Regulation for approved parts, part sources and maintenance providers for Norwegian military aircraft

Aircraft Parts Regulation

MILITARY AIRWORTHINESS AUTHORITY - NORWAY

Revision 1.6, 22 February 2024

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Version	Changes
1.1 dated 10 Apr.2018	- Errors in E 1.5 - Clarifying E 1.2
1.2 dated 01 Nov.2019	- Changed Title - Added change bars - Added SAE int in Table 5 - Added requirements for authorization of maintenance providers receiving or holding parts originating from the Norwegian Defence warehouses to reauthorize parts (G 1. and G 2.2) - Changed wording in E 2 approved maintenance providers - Added requirements for material inspectors in F - Moved chapter F to G
1.3 dated 02 May.2020	- Added definition of “Handling agent” (B.4.1) - Moved maintenance requirements to a new chapter H to avoid confusion - Added possibility for maintenance shops within Norwegian Armed forces to obtain a certificate (H.2.1) - Add EMAR 145 approved organisation as privileged for reauthorization of parts originating from a Norwegian Defence warehouse (G.2.2.3.)
1.4 dated 02 Feb.2021	- Amended G.2.2. and G.2.2.3 to clarify what is needed to be a qualified organisation

1.5 dated 1 Oct.2021	- Added NHIndustries in appendix 1 table 1 - Removed Fokker in appendix 1 table 1 (Fokker Services has AS9000 cert.) - Changed company name Aircraft Industri Maintenance to Kongsberg Aviation Maintenance Services in appendix 1 and 2 several places. - Changed maintenance provider for propeller to P-3N/C to Vector Aerospace/Standard Aero - Replaced Hamilton Sundstrand with Collin Aerospace in appendix 2 table 6 and 7. - Changed company name Fred Olsen Flyveselskap to Fred Olsen Fly og Luftmateriell AS. - Removed all web links in appendix 2 - Rewritten E.2.1, removed outdated information - Rewritten D.2, added more text how to approve suppliers - Corrected abbreviations throughout the documents.
1.6 dated 22 Feb 2024	- Adjusted Para D and E to where D is general requirements, including common parts, and E is additional requirements for type specific parts. - New para D.4.4 to clarify Foreign Military Sales as a source for aircraft parts - New table 4 to list a more complete list of alternative acceptable CoC formats - Clarified para H.2.1 regarding alternative AMC than EMAR 145 approval to become an approved maintenance provider. - Removed appendix 1. Approved organisations will be listed on the MAA-NOR homepage. MAA-NOR does no longer explicitly approve suppliers.

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NOTE This document will be revised to become a Norwegian national AMC GM to EMAR M and EMAR 145.

A. INTRODUCTION

This regulation states the requirements for parts intended for use on Norwegian military registered aircraft. It is arranged in one general module and one aircraft type specific module.

This regulation also states requirements for aircraft maintenance organisations, with a special focus on those organisations in jurisdictions where EMAR 145 has not been implemented.

Lists of approved organisations are published on the MAA-NOR homepage at www.maanor.no , and on the Norwegian defense intranet at https://fma.mil.no/ForvaltetInformasjon/NML/Sider/default.aspx .

AMC 1: (Ref. A) Explanation of text with blue background

The regulation contains regulatory text. Text on BLUE BACKGROUND is either Acceptable Means of Compliance (AMC) or Guidance Material (GM).

An AMC provided in this regulation will satisfy the regulation text.

The regulation allows for alternative AMCs to those provided in this AMC GM document. However, any such alternative AMCs must satisfy the regulation text, must be submitted to the MAA-NOR for approval, and must be approved before any use.

A.1. Purpose

This Regulation states how the MAA-NOR regulates and assesses parts intended for use on Norwegian military aircraft.

This Regulation states requirements for maintenance providers, for 1. How to implement EMAR 145 into procurement contracts, and 2. How to contract maintenance providers in jurisdictions where EMAR 145 is not implemented (typically USA).

A.2. Scope of application

Compliance with this Regulation is mandatory in the Norwegian defence sector.

All units and/or organisations within the Norwegian defence sector are required to enforce that any non-defence sector organisations or persons that operate or maintain (including repair, modify and supply) Norwegian military aircraft, adhere to this Regulation.

Failure to adhere to this Regulation could potentially render any contract null and void, or prohibit use of any procured equipment.

Civilian registered aircraft that are temporarily used for military operation are not covered by this regulation (ref §17 Luftfartsloven).

This regulation is not applicable to testing, development, or any use involving prototypes.

A.3. Relation to other directives and regulations

This Regulation is subordinate to Airworthiness Regulation in the Norwegian Defence Sector (BLF).

A.4. Referenced documentation

Table 1, Referenced documentation

REFERENCE DATA MODULE	TITLE
LOV-1993-06-11-10	Lov om Luftfart (Luftfartsloven)
ASME Y14.100	Engineering Drawing Practices
EMAR M	Continuing Airworthiness
MIL-HDBK-516	Airworthiness Certification Handbook
NAVAIR 11-515	Aviation Critical Safety Item Management Handbook

A.5. Related documentation

Table 2, Related documentation, general

PUBLICATION REFERENCE	TITLE
BML	Bestemmelser for Militær Luftfart
RFKL	Faglige krav til vedlikeholdspersonell for Luftmateriell
BFL 712-1	Forvaltning av drivstoff
TO-00-20-2	Maintenance Data Documentation
TO-00-20-5001-1	Forebyggende vedlikehold av luftfartøy og bruk av blanketter (legacy document, no longer applicable for aircraft types or organisations with an EMAR approval)
TO-00-20-5005	Drift og vedlikehold av luftmateriell
TO-1-1A-8	Structural hardware - Aircraft and missile repair
TO-1-1A-14	Aircraft electric and electronic wiring - Volume 1 - Installation and repair practices
TO-42E2-1-2	Hydraulic packings and gaskets - Identification, use and disposition
CLP Regulation	Regulation on Classification, Labelling and Packing (CLP) of Substances and Mixtures
DGR	IATA Dangerous goods regulations
AS9100	Quality Management Systems - Requirements for Aviation, Space and Defence Organisations

AS9120	Quality Management Systems - Aerospace Requirements for Stockist Distributors
AQAP 2131	NATO Quality Assurance Requirements for Final Inspection
STANAG 1135	Interchangeability of Fuels, Lubricants and Associated Products used by the Armed Forces of the North Atlantic Treaty Nations
STANAG 3149	Minimum Quality Surveillance for Fuels
STANAG 4107	Mutual Acceptance of Government Quality Assurance and Usage of the Allied Quality Assurance Publications (AQAP)
STANAG 4714	Minimum Quality Surveillance for Lubricant and Associated Products
ATA 300	Specification for packaging of airline supplies
NDTS-1500	LM Aero specification NDTS-1500 for non-destructive inspection
BLF	Regulation for Norwegian Military Airworthiness

Table 3, Related documentation, type specific

PUBLICATION REFERENCE	TITLE
TO-1F-16AM-4 series	USAF/EPAF series F-16A/B MLU aircraft - Illustrated parts breakdown
TO-1H-412-5004 series	RNoAF Bell 412 - Illustrated parts breakdown
TO-NO1C-130J-4 series	RNoAF C-130J aircraft - Illustrated parts breakdown
DWAP-101C-0443-3A	RNoAF SAR Sea King Mk43, Mk43A, Mk43B - Illustrated Parts Catalogue
IETP JA-C0418-N0016	NH90 NFH-NNWN IETP (Refer to the Illustrated Parts Data infoset)
TO-1T-17-4	RNoAF T-17 Saab Safari - Parts Catalog
TO-1RQ-11B-5004	RAVEN B 1RQ-11B Illustrated Part Catalog

B. DEFINITIONS

Refer to European Military Airworthiness Document (EMAD) 1, Definitions and Acronyms, for definitions used in this regulation.

The Military Airworthiness Authority - Norway will be shortened to MAA-NOR.

Airworthiness authorisations can be given by privileged organisations via approved expositions, these cases are also included in the abbreviation MAA-NOR.

Additionally, the following definitions are applicable to this publication:

B.1. Design Activity (ref ASME Y14.100)

The Design Activity is an organisation that has, or has had, responsibility for the design of an item.

MAA-NOR will pursuit EMAR 21J design organisation approvals (DOA, see EMAD 1) for all design activities.

Due to extensive modification on some Norwegian military aircraft, this activity has been divided between several organisations or manufacturers including the MAA-NOR.

The term Original Equipment Manufacturer (OEM) will be avoided in this regulation because it has historically been used for reference to both original and current Design Activity whether they are a manufacturer of the part or not.

B.2. Current Design Activity

The Design Activity currently responsible for the design of an item. This may be the original Design Activity or a Design Activity to which the design responsibility has been transferred.

B.2.1. Original Design Activity

The Design Activity originally responsible for the design and identification of an item whose drawing number and activity identification is shown in the title block of the drawings and associated documents.

B.2.2. Design Activity identification

The application of a unique identifier that distinguishes an activity or organisation from another activity or organisation. Examples of Activity identification include Activity name, Activity address, or CAGE code.

B.3. Part references

The term Part Reference is a unique identifier of a part consisting of the part number and a source identifier (i.e. CAGE code).

B.3.1. Part number

The part number (also known as P/N or PIN) is used to identify a part and assigned by the original Design Activity, or by the controlling nationally recognized standard. See also ASME Y14.100.

NOTE: The part number is not fully item identifying without the manufacturer or governing standard being specified.

B.3.2. CAGE code

Commercial and Government Entity (CAGE) code, is a unique identifier of a supplier, manufacturer, government agency or an organisation (i.e. standardization organisations ref Table 5. See also ASME Y14.100.

B.4. Supplier

In this regulation the term supplier includes vendor, distributor, and broker.

B.4.1. Handling agents

A handling agent is a contracted agent that handles the sourcing of and agreements with maintenance providers outside of the Norwegian Defence Forces.

B.5. Interchangeability and substitution (ref ASME Y14.100)

B.5.1. Interchangeable item

An Interchangeable item is one which (1) possesses such functional and physical characteristics as to be equivalent in performance, reliability, and maintainability, to another item of similar or identical purposes; and (2) is capable of being exchanged for the other item (a) without selection for fit or performance, and (b) without alteration of the items themselves or of adjoining items, except for adjustments.

B.5.2. Substitute item

A substitute item is one which possesses such functional and physical characteristics as to be capable of being exchanged for another only under specified conditions or in particular applications and without alteration of the items themselves or of adjoining items.

B.5.3. Form, Fit and Function

1. Form: The shape, size, dimensions, mass, weight, and other physical parameters which uniquely characterize an item. For software, form denotes the language and media.

2. Fit: The ability of an item to physically interface or interconnect with or become an integralpart of another item.
3. Function: The action or actions which an item is designed to perform.

B.5.4. I&S classes

Common types of Interchangeability and Substitution (I&S) are as follows:

- Two-way interchangeable
- One-way interchangeable
- Substitutional
- Not interchangeable

Each aircraft type has equivalent nomenclature stated in the applicable technical documentation.

B.6. Critical Safety Item (CSI) (ref MIL-HDBK-516C 3.1.30)

A part, an assembly, installation equipment, launch equipment, recovery equipment, or support equipment for an aircraft or aircraft type where the part, assembly, or equipment contains a characteristic any failure, malfunction, or absence of which could cause:

1. a catastrophic or critical failure resulting in the loss of or serious damage to the aircraft or weapon system
2. an unacceptable risk of personal injury or loss of life
3. an uncommanded engine shutdown that jeopardizes safety.

(See also Aviation Critical Safety Item Management Handbook, 16 March 2011)

C. MATERIAL CLASSIFICATION

The following material classifications are applicable to this publication:

C.1. Common parts

The term "common part" is used in this regulation to identify parts that are not designed for specific aircraft types. Common parts are divided into four material classes: Standard parts, POL (petroleum, oil and lubrication), chemicals and raw materials.

C.1.1. Standard parts

See EMAD 1. (see also EASA Part M AMC M.A.501).

C.1.2. POL (Consumable material)

In this publication, the abbreviation POL denotes Petroleum, Oil and Lubricants for use in aircraft maintenance.

C.1.3. Chemicals

In this publication, the term Chemicals including cleaning, anti-ice and de-icing agents, adhesives, sealants, coatings, acids and bases for aircraft maintenance.

C.1.4. Raw materials

Raw material includes raw or processed products that normally will be transformed by further processing, reshaping or combined with other materials into a new and usable product (ref ASMEY14.100). Examples

are metals (plates, tubes, profiles), plastic materials, rubber, fibre materials (glass and carbon fiber) and composite materials.

C.2. Type specific parts

A part defined by the current Design Activity for specific aircraft. Parts that cannot be defined as a common part shall be treated as a type specific part.

D. GENERAL PARTS REQUIREMENTS, INCLUDING COMMON PARTS

This chapter outlines the requirements for common material to be used on Norwegian military registered aircraft and cover standard parts, petroleum, oil, lubrication (POL), other chemicals, and raw materials.

D.1. General requirements for suppliers

In order to be an approved supplier for common parts, either of the following requirements shall be fulfilled:

1. The supplier shall be certified to the following Quality Management System:
   - AS9120, or
   - AS9100 with a relevant scope for the intended supply
2. Or, the supplier shall be ISO9001 certified with a relevant scope for the intended supply and, where relevant, to be verified by the CAMO, should be compliant with the following Quality Management System:
   - AS9120, or
   - AS9100.

Compliance must be verified by the CAMO before material supplied is authorized for use, or the supplier must be specifically authorized by the MAA-NOR.

AMC 2: (Ref. D.1) Verification of AS certification

Compliance to AS9100 or AS9120 implies a Quality Assurance system according to AQAP 2131. Certification to the AS91xx quality management system can be verified in the SAE database OASIS. See **www.sae.org/oasis**

The supplier shall have an audit agreement with the MAA-NOR embedded in the contract.

D.2. Approved manufacturers

When a manufacturer specific Part Reference for a common part (e.g. Aeroshell-XYZ 12345) is listed in the aircraft technical documentation, that manufacturer (12345) is automatically approved as a supplier for that part.

If the manufacturer stated by the aircraft technical documentation has ceased trading or is otherwise not possible to procure from, a substitute manufacturer can be used in accordance with the requirements in the applicable standard, specification, or drawings.

AMC 3: (Ref. D.2) Use of qualified product list or databases to find substitute manufacturer

When a manufacturer is listed in the technical documentation and the material standard or specification requires a qualification of the manufacturer, this can be found in the accompanying Qualified product/manufacturer/Supplier List or Database (QPL/QPD/QML/QSL). When a substitute is found in such a list in accordance with the standard, specification or drawing, the part is authorized. For American military standards, DLA has a webpage "qpldocs.dla.mil".

When a manufacturer cannot be found iaw standard specification or drawing, the approval requirements must be verified before a potential procurement against the substitute manufacturer.

AMC 4: (Ref. D.2) Verification of substitute manufacturer

This verification could be done by a certified supplier (See D.1 item 1), an EMAR 145 organisation or the Government Quality Assurance (GQA).

GM 1: (Ref. D.2) Examples of CAGE that is impossible to procure parts from

Typically, this is the case when the original manufacturer has terminated its business, been merged with other companies, the production has been moved to another plant within the same company but with another CAGE or the original CAGE has been bought by another company. This is also the case when the CAGE refers to a standardisation office.

If no substitute can be found in accordance with the applicable standard, specification or drawings, a manufacturer may apply to the MAA-NOR for a production approval iaw EMAR 21 Subpart F or Subpart G.

D.3. Interchangeability and substitution approval

Interchangeability and substitutions (I&S, see Para B.5) are authorized through the technical documentation for each aircraft type. Additionally, Interchangeability between different standard parts may be approved by the MAA-NOR, a MAA-NOR authorized organisation or certified person. The MAA-NOR will document an approval of an organisation in writing.

D.3.1. Personnel certified to approve interchangeability

Personnel within the Norwegian Armed Forces may be certified to approve the use of an interchangeable part when the following requirements are fulfilled:

- Certifying staff within an EMAR 145 approved organisation.
- For legacy types: The person must have the right to sign off a red / (as defined in TO-00-20-5001), or function as a quality inspector ("Produksjonskontrollør", see TO 00-20-5001) for the applicable air system.
- A course, defined by the MAA-NOR, in the use of a searchable database for standards and specifications has been completed.
- The certificate shall list the material classification for which the certification is valid.

D.3.2. Organisations with privileges to approve interchangeability

The MAA-NOR may, as part of the organisational approval, award a privilege to an organisation to approve the use of an interchangeable Part Reference when the following is fulfilled:

- The organisation is approved by the MAA-NOR for relevant maintenance on the applicable system.
- The Design activity of the part has the privilege to define interchangeability of the applicable part number within the privileges granted by the original certification authority. This requires the Design activity to update any necessary technical manual (approved data) and notify the CAMO.

D.3.3. Approval by other organisations

Only part references approved by the MAA-NOR, from the design activity, or from an appropriately recognized airworthiness authority[1], are authorized for use on Norwegian military registered aircraft.

D.4. Certification of Conformity

Certification of Conformity shall be documented on a Form 1.

GM 3: (Ref D.4) Certification of Conformity (CoC)

Certification of Conformity (CoC) is a document used by suppliers and manufacturers, and is issued to a product that meets a minimum set of regulatory, technical and safety requirement (i.e. through a drawing or specification).

NOTE: Only organisations holding a valid EMAR approval by the MAA-NOR or an appropriately recognized airworthiness authority are eligible to issue a form 1.

If a Form 1 cannot be used, or is otherwise not available, the following documentation is acceptable to MAA-NOR, see table 4.

Table 4 List of CoC formats acceptable to the MAA-NOR

STATE OF ORIGIN	AUTHORISED RELEASE DOCUMENT	COMMENTS
Organisations approved in accordance with EMAR, either by the MAA-NOR or by an authority recognized by the MAA-NOR	EMAR/national military Form 1. If dictated by special conditions, a form/CoC as per contract may be accepted.	
Organisations contracted by USAF, US Navy or other US military agency as part of the airworthiness construct of a recognized authority; or, Organisations contracted as part of agreements or shared oversight where MAA-NOR is part of the regulatory construct	As per contract, including electronic formats, see NOTE and further paragraphs below.	The applicable release document requirements in the contract must be disclosed to the MAA-NOR.
Organisations contracted by USAF, US Navy or other US military agency where the contract includes DFARS Clause 252.246-7000	US Department of Defence (DD) Form 250 DD Form 1574	NOTE that the DOD appears to be phasing out standardized CoC formats, replacing them with CoC formats "as per contract". Refer to USAF TO 00-20-3 for rules for how DD1574 is applied as well as a

[1] https://www.fma.no/maanor/approvals-recognitions

		comprehensive list of USAF DD formats.
Organisations other than those above	BI3307 BL0708	BI3307 is a Norwegian legacy CoC-format. The BI3307 may be used to denote parts from a manufacturer or maintenance organisation that does not hold the applicable EMAR approval, and/or that holds an alternative approval by MAA-NOR, and/or is operating in accordance with legacy regulations.
CIVILIAN PARTS (commercial common parts or equivalent)		
United Kingdom	EASA Form 1 CAA Form 1	
EU+ (Including Norway, Iceland, Switzerland), including organisations located outside the UK and the EU where EASA has issued a Part 21 Production Approval	EASA Form 1	
USA	FAA Form 8130-3	
Canada	TCCA Form ONE	
Brazil	ANAC Form F-100-01 (formerly SEGVOO 003) (2)	
Japan	EASA Form 1 JCAB Form 18	

NOTE: CoC formats as per contract may be on an electronic format, provided the format and related infrastructure is approved or accepted by the MAA-NOR.

The CoC document shall, where applicable, include reference to the applicable technical documentation, revision and date, used during maintenance.

A supplier approved in accordance with the general requirements in Para D.1 shall store the original manufacturers CoC to be available upon request. In case of a request, it shall be possible for a supplier to trace back to the original manufacturer batch.

D.4.1. Certification of Conformity issued by a manufacturer (i.e. "as per contract")

A CoC issued by a manufacturer shall include the following:

- Part number defined by the standard or specification.
- Manufacturers CAGE code and/or full name.
- The delivered quantity of Part References (P/N - CAGE).
- Signature that certifies the part's conformity to its design and an approval for safe operation.
- Manufacturers Batch or Lot number if issued.
- Purchase order number (for tracking purposes).

D.4.2. Certification of Conformity issued by a maintenance organisation (i.e. "as per contract")

A CoC issued by a maintenance contractor shall include the following:

- Maintenance organisation name and address.
- Part number defined by the standard or specification.
- The delivered quantity.
- Serial number (where applicable).
- Maintenance activity performed.
- Reference to applicable documentation for maintenance.
- Signature (including digital signature, and/or in a recognised database system) that certifies or confirms the part conformity to contract.
- Manufacturers Batch or Lot number if issued.
- Purchase order number (for tracking purposes).

The maintenance contractor must, upon request, be able to trace the manufacturing source (full name and/or CAGE code).

D.4.3. Certification of Conformity issued by a supplier (i.e. "as per contract")

A CoC issued by a vendor or supplier other than the manufacturer shall include the following:

- Part number defined by the standard or specification.
- The delivered quantity of Part References (P/N - CAGE).
- Purchase order number (for tracking purposes).

The supplier must, upon request, be able to trace the manufacturing source (full name and/or CAGE code).

AMC 6: (Ref. D.4.3) BL 3307 with more than one part reference

BL 3307 (NDMA) covers these items. BL 3307 can be used to list several Part References when under the same purchase order number.

NOTE: An exemption to the requirements above is that MAA-NOR does accept DD250 and DD1574 despite the lack of original manufacturer and part number. NATO stock number (NSN) is used instead).

D.4.4. Documentation of Foreign Military Sales (FMS) parts

Foreign Military Sales (FMS) is a vehicle for purchasing parts from the Defense Logistics Agency (DLA) inventory in the United States.

The following information must be present for an FMS part to be used on Norwegian military aircraft:

- DD1348 form
- NATO stock number, NSN
- DLA contract number.

The part number, when available, shall be the primary reference.

For aircraft types that does not identify parts through the NSN number, the part number shall be verified against the appropriate technical manual before use.

AMC 7: (Ref. 4) Foreign Military Parts and DD 1348

The intention of purchasing parts through FMS is to receive controlled material with a trace back to the original manufacturer. The parts and their manufacturers are controlled by the Defense Contract Management Agency (DCMA) and are documented on the package and with a DD1348 form for common parts. The supply chain is unbroken from the US to the Norwegian Defense sector and therefore the DLA contract number will provide sufficient trace to the original manufacturer.

A part purchased through the FMS should therefore be accepted for installation if a contract number and NSN can be linked to the part, this is regarded as sufficient to use the part on a Norwegian aircraft.

GM 3: (Ref. D.4.3) Examples of tracing a manufacturer

Examples of using a supplier CoC to find manufacturer:

Example 1:

- A part was delivered via FMS and marked both on the package and form DD1348 with the contract number SPM5A712M1498.
- Using a procurement history database provider like Haystack allowed for a trace to the manufacturer from the contract number.

When combined, this information is sufficient to fulfill the requirements.

Example 2:

- There is a difference between the P/N on the part and on the package.

The CoC from the supplier shows the contract number which can be used when contacting the supplier to get a copy from the manufacturer.

D.5. Approved data

A common part for use on military aircraft must always have its origin from the accompanying technical documentation.

The standards databases delivered by IHS (ERC) and DLA (ASSIST) are authorized as approved data for standards and specifications.

NOTE: Interchangeability between different standards must be approved as specified in Para D.3.

AMC 7: (Ref. D.5) I&S evaluation documentation

For military aircraft where the Design Activity is originated within the USA DoD, the TO's 1-1A-8, 1-1A-14 and 42E2-1-2 can be used for interchangeability and substitutions evaluation.

In order to find information about interchangeability between POL products, the STANAG 1135 can be used within NATO.

GM 4: (Ref. D.5) Using a Standards database to find Standard material

Example of using Standards database to find latest Part Reference of a standard part:

- The aircraft technical documentation call for a washer with the Part Reference AN960-1016, CAGE 88044 (Aeronautical Standards).
- When searching in a Standards database for the governing standard AN960, a cancel note is found which cancel the AN960 standard and replace it by NAS1149, CAGE 80205 (National Aerospace Standards).
- The NAS1149 standard defines the replacement Part Reference for AN960-1016 to be NAS1149F1063P in an interchangeability table.
- The Part Reference ordered should be the latest Part Reference NAS1149F1063P, CAGE 80205.

GM 5: (Ref. D.5) Using a Standards database to find a Chemical

Example of using a Standards database to find latest Part Reference of a chemical:

- In the Technical order for the F-16 there is a reference to MIL-S-23586 sealant.
- Using a Standards database and looking up the MIL-S-23586 you will see that it has been revised.
- In the document family the Standards database state that the MIL-PRF-23586 F is the latest revision.
- The MIL-PRF-23586 has a paragraph about qualification and refers to a Qualified Products List (QPL-23586) and where to look it up.
- Depending on Type, Class and Grade different manufacturers are on the list and are thereby authorized for use on Norwegian military aircraft.
- The use of any other manufacturer must be authorized explicitly by the MAA-NOR.

GM 6: (Ref. D.5) Using a standard to trace approved I&S

Example of interchangeability authorized through a standard:

- The aircraft technical documentation call for a clamp with the P/N MS21919DG20.
- When searching in a Standards database for the governing standard MS21919, rev E show that the material is aluminum alloy and gives the size of the clamp. The standard also has a note 4 that cancel and replace CRES and aluminum alloy clamps with the AS21919.
- The P/N MS21919WDG20 is on stock and certified personnel is tasked to check whether this part number can be used instead of the MS21919DG20. MS21919 standard rev E provides an interchangeability table which can be used as a basis for approving such interchangeability.

D.6. Specific requirements for Standard parts

D.6.1. General

The Design Activity of the aircraft may issue a standard parts specification, or may refer to a specification in the parts catalogue.

Standard parts are identified by a part number defined by the Design Activity responsible for the *specification*.

GM 7: (Ref. D.5) Using a standard to trace approved I&S

Examples of such specifications (not exhaustive)

- National Aerospace Standards (NAS)
- Army-Navy Aeronautical Standard (AN)
- Society of Automotive Engineers (SAE)
- Joint Electron Device Engineering Council
- Joint Electron Tube Engineering Council
- American National Standards Institute (ANSI)
- EN specifications

In order to allow the use of a standard part on all applicable aircraft types, the governing Part Reference must be available for identification purposes.

Procurement of standard parts shall be done through approved suppliers, see Para D.1.

For interchangeability purposes, standard parts are divided into structural/system parts and avionic parts.

D.6.2. Documentation

Documentation that accompanies Standard Parts should clearly relate to the particular parts and contain:

- A conformity statement (An EMAR Form 1 or equivalent is normally not issued and should not be expected)
- Manufacturing source (this should show the batch/lot or purchase number)
- Supplier source
- Any special conditions (storage conditions, life limitations etc)

GM 7: (Ref D.6.2) Obtaining original CoC through a supplier

In the case where the only CoC is from the supplier, it must be ensured through contract and the suppliers quality system (see Para D.4.3) that the supplier have their original manufacturer CoC archive on a safe place for at least 10 years and that the trace to the manufacturer should be readily accessible within 24 hours.

D.6.3. Marking

The part shall be marked according to the governing standard and must clearly show the Part Reference called out for by the specification.

D.7. Specific requirements for POL (Consumable material)

D.7.1. General

POL products are used across all Norwegian military aircraft as well as in cross servicing within NATO. It is desirable to minimize the number of products in this category but crucial that the producers are approved.

GM 8: (Ref D.7.1) Governing standards

POL products are usually governed by an official standard as defined in "Standard Parts". For lubricants, STANAG 1135 and 4714 are applicable. For quality testing and handling of fuel, refer to BFL 712-5 (A) and STANAG 3149.

When a change of manufacturer within the same specification and application area is needed, the applicable CAMO must be consulted first.

D.7.2. Documentation

Traceability on the CoC (see Para D.4) to the manufacturer and batch/lot is required as follows:

- CoC from the original manufacturer showing the batch/lot or purchase number, or
- Certificate of Analysis (CoA) (can be used in lieu of CoC when CoC requirements (see Para D.4) are fulfilled in the CoA).
- Material Safety Data Sheet (MSDS) as defined by regulation (EC) No 1907 (REACH).
- Technical data sheet (TDS).

Consolidation of the certificates is allowed.

D.7.3. Marking

The part shall be marked according to the governing standard and must clearly show the Part Reference called out for by the specification. In addition, POL products must be marked according to the following STANAG references:

- For fuel products STANAG 3149.
- For lubricant products STANAG 4714.

If the POL product with a NATO code does not meet the STANAG initially or after a defined time, the NATO code shall be crossed out with a red X.

D.8. Specific requirements for Chemicals

D.8.1. General

The term Chemicals is a collective term for wide area of materials as defined in the introduction to this publication, ref Para C.1.3. The differences in short from other general parts are the requirements for Material Safety Data Sheet (MSDS), a Certificate of analysis (CoA) and additional rules for marking.

D.8.2. Documentation

Traceability on the CoC (see Para D.4) to the manufacturer and batch/lot is required as following deliverables:

- CoC from the original manufacturer showing the batch/lot or purchase number, or
- Certificate of Analysis (CoA) (can be used in lieu of CoC when CoC requirements are fulfilled in the CoA).
- Material Safety Data Sheet (MSDS) as defined by regulation (EC) No 1907 (REACH).
- Technical data sheet (TDS).

Consolidation of the certificates is allowed.

D.8.3. Marking

Chemicals shall be marked according to the CLP Regulation (Table 3), see Regulation (EC) No. 1272/2008 (or later) made by the European Parliament and Council. Some chemicals do conform to a NATO STANAG and will have to be marked accordingly.

D.8.4. Shelf Life

Chemicals for aircraft use often have time and temperature limitations like storage time and temperature and/or time since manufacture. These limitations ensure that the chemical properties conform to the specifications it is designed in accordance with. Sources for limitations are found in the aircraft manufacturer approved manuals, vendor approved manuals, chemical manufacturer technical data sheets (TDS) and/or chemical specifications.

For Norwegian military aircraft the following applies:

- When in doubt of which source for limitations prevail, the CAMO shall be contacted.
- The most critical limit (time/temperature/etc.) shall be registered in the ERP system to ensure follow-up through the supply organisation.

D.8.5. Shelf life extension

Shelf life extensions shall be authorized by the MAA-NOR for a specific area and batch before use.

The NDMA shall use data from aircraft manufacturer, aircraft vendor, chemical manufacturer and/or test reports from FOLAT as basis for authorization.

Documentation of a limitation extension shall follow the designated batch.

After use of a batch with extended limits and designated usage, the batch shall be discarded in accordance with prevailing regulations, or a new extension shall be asked for.

D.9. Specific requirements for raw materials

D.9.1. General

Raw materials should only be accepted when satisfied that it is to the required specification (a Material Inspection Certificate or equivalent).

D.9.2. Documentation

The material and/or its packaging should be marked with the applicable specification.

The following is required as a deliverable where applicable:

- the manufacturer's batch/lot or purchase number
- Test report type 2.2 in accordance with EN 10204 (to ensure the composition).
- Material Safety Data Sheet (MSDS) if applicable as defined by regulation (EC) No 1907 (REACH).
- Technical data sheet (TDS) if applicable.

D.9.3. Marking

Raw materials must be marked in accordance with the prevailing standard.

E. ADDITIONAL REQUIREMENTS FOR TYPE SPECIFIC PARTS

E.1. General requirements

This part provides requirements for procurement and use of type specific parts (as defined in C.2). The intention is to ensure flight safety by using parts manufactured by an approved source, and that those parts have adequate documentation enclosed to prove it.

E.1.1. Arrangement

This data module is arranged in a general section and one section for each aircraft and engine type in the Norwegian Armed Forces inventory. The different types will be implemented over time.

A list of approved manufacturers and sources can be found at www.maanor.no .

E.1.2. Approved technical documentation

For every aircraft type a set of technical documentation is approved by the MAA-NOR. This documentation shall be the starting point for determining an authorized part.

The maintenance technician has final responsibility and authority for determining acceptability of aircraft parts based on the approved technical documentation.

E.1.2.1. FLIS data

The Federal Logistic Information System (FLIS) is acknowledged as a data source with different restrictions depending on the aircraft type.

AMC 8: (Ref. E.1.2.1) Approved interfaces for FLIS data

Approved interfaces for looking up FLIS data are Haystack (IHS) and FedLog (DLA). It is mainly expected to be used as acceptable source for determining part equivalency for military aircraft where the original Design Activity is based in the USA (typical F-16, C-130 and P-3). See the applicable system for further requirements before use.

E.1.3. Approved manufacturers in general

In general, an approved manufacturer of a Norwegian military aircraft type specific part is one of the following regardless of aircraft type:

1. As determined by the current Design Activity for the applicable part, system or aircraft
    a. The Design Activity.
    b. Manufacturer approved or licensed by the Design Activity.
    c. Manufacturer chosen by a Design Activity approved or licensed supplier.
2. A MAA-NOR specifically approved manufacturer or supplier of the part.

In order to purchase a part directly from a manufacturer the procuring activity must verify that the manufacturer has an agreement with the design activity of the applicable part. Such an agreement must cover drawing updates, inspections and technical support of the manufacturer or supplier by the design activity.

E.1.3.1. Documentation requirements for manufacturers or supplier/distributors

General requirements for documentation of a Part Reference are as follows:

1. A type specific part shall always be documented with a Certification of Conformity as defined inPara D.4 from either of the following entities:
    a. A Design Activity, its licensee or approved supplier/distributor.
    b. An MAA-NOR-approved manufacturer or supplier/distributor.
    c. The aircraft manufacturer.
    d. The aircraft manufacturer approved supplier/distributor.
2. The documentation shall be readily accessible for the technician in charge of the installation or inspection of the part.

E.1.3.2. Parts manufactured by a maintenance organisation (including RNoAF)

A spare part produced by a maintenance organisation is authorized for use provided the following requirements are fulfilled:

1. The work shall be initiated and documented through the relevant Enterprise Resource Planning (ERP) system. Adequate local procedures shall be established to ensure adherence to and documentation of manufacturing requirements.
2. All necessary technical documentation, including drawings, manufacturing procedures etc, shall be present in its latest revision.
3. Raw material shall be iaw the applicable specification and have the necessary material certificates.
4. Tooling shall be per the drawing, and any calibration shall be current and documented.
5. All involved personnel shall have the necessary and relevant training, including any approvals or certifications.
6. The work performed and/or the finished part shall be approved by local certifying staff.
7. The part shall be clearly marked with Part Number and the manufacturing entity. If the part is not immediately installed on a Norwegian Military aircraft in the same facility as it was manufactured, the part shall have issued a Certificate of Conformity (CoC).

E.2. Documentation of serviceable parts removed from an aircraft during maintenance

A serviceable component removed from an aircraft during maintenance, shall be documented with a completed CoC in an accepted format before entering storage or being sent to another organisation.

If the component is to be used within the same organisation, the part shall be documented in accordance with the organisation's exposition/quality system.

E.3. Engine and propellers

E.3.1. General

Engine and propeller parts are authorized separately from the aircraft it is utilized on. For the Norwegian inventory of engines and propellers the design authority is the original manufacturer and they either are the main supplier or have licensed the manufacturing and/or distribution of the type specific parts. See Appendix 2.

E.3.2. Technical documentation for part identification

Every engine and propeller has its own technical documentation where the parts catalogue shows the P/N and the belonging CAGE or equivalent manufacturer data. For the type specific parts no other combination of P/N and CAGE (part reference) is allowed, except when the Design Authority for the engine or propeller, or the MAA-NOR has granted a substitute.

E.4. Interchangeability and substitution of type specific parts

The MAA-NOR may authorize other organisations with engineering capability to do substitution evaluations depending on material class and aircraft type. These organisations are listed undereach aircraft type.

F. INSPECTION OF PARTS

F.1. Introduction

As a part of the procurement process, control and inspection of the procured parts before use is important. The inspection and control shall be done in accordance with the requirements in this regulation based on the materiel classification. The function shall be governed by the Norwegian Armed Forces.

F.2. Inspection requirements

The Norwegian Armed Forces shall ensure that the material made available for the end user is inspected and controlled in accordance with the applicable requirements based on the material classification and/or component classification. The entity that performs the inspection shall develop sufficient procedures to ensure the following:

1. Identification of the applicable material class as defined in chapter C
2. Clear relation between competence and personnel privileges
3. Inspection, handling and further control in accordance with the requirements for the applicable material class
4. Rejection criteria, handling of rejected material and deficiency reporting
5. Facilities and tooling to support an optimal inspection and control environment
6. Routines for use of external competence and which occasions it is required

The inspector shall be able to identify the material and its class and verify that:

1. The delivered material is in accordance with the purchase order
2. The material is sufficient documented
3. The documentation is sufficient confirmed or signed
4. The material condition is in accordance with the purchase order
5. The material is marked in accordance with its specifications

F.3. Personnel requirements

The Norwegian Armed Forces must ensure that approved personnel performing control and inspection have:

1. Knowledge of the requirements in this regulation and the procedures and processes used to inspect, control and accept parts.
2. Technical knowledge and experience with the parts to be inspected and/or controlled.
3. Undergone an assessment process covering competence, experience and capacity.

AMC 9: (Ref. F.3) Sufficient knowledge and experience

The requirement is fulfilled if knowledge is documented as a completed relevant course. The experience should be documented, not older than 2 years and not shorter than 2 months. The personnel in this function should also be a part of an educational program to ensure up to date knowledge on procedures and Human Factor implications on workmanship. The assessment and approval must be documented, dated and signed.

G. REAUTHORIZATION OF PARTS

G.1. Introduction

Because of inchoate standardization in the supply chain, a part can enter the Norwegian Armed Forces without fulfilling the requirements for documentation and/or marking as described in the previous modules, and therefore is deemed unauthorized. This section provides rules to enable the Norwegian Armed Forces or a maintenance organisation receiving or holding parts originating from the Norwegian Defence warehouses to utilize parts that are deemed unauthorized for use on Norwegian military aircraft, by using reauthorization as a last resort. The primary deviation addressed in this section is lack of documentation, i.e. markings or certifications, on common and type specific parts with or without certain conditions.

G.1.1. Arrangement

This module is divided into requirements in general, additional requirements depending on material type, additional requirements depending on condition; and requirements for used parts. The general part outlines the requirements for authorized persons or organisations to reauthorize a part for use on Norwegian military aircraft. Common and type specific part may satisfy additional requirements.

G.1.2. General limitations

The requirements in this module do not apply to:

- Parts that in any way are degraded or damaged.
- The following material types: Raw materials, petroleum, oil, lubrication and chemicals asdefined in Para C.1.

For cases outside the scope of this module, the CAMO should be contacted for further procedures on how to proceed.

G.1.3. Handling before reauthorization

For parts in storage, or arriving into storage, without marking and/or documentation in accordance with the requirement in this regulation, the following shall be performed:

1. The part shall be physically moved to a separate quarantine area.

2. The part shall be marked in a clear and visible manner as "UNSERVICEABLE due to missing marking/documents" or equivalent as applicable.

3. A deficiency report shall be registered against the part and its supplier in the material system.

4. The supplier shall be contacted in order to get missing documentation before any reauthorization is attempted for.
5. Ensure that the supplier, if available, has been contacted and that a reauthorisation will give a substantial gain in aircraft availability or serviceability before starting the effort. If a new or equivalent part with approved marking and documentation can be supplied, the associated cost and benefit of reauthorization vs disposal or return to the supplier shall be assessed.

G.2. General requirements

A reauthorization should not be the first resort when documentation is missing.

In order for a non-conforming part to be a candidate for reauthorization by this regulation, the part and the executing resource must act within the limits of the general requirements.

NOTE: If any doubt arises when performing a reauthorization, the CAMO shall be contacted for further disposition.

G.2.1. Personnel qualification

These requirements and privileges are only valid for the Norwegian Armed Forces. Local Technical Manager or equivalent is responsible for:

1. Approving personnel for execution of a reauthorization. The authorization shall be documented on an "autorisasjonsbevis" (see Reglement om faglige krav til vedlikeholdspersonell for luftmateriell, RFK Luft).

2. Issuing local procedures as necessary to ensure adherence and clear reference to this

regulation. The procedures shall be readily accessible for the approved personnel.

In order to be qualified for reauthorization of parts, personnel shall be:

1. Technicians authorized as certifying staff or authorized to sign out red /, and
2. Experienced within the technical area where the specific part is to be used.

G.2.2. Personnel qualification within a privileged maintenance provider

A maintenance provider with a privilege for reauthorization of parts or with an EMAR 145 approval with the subject aircraft in scope, can qualify personnel to perform reauthorization. These requirements and privileges are only valid for a maintenance provider with parts originating from a Norwegian Defence warehouse. Quality Manager or local workshop manager or equivalent is responsible for:

1. Approve qualified personnel for executing of a reauthorization. The approval shall be listed in the organisation's personnel register
2. Include procedures in the organisation quality system or MOE that ensure adherence and clear reference to this regulation. The procedures shall be readily accessible for the approved personnel.
3. Ensuring that a privilege is given as stated in Appendix 2 or through an EMAR 145 approval with the subject aircraft in scope before reauthorization is undertaken.

G.2.3. Documentation

Personnel approved under the requirements above are authorized to issue BL3307 Certificate of Conformity (CoC) which constitutes a release to service to replace the (lost or lacking) original documentation.

NOTE: Form 1 SHALL NOT be used for reauthorized parts.

The following shall be accounted for:

1. The CoC shall state which system the reauthorization has taken into account.
2. The approved technician shall issue BL3307 CoC which in a clear and visible manner states that the part is authorized according to this regulation.
3. A completed CoC shall remain with the part.
4. For critical parts, a MAA-NOR approval shall be enclosed.
5. If quantum packages are approved, a copy of the CoC shall be enclosed with the package.
6. The part/package shall in a clear and visible manner be marked with the correct reference number iaw FAA Advisory Circular 43-213.
7. The part/package shall in a clear and visible manner be marked with the contract number/purchase number for traceability to the supplier.
8. Existing documentation shall be attached.
9. The verification methods and results shall be denoted as comments.

10. If a part is a component controlled by its serial number and the serial number is unknown, the part shall be marked with a new serial number iaw TO-00-20-5005, chapter "Flåtestyring - Individer ", Para 4.3.

G.3. Additional requirements dependent on material type

The following requirements are additional to the general requirements based on either common or type specific materials. Reauthorization of other material types will need a specific disposition by the CAMO.

G.3.1. Reauthorization of Common parts

See definition on Common parts in Para C.1

G.3.1.1. Reauthorization requirements

Authorization of a common part shall be done by approved personnel as follows:

6. Verify whether the material P/N and CAGE is in accordance with the technical documentation on the system it is intended for.

7. Perform a thorough visual inspection of the material. This shall be done by a technician that is certified on the applicable system, and that is or under supervision of an approved technician as described in Para G.2.1.

    a. Verify in particular that the part is free from damage and show no signs of corrosion or other physical damage.

    b. Fasteners and screws shall be sampled and checked for correct dimensions.

8. Critical parts or parts that cannot be verified through visual inspection as described above shall be further inspected and handled as follows:

    a. Establish a point of contact within the CAMO.
    b. For general purpose non-destructive inspection use LM Aero specification NDTS- 1500K dated August 18 2004 or later.
    c. If further inspections are deemed necessary to verify material integrity, the CAMO shall upon request initiate physical destructive tests on a representative sample and verify the result.
    d. A confirmation on the methods used and the result shall follow the reauthorization documentation.

G.3.2. Reauthorization of Type Specific Parts

See definition of Type Specific Parts in Para C.2.

NOTE: Used type specific structural parts missing complete history are not eligible for reauthorization.

G.3.2.1. Reauthorization requirements

Authorization of a type specific part shall be done by approved personnel as follows:

1. The part must be marked with a P/N in accordance with the technical documentation for the subject aircraft type.

2. A plausible trace to the manufacturer must be obtained through either a CAGE code or a supplier procurement number.

3. If the part is tracked individually by a S/N the existing S/N must be controlled against the ERP system and adjusted accordingly. If the S/N is unavailable a new S/N shall be established in accordance with TO-00-20-5005.

4. If the technical documentation requires a log card (AFTO Form 95 or similar) this must be established before installation.

5. Type specific parts shall be further inspected by a technician that is certified on the applicable system or under supervision of an approved technician as described in Para G.2.1 and handled in the following order:

    a. Through visual inspection, verify that the part is free from damage and show no signs of corrosion or other physical damage.

    b. Establish a point of contact within the CAMO.

    c. For general purpose non-destructive inspection, use LM Aero specification NDTS-1500K dated August 18 2004 or later.

    d. The Nor mil CAMO shall determine whether a functional test or other ways of testing the part is available and necessary.

        i. If further inspections are deemed necessary by destructive testing to verify material integrity, the NDMA shall upon request initiate physical destructive tests on a representative sample and verify the result.

    e. If any results deviate, the Norwegian military CAMO shall be contacted for consideration.

    f. A confirmation on the methods used and the result shall follow the reauthorization documentation.

G.4. Additional requirements dependent on condition

The following requirements are additional to the general requirements and the requirements based on material type. If none of the initial conditions are met, this section does not apply.

G.4.1. Reauthorization after an incident or accident

The requirements in this section shall apply when the part has been installed in a system that was subject to an incident or accident, hereafter called incident. These requirements are in addition to the general requirements and the requirements based on material type.

G.4.1.1. Reauthorization requirements

When an incident has occurred that can have an impact on the part of interest, the Norwegian military CAMO (supported by design authority/21J if required) shall perform an assessment of the incident, in order to provide recommendations on which parts that can be authorized for use and what sort of action that must be performed to the parts in order before a reauthorization is done.

G.5. Additional requirements for parts used under the authorization of a

foreign Airworthiness Authority (MAA/TAA)

These are parts that are sourced from outside the Norwegian defence sector environment, i.e. not originating from the Norwegian Defence warehouses. Instead, such parts may originate from foreign defence sector warehouses. This may introduce additional risk.

The requirements in this section are in addition to the general requirements and the requirements based on material type.

G.5.1. Reauthorization requirements

WARNING

Functional tests on material without approved P/N, CAGE or documentation shall not under any circumstances be performed on operational aircraft, as this may lead to damage to equipment and personnel.

In order to use a used Type Specific Part, the airworthiness authority for the foreign system the part has been used on, must be recognised by the MAA-NOR with respect to its rules and regulations for part logistics.

1. Verify whether P/N, CAGE and S/N are correct iaw log card and enclosed history/documentation.

NOTE: Verify that complete history is enclosed. As this could potentially be used or new old stock material, the history may have been issued in various formats. In particular, verify that flight hours/calendar time is continous and matches performed repairs, overhauls and any modification.

NOTE: Verify that the modification status is iaw current revision. If modification status is not iaw current revision, the material shall either be modified to the approved revision or waiver must be given by the Norwegian military CAMO. Any material shipped to external maintenance shall prior to shipment be correctly registered in the material data system.

2. A thorough visual inspection of the material shall be performed by an approved technician

3. Verify in particular that the part is free from damage and show no signs of corrosion or other physical damage.

4. Sample measurements of important dimensions shall be made.

5. Critical Structural parts or parts that cannot be verified through visual inspection as described above shall be inspected iaw LM Aero specification NDTS-1500 .

    a. If NDTS-1500 is insufficient to verify whether the part can be authorized, the NDMA shall be contacted to provide further instructions.

    b. The NDMA shall if deemed necessary initiate physical destructive testing to verify material integrity.

    c. The verification result shall be presented to the NDMA which issues final approval/rejection.

6. If the complete history is not present, the material shall be subject to all inspections and functional tests required at overhaul/repair. If such tests cannot be performed at a Norwegian Military maintenance facility, an AFTO Form 350 shall be filled in (refer to TO-00-20-2) and the material sent to the applicable maintenance provider.

    a. If no overhaul/repair procedures exist, contact the Norwegian military CAMO to obtain furtherinstructions.

    b. If the material fails to pass all such inspections/tests, the Norwegian military CAMO shall be contactedto provide further instructions and to verify whether the case can be resolved through warranty.

7. The approved technician shall issue BL3307 CoC which in a clear and visible manner states that the part is authorized according to this Regulation. A completed CoC shall remain with the part, and a copy shall be linked to the equipment in the applicable management system. For critical parts, the MAA-NOR approval shall be enclosed.

8. Register equipment S/N and, if required by the maintenance program, flight hours/calendar time in the maintenance management system.

G.6. Requirements for use of parts stored and dismantled from withdrawn aircraft

Aircraft withdrawn from service are sometimes dismantled for spares. This is a maintenance activity and shall be accomplished under the control of a maintenance organisation approved by the MAA-NOR.

Serviceable aircraft components removed from Norwegian military registered aircraft withdrawn from service may be issued with an EMAR Form 1 (or equivalent) subject to compliance with this subparagraph.

To be eligible for installation, components removed from an aircraft withdrawn from service may be issued with an EMAR Form 1 (or equivalent) by an appropriately rated organisation following a satisfactory assessment.

As a minimum, the assessment shall satisfy the standards set in the following paragraphs as appropriate. This should, where known, include the possible need for the alignment of scheduled maintenance that may be necessary to comply with the maintenance programme applicable to the aircraft on which the component is to be installed.

a) The organisation should ensure that the component was removed from the aircraftby an appropriately qualified person.

b) The aircraft component may only be deemed serviceable if the last flight operationwith the component fitted revealed no faults on that component/related system.

c) The aircraft component should be inspected for satisfactory condition including in particular damage, corrosion or leakage and compliance with any additional maintenance data.

d) The aircraft record should be researched for any unusual events that could affectthe serviceability of the aircraft component such as involvement in accidents, incidents, heavy landings or lightning strikes. Under no circumstances may an EMAR Form 1 (or equivalent) be issued in accordance with this paragraph if it is suspected that the

aircraft component has been subjected to extremes of stress,temperatures or immersion which could affect its operation if not waived by the MAA-NOR.

e) A maintenance history record should be available for all used serialised aircraft components.

f) Compliance with known modifications and repairs should be established. The flight hours/cycles/landings as applicable of any service life-limited parts including time since overhaul should be established.

g) Compliance with known applicable airworthiness directives should be established.

Subject to satisfactory compliance with these items, an EMAR Form 1 (or equivalent) may be issued and should contain the information as specified in EMAR 145.A.50 including the aircraft from which the aircraft component was removed. If information is missing, see reauthorization procedures in section G.

a) Irrespective of whether the aircraft holds a certificate of airworthiness or not, the organisation responsible for certifying any removed component should ensure that the manner in which the components were removed and stored are compatible with the standards required by EMAR 145.

b) A structured plan should be formulated to control the aircraft disassembly process. The disassembly is to be carried out by an appropriately rated organisation under the supervision of certifying staff that will ensure that the aircraft components are removed and documented in a structured manner in accordance with the appropriate maintenance data and disassembly plan.

c) All recorded aircraft defects should be reviewed and the possible effects these may have on both normal and standby functions of removed components are to be considered.

d) Dedicated control documentation is to be used as detailed by the disassembly plan, to facilitate the recording of all maintenance actions and component removals performed during the disassembly process. Components found to be unserviceable are to be identified as such and quarantined pending a decision on the actions to be taken. Records of the maintenance accomplished to establish serviceability are to form part of the component maintenance history.

Suitable EMAR 145 facilities for the removal and storage of removed components are to be used which include suitable environmental conditions, lighting, access equipment, aircraft tooling and storage facilities for the work to be undertaken. While it may be acceptable for components to be removed, given local environmental conditions, without the benefit of an enclosed facility, subsequent disassembly (if required) and storage of the components should be in accordance with the manufacturer's recommendations.

H. MAINTENANCE PROVIDERS

This section applies to maintenance providers outside the Norwegian Armed Forces.

H.1. General requirements for maintenance handling agents

A handling agent in contract with Norwegian Armed Forces has the responsibility for the components agreed on until the part is maintained and returned or discarded. A handling agent must be able to prove the following before contract is agreed on:

- The handling agent must prove that the requirements in Para H.2 are fulfilled for all the maintenance providers that the handling agent intends to use.
- The handling agent must notify the purchaser when a new maintenance provider has been chosen for one or more of the components agreed on.
- The MAA-NOR will not specifically approve subcontractors, but reserves the authority to reject subcontractors. A complete list of subcontractors shall be made available to the MAA-NOR.

H.2. General maintenance organisation requirements

Maintenance organisations (provider) shall be approved by the MAA-NOR before maintenance is performed on Norwegian Military Aircraft or its parts and components.

Information on how to apply to the MAA-NOR is found on www.maanor.no

The MAA-NOR may accept other approvals as the basis for an application:

- Organisations that are EMAR 145 approved by an appropriately recognized foreign EMAR compliant military airworthiness authority.
- Organisations that are EASA part 145 approved, refer to 145.A.70 (d)
- Organisations that are approved by or compliant to an accepted alternative means of compliance.

The maintenance organisation shall apply for approval to the MAA-NOR using EMAR Form 2 or equivalent.

GM 9: (Ref. H.2) Application prerequisites

The application may be submitted to the MAA-NOR independently of contractual status.

AMC 10: (Ref. H.2) Acceptance of foreign military EMAR 145 approval

A foreign military EMAR 145 approval may be accepted by the MAA-NOR as long as the subject foreign military authority is EMAR compliant and recognized by MAA-NOR. The maintenance organisation must still apply for approval to the MAA-NOR for any extensions to the scope of work.

AMC 11: (Ref. H.2) Acceptance of EASA part 145 approval

A civilian EASA part 145 approval is generally accepted as equivalent to an EMAR 145 approval.The maintenance organisation must still apply for approval to the MAA-NOR for any extensions to the scope of work, ref 145.A.70 (d).

AMC 12: (Ref. H.2) Application for EMAR 145 approval by foreign based organisations

Maintenance Providers with facilities outside Norway and in a nation where the military airworthiness authority has implemented EMAR, should apply for an EMAR 145 approval to the applicable foreign military airworthiness authority. If such an application is refused or otherwise cannot be issued, an approval can be applied for to the MAA-NOR.

AMC 13: (Ref. H.2) Basis for application by an EMAR 145 approved maintenance organisation

If an EMAR 145 Maintenance organisation exposition is awarded by a foreign recognised military airworthiness authority, the application to the MAA-NOR is only required to contain proof of approval by the foreign authority and the approved MOE. If the approval scope is the same, the MAA-NOR will validate and may accept the approval.

If any differences (i.e. additions to the scope of work, capability lists etc) are required, refer to EMAR GM 145.A.70(a) 10.

AMC 14: (Ref. H.2) Processing time for application validation

Validation effort and related processing time depends upon the status of EMAD R recognition with the applicable foreign MAA.

H.2.1. Maintenance organisations that have implemented common or recognized maintenance standards (CMS)

Applicable to common maintenance standard (CMS) including US Air Force AFI 21-101, US Navy COMNAIRFORINST 4790.2b (Naval Aviation Maintenance Program).

1. Contracting must be performed under the control of a Program Office, and/or under a standard or regulation set approved or accepted by the MAA-NOR.
2. The maintenance shall take place in the facility/facilities where the maintenance organisation certifying staff/quality assurance staff is based.
3. The maintenance organisation scope of work shall include the same aircraft type or parts or appliances thereof, as that on Norwegian military register.
4. The applicable national military airworthiness authority (or equivalent government entity) must be appropriately recognized by the MAA-NOR.

The maintenance organisation shall be subject to oversight (which may include, but no limited to, physical audit) by the MAA-NOR or an authority or agency recognised or otherwise enabled by the MAA-NOR.

The CAMO shall inform the MAA-NOR of use of such maintenance organisations.

Following base maintenance (depoty level) at a maintenance organisation approved iaw H.2.1, the CAMO shall perform a sufficient post maintenance inspection that covers the applicable maintenance, and submit any findings to the MAA-NOR.

H.2.2. Maintenance organisations not capable of obtaining an EMAR 145 approval or not iaw common or recognized maintenance standards

If the maintenance organisation is not capable of obtaining an EMAR 145 approval or iaw H.2.1, the maintenance organisation or its' representative shall apply to the MAA-NOR for an alternative AMC.

The maintenance organisation or its' representative shall justify to the MAA-NOR why an EMAR 145 approval is unfeasible.

One of the following alternatives may be applied for:

1. Maintenance organisations approved by a foreign national military airworthiness authority (non-EMAR 145).
2. Maintenance organisations that are part of the current Design Activity or have a current license or approval from the current Design Activity (OEM), see Appendix 2.
3. MAA-NOR specific approved maintenance organisations.

In these cases, the MAA-NOR will issue an approval valid for maintenance for the applicable aircraft type, or for an applicable component capability list.

The maintenance organisation shall be subject to oversight (including, but no limited to, physical audit) by the MAA-NOR or an authority or agency recognised or otherwise enabled by the MAA-NOR.

Following base maintenance (depoty level) at a maintenance organisation approved iaw H.2.2, the CAMO shall perform those parts of an airworthiness review, compliance audit or similar, that covers the applicable maintenance, and submit the findings to the MAA-NOR.

For applications regarding 1,2 or 3 above, the applicant should submit the following information to the MAA-NOR as part of the application:

1. The maintenance provider shall hold the complete and latest update of the applicable technical documentation as issued by the current design activity and/or Norwegian military CAMO.
    a. The technical documentation must be specific for the applicable component or assembly including its Part Reference.
    b. The Maintenance Provider shall have a push agreement for updates to the technical documentation.
    c. The Maintenance Provider is required to adhere to the technical documentation, including any supplements as issued by the Norwegian military CAMO.
1. Either of the following requirements shall be fulfilled if an EMAR 145 approval is not present:
    a. The Maintenance organisation shall be certified to the AS9100 or AS9110 Quality Management System with a relevant scope for the intended maintenance, or;
    b. The Maintenance organisation shall be ISO9001 certified and compliant to the AS9100 or AS9110 Quality Management System with a relevant scope for the intended maintenance.
    c. A military maintenance organisation shall be shall be compliant to the AS9100 or AS9110 Quality Management System with a relevant scope for the intended maintenance.

Compliance must be verified by the MAA-NOR and/or the quality assurance department in the Norwegian Armed Forces in order for maintained material to be authorized for use.

AMC 16: (Ref. H.2.2) Relation between AS9100 and AQAP 2130/2131

Compliance to AS9100 implies a Quality Assurance system according to AQAP 2130 and 2131.

GM 10: (Ref. H.2) Verification of AS certification

Certification to the AS91xx quality management system can be verified in the SAE database OASIS. See www.sae.org/oasis.

The Maintenance organisation must have an engineering support contract with an MAA-NOR approved or accepted design organisation (Design Activity/OEM) for any repair procedure or activity not covered by the technical documentation.

H.2.3. Component ratings

If the maintenance organisation is not capable of obtaining an EMAR 145 approval, the maintenance organisation shall apply to the MAA-NOR for an alternative AMC.

The MAA-NOR may accept component ratings awarded by recognized military authorities, as well as by FAA, Transport Canada (TC) or EASA.

For components unique to State Aircraft where FAA, TC or EASA do not issue any component rating, the Maintenance Provider must hold a current civilian Part 145 capability for components of the same category.

The MAA-NOR may accept maintenance organisations that hold current USAF, US Navy or US Army contracts. In this case, the component rating must be specific to the applicable Part Number or Assembly. All such maintenance activities shall be documented in accordance with TO-00-20-1; Aerospace equipment maintenance inspection, documentation, policies, and procedures.

Alternatively, the MAA-NOR may accept maintenance organisations that have a current license or approval from the current Design Activity (OEM).

H.2.4. Test Report

For avionics components, category C2, C3, C5, C8, C14 and C18, the maintenance organisation shall prepare a SRU/ Sub-component test report for each S/N or individual component overhauled or repaired.

The Test report can be integrated or separate from the CoC (Release to Service document).

In addition to the CoC, the Test Report shall, as a minimum, contain the following information:

- Test equipment used, identified with Parts Reference.
- System Test Specification (STS) or Drawing Specification that were used for test.
- Certified Sub-Component Test Program with used revision, if applicable.
- Parts replaced, if related to the maintenance activity.
- Measurement results of the test.
- Date when the test was performed.
- Signature that certifies that the measurements are compliant to the STS or Drawing Specification.

I. SUMMARY TABLES

Table 5: The most used standardization organisations with CAGE (not exhaustive)

ORGANISATION NAME	CAGE
SAE International	0U583
National Semiconductor Corporation	27014
Electronic Industries Association	80131
American National Standards Institute (ANSI)	80204
National Aerospace Standards (NAS)	80205
Society Of Automotive Engineers Inc (SAE)	81343
Federal Specifications	81348
Military Specifications	81349
Joint Army-Navy Specifications	81350
Aeronautical Standards Group (AS)	88044
Military Standards	96906
Deutsches Institut Für Normung EV (DIN)	D8286
Association Francaise De Normalisation (AFNOR)	F0110
Bureau De Normalisation De L'aeronautique Et De L'espace	F0111
Union Technique Electricite	F0114
Union Technique Electricite	F0115
Airspace And Defense Industry Assiciation Of Europe	I9005
Comite Europeen De Normalisation (CE)	I9006
International Organization For Standardization (ISO)	I9008
International Electrotechnical Commission (IEC)	I9009
British Standards Institution (BSI)	K7766

Table 6: Documentation requirements

	STANDARD PARTS	POL	CHEMICALS	RAW MATERIAL
CERTIFICATE OF CONFORMITY (COC) (BY)	X (Supplier or manufacturer)	X** (Manufacturer)	X** (Manufacturer)	
CERTIFICATE OF ANALYSIS (COA)		X	X	
MATERIAL SAFETY DATA SHEET (MSDS)		X	X	X*
TEST REPORT TYPE 2.2				X
TECHNICAL DATA SHEET (TDS)		X	X	X*

* If applicable

** Only needed if the CoA does not cover the requirements for a CoC

Table 7: Marking requirements

	STANDARD PARTS	POL	CHEMICALS	RAW MATERIAL
ACCORDING TO ITS STANDARD	X	X	X	X
CLP REGULATION		X	X	
STANAG 4714		X		
STANAG 3149		X		
STANAG 1135		X		

K. REQUEST FOR REVISIONS OR CHANGES

Request for revisions or changes shall be forwarded to the MAA-NOR. See www.maanor.no for contact information.