

# INTRODUCTION TO DEFENCE AVIATION SAFETY





#### Note to readers

This booklet is an update to the *Introduction to Defence Aviation Safety Guidebook* released in April 2019.

Every effort has been made to ensure the information in this booklet was accurate at the time of printing. This document is a guide and readers are reminded that the *Defence Aviation Safety Program Manual* remains the authoritative document for the management and regulation of Aviation Safety in Defence.

Updates to the *Defence Aviation Safety Program Manual* are typically published in February and July each year. In exceptional circumstances, an update may be released out-of-cycle. Updates to the Defence Aviation Safety Program Manual may cause elements of this guidebook to become out of date

November 2024

# **Defence Aviation Authority**

Military aviation involves managing unique hazards and risks. To meet its moral and legal obligations beyond statutory Work Health and Safety requirements, Defence issues additional policy and regulations for the Defence Aviation context, achieved primarily through the establishment of the Defence Aviation Safety Framework.

The Defence Aviation Safety Framework is developed cognisant of the military imperative to balance operational objectives and safety outcomes. The framework supports commanders and managers to make informed judgements that enable generation and delivery of airpower, while managing Aviation Safety risks.



Defence cannot afford to manage aviation hazards and risks in isolation. A guiding principle for the ongoing development of the framework is, where practical, the adoption or adaption to the military environment of contemporary global Aviation Safety management conventions. The Defence Aviation Safety Authority maintains close links with Australia's Civil Aviation Safety Authority and the Australian Transport Safety Bureau, while monitoring global developments in Aviation Safety.

To support the acquisition, maintenance and operation of Defence Aviation capabilities, Defence maintains relationships with other aviation authorities around the world, including the Civil Aviation Safety Authority. The adoption of global conventions and the establishment of relationships with other authorities provide Defence with efficient access to global supply chains and maintenance vendors, and the opportunity to exploit blended workforce options.

We are currently in a period of strategic autumn facing the most volatile regional security environment since the Second World War. With the threat of entering a strategic winter – a period of great power conflict – our mission requires us to shift from service-centric approaches towards true collaboration as part of an integrated and focussed force. During implementation of the National Defence Strategy we will not compromise on safety. Our key to success hinges upon keeping our greatest capability – our people – safe; generating and delivering highly effective airpower, and maintaining behaviours and a generative safety culture.

The Defence Aviation Safety Framework continues to evolve to remain a contemporary Aviation Safety System to best support Defence Strategic Objectives and the National Defence Strategy. I commend this Guidebook to you as a handy reference to the Defence Aviation Safety Framework.

## SG Chappell, DSC, CSC, OAM

Air Marshal Defence Aviation Authority

November 2024

# Contents

Contents	4
Defence Aviation Safety – Why?	5
Global Aviation Safety Environment	6
Australian Aviation Safety Environment	6
Defence Aviation Safety Framework	7
Defence Aviation Authority	<b>-</b> 7
Defence Aviation Safety Program	י א
Defence Aviation Safety Roard	ט פ
Independent Review of Aviation Safety	0
Management — Airworthiness Boards	
Aviation Safety and Command	9
Defence Aviation Safety Authority	0 0
Director General Defence Aviation Safety Authority	<b>9</b> 10
Chief of Staff	10
Director of Defence Elight	
Safety Bureau	10
Director of Aviation Operations.	10
Director of Initial Airworthiness	10
Director of Continuing Airworthiness	11
Director of Aviation Engineering	11
Director of Space	11
Delegates of the Safety Authority	11
The 'Authority'	11
Defence Aviation Safety Program	
Defence Aviation Safety Program Manual	12
Independent Investigative Capability	13
Defence Aviation Safety Regulation	14
The Regulations	
Structure of Regulations and Guidance	14
General Requirements	14
DASR Parts	14
Acceptable Means of Compliance	14
Guidance Material	15
Advisory Circulars and Factsheets	15
Flexibility Provisions	16
Recognition of Other Aviation Authorities	16
Airworthiness	16
Initial Airworthiness	16
Continuing Airworthiness	17
DASK 21 — AllCrait Design, Production and	17
DASR M — Continuing Airworthingss	17
Management	17
DASR 145 — Requirements for	
Maintenance Organisations	17
DASR 66 — Military Aircraft Maintenance	
Licensing	17
DASR 147 — Maintenance Training	10
Urganisations	18

Flight Operations	18
DASR Aircrew	18
DASR AO.Gen — Air Operations General	18
DASR ARU — Authority Requirements	10
DASP ESTD Elight Simulation Training	10
DASKTSTD — Flight Simulation Haining Devices	18
DASB ET — Elight Test	19
DASR NDR — Non-Defence Registered Aircraft	19
DASB OBO — Organisation Requirements	
for Air Operations	19
DASR RoA — Rules of the Air	. 20
DASR SPA — Specific Purpose Approval	. 20
DASR SPO — Special Purpose Operations	. 20
DASR UAS — Uncrewed Aircraft Systems	. 20
Aviation Services and Facilities	. 20
DASR 139 — Aerodromes	20
DASR ABM — Air Battle Management	. 21
DASR ACD — Air Cargo Delivery	. 21
DASR ANSP — Air Navigation Service Providers	21
Cross-regulatory Requirements	21
DASR AVFM — Aviation Fatigue Management	21
DASR MED — Medical	21
DASR NTS — Non-Technical Skills	. 21
DASR SMS — Aviation Safety Management	01
Systems ACMC	
The Defence ASMS	
	22
Aviation Safety Authorisations	.23
Products	23
Military Type Certificate	23
Military Supplemental Type Certificate	23
Airworthiness Directive	23
Certificate of Airworthiness	.23
Military Permit To Fly	24
Acredreme Certificate	24
AUTOUTOTTE CELITICALE	
Onerating Permit	25
Organisations	25
Military Air Operator Certificate	25
Aerodrome Operator Approval	25
Air Cargo Delivery Service	20
Provider Certificate	.25
Air Navigation Service	
Provider Certificate	. 25
Initial Airworthiness Organisational	
Approvals	. 25
Continuing Airworthiness Organisational	
Approvals	. 25
More information	. 26
Acronyms	. 27

## **DEFENCE AVIATION ACCIDENTS (FATALITIES & HULL LOSSES)**



Figure 1: Defence Aviation Accidents 1980 - present

# Defence Aviation Safety – Why?

Defence has a moral and legal obligation to ensure Aviation Safety pursuant to the *Work Health and Safety Act 2011.* 

Aviation Safety is the state in which risks to personnel arising from aircraft operations are eliminated So Far As Reasonably Practicable (SFARP) or otherwise minimised SFARP through a continuing process of hazard identification and safety risk management.

In the Defence context, Aviation Safety encompasses both the manner in which aircraft are flown, and the tasks, activities and management systems whose primary purpose is to enable safe flight.

Prior to 1991, and extending back to the beginning of military aviation, there was a cultural acceptance in Defence that military flying operations were inherently risky and that accidents and fatalities were inevitable. This came to a head between 1981 and 1991 when the Australian Defence Force (ADF) suffered an aircraft loss rate averaging more than five per year and fatalities averaging more than four per year.

Figure 1 shows the aircraft hull losses and associated fatalities from 1980 to September 2023. In 1991, new safety policies and regulations were progressively introduced, and these policies and regulations have continued to evolve with a strong focus on the importance of a just and generative safety culture in Defence Aviation.

Unlike civil aviation in Australia, Defence does not have dedicated Aviation Safety legislation. Defence establishes organisations and accountabilities, as well as prescribing policies and regulations under the *Defence Act 1903*, to amplify obligations for military aviation in the *Work Health and Safety Act 2011*.



# Global Aviation Safety Environment

The Second World War was the catalyst for significant developments in aviation that allowed for increased networks and capacity for the movement of passengers and freight around the world. In 1944, the United States invited 55 nations to attend the International Civil Aviation Conference in Chicago. Building on the work of the International Commission for Air Navigation that was established in Paris in 1919, along with other pre-war conferences, committees and conventions, the Convention on International Civil Aviation was ratified by 52 nations. By April 1947, the Convention had been ratified by a sufficient number of nations to enable the establishment of the International Civil Aviation Organisation (ICAO). The core ICAO mandate, which remains unchanged, is to help Member States to achieve the highest possible degree of uniformity in civil aviation regulations, standards and procedures. Since its formation, ICAO has remained contemporary, issuing more than 12,000 international standards and recommended practices (SARPs), which have been agreed by consensus by the 193 Member States of ICAO.

# Australian Aviation Safety Environment

Australia is a signatory to the Convention on International Civil Aviation, also known as the Chicago Convention. Article 3 of the Chicago Convention states that the convention applies to civil aviation and does not apply to State Aircraft. The *Civil Aviation Act 1988* defines that, for Australia, a State Aircraft is an 'aircraft of any part of the Defence Force (including any aircraft that is commanded by a member of that Force in the course of duties as such a member)'.

The Act also defines 'aircraft used in the military, customs or police services of a foreign country' as State Aircraft. While the Chicago Convention excludes State Aircraft, Article 3 requires that '... contracting States undertake, when issuing regulations for their state aircraft, that they will have due regard for the safety of navigation of civil aircraft'.

In 1999, ICAO issued Annex 19 to the Chicago Convention, which requires contracting states to develop a State Safety Program (SSP). Australia's Aviation SSP aims to conform to the requirements of Annex 19, with compliance assessed by ICAO. The Defence Aviation Safety Program (DASP) has been developed cognisant of, and is broadly aligned with, the ICAO SSP requirements.

Australian Government agencies have agreed to pursue an integrated approach to management of Australia's civil SSP and the DASP, strengthening interagency agreements and pursuing common initiatives to promote the improvement of Aviation Safety in Australia. Closer engagement between the DASP and the civil SSP offers Australia the opportunity for better engagement with ICAO in the future, an inexpensive and highly valued vehicle for international engagement in the Asia-Pacific region, reduced overheads for Australian industry with increased harmonisation as well as recognition of the respective regulation of Defence and civil aviation.

6



Figure 2: The Defence Aviation Safety Framework

# Defence Aviation Safety Framework

The framework of organisations and accountabilities, combined with prescribed policy and regulation that contextualise and amplify statutory WHS obligations for military aviation, is called the Defence Aviation Safety Framework (DASF).

The framework is established by the Chief of the Defence Force (CDF) and Secretary for the Department of Defence through Joint Directive 21/2021 — *The Defence Aviation Safety Framework*. Figure 2 provides an illustration of the DASF.

The DASF has been established in accordance with global developments in civil and military Aviation Safety to optimise mutual recognition and interoperability with international partner nations.

## **Defence Aviation Authority**

The Chief of Air Force (CAF) has been appointed as the Defence Aviation Authority (Defence AA) and is accountable to CDF and the Secretary to:

- establish an appropriately resourced safety organisation called the Defence Aviation Safety Authority (DASA)
- implement the DASP in line with contemporary international conventions
- prescribe effective Defence Aviation Safety Regulation (DASR) in line with contemporary international regulation
- monitor, advise and report on Aviation Safety performance in Defence
- establish an independent agency for the investigation of Aviation Safety incidents and accidents.



### **Defence Aviation Safety Program**

The DASP is the ongoing fulfilment of the functions and accountabilities established by the DASF. Described at the highest level, these are:

- independent safety assurance applied by DASA, specifically:
  - the prescription and interpretation of Aviation Safety management policy, inclusive of DASR and related standards
  - the issuance of authorisations, including permits, approvals and licences, to certify that Defence Aviation platforms, systems, organisations and personnel have shown compliance with applicable DASR
  - ongoing oversight and enforcement activities to assure compliance with the DASR and the continued validity of authorisations issued by DASA
  - the promotion of Aviation Safety through education, training, and dissemination of safety information
- independent accident and incident investigations performed by Defence Flight Safety Bureau (DFSB) in order to prevent recurrence and improve safety performance
- independent reviews of Aviation Safety coordinated by HQ DASA on behalf of the Defence AA.

The DASP also identifies continuing processes of hazard identification and safety risk management for execution by commanders and managers.

### **Defence Aviation Safety Board**

The Defence AA has established the Defence Aviation Safety Board (DASB) to support overseeing the performance of, and setting the strategic direction for, the DASP. The DASB is a key element of the system instituted by the Defence AA to meet their obligation to assure Aviation Safety within Defence. The DASB is also responsible for considering the views of all significant Defence Aviation stakeholders when Aviation Safety initiatives are proposed, and ensuring that the approach to Aviation Safety adopted by DASA is aligned, where appropriate, with that taken by the Civil Aviation Safety Authority (CASA) and the Australian Transport Safety Bureau (ATSB). The DASB is an advisory to, and chaired by, the Defence AA.

### Independent Review of Aviation Safety Management — Airworthiness Boards

Joint Directive 21/2021 — *The Defence Aviation Safety Framework* also provides the basis for the Defence AA to convene independent boards to provide independent assurance that Aviation Safety is being effectively managed and to review the safety of Defence Aviation activities. Supported administratively by DASA, the Defence AA maintains a panel of one- and two-star ranked ADF Reserve officers, with an operational or technical background, to be members of an Airworthiness Board (AwB).

The review boards complement the independent assurance activities undertaken by DASA and focus on aspects where DASA assurance activities may provide limited confidence. This is specifically relevant from a 'system of systems' perspective that examines the relationships and interaction between the separate entities that collectively ensure that Aviation Safety is being effectively managed.

# Aviation Safety and Command

While the DASF is a structured framework to assure the credibility and defensibility of Aviation Safety within Defence, responsibility to ensure the safety of military aviation operations and the airworthiness of aircraft rests with command and management. Under the ICAO framework, the term 'airworthiness' (encompassing Initial Airworthiness and Continuing Airworthiness) is associated with design, production and maintenance of aircraft.

Commanders and managers are therefore accountable for ensuring aviation systems under their command or control are designed, constructed, maintained and operated to approved standards and limitations, by competent and authorised personnel acting as members of an approved organisation.

The nature of military aviation is unique and complex, and the need for commanders to balance operational objectives and safety outcomes is well understood.

The DASR includes flexibility provisions to assist commanders faced with compelling operational

imperatives to make informed judgements regarding compliance with safety obligations. Such judgements must be made at the appropriate command level, must ensure that Aviation Safety risks are eliminated SFARP and, if it is not reasonably practicable to eliminate risks to health and safety, to minimise those SFARP.

# Defence Aviation Safety Authority

DASA is an organisation in Defence that operates independently of the command chain to enhance and promote the safety of military aviation operations and the airworthiness of State Aircraft in Defence. This objective is primarily achieved through implementation of the DASP, which supports compliance with statutory safety obligations and assures the effective management of Aviation Safety risks.

DASA is led by the Director General DASA (DG DASA) and comprises a headquarters for all enabler support services and six functional directorates, each led by a senior military or Australian Public Service (APS) officer as follows:

- Chief of Staff (CoS) — Military officer aviation
- Director of Defence Flight Safety Bureau (DirDFSB) — Military officer aviation
- Director of Aviation Operations (DAVNOPS) — Military officer aviation
- Director of Initial Airworthiness (DIA) — APS engineer
- Director of Continuing Airworthiness (DCA) Military engineer
- Director of Aviation Engineering (DAVENG) — Military engineer
- Director of Space (DSpace) — APS engineer.

DG DASA and DASA Directors are responsible for the efficient implementation of the DASP on a day-to-day basis, and have clear delegations and leadership functions within DASA.

### Director General Defence Aviation Safety Authority

DG DASA is the principal authority on matters concerning stewardship of the DASP. DG DASA is delegated by the Defence AA to approve amendments to the *DASP Manual* Volumes 2 and 3 (including all DASR). DG DASA is also delegated to issue/revoke all authorisations (including permits, approvals, licences and similar artefacts) as necessary for implementation of the DASR.

### **Chief of Staff**

The Chief of Staff leads the headquarters of DASA and provides support to the directorates in the form of enabling functions for:

- coordination of the Defence Aviation Safety Program
- policy, engagement advice and a recognition function
- support to the Independent Review of Aviation Safety under the Defence Aviation Safety Program
- business support and governance.

# Director of Defence Flight Safety Bureau

The Director of Defence Flight Safety Bureau (DirDFSB) is responsible for independent aviation accident and incident investigations in order to prevent recurrence and improve safety performance. DirDFSB is accorded powers by the Defence AA for autonomous action outside of both DASA and the command chain, and to directly report matters of concern that may impact Aviation Safety. DFSB is functionally independent of



the DASA Directorates that are responsible for regulatory assurance of Aviation Operations, Initial and Continuing Airworthiness, and Safety Management Systems.

### **Director of Aviation Operations**

The Director of Aviation Operations (DAVNOPS) is the DASA lead on matters concerning safe aviation operations. This includes:

- the formulation and interpretation of policy, regulations and standards for aircraft operations
- Uncrewed Aircraft Systems, Air Navigation Services and Aerodromes
- education
- the issue of organisational approvals
- associated oversight and enforcement.

### **Director of Initial Airworthiness**

The Director of Initial Airworthiness (DIA) is the DASA lead on matters of Initial Airworthiness. This includes:

- formulation and interpretation of Initial Airworthiness policy, regulations and standards
- the certification of State Aircraft and Aerodromes
- education
- the issue of organisational approvals and associated oversight and enforcement.



### Director of Continuing Airworthiness

The Director of Continuing Airworthiness (DCA) is the DASA lead on matters of Continuing Airworthiness. This includes:

- formulation and interpretation of Continuing Airworthiness policy and regulations
- education
- the issue of organisational approvals and licences
- associated oversight and enforcement.

### **Director of Aviation Engineering**

The Director of Aviation Engineering (DAVENG) provides engineering services in support of DIA and DCA, and the provision of specialist aviation structural engineering and training services to aviation commanders, to ensure aircraft platform and propulsion system structural integrity.

### **Director of Space**

The Director of Space (DSpace) is responsible for delivering independent space safety regulator functions for Defence. This is expected to include approval of space and high-powered rocket licences and permits; support to the conduct of accident investigations; and assurance of collision avoidance and debris mitigation.

### **Delegates of the Safety Authority**

To assist in the execution of DASA functions, DG DASA appoints agents—known as Delegates of the Safety Authority (DoSA)—to perform specific DASA activities.

The DoSA is a personal appointment based on the skills, knowledge and experience a person holds in Aviation Safety, and the level, scope and limitations of the appointment are contained in a Letter of Delegation. DoSA may be appointed to individuals either internal or external to Defence. For example, they are commonly established at the aircraft platform level in Capability Acquisition and Sustainment Group (CASG) to progress Initial Airworthiness matters as well as in the ADF to progress Flight Test and Air Traffic Controller licencing matters.

### The 'Authority'

The term 'Authority' is often used in regulation and training material without specific reference to either the Defence AA, DG DASA, DASA Directors or an individual DoSA. This is a natural by-product of adopting global conventions in Aviation Safety and airworthiness, and exploiting the globally available training and education material. In nearly every case, the use of the term 'Authority' is intended to refer to DASA.

# Defence Aviation Safety Program

In 2011, the Secretary and CDF introduced the DASP, well ahead of the formation of DASA and the issuance of the DASR in 2016. As summarised briefly earlier in this text, the DASP focuses significant effort for Defence Aviation Safety around the four regulatory functions listed below in addition to an independent investigative function:

- policy and regulation
- education and promotion
- initial certification and approval (based on the management of risk)
- oversight and enforcement (as the key aspects of compliance assurance).

In the same manner that ICAO uses SARPs to benchmark the performance of civil SSPs around the world, DASA benchmarks the performance of the DASP through recognition arrangements with other Military Aviation Authorities (MAA). This benchmarking activity



Figure 3: Hierarchy of Defence Aviation Safety policy

uses the globally agreed Military Authorities Recognition Question set (MARQ), which are a military derivative of ICAO's SARPs.

The similarity between the Australian SSP for civil aviation and the Australian DASP for Defence Aviation provides the framework for improved engagement across Government agencies. This ensures that common safety initiatives can be pursued as a matter of policy for the promotion of Aviation Safety in Australia.

Defence Aviation Safety arrangements are prescribed in legislation, Government policy, Joint Directive 21/2021 — *The Defence Aviation Safety Framework*, and the *DASP Manual*.

Figure 3 illustrates the hierarchy of the Defence Aviation Safety Policy, which provides the framework, authority, obligations and accountabilities necessary to implement and operate an effective Aviation Safety program.

### Defence Aviation Safety Program Manual

The DASP Manual is used by the Defence AA to establish policy and guidance for implementation of the DASP.

The manual is published in three volumes:

- Volume 1, Requirements for the DASP, expands on Joint Directive 21/2021 — The Defence Aviation Safety Framework to establish requirements for the implementation of the DASP
- Volume 2 *Defence Aviation Safety Regulation* establishes all requirements and provisions for the management of Aviation Safety by commanders and managers
- Volume 3 DASP Guidance provides an overview of the DASP and how its various elements collectively achieve the required safety objectives, and promotes understanding of concepts and processes spanning multiple requirements.



The DASR aims to align the DASF with contemporary Aviation Safety conventions, including ICAO standards and recommended practices and European Military Airworthiness Requirements (EMAR).

### Independent Investigative Capability

DFSB provides an independent investigative capability that is aligned to ICAO SARPs:

- Annex 13 to the Convention on International Civil Aviation Aircraft Accident and Incident Investigation
- Annex 19 to the Convention on International Civil Aviation Safety Management, including Amendment 1
- ICAO Document 9756 Manual of Aircraft Accident and Incident Investigation.

DFSB is also responsible for:

- establishing and maintaining the Defence Aviation safety reporting framework
- establishing and maintaining the Defence Aviation confidential reporting system
- establishing and maintaining safety data collection and processing systems to capture, store, aggregate and enable the analysis/ exchange of safety data and safety information
- conducting safety data analysis, safety related research and review of contemporary practices in Aviation Safety
- utilising the outcomes from safety analysis, research and investigation functions to influence organisational learning
- increasing safety awareness, knowledge and action through promotion and education programs.

# Defence Aviation Safety Regulation

DASA issued the DASR on 30 September 2016, introducing a suite of integrated Aviation Safety regulations that represent contemporary practice in global aviation regulation. The DASR aligns Initial and Continuing Airworthiness regulations of Defence with a contemporary Europeanbased Aviation Safety convention. In parallel, the introduction of the Military Air Operator (MAO), Air Navigation Service Providers (ANSP), Aerodromes and Uncrewed Aircraft Systems (UAS) regulations has clarified responsibilities within Defence Aviation Safety management, and is consistent with Defence's three-decade drive for excellence in Aviation Safety.

### **The Regulations**

The DASR are issued as Volume 2 of the DASP Manual and can be found on the DASA internet site (dasa.defence.gov.au). Figure 4 outlines the hierarchal relationship of the DASR.

### Structure of Regulations and Guidance

### **General Requirements**

The General Requirements (GR) define the scope of the DASR, the applicability of the DASR parts as well as establish requirements and provisions that are each applicable to a significant proportion of regulated entities.

### **DASR** Parts

The DASR Parts are outcome based and specify requirements for each of the specifically regulated Aviation Safety topics. They may include associated supporting information in the form of Acceptable Means of Compliance (AMC) and Guidance Material (GM).

### Acceptable Means of Compliance

AMC provides a generic and widely applicable approach to meeting the respective DASR requirements. DASA publishes AMC to provide certainty as to how the required safety outcomes



Figure 4: Defence Aviation Safety Regulation

may be achieved. Choosing to implement an AMC relieves the regulated entity of the burden of proving that the means of compliance achieves the intended safety outcome. The regulated entity demonstrates compliance with the DASR by appropriately implementing AMC. Regulated entities are free to propose Alternative Means of Compliance (AltMoC). The nature of Aviation Safety regulation means the use of AltMoC may not be suitable in every instance. Early engagement with DASA is recommended if an AltMoC is sought.

### **Guidance Material**

Guidance Material (GM) is non-binding explanatory and interpretation material. GM may provide a background or history of the regulation to assist understanding of the requirements or include examples intended to assist the user to comply with regulation.

### **Advisory Circulars and Factsheets**

Advisory Circulars (AC) and Factsheets are sources of support material intended to promote understanding of, and compliance with, the DASR. All support material is authoritative information issued by DASA that does not mandate any action but which may address regulatory requirements and provisions established elsewhere.

ACs are typically issued to bring an issue to the attention of the target audience or to address a complex topic. ACs may be used to identify acceptable ways to achieve regulatory compliance, either as a temporary transition arrangement or in advance of promulgation as AMC in the DASR. Examples include information regarding Aviation Safety or airworthiness matters, information that enhances compliance understanding for existing regulation, or policy guidance for aviation issues that are not yet regulated but require further understanding.

Factsheets are typically issued to provide concise information that may assist those interested in a particular topic.





### **Flexibility Provisions**

In the circumstance in which a military commander needs to operate a Defence aircraft for a non-discretionary activity outside the approved configuration, role, environment or a prescribed limitation or condition, a Military Permit to Fly (MPTF), Airworthiness Directive (AD) or Command Clearance (CC) is required to supplement the approved Certificate of Airworthiness (CoA).

While MPTFs and ADs are recognised authorisations in the global convention of military airworthiness, the terminology 'Command Clearance' is unique to the Australian DASR. It permits a commander to deviate from the authorised configuration, role, environment, limitation or condition to achieve mission requirements, in accordance with statutory safety obligations. The GR and DASR Parts include embedded flexibility provisions that allow alternative approaches where an equivalent level of protection can be attained, or where a credible and defensible level of military Aviation Safety performance can be assured through the application of sound risk management principles. In the event of compelling operational imperatives or emergencies, operational commanders may deviate from the Aviation Safety requirements via a CC.

### Recognition of Other Aviation Authorities

To promote flexibility for the aviation community further, and to support interoperability with partner nations, DASA recognises the safety assurance applied by other civil and military aviation authorities. A Recognition Certificate is issued by DASA to detail the scope, conditions and caveats that must be addressed before the recognition of a foreign MAA or Civil Aviation Authority (CAA) can be exploited. Recognition Certificates are promulgated on the DASA internet site.

### Airworthiness

**Initial Airworthiness** covers the design, production and certification aspects of an



aircraft. This includes 'Continued Airworthiness' which defines ongoing obligations necessary to ensure the continued validity of a design. Initial Airworthiness establishes the criteria for certification of military aircraft and related products as well as design and production organisations.

**Continuing Airworthiness** covers all processes that ensure an aircraft continues to comply with Initial Airworthiness requirements, and supports the ongoing validity of the CoA of the aircraft.

The terminology Continued and Continuing Airworthiness can be confusing. To describe this in a simple way, Continued Airworthiness is a design function concerning an aircraft type and Continuing Airworthiness is a maintenance and configuration management function concerning a single aircraft or fleet.

# DASR 21 — Aircraft Design, Production and Certification

The purpose of DASR 21 – Aircraft Design, Production and Certification is to assure the certification of military aircraft and related products, parts and appliances, including the regulation of design and production organisations, throughout the entire lifecycle of the platform.

DASR 21 is only applicable to aircraft on the Defence Register. Non-Defence Registered aircraft (civil registered) will continue to be managed under the regulation of the applicable CAA.

# DASR M — Continuing Airworthiness Management

The purpose of DASR M – Continuing Airworthiness Management is to assure that each aircraft is of the approved configuration for the intended purpose and is safe to fly. While not directly responsible for actual aircraft maintenance, a DASR M Subpart G Continuing Airworthiness Management Organisation (CAMO) is responsible for engaging approved DASR 145 Maintenance Organisations and other acceptable providers to conduct maintenance. The Continuing Airworthiness Management Exposition (CAME) specifies the manner in which the CAMO and relevant individuals meet their Continuing Airworthiness responsibilities.

### DASR 145 — Requirements for Maintenance Organisations

The purpose of DASR 145 — Requirements for Maintenance Organisations is to assure that an organisation meets the requirements to qualify for initial or continued approval for the maintenance of aircraft and components. The Maintenance Organisation Exposition (MOE) specifies the requested scope of work and how the maintenance organisation intends to comply with DASR 145.

# DASR 66 — Military Aircraft Maintenance Licensing

The purpose of DASR 66 — Military Aircraft Maintenance Licensing is to define the maintenance licensing system and establish the requirements for application, issue and continued validity of a Military Aircraft Maintenance Licence (MAML). A MAML is not an authority to conduct or certify maintenance; this authority must be granted by the person responsible for the quality system within the relevant DASR 145 Maintenance Organisation.

# DASR 147 — Maintenance Training Organisations

DASR 66 is underpinned by the implementation of DASR 147 — Aircraft Maintenance Training Organisations (MTO). The purpose of DASR 147 is to establish the requirements to be met by an MTO in order to conduct training and examination as specified in DASR 66.

### **Flight Operations**

This group contains regulations for the safe conduct of flight operations by Defence aircraft, including UAS and aircraft operated on behalf of Defence. It includes requirements for training and qualification of all personnel involved in military flight operations.

### **DASR Aircrew**

The purpose of DASR Aircrew is to assure that Defence aircrew are adequately trained and proficient for employment in a specific role. This includes regulation for the personnel and training aspects of Flying Instruction, Airborne Emergency Training, Crew Resource Management, Aviation Safety training and Flying Logbooks.

### DASR AO.Gen — Air Operations General

DASR Air Operations (AO) General is applicable to all areas of air operations and includes requirements for Orders, Instructions and Publications (OIP) specific to air operations.

# DASR ARO — Authority Requirements for Air Operations

The purpose of DASR ARO — Authority Requirements for Air Operations is to address a range of AO matters, including the following:



- Statement of Operating Intent and Usage (SOIU), to inform decisions on whether an aircraft design remains safe for operations
- Cessation of Flight Operations, which provides a mechanism for command to cease flight operations to allow time to address emergent risks
- the Defence Register
- establishment of the Military Air Operator (MAO).

A MAO is the regulated organisation approved by DASA to conduct air operations. The senior member of a MAO is the Accountable Manager (AM), which is usually a Force Element Group (FEG) commander or equivalent.

The majority of Defence flight operations are conducted under a Military Air Operator Certificate (MAOC) issued to a MAO. The MAO is usually a FEG or equivalent.

# DASR FSTD — Flight Simulation Training Devices

The purpose of DASR FSTD — Flight Simulation Training Devices is to assure aviation operations augmented by a Flight Simulation Training



Device (FSTD) are adequately controlled and managed. Approval of an FSTD is via an Installation Operating Permit (IOP).

#### DASR FT - Flight Test

The purpose of DASR FT — Flight Test is to assure that a MAO only undertakes those Flight Test activities it is capable of safely conducting, including that the tests are conducted under appropriate airworthiness controls using suitable personnel, processes and data. Flight Test is a subset of Defence Test and Evaluation (T&E). Flight Test activities involve, to varying extents, the operation of an aircraft outside of its existing certification. A MAO requires a specific privilege to be able to conduct Flight Test activities of this nature.

#### DASR NDR — Non-Defence Registered Aircraft

The purpose of DASR Non-Defence Registered Aircraft (NDRA) is to assure operation of NDRA by, or on behalf of, Defence is conducted under the airworthiness oversight of Defencerecognised Civil or Military Aviation Authorities.

# DASR ORO — Organisation Requirements for Air Operations

The purpose of DASR ORO — Organisation Requirements for Air Operations is to assure Defence aircraft are operated with adequate controls to ensure safety of flight. They include the following:

- Flight Operations—ensuring aircraft are operated in approved roles, with correct mission equipment, to approved procedures and instructions
- Flying Management Systems
- Appointment of Key Staff
- Aircrew Competency System
- Flight Authorisation System
- Aeronautical Life Support Equipment
- Aircraft Crewing (including Captaincy)
- Oxygen Management (including Flight Crew and Supplemental Oxygen)
- Authorised Electronic Equipment
- Carriage of Personnel on Defence Aircraft
- Use of Role Equipment
- Flight Recorder(s) and Locating Equipment.



#### DASR RoA - Rules of the Air

The purpose of DASR RoA — Rules of the Air is to assure that the rules stipulated within Defence Aeronautical Information Publication (AIP), as they apply to Defence Aviation, are harmonised with ICAO and national civil practice wherever practical. The intent is that Defence Aviation will have due regard for the safety of navigation of civil aircraft.

#### DASR SPA - Specific Purpose Approval

The purpose of DASR SPA — Specific Purpose Approval is to assure that certain Defence Aviation activities are conducted safely. The scope of DASR SPA includes Command Clearances, Low Flying, Flypasts and Flying Displays, Defence Long Range Operations and Night Vision Imaging System operations.

#### **DASR SPO** – Special Purpose Operations

The purpose of DASR SPO — Special Purpose Operations is to assure that routine special purpose operational roles are managed to the specified standards and level of safety. DASR SPO includes Joint Personnel Recovery and Aeromedical Evacuation.

#### DASR UAS — Uncrewed Aircraft Systems

The purpose of DASR UAS — Uncrewed Aircraft Systems is to assure the safe operation of UAS. The regulations account for the range of UAS complexity, design pedigree and mass through three different categories: [type] certified category UAS, specific category UAS and open category UAS.

#### **Aviation Services and Facilities**

This group contains regulations for the services and facilities that directly support the safe conduct of aviation operations by Defence.

#### DASR 139 — Aerodromes

The purpose of DASR 139 — Aerodromes is to assure those organisations responsible for Defence-certified aerodromes manage the design, certification and operational requirements for Defence-certified aerodromes in accordance with specified standards and requirements.

DASR 139 Aerodromes reflects the commitment of Defence to align with civil standards and

practices, where practical to do so, for certification of Defence aerodromes, including shipborne heliports. The Aerodrome Operator is a DASA-approved organisation.

### DASR ABM — Air Battle Management

Air Battle Management (ABM) is the control of military air operations that may include the control and coordination of integrated air and missile defence, offensive counter-air, strategic attack, close air support and other warfighting or supporting air activities. DASR ABM requires that Air Battle Management Operations are conducted safely.

### DASR ACD — Air Cargo Delivery

The purpose of DASR ACD — Air Cargo Delivery is to assure suitability for flight is not compromised by ineffective management of the preparation, composition, configuration, loading, placement and restraint of passengers, general cargo and non-standard cargo. The regulation applies to MAOs conducting ACD and ACD Service Providers.

# DASR ANSP — Air Navigation Service Providers

The purpose of DASR ANSP — Air Navigation Service Providers is to assure those organisations, systems and services that support flight operations. This assurance includes, where appropriate, their configuration, role and operating environment (CRE), system modifications, review and oversight, compliance requirements, interoperability arrangements and assurance activities, are managed in accordance with specified standards and requirements.

Like the MAO, the ANSP is a DASAapproved organisation with an AM, which is usually a FEG commander or equivalent. This regulation applies to Air Traffic Control, Aeronautical Information and Defence-provided Meteorological services.

### **Cross-regulatory Requirements**

This group contains regulations that are made applicable by DASR parts within multiple other groups.

### DASR AVFM — Aviation Fatigue Management

The purpose of DASR AVFM — Aviation Fatigue Management is to assure Defence aircrew and air traffic controllers are subject to defined management controls that eliminate or otherwise minimise organisational aviation fatigue risks.

### DASR MED - Medical

The purpose of DASR MED – Medical is to assure personnel conducting flying-related duties, including aircraft controllers, are aware and appropriately trained in Aviation Medicine before commencing flying-related activity, meet prescribed medical standards and remain medically fit for flying duties through effective health management.

### DASR NTS - Non-Technical Skills

Non-Technical Skills (NTS) focuses on human performance—the mental, social, and personal management abilities that complement the technical skills of personnel, and contribute to safe and effective performance in complex work systems (ie the interaction of people, activities and equipment). DASR NTS assures that personnel in specific Defence aviation categories and roles are adequately trained and proficient in managing threats and errors in their work environment.

# DASR SMS — Aviation Safety Management Systems

An Aviation Safety Management System (ASMS) is a systematic approach by an organisation to manage Aviation Safety risks as close as possible to where they arise, and includes the necessary organisational structures, accountabilities, policies, procedures and plans.



Building on the compliant processes in an organisation, Aviation Safety performance is enhanced when the ASMS couples the positive attitudes, beliefs, values and practices of the personnel within an organisation.

The DASR requires most organisations holding a DASR approval to comply with DASR SMS — Aviation Safety Management Systems, which is aligned to ICAO Annex 19. This includes organisations in Defence and Defence industry involved in Initial and Continuing Airworthiness, military air operations, air navigation services and aerodrome operations.

The risk management element of DASR SMS is a direct adoption of the statutory obligations for risk management in Australia's *WHS Act 2011*, allowing Defence Aviation to exploit the global convention in ASMS while remaining compliant with uniquely Australian legislation.

## The Defence ASMS

In compliance with DASR, the command chain in Defence has mandated the use of a standardised Defence ASMS for MAOs in Navy, Army and Air Force. Standardisation allows for improved coordination between respective MAOs, use of common tools and systems, and the collection and analysis of safety intelligence by the command chain and DASA to improve and promote Aviation Safety performance respectively.

## **Defence Registration**

An aircraft must be Defence-registered when Defence continuously operates it as a State Aircraft. These aircraft are operated under DASR flight approvals.

# Aviation Safety Authorisations

DASA issues authorisations, such as certificates and approvals, in respect of products and organisations when they have been shown to be in compliance with the applicable DASR.

### Products

### **Military Type Certificate**

A Military Type Certificate (MTC) is issued by DASA and certifies that the aircraft type design complies with the applicable Type Certification Basis when operated within the conditions and limitations specified on the accompanying Type Certificate Data Sheet (TCDS). The TCDS also describes the Type Certification Basis, details technical characteristics and includes details of each applicable aircraft.

### Military Supplemental Type Certificate

A Military Supplemental Type Certificate (MSTC) may be issued by DASA to certify a major change to the type design by an eligible design organisation.

### **Airworthiness Directive**

An Airworthiness Directive (AD) is issued by DASA to mandate action on an aircraft to restore safety, when evidence shows that the airworthiness of the aircraft may otherwise be compromised.

### **Certificate of Airworthiness**

A non-expiring Certificate of Airworthiness (CoA) attests that an individual aircraft conforms to the approved type design. An individual aircraft remains 'airworthy' if the aircraft is maintained in accordance with Instructions for Continuing Airworthiness and the CoA is validated annually





by issuance of a Military Airworthiness Review Certificate (MARC). Under DASR, the MARC may be extended, or a new MARC issued. The review is a routine functional and physical configuration audit, by suitably qualified personnel, to ensure a specific aircraft remains airworthy and safe to operate.

#### **Military Permit To Fly**

A Military Permit to Fly (MPTF) is issued by DASA to permit the flight of an aircraft that does not meet, or has not yet demonstrated compliance with, applicable airworthiness requirements. In the application to DASA, the MAO is required to demonstrate appropriate risk management by documenting the specified purpose, conditions and limitations to ensure the safe operation of the aircraft. The DoSA Flight Test assists a MAO in the development of conditions and limitations for Flight Test activities, and issues MPTFs for complex Flight Test on behalf of DASA.

#### Uncrewed Aircraft System Operating Permit

An Uncrewed Aircraft System Operating Permit (UASOP) is issued by DASA to permit the flight of a UAS that has not been issued an MTC and CoA, does not meet the Open UAS category requirements, and cannot be authorised to fly under a DASR UAS Standard Scenario. In the application to DASA, the prospective operating organisation is required to demonstrate appropriate risk management by documenting the specified purpose, conditions and limitations to ensure the safe operation of the UAS.

#### **Aerodrome Certificate**

An Aerodrome Certificate is issued by DASA when it has been shown that the aerodrome's design and construction comply with the agreed certification basis. The granting of a certificate is subject to the respective Aerodrome Operator having arrangements in place to ensure continued safe operation and ongoing compliance with the certification basis.

### Flight Simulation Training Device Installation Operating Permit

A Flight Simulation Training Device Installation Operating Permit (FSTD IOP) is issued by Commander Australian Fleet, Commander Army Aviation Command or Air Commander Australia, to authorise operation of an FSTD in accordance with stated limitations and conditions.

### Organisations

### **Military Air Operator Certificate**

A Military Air Operator Certificate (MAOC) is the principal authorisation issued by DASA to conduct military air operations. A MAOC is a single-page certificate (DASR Form 138) to authorise the MAO, usually a FEG or equivalent, to perform military air operations as defined in the accompanying Operations Specification (OpSpec) and in accordance with DASR. An OpSpec (initial issue or update) is always accompanied by a compliance statement from the applicant that demonstrates how compliance with DASR is achieved and an attestation from the accountable manager.

### **Aerodrome Operator Approval**

An Aerodrome Operator (AD OPR) approval must be held by organisations responsible for operation of Defence-certified aerodromes. The approval, issued by DASA, provides assurance that the Aerodrome Operator is competent to manage the respective design, certification and operational requirements in accordance with specified standards.

# Air Cargo Delivery Service Provider Certificate

An Air Cargo Delivery Service Provider Certificate (ACDSPC) is the principal authorisation granted by DASA to enable provision of Air Cargo Delivery services. An ACDSPC is a single-page certificate to authorise the ACDSP, to provide ACD services as defined in the accompanying Service Provision Conditions (SPC). An ACDSPC (initial issue or update) is always accompanied by a compliance statement from the applicant that demonstrates how compliance with DASR is achieved and an attestation from the accountable manager.

### Air Navigation Service Provider Certificate

An Air Navigation Service Provider Certificate (ANSPC) is the principal authorisation granted by DASA to enable provision of Air Navigation Services (ANS). An ANSPC is a single-page certificate to authorise the ANSP, to provide ANS as defined in the accompanying Service Provision Conditions (SPC). An ANSPC (initial issue or update) is always accompanied by a compliance statement from the applicant that demonstrates how compliance with DASR is achieved and an attestation from the accountable manager.

# Initial Airworthiness Organisational Approvals

DASR 21J Military Design Organisation Approval and DASR 21G Military Production Organisation Approval certificates are the principal authorisations awarded by DASA to enable design, repair, modification and production of aircraft. Organisations may be awarded privileges dependent on the scope of services provided and maturity of the organisation.

### Continuing Airworthiness Organisational Approvals

DASA awards organisational approval certificates to DASR M CAMOs, DASR 145 Maintenance Organisations and DASR 147 Maintenance Training Organisations. Organisations may be awarded privileges dependent on the scope of services provided and maturity of the organisation.

# More information

#### **Defence Aviation Safety Authority Contacts**

Correspondence to the Defence AA all correspondence to the Defence AA should be through the DASA Registry for staffing and administrative processing.

DASA intranet: http://drnet/dasa

DASA internet: https://dasa.defence.gov.au/

#### **Email contacts**

General enquiries: dasa.registry@defence.gov.au

Regulatory enquiries: dasa.dasr@defence.gov.au

#### Newsbreak subscription:

dasa.subscribe@defence.gov.au

Feedback: dasa.stakeholderfeedback@defence.gov.au

#### **Flight Safety Reporting Contacts**

#### DFSB Duty Officer: (02) 6144 9199

For any investigation inquiries: DFSB.investigations@defence.gov.au

Australian Transport Safety Bureau aviation 24hr reporting line: 1800 011 034 WHS Notifiable events: 1300 366 979

#### **Confidential Report (CONFIR)**

A CONFIR may be used by individuals to reactively or proactively report an aviation-related safety event or issue, where they are unwilling to use the normal Aviation Safety reporting system for fear that they may be disciplined, ridiculed, or otherwise disadvantaged if they do so.

The CONFIR must be either emailed to dfsbdirector@dpe.protected.mil.au, or mailed directly to Director DFSB, marked as 'TO BE OPENED BY DIRECTOR DFSB ONLY'.

Director Defence Flight Safety Bureau FBN-F4-1-114 PO Box 7933 CANBERRA BC ACT 2610

#### **ASR Service Desk**

Contact the ASR Service Desk for all ASR related support. The ASR Service Desk seeks to respond to e-mail or phone requests or inquires within one business day. All requests or inquiries are categorised as either a Service Request or an Incident. The ASR Service Desk aims to satisfy a Service Request within one business day and to resolve an Incident within five business days.

#### ASR Service Desk Support Hours:

Mon to Thur: 0800 to 1600 Fri: 0800 to 1500 (excluding public holidays and stand-down periods) Email: ASR.Servicedesk@defence.gov.au

Telephone: (02) 5130 7704



### ACRONYMS

AC	Advisory Circular
ACD	Air Cargo Delivery
ACDSP	ACD Service Provider
ACDSPC	ACD Service Provider Certificate
AD	Airworthiness Directive
ADF	Australian Defence Force
AIP	Aeronautical Information Publication
AltMoC	Alternative Means of Compliance
AM	Accountable Manager
AMC	Acceptable Means of Compliance
ANSP	Air Navigation Service Provider
ANSPC	Air Navigation Service Provider Certificate
AO	Air Operations
APS	Australian Public Service
ARC	Airworthiness Review Certificate
ARO	Authority Requirements for Air Operations
ASMS	Aviation Safety Management Systems
ATSB	Australian Transport Safety Bureau
AwB	Airworthiness Board
CAA	Civil Aviation Authority
CAF	Chief of Air Force
CAME	Continuing Airworthiness Management Exposition
CAMO	Continuing Airworthiness Management Organisation
CASA	Civil Aviation Safety Authority
CASG	Capability Acquisition and Sustainment Group
CDF	Chief of Defence Force
CoA	Certificate of Airworthiness
CONFIR	Confidential Report
CRE	Configuration, Role and Operating Environment
DASA	Defence Aviation Safety Authority
DASB	Defence Aviation Safety Board
DASF	Defence Aviation Safety Framework
DASP	Defence Aviation Safety Program
DASR	Defence Aviation Safety Regulations
DirDFSB	Director of Defence Flight Safety Bureau
Defence AA	Defence Aviation Authority
DFSB	Defence Flight Safety Bureau
DG DASA	Director General Defence Aviation Safety Authority

DoSA	Delegate of the Safety Authority
EMAR	European Military Airworthiness Requirements
FEG	Force Element Group
FSTD	Flight Simulation Training Device
FSTD IOP	Flight Simulation Training Device Installation Operating Permit
FT	Flight Test
GM	Guidance Material
GR	General Requirements
ICAO	International Civil Aviation Organisation
IOP	Installation Operating Permit
JD	Joint Directive
MAA	Military Aviation Authority
MAML	Military Aircraft Maintenance Licence
MAO	Military Air Operator
MAOC	Military Air Operator Certificate
MARC	Military Airworthiness Review Certificate
MARQ	Military Authorities Recognition Question set
MED	Medical
MOE	Maintenance Organisation Exposition
MPTF	Military Permit to Fly
MSTC	Military Supplemental Type Certificate
MTC	Military Type Certificate
MTO	Maintenance Training Organisation
NDRA	Non-Defence Registered Aircraft
OIP	Orders, Instructions and Publications
OpSpec	Operations Specification
ORO	Organisation Requirements for Air Operations
RoA	Rules of the Air
SARPs	Standards and Recommended Practices
SFARP	So Far As Reasonably Practicable
SOIU	Statement of Operating Intent and Usage
SPA	Specific Purpose Approval
SPC	Service Provision Conditions
SPO	Special Purpose Operations
SSP	State Safety Program
TCDS	Type Certificate Data Sheet
T&E	Test and Evaluation
UAS	Uncrewed Aircraft System
UASOP	Uncrewed Aircraft System Operating Permit



Defence Aviation Safety Authority