

FACTSHEET – DASA ASSURANCE OF AIR LAUNCHED STORES

AIM

This factsheet explains the extent that DASA provides safety assurance for a particular form of Explosive Ordnance (EO): air launched stores. Separate factsheets will cover other forms of aviation-related EO.

INTRODUCTION

Explosive Ordnance (EO) comprises all munitions containing explosives, nuclear fission or fusion materials and biological and chemical agents.¹ There are three forms of EO relevant to the aviation domain: air launched stores (including bombs, missiles, countermeasures etc.), inert EO (including dummy weapons and simulators) and aircraft-embedded EO (including propellants and charges forming part of an aircraft component).

Within Defence, a separate safety program has been established to manage the unique set of risks posed by EO. As part of the Defence EO Safety Program (EOSP) VCDF is appointed as the Defence EO Safety Authority and Director General Explosive Ordnance (DGEO) is appointed as the EO Safety Regulator

Some EO forms part of an aircraft, thus also falling within the scope of the Defence Aviation Safety Framework (DASF), with regulation and assurance provided by DASA. Therefore, organisations and individuals managing air launched stores should understand the role of the different authorities and what their obligations are under each safety framework. The intent of this factsheet also applies to Unmanned Aircraft Systems (UAS) where appropriate.

DIVISION OF RESPONSIBILITIES BETWEEN EOSP AND DASF

The division of assurance responsibility between the DASA and DGEO is mutually agreed and understood. DGEO regulates and assures the design, production, importation, maintenance, storage and transportation of air launched stores. DASA has no direct regulatory or assurance responsibilities for these functions, instead relying on the EOSP (through DGEO) to provide ongoing assurance that organisations performing these activities fully understand and satisfy their obligations under the WHS Act. Specifically, these organisations must ensure that all EO products are safe for all their intended aviation roles and environments, and that all residual hazards/risks are managed and communicated appropriately.

The integration of an air launched store into a type, or its installation onto an aircraft, is conducted under the DASF for which DASA is the safety authority and independent assurance agency.

INTEGRATION OF STORES

The integration of a new air launched store onto a type is a type design change and is the responsibility of the product's Military Type Certificate (MTC) holder (DASR 21.A.42) under the DASRs. The change should be classified as major as described at Appendix A to GM to DASR 21.A.91.

In order for the change to be approved, the applicant must show compliance for all Type-Certification Basis (TCB) elements relevant to the integration, including those pertaining to structural loads and flight dynamics. For the purpose of showing compliance (DASR 21.A.97 and DASR 21.A.103(b)), the store is considered 'specific equipment' as defined in DASR 21.A.303.d². Compliance is then primarily demonstrated through the Aircraft Stores Compatibility (ASC) process, and assessment against the relevant ASC standard applied to that type. The responsibility to ensure the suitability of data used in demonstrating TCB compliance, which may include information sourced from Defence EO organisations, is also the applicant's responsibility. This process is depicted at Annex A.

¹ Australian Defence Glossary

² Equipment that is installed in or attached to the aircraft for operation in flight, is not essential in order for the aircraft to comply with the applicable airworthiness standards, and is not able to control equipment or systems that are essential in order for the aircraft to comply with the applicable airworthiness standards.



As part of the change to type design integrating the store, the applicant must demonstrate that the store is suitable for the aviation roles and environments in which it will be used (DASR 21.A.103.a.2.iii). Therefore, in integrating the store onto the type the applicant must ensure that the EO organisations (in-service or project) providing the store understand the aviation roles and environments in which the stores will be used. This may be achieved through preparation of a Platform EO Environment and Usage Specification (an interface specification document defined by Explosive Materiel Branch (EMB)).

APPROVAL OF CHANGES TO AIR LAUNCHED STORE DESIGN UNDER DASRs

DGEO is responsible for the assurance of any changes to the design of the store. Notwithstanding, DASA continues to provide independent assurance for the safe integration of changed stores onto the type and the fitment of those changed stores onto aircraft.

Changes to the design of air launched stores that require alteration of the type design data at aircraft level constitute a change to the type design and require a design change approval under DASR 21. Some design changes to stores will require further demonstrations of compliance in order to approve the integration of the changed store into the parent product (e.g. changes to exterior form, structural strength, mass, balance etc.). As for a new store, compliance for a changed store is primarily demonstrated through the Aircraft Stores Compatibility (ASC) process, and assessment against the relevant ASC standard applied to that type. Other changes may require alteration of the type design data but not affect any elements of the product's TCB (e.g. part number changes with no functional or physical change to the store or how it interfaces with the aircraft) and can be issued a design approval without further demonstrations of compliance. Changed stores that do not alter the type design data at aircraft level or affect how the store interfaces with the aircraft do not require a design change approval. For design changes requiring an approval under DASR 21, Defence centres of expertise (e.g. AWE SQN) should be consulted (if necessary) to determine if further demonstrations of compliance are required. The process for integrating new/changed stores that alter the type design data (i.e. those requiring a design approval) is depicted at Annex A.

DASR ORGANISATION APPROVALS REQUIRED FOR STORES

The safety of air launched stores is assured by DGEO. Therefore, organisations designing, producing or maintaining stores off-aircraft are not required to hold approvals issued by DASA under DASRs.

Organisations integrating stores into the type design (MTC holders) are required to demonstrate to DASA via their Type Continued Airworthiness Exposition (TCAE) how they fulfil the requirements to integrate new stores to their products, including accounting for services provided externally to their own organisation. Organisations installing stores onto aircraft must hold relevant maintenance approvals under the DASRs and ensure that the store is accompanied by release documentation satisfactory to DGEO.

OPERATION WITH NON-CONFORMING AIR LAUNCHED STORES

Where a store does not conform to data approved as part of the type design change its use is subject to the normal deferred defect provisions of DASRs as outlined at DASR M.A.301(a)(2) and DASR 145.A.50(e). Where that defect affects the safe operation of the aircraft, the aircraft operator will require a Military Permit to Fly (MPTF) in accordance with DASR 21 Subpart P or a Command Clearance in accordance with DASR SPA.10.

USEFUL INFORMATION

- Related material is detailed in: AC 002/2018—*Application For Military Type Certificates and Major Design Changes*

ANNEX A – INTEGRATION OF AIR LAUNCHED STORES

