Assessment Number & ETA Flight Number: .....

What operations occurred;

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What went well;

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What didn't go well;

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Improvements/changes/steps required prior to next operation;

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Post Aviation Operations Debrief Considerations

- □ Were all the Daily Aviation Operations completed as tasked?
- □ Are there any safety or environmental issues to report?
- □ If required, has an IHIS/SIRUS report been lodged*?
- □ Were any published wildlife buffer zones encroached during flight operations?*
- □ Was any refuelling undertaken at a fuel cache? (if so please detail the number and colour of drums used).
- □ Where required, has a Field Landing Site Report Field Landing Site Report (Appendix C and/or D) been completed and provided to the Operations Coordinator with photos?
- □ Are there any serviceability issues with the aircraft?
- □ Are there any Crew Duty Hour issues to be aware of that may affect future Aviation Operations?
- □ Were there any other issues to report (i.e., comms, weather, support)? (if so please detail)

Aircraft Captain: ..... Signature: ..... Date: .....

Ops Coord / SL: ..... Signature: ..... Date: .....

* An IHIS report is required to be lodged for any Environmental issues or encroachment into wildlife flight buffer zones.
* A SIRUS report is required to be lodged for any Safety/WHS issue.

- □ Upon completion, upload or attach this form into the relevant Safety Culture report.

Appendix F. Fuel cache establishment checklist

Authorising Officer: ..... Signature: ..... Date: .....

Prior to commencing establishment of a new fuel cache, approval in writing must be obtained from the Aviation Director via aviation.operations@aad.gov.au .

On completion of the checklist, sign and date (at bottom of checklist) and email to AAD Aviation Section at aviation.reporting@aad.gov.au

The following checklist is a guide to meeting the minimum standard within the Aviation Initial Environmental Evaluation (IEE) requirements for minimising the risk and impacts specific to caching fuel in Antarctica.

New caches can only be established following competition of the below checklist: -

- ☐ Approval obtained from the Aviation Director to establish the new fuel cache
- ☐ The environmental values of the proposed site and surrounding area.
- ☐ The features of the local landscape, with particular emphasis on slope, aspect, water flows, susceptibility to high winds and heavy snowfalls, and proximity to lakes, vegetation and wildlife.
- ☐ Any particular challenges for clean-up actions presented by the location, landscape, and surrounding area (e.g. the area's accessibility and its susceptibility to damage from machinery or recovery equipment).
- ☐ The prospects for the timely removal of drums once emptied or expired.
- ☐ Caches on ice and snow are marked using bamboo canes, wands or similar.
- ☐ Caches are secured to prevent dispersal by wind.
- ☐ Drums are stored on their sides to prevent water being drawn inside and the fuel becoming unacceptable for aviation.
- ☐ The number and colour of drums have been recorded and provided to the Operations Coordinator / Station Leader.
- ☐ Photos or video showing cache established and also once decommissioned.

(Please ask all participants in the establishment of the cache to sign checklist)

Name	Role	Signature

Appendix G. Pilot handover checklist - Helicopter Resources

HELICOPTER RESOURCES PTY LTD

Base:		**Date:**	
Outgoing Snr Pilot:		**Incoming Snr Pilot:**	

LOCATION

☐ **Site Induction:** *Description of site changes since last season/differences to base instructions.*

Notes:

☐ **Hazards:** *Description of any new hazards not outlined in Base Instructions.*

Notes:

☐ **Procedures:** *Description of any variance to or new procedures not covered in manuals/SOPs.*

Notes:

☐ **Facilities:** *Any changes made to facilities not detailed in Base Instructions. Tour of aviation related facilities for incoming crew.*

Notes:

PERSONNEL

☐ **Introduction to Key Personnel:** *Senior Customer Contact, Station Leader, Ops Coordinator, Comms, Met etc.*

☐ **Contact List:** *Updated phone and email contacts.*

ADMINISTRATION

☐ **Hours Summary and KPI Spreadsheets:** *Ensure incoming Snr Pilot has up to date copy.*

☐ **Reporting procedure to Client:** *Who are these documents sent to, what frequency?*

Notes:

☐ **Safety Meetings:** *Minutes of Safety Meetings forwarded to incoming Snr Pilot*

☐ **Communications:** *Ensure new Snr Pilot knows the company phone PIN, has email access etc.*

MAINTENANCE

☐ **MEL / Deferred Defects:** *Items currently MEL'd / Deferred. Rectification due by?*

Notes:

☐ **Maintenance Projections:** *Upcoming inspections.*

Notes:

☐ **Current Maintenance:** *Any maintenance currently underway.*

Notes:

☐ **HR-160:** *Incoming pilots and engineers to complete Aircraft Checklist and accept aircraft.*

OPERATIONS (continued next page)

☐ **Task Status:** *Briefing on all tasks currently underway and being planned.*

Notes:

	Planning: *Hand over all email correspondence, meeting notes, flight planning details, JHAs etc.*
Notes:	
	Fuel: *New and existing fuel caches, locations, number of drums, expiry dates etc.*
Notes:	
	Field Sites: *Review current landing reports, brief on hazards, known crevasses, site markings, approach/departure procedures (if applicable), date last cleared, date of next clearance required etc. Status of established helipads, any restrictions on landing etc. Refer to AAD Field Landing Site Database on AAD Intranet.*
Notes:	
	Navigation: *New locations entered into aircraft GPS, names used, double check coordinates. Review maps etc. Condition of sea ice for overfly.*
Notes:	
	Flight Paths: *Any changes to existing flight paths. New flight paths etc.*
Notes:	
	Training: *Status training, passenger briefings, sling load training etc. Who is cleared to unload themselves in the field, who needs an escort/shutdown.*
Notes:	
	Field Parties: *Location of any current field parties relying on helicopter support or equipment left in the field for retrieval by helicopter.*
Notes:	
	Role Equipment: *Status of all role equipment, lifting gear, fuel pumps, radios etc.*
Notes:	
	Communications: *Any changes to standard communication procedures. Areas where Comms unreliable etc.*
Notes:	
	Aircraft Security: *Procedures for aircraft overnight storage, hangar procedures, tie down requirements etc.*
Notes:	

ENVIRONMENTAL and EMERGENCIES

	Restricted Areas: *New restricted / no fly areas. Any tasks planned that require permits.*
Notes:	
	Spill Response: *Location of all spill response equipment.*
Notes:	
	Biosecurity Control: *Biosecurity requirements, boot wash down, gear inspection etc.*
Notes:	
	Emergency Equipment: *Location of all emergency equipment, fire extinguishers, crash boxes etc.*
Notes:	
	Emergency Response Plan: *Review ERP with incoming crew.*

NOTIFY THE STATION LEADER ONCE THE HAND OVER IS COMPLETE AND THE NEW SNR PILOT HAS TAKEN OPERATIONAL CONTROL.

Appendix H. Pilot handover checklist - Kenn Borek Air

Kenn Borek Air Ltd.	FORM NAME:	AIRCRAFT HANDOVER CHECKLIST
	FORM NUMBER:	KBAL 246

Date: _____ **Aircraft:** _____

Initial		Topic	Briefing
Outgoing Captain	Incoming Captain		
		Aircraft Condition	Aircraft status: MEL items, previous snags, recurring snags, upcoming maintenance. *Notes:*
		Field Sites / Fuel- Caches	Handover off-strip reports, brief various strip conditions/hazards (known crevasses, site marking, obstacles) fuel cache locations, GPS User (should be included on off-strip report) number of drums, any equipment left in the field, and date of last known visit. *Notes:*
		Missions	Completed tasks, ongoing tasks and upcoming tasks. Handover any related documents or correspondence. *Notes:*
		Recent Wx Brief	Recent Wx conditions in the area and at off-strip sites. The purpose being to give the incoming crew an idea of how much snow/ice conditions are likely to have changed. *Notes:*
		Maps/Charts KBA Ops Documents	Handover applicable charts, approach plates, AFIM etc. All OFP, pax manifest, and charter ticket booklets. *Notes:*
		Emergency	Review station emergency procedures/equipment: Fire, spills, and emergency response plan. *Notes:*
		Ferry Flt Docs/Equipment *(if applicable)*	Ensure incoming crew has all required documents for the end of season ferry flight. All equipment for trip home is accounted for. Including ferry tanks, spares, wheels, tools needed for ski change-over etc. *Notes:*

Initial		Topic	Briefing
Outgoing Captain	Incoming Captain		
		Station Procedures	Briefing should include a station tour, crew accommodations, unique station procedures and tasks. *Notes:*
		Introductions	Introduction to client primary point of contact, other key personnel, key phone and email contacts. *Notes*:
		Flt Planning and Dispatch	Describe contract specific flight planning and communication procedures. *Notes:*
		Daily Ops	Weather briefing times and location, travel around station and to aircraft, fueling procedures, cargo loading procedures, passenger handling, no-fly areas, Contract specific paper work. *Notes*:
		Role Equipment	Status and location of fuel kit, loading ramps and any other equipment that may be used during this operation. *Notes*:
		Aircraft Security	Any special considerations based on location or client requirements. *Notes*:
		Restricted Areas	New restricted / no fly areas. Any missions planned that require approval. *Notes:*

OUTGOING CAPTAIN

Name: _____

Signature: _____

INCOMING CAPTAIN

Name: _____

Signature: _____

Appendix I. Station Rotary Aviation Readiness Checklist

Station Aviation Readiness Checklist		
Season:	Station:	Aircraft:

Position	Name
Station Leader	
Operations Coordinator	
Senior Pilot	
Pilot	

On completion of the checklist, sign and date (at bottom of checklist) and email to AAD Aviation Section at aviation.reporting@aad.gov.au

Prior to arrival of Rotary aircraft						
Item	**Description**	**Yes**	**No**	**N/A**	**Date**	**Comments**
1	Are helipads in a good state of repair and free from equipment or debris?	☐	☐	☐		
2	Are helipad exclusion zones identified as per station maps and established?	☐	☐	☐		
3	Has helipad WDI been installed?	☐	☐	☐		
4	ATK fuel requirements been identified and made available for refuelling?	☐	☐	☐		
5	Emergency response and ground support equipment identified/confirmed serviceable and available at Helipad?	☐	☐	☐		
6	Have any necessary Helicopter safety briefings and inductions been provided to those who require them?	☐	☐	☐		
7	Has communications with aircrews and/or tasking officers (VM, PRIC, USAP, other station etc) been established prior to aircraft departure?	☐	☐	☐		
8	Has weather forecasting and observations requirements been established and agreed for aircraft arrival?	☐	☐	☐		

9	Has station communications requirements and coverage been established?	☐	☐	☐		
10	Has station received any fixed wing passenger manifests or helicopter disembarkment plans from VLs?	☐	☐	☐		
11	Has station received any cargo manifests associated with arriving aircraft?	☐	☐	☐		
12	Has aircrew accommodation been organised?	☐	☐	☐		
Prior to aircraft passenger operations						
Item	**Description**	**Yes**	**No**	**N/A**	**Date**	**Comments**
13	Have pilots undertaken necessary station inductions?	☐	☐	☐		
14	Have pilots completed an environmental checklist with the SL or OPSC?	☐	☐	☐		
15	Have helicopter crews undertaken a local area familiarisation flight?	☐	☐	☐		
16	Have aircrews undertaken necessary survival training?	☐	☐	☐		
17	Have aircrews undertaken dynamic terrain awareness training?	☐	☐	☐		
18	Have aircrews had a suitably rest period following their arrival?	☐	☐	☐		
19	Are aircraft serviceable and ready to commence operations?	☐	☐	☐		
20	Have aircrews been given an operational briefing and overview of station / season operations prior to commencement?	☐	☐	☐		

SIGN ON COMPLETION			
Position	**Name**	**Date**	**Signature**
Tasking Officer			
Aircrew			
Tasking Officer			
Aircrew			

Appendix J. Station Fixed Wing Aviation Readiness Checklist

Station Aviation Readiness Checklist		
Season:	Station:	Aircraft:

Position	Name
Station Leader	
Operations Coordinator	
Captain	
First Officer	

On completion of the checklist, sign and date (at bottom of checklist) and email to AAD Aviation Operations Section at aviation.reporting@aad.gov.au

Prior to arrival of aircraft						
Item	**Description**	**Yes**	**No**	**N/A**	**Date**	**Comments**
1	Has a sea ice Ski Landing Area been established as per SOPs?	☐	☐	☐		
2	Has a plateau Ski Landing Area been established?	☐	☐	☐		
3	Has a Ski Landing Area Serviceability and Condition report been completed and sent to arriving aircrew?	☐	☐	☐		
4	ATK fuel requirements been identified and made available for refuelling?	☐	☐	☐		
5	Emergency response and ground support equipment identified/confirmed serviceable and available at SLA	☐	☐	☐		
6	Have any necessary Helicopter and Fixed Wing safety briefings and inductions been provided to those who require them?	☐	☐	☐		
7	Has communications with aircrews and/or tasking officers (VM, PRIC, USAP, other station etc) been established prior to aircraft departure?	☐	☐	☐		
8	Has weather forecasting and observations requirements been established and agreed for aircraft arrival?	☐	☐	☐		

9	Has station communications requirements and coverage been established?	☐	☐	☐		
10	Has station received any fixed wing passenger manifests or helicopter disembarkment plans from VLs?	☐	☐	☐		
11	Has station received any cargo manifests associated with arriving aircraft?	☐	☐	☐		
12	Has aircrew accommodation been organised?	☐	☐	☐		
Prior to aircraft passenger operations						
Item	**Description**	**Yes**	**No**	**N/A**	**Date**	**Comments**
13	Have pilots undertaken necessary station inductions?	☐	☐	☐		
14	Have pilots completed an environmental checklist with the SL or OPSC?	☐	☐	☐		
15	Have aircrews undertaken necessary survival training?	☐	☐	☐		
16	Have aircrews undertaken dynamic terrain awareness training?	☐	☐	☐		
17	Have aircrews had a suitable rest period following their arrival?	☐	☐	☐		
18	Are aircraft serviceable and ready to commence operations?	☐	☐	☐		
19	Have aircrews been given an operational briefing and overview of station / season operations prior to commencement?	☐	☐	☐		

SIGN ON COMPLETION			
Position	**Name**	**Date**	**Signature**
Tasking Officer			
Aircrew			
Tasking Officer			
Aircrew			