



Australian Government
Department of Defence



**Defence Aviation
Safety Authority**

ADVISORY CIRCULAR

AC 009/2018

**ADDRESSING SERVICE RELEASE REQUIREMENTS
UNDER DEFENCE AVIATION SAFETY REGULATIONS**

U8706659

v1.0 – 16 October 2018

An Advisory Circular is issued by the Authority to promulgate important information to the Defence Aviation community, but does not mandate any action. This includes informing the community on aviation safety / airworthiness matters, information that enhances compliance understanding for existing regulation, or policy guidance for aviation issues not yet regulated that requires further understanding.

Audience

This Advisory Circular (AC) is relevant to the Defence Aviation regulated community who have transitioned, or are continuing to transition, from the previous suite of airworthiness regulations¹ to the Defence Aviation Safety Regulations (DASR). This includes:

- Military Air Operator (MAO) organisations (including Continuing Airworthiness Management Organisations (CAMO) and CAMO service providers)
- design organisations (System Program Offices (SPO))
- Contractor Military Design Organisation Approval (MDOA) holders and equivalents
- Organisations involved in managing the configuration of ADF aircraft (Project Offices, SPO and Through Life Support (TLS) contractors).

Purpose

Unlike the previous suite of airworthiness regulations, the DASR do not include specific 'Service Release' (SR) requirements nor an aviation safety Instrument. This has been interpreted in some areas as a deficiency regarding assurance that SR requirements, specified under the previous suite of airworthiness regulations, are satisfied under the DASR. To address this concern, this Advisory Circular will:

- explain the concept of Service Release
- summarise the historical Service Release requirements applicable for a new aircraft type/major change and during sustainment
- identify how DASR satisfy the historical Service Release elements.

Further information

For further information on this AC, contact DAVREG-DASA at dasa.dasr@defence.gov.au

¹ The previous suite of aviation safety regulations comprised Military Aviation Regulations, Operational Airworthiness Regulations and Technical Airworthiness Regulations.

ADDRESSING SERVICE RELEASE REQUIREMENTS UNDER DASR
Status

This AC will remain current until cancelled by DASA.

Version	Date Approved	Approved By	Details
1.0	16 October 2018	A/DG DASA	Initial release

ADDRESSING SERVICE RELEASE REQUIREMENTS UNDER DASR
Contents

Audience	i
Purpose	i
Further information	i
Status	ii
1 Reference material	1
1.1 Acronyms.....	1
1.2 Definitions	2
1.3 References.....	2
2 Background	3
2.2 Relationship between Service Release and Type Certification.....	3
3 Service Release for a new aircraft type or major change	4
3.2 Operational requirements.....	4
3.3 Technical requirements.....	4
3.4 Logistics requirements	4
3.5 Issue of Service Release – Airworthiness Board role.....	4
3.6 Limitation to Service Release.....	5
4 Service Release during sustainment	6
4.2 Operational requirements.....	6
4.3 Technical requirements.....	6
4.4 Logistics requirements	6
4.5 Continuation of Service Release – Airworthiness Board role	6
5 Service Release during sustainment	7
5.2 Initial Airworthiness: DASR 21 Aircraft Design, Production and Certification.....	7
5.3 Continuing Airworthiness: DASR M, 145.....	7
5.4 DASR Military Air Operator	8
5.7 DASR Safety Management System	9
5.8 Independent review of Aviation Safety	9
5.9 Addressing Service Release limitations under DASR	9
6 DASR coverage of Service Release aspects	10
7 Conclusion	11

Reference material

1.1 Acronyms

The acronyms and abbreviations used in this AC are listed in the table below.

Acronym	Description
AC	Advisory Circular
AIS	Aeronautical Information Service
AwB	Airworthiness Board
CAMO	Continuing Airworthiness Management Organisation
CASG	Capability Acquisition and Sustainment Group
Defence AA	Defence Aviation Authority
DASA	Defence Aviation Safety Authority
DASR	Defence Aviation Safety Regulation
EMAR	European Military Airworthiness Requirements
FMS	Flying Management System
FTP	Flight Test Permit
ILSM	Integrated Logistics Support Manager
MAO	Military Air Operator
MAOC	Military Air Operator Certificate
OIP	Orders, Instructions and Publications
OPSPEC	Operations Specification
PEM	Project Engineering Manager
SOI	Statement of Operating Intent
SOIU	Statement of Operating Intent and Usage
SR	Service Release
TC	Type Certification
UAS	Unmanned Aircraft System

1.2 Definitions

Terms that have specific meaning within this AC are defined in the table below.

Term	Definition
1.2.1	Nil

1.3 References

1.3.1 AAP 7001.048 Defence Aviation Safety Program Manual (withdrawn)

1.3.2 AAP 7001.053 Technical Airworthiness Management Manual²

1.3.3 AAP 8001.010 Defence Operational Airworthiness Manual (withdrawn)

1.3.4 AAP 8000.011 Defence Aviation Safety Regulations

Unless specified otherwise, all regulation references in this AC refer to the Defence Aviation Safety Regulation (DASR).

² Post 30 September 2016, AAP 7001.053 is only applicable to aviation service provider organisations contracted to Defence who are yet to transition to DASR.

2 Background

2.1 The concept of Service Release (SR) was introduced shortly after establishment of the Airworthiness Coordination and Policy Agency (ACPA) in the latter half of 1999. SR was issued based on a declaration of the 'readiness' of supporting elements to sustain the airworthiness of a specified aircraft type at a designated Rate of Effort (RoE), in the approved Configuration, Roles and operating Environment (CRE) as per the Statement of Operating Intent (SOI).³ This included, inter alia, assessments to ensure appropriate operational, maintenance and engineering management arrangements were in place, there were sufficient trained and qualified personnel to operate and maintain the aircraft type, and there were adequate logistics arrangements in place to sustain operations at the expected rate of effort.

2.2 **Relationship between Service Release and Type Certification.** While the activities that underpinned Type Certification (TC) and SR were often performed concurrently, they supported distinctly different, albeit related, outcomes. Ostensibly, TC confirmed conformance of the aircraft system design, and accompanying operating and maintenance instructions, with prescribed airworthiness standards, whereas SR declared that the aviation support elements required to support aircraft operations, at a designated RoE, were available. While TC and SR supported distinctly different outcomes they were co-dependent, as TC was a pre-requisite for issue of SR⁴ and, except for operation under a Special Flight Permit (SFP)⁵ or Flight Test Permit (FTP), both a TC and SR were required before the aircraft type was operated.

³ AAP 7001.048 Sect 3, Chap 4, para 5.

⁴ AAP 7001.048 Sect 3, Chap 4, para 7.

⁵ An SFP was normally used to cater for scenarios where TC was incomplete and/or when SR was not appropriate due to support arrangements not being sufficiently robust.

3 Service Release for a new aircraft type or major change

3.1 The previous suite of airworthiness regulations provided prescriptive operational, technical and logistics requirements to be addressed in order to support an SR declaration by the Defence Aviation Authority (Defence AA) when introducing a new aircraft type or major change into service. These are summarised in the following paragraphs.

3.2 **Operational requirements**⁶. The operational requirements of SR focused on establishing the operational airworthiness infrastructure required to support flying operations.⁷ The operational airworthiness infrastructure included existence of a Flying Management System using approved Orders, Instructions and Publications (OIP), and approved training, qualification and competence criteria to safely operate the aircraft.

3.3 **Technical requirements**⁸. The technical requirements of SR focused on the capacity of the engineering and maintenance organisations to adequately support the operation of the aircraft in the intended roles and environment at a designated rate of effort. This focus was underpinned by the existence of a type certificate, confirmation that individual aircraft conformed to the type design, and that closed loop monitoring systems were in place for structural integrity, software integrity and system safety.

3.4 **Logistics requirements**⁹. The logistics requirements of SR focused on the provision of adequate logistics supporting infrastructure and arrangements to enable the ongoing operation of the aircraft at a designated rate of effort. Logistics supporting infrastructure and arrangements addressed operational and maintenance training systems, sufficiency of publications, spares and support equipment provisioning and facilities.

3.5 **Issue of Service Release - Airworthiness Board role.**¹⁰ One role of the Airworthiness Board (AwB) was to review evidence that demonstrated the specified SR requirements had been met and, as appropriate, recommend that the Defence AA approve SR.

⁶ AAP 8000.010, Sec 2, Chap 3, OAREG 3.4 Service Release for New Aircraft and Major Changes to Type Design.

⁷ Operational airworthiness infrastructure includes a Flying Management System (FMS); documentation of operational rules limitations and instructions; training, qualification and competency criteria; and availability of sufficient trained aircrew.

⁸ AAP 7001.053 Sect 2, Chap 1, TAREG 2.4 – Service Release for Major Changes to Type Design.

⁹ AAP 7048.001 Sect 2, Chap 3, MILAVREG 3.3 – Service Release, Reference A Sect 3 Chap 4, para 48.

¹⁰ AAP 7048.001 Sect 2, Chap 3, MILAVREG 3.3 – Service Release, and MILAVREG 4.3 Airworthiness Board Outcomes.

- 3.6 **Limitations to Service Release.** Where airworthiness issues were not fully resolved and/or support arrangements remained immature, consideration was given to granting SR with appropriate limitations, to ensure the required level of safety was not adversely affected.

4 Service Release during sustainment

- 4.1 During sustainment of an aircraft type, SR remained valid unless the arrangements established to meet the operational, technical or logistics SR requirements during introduction of a new aircraft or major change became ineffective.
- 4.2 **Operational requirements.** New or varied SR operational requirements were predominantly associated with supplemental role approvals. Supplemental role approval was contingent on confirmation that SR operational requirements specified for a new aircraft type or major change had been appropriately addressed.¹¹
- 4.3 **Technical requirements.** New or varied SR technical requirements were predominantly associated with minor changes to the type design, and were usually addressed as part of the 'Incorporation Approval' process¹², which formally permitted a design change to proceed from the design phase to the incorporation phase, ostensibly committing the resources required for implementation.
- 4.4 **Logistics requirements.** There were no additional SR logistics requirements beyond those specified at paragraph 3.4. Any changes required to the established logistics supporting infrastructure or approved RoE, and arrangements due to incorporation of a minor change to the type design, were normally addressed as part of the 'Incorporation Approval' process.
- 4.5 **Continuation of Service Release - Airworthiness Board role.** During AwB review of an in-service aircraft type, the AwB reviewed evidence provided by key appointments and authorities to support continuation of SR and, if satisfied, recommend continuation of SR to the Defence AA.

¹¹ AAP 8000.010, Sect 2, Chap 3, OAREG 3.5 – New or Modified Configuration, Role or Environment.

¹² AAP 7001.053, Sect 2, Chap 1, TAREG 3.5.12 – Incorporation Approval and TAREG 3.5.13 - Service Release for Minor Changes to Type Design.

5 Comparison of DASR against Service Release concept and implementation

- 5.1 The DASR address all safety related SR requirements in the previous suite of regulations. The comparison is undertaken through the separate groupings of DASR in the following paragraphs.
- 5.2 **Initial Airworthiness: DASR 21 – Aircraft Design, Production and Certification.** The DASR 21 requirements are focused on aircraft design, certification and production, which are the fundamental pillars of 'Initial Airworthiness', and thus have limited equivalence to the SR requirements in the previous suite of regulations. However, the DASR 21 production and design organisational approvals (and associated requirements) effectively address the requirement for appropriate engineering and production support required as part of the 'Continued Airworthiness' arrangements. The DASR also introduced 'holder obligations' associated with the award of aviation safety instruments, which invoke a system of continuous monitoring and corrective action to ensure the continuing validity of the type certificate. Consequently, when combined with Safety Management System (SMS) regulations, DASR strengthen the previous design support provisions embodied within structural integrity, software and system safety requirements, by covering all elements of the Type Design. Ongoing assurance oversight by DASA is also explicitly embodied within the DASR Part 21.
- 5.3 **Continuing Airworthiness: DASR M, 145.** The requirement for the establishment of a responsible Continuing Airworthiness Management Organisation (CAMO) prior to introduction of a new aircraft type provides confidence that airworthiness is, and will continue to be, assured following introduction of a new aircraft type. It achieves this by invoking:
- relevant DASR 21 support requirements
 - continuing airworthiness and associated configuration management requirements for individual aircraft
 - the requirement for maintenance of aircraft and components to be conducted by approved maintenance organisations
 - ongoing DASA assurance oversight for DASR M (CAMO) and DASR 145 Maintenance Organisations.
- 5.3.1 Including the following logistics considerations:
- licensing of maintenance personnel and identification of training / experiential requirements of key personnel in approved organisations

ADDRESSING SERVICE RELEASE REQUIREMENTS UNDER DASR

- requirements for facilities¹³ where this has a direct human factors impact on the ability to execute the required activity
- the use of manufacturer specified support equipment¹⁴
- spares and consumables configuration management requirements.

5.4 **DASR Military Air Operator (MAO).** A significant change in the transition to DASR was the introduction of the MAO construct, which is ostensibly an organisational approval based upon the SR operational requirements in the previous suite of regulations. Under this new arrangement, the MAO applicant submits a Compliance Statement (CS) to support initial issue of, or amendments to, an MAO Certificate (MAOC) and the accompanying Operations Specification (OPSEC). The Authority then issues or updates the MAOC or OPSPEC when satisfied that the MAO can safely conduct flight operations. The OPSPEC provides comprehensive details on the scope of permitted operations (including unmanned aircraft systems (UAS) if applicable) and confirmation of an established CAMO and designated Continuing Airworthiness Manager (CAM). In effect, the MAOC and attached OPSPEC provide confirmation by the Authority that:

- a compliant Flying Management System (FMS) has been established to safely manage flight operations for the configuration, role and environment in the approved Statement of Operating Intent and Usage (SOIU)
- an approved system of rules, limitations and instructions have been documented in Orders, Instructions and Publications (OIP)
- approved training, qualification and competency criteria exist to safely operate the aircraft.

5.5 Further, in conjunction with the CAMO requirements, the issue of an MAOC and attached OPSPEC provides assurance that the operational, technical and associated logistics systems are adequate to ensure continued safe aircraft operation.

5.6 Ongoing DASA oversight of a MAO is addressed via several means, including through the Aviation Safety Reporting DASR and the MAOC Implementing Regulation¹⁵. This includes using an AwB to review changes to a MAOC/OPSPEC, or to review ongoing safe operation of aircraft by a MAO.

¹³ DASR M.A.705 Facilities and DASR 145.A.25 Facility requirements.

¹⁴ DASR 145.A.40 Equipment, tools and material.

¹⁵ DASR ARO.100.A

- 5.7 **DASR Safety Management System.** The requirement to establish an SMS is being implemented across all regulated organisations (DASR MAO, M, 145, 21J, 21G and Aeronautical Information Service (AIS) approvals), due to recognition that process regulation only provides a minimal level of protection against hazards that threaten safety, with overall effectiveness limited by organisational, environmental and human factors. An SMS provides a higher level of aviation safety by supporting and extending the protection afforded through process regulation alone. In particular, a mature SMS complements the other DASR requirements by ensuring that any other credible hazards and associated risks¹⁶ are assessed, eliminated So Far As is Reasonably Practicable (SFARP) and, where elimination is not practicable, mitigated SFARP and subsequently monitored under a mature SMS.
- 5.8 **Independent review of Aviation Safety – DASR ARO.80.** The DASR retain the requirement for the Authority to prescribe mechanisms to independently review the safety of aviation systems within the scope of the Defence Aviation Safety Program (DASP). Furthermore, regulated entities must support independent reviews as prescribed by the Authority. An acceptable means of compliance to this DASR is the use of an AwB, whose role remains consistent with the previous suite of regulations, as an independent board of review. Accordingly, while the term ‘Service Release’ is no longer used, an AwB still considers those aspects. Specifically, an AwB still has an active role in reviewing evidence, and then independently recommending whether an aircraft type can be, or can continue to be, safely operated and supported in the approved configuration(s), role(s) and environment(s), subject to any conditions and limitations considered necessary in the interests of aviation safety.
- 5.9 **Addressing Service Release limitations under DASR.** While the concept of SR limitations is retained under DASR, their implementation has changed slightly as follows:
- 5.9E **Other system limitations or compliance shortfalls against regulated requirements will usually be documented in the organisational approval certificate or associated attachment (such as a MAOC OPSPEC Type Annex or CAMO Schedule), and subsequently recorded in relevant OIP.**
- 5.9E **the issue of a Military Restricted Type Certificate (MRTC) or a Military Type Certification (MTC) with limitations documented in the associated Type Certificate Data Sheet (TCDS).¹⁷**

¹⁶ This includes the SR logistics requirements detailed in the previous suite of regulations but not directly specified in the DASR.

¹⁷ In some circumstances it may be more appropriate to document limitations using a different means (eg: amendment to the Flight Manual).

6 DASR coverage of Service Release aspects

- 6.1 As outlined, DASR provide comprehensive coverage of SR aspects detailed in the previous suite of regulations, albeit in a different manner. Unlike the previous suite of regulations, DASR are focused solely on safety, and do not blur the line between safety and capability requirements. In effect, compliance with the DASR ostensibly provides the same degree of assurance that operations will be conducted safely as was provided by compliance with the SR requirements in the previous suite of regulations. As such, there has been no real change in this area associated with the introduction of DASR.
- 6.2 The increased focus on credible hazards and airworthiness risks associated with the introduction of DASR does not imply a reduction in the importance of establishing a support system than can deliver the planned rate of effort. Rather it simply acknowledges that actively managing the capability related aspects of an aircraft type, such as logistics arrangements required to support a particular rate of effort, is a command responsibility. Accordingly, MAO and CASG units are responsible for establishing their own governance arrangements to support achievement of capability requirements, and oversight by DASA will be limited to safety considerations only.

7 Conclusions

- 7.1 Under the previous suite of regulations, SR was a useful term to collectively describe all the necessary support arrangements to sustain the airworthiness of an aircraft type when operated as described in the SOIU for a given rate of effort. However, in its implementation, the SR concept became misinterpreted through blurring the achievement of safety outcomes with capability delivery. The introduction of DASR has corrected this misinterpretation, such that the support arrangements that directly impact aviation safety remain under DASA oversight, while those that are solely capability related have been removed from DASA purview.
- 7.2 DASR has replaced the concept of SR through the application of appropriate organisational approvals, the requirement for Safety Management Systems, and introduction of the MAO and the CAMO. Furthermore, DASR continue to reinforce the need for an independent review of aviation safety, which is typically undertaken by an AwB. Under this regulatory framework, DASA oversight provides assurance that there is sufficient operational, technical and logistics support to ensure continued safe operation of aircraft.

Original Signed

16 October 2018

Director General – Defence Aviation Safety Authority