



NORWEGIAN DEFENCE MATERIEL AGENCY

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

is promulgated for the Norwegian Defense Sector

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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 weapon system/type specific module with attachments for volatile data.

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).
 Any AMC shall satisfy the regulation text. The regulation opens 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 NMAA for approval, and must be approved before any use.

A.1. Purpose

This Regulation states how the NMAA regulates and assesses parts intended for use on Norwegian military aircraft.

A.2. Scope of application

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

All units and/or organizations within the Norwegian defence sector are required to enforce that any non-defence sector organizations 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 Regulation for Norwegian Military Airworthiness (RMA/RML).

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 Part 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

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BMF/Luft 750-1	Bestemmelser for vedlikehold av Forsvarets luftmateriell
RFKL	Faglige krav til vedlikeholdspersonell for Luftmateriell
BFL 712-1	Forvaltning av drivstoff
TO-00-20-2	Maintenance Data Documentation
TO-00-20-5001	Forebyggende vedlikehold av luftfartøy og bruk av blanketter
TO-00-20-5005	Drift og vedlikehold av luftmateriell i IFS App7 IMAS
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 Organizations
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-1500K	LM Aero specification NDTS-1500K dated August 18 2004 or later
RML	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)
NA-01-75PAN-4 series	RNoAF P-3N aircraft - Illustrated Parts Breakdown
NA-01-75PAU-4 series	RNoAF P-3C UIP aircraft - Illustrated parts breakdown
NA-01-75PAA-4 series	US Navy P-3A and P-3B aircraft - Illustrated parts breakdown

NA-01-75PAC-4 series	US Navy P-3C aircraft - Illustrated parts breakdown
TO-1U-FJF-5004 series	RNoAF EW/Basic Falcon 20 retrofit aircraft - Illustrated parts breakdown
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.

Refer to Norwegian Defence Materiel Agency (NDMA) Definitions Handbook for any definitions not provided in EMAD 1.

Additionally, the following definitions are applicable to this publication:

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

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

Due to extensive modification on some Norwegian military aircraft, this activity has been divided between several organizations or manufacturers including the Norwegian Military Airworthiness Authority (NMAA).

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 organization from another activity or organization. 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:

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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 organization (i.e. standardization organizations 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.4.2. EASA/EMAR Part 145 level

The maintenance provider has facilities, training, certifying staff, tools, documentation and procedures of such standard in order to fulfill the intention of FAA (Federal Aviation Administration)/EASA/Transport Canada Part 145 or EMAR 145 requirements for the applicable scope of work.

NOTE

A specific FAA/EASA/TC Part 145 or EMAR certificate is not an explicit requirement for a maintenance provider to satisfy the part 145-level requirement.

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 integral part 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 aviation weapon system 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

Standard parts are parts that are manufactured in complete compliance with an established industry, agency, competent authority or other Government specification which includes design, manufacturing, test and acceptance criteria, and uniform identification requirements. The specification must include enough information in order to produce the part with full conformity and must be official and available to all manufacturers (see also EASA Part M AMC M.A.501).

C.1.2. POL

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 ASME Y14.100). 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 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**. Approved manufacturers can be found in Appendix 1.

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 compliant with the following Quality Management System:
 - AS9120, or
 - AS9100

Compliance must be verified by the quality assurance department in order for material supplied to be authorized for use, or the supplier must be specifically authorized by the NDMA. Specifically authorized suppliers are listed in Appendix 1.

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 NDMA embedded in all new contracts.

D.2. Approved manufacturers

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

A manufacturer not listed in the aircraft technical documentation may be approved by the NDMA as a supplier on a case to case basis, providing the following is fulfilled:

- The material is manufactured in full compliance to the valid revision of its specification at the time of manufacture.
- Inspection criteria outlined in the specification have been met.
- Qualification requirements have been fulfilled.
- The manufacturer is listed in the applicable Qualified Product/Manufacturer/Supplier List/Database (QPL/QPD/QML/QSL) at the time of manufacture if required by the specification.

D.3. Interchangeability and substitution approval

Interchangeability and substitutions (I&S, see Para B.5) are authorized through the technical documentation for each weapon system. Additionally, Interchangeability between different standard parts may be approved by the NDMA, a NDMA authorized organization or certified person. The NDMA will document an approval of an organization 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:

- 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 NDMA, 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. Organizations authorized to approve interchangeability

An organization outside of the Norwegian Defence can be authorized by the NDMA to approve the use of an interchangeable Part Reference when the following is fulfilled (See Appendix 1 for capability list):

- The organization is authorized by the NMAA for relevant maintenance on the applicable system, or a NDMA authorized supplier (see Appendix 1) of the applicable class of material.
- The Design activity of the part has the privilege to define interchangeability of the applicable part number within the privileges granted by the certification authority. This requires the Design activity to notify the NDMA of follow-on maintenance and to update any necessary technical manual.

D.3.3. Approval by other organizations

Only part references approved by the NMAA or the design activity are authorized for use on Norwegian military registered aircraft.

GM 1: (Ref. D.3.3) Examples of parts approved by other organizations

A part approved by another organization (for example a Parts Manufacture Approval by FAA, also called PMA part) is only approved when the Part Reference is described in the technical documentation.

Example 1:

- The P/N 6731153-1 is ordered.
- The P/N 6731153P-1 is offered by a supplier.

The suffix "P" has been added to the P/N by the manufacturer to show that the part has been made under another approval than the original P/N, in this case by FAA (PMA part). This P/N is not approved by the NDMA or the Design Activity and shall not be used on Norwegian military registered aircraft.

Example 2:

- P/N 9440791-1 is ordered and received.
- The P/N corresponds with the technical documentation for the applicable system.
- The label is marked with "PMA".

This is a part with the correct P/N and is authorized by the design activity for use on the applicable system. It has in addition been authorized by FAA for use on another system and is therefore also a PMA part. This part is authorized by the NDMA through the technical documentation for use on Norwegian military registered aircraft.

D.4. Certification of Conformity

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). 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

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 certify 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).

AMC 3: (Ref. D.4.1) BL 3307 coverage

BL 3307 (NDMA) covers the above mentioned items.

D.4.2. Certification of Conformity issued by a maintenance contractor

A CoC issued by a maintenance contractor 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 **certify the part's conformity to contract.**
- Manufacturers Batch or Lot number if issued.
- Purchase order number (for tracking purposes).
- Reference to applicable documentation for overhaul/maintenance.

D.4.3. Certification of Conformity issued by a supplier

A CoC issued by a vendor or supplier other than the 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).
- Purchase order number (for tracking purposes).

AMC 4: (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.

GM 2: (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.

Together the information was enough 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 show the contract number which can be used when contacting the supplier to get a copy from the manufacturer.

NOTE

An exemption to the requirements above is that NDMA does accept DD250, DD1574 and DD1348 (Foreign Military Sales) despite the lack of original manufacturer and part number (NSN is used instead).

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 searchable databases for standards and specifications. Note that interchangeability between different standards must be approved as specified in Para D.3.

AMC 5: (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 3: (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 4: (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 NMAA.

GM 5: (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

Standard parts are identified by a part number defined by the Design Activity responsible for the specification and the Design Activity CAGE code. If, for a given aircraft type or component, the system technical documentation uses a manufacturer specific part number (and CAGE code), the use of this Part Reference is also approved for this specific aircraft or component.

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

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
- CoC from the supplier with a batch/lot or purchase number that ensures a trace further to the manufacturer.

GM 6: (Ref D.6.2) Obtaining original CoC thru 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

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 amount of products in this category but crucial that the producers are approved.

GM 7: (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, see BFL 712-5 (A) and STANAG 3149.

When a change of manufacturer within the same specification and application area is needed, the NDMA 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 NDMA shall be contacted.
- The most critical limit (time/temperature/etc.) shall be registered in the ERP system to ensure follow-up through the supply organization.

D.8.5. Limitation extension

Limitation extensions shall be authorized by the NDMA 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 have an extra requirement compared to other general parts for a Material Inspection Certificate in order to be authorized for use on aircraft.

D.9.2. Documentation

Traceability to the manufacturer's batch/lot or purchase number is required. The following is required as a deliverable:

- 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 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. Summary tables are referred to and presented in Appendix 2.

E.1.2. Approved technical documentation

For every aircraft type a set of technical documentation is approved by the NMAA. 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 6: (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 aircraft where the original Design Activity is based in the United States of America (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
 - i) The Design Activity.

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- ii) Manufacturer approved or licensed by the Design Activity.
 - iii) Manufacturer chosen by a Design Activity approved or licensed supplier.
2. A NDMA 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 in Para D.4 from either of the following entities:
 - a) A Design Activity, its licensee or approved supplier/distributor.
 - b) An NMAA-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 RNoAF

A spare part produced by the RNoAF 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 in accordance with 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, and any approvals or certifications.
- 6) The work performed and/or the finished part shall be approved by local RNoAF certifying staff.
- 7) The part shall be clearly marked with Part Number and RNoAF as 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. Requirements based on aircraft type

E.2.1. P-3C and P-3N

E.2.1.1. General

The P-3 is a patrol aircraft produced by Lockheed, and Lockheed Martin (Marietta) is the Design Activity today. The Norwegian inventory of P-3 contains a version for Coast patrol (P-3N) and one version for Maritime patrol/Anti-submarine warfare (P-3C). The NDMA have designed modifications to the P-3 system and act as Design Activity in those cases.

Technical publications for the P-3C are issued by the US Navy in the NAVAIR 01-75PAC- and NAVAIR 01-75PAI-series, supplemented with NAVAIR 01-75PAU-series from the Norwegian Defence Materiel Agency, Air Systems Division.

- Technical publications for the P-3N are issued by the NDMA in the NAVAIR 01-75PAN-series.
- Technical publications issued by the US Navair are approved by the NMAA.

E.2.1.2. Technical documentation for part recognition

The parts catalogues for the P-3 show the CAGE codes for the original manufacturers of a part number and not necessarily current or licensed manufacturers. In order to find the latest version of a part number or the current manufacturer additional information may be needed. The NDMA have approved part information from the governmental agencies listed in Para E.2.1.3 as part of the technical documentation for a part used on the P-3.

E.2.1.3. Interchangeability and substitutions

Interchangeability and substitution (I&S) engineering disposition done for type specific parts on the P-3 are generally approved by the NMAA when issued by the following governmental agencies:

- United States Navy (USN) (POC: PMA-290 at Patuxent River)
- Royal Canadian Air Force (RCAF)

A distributor or manufacturer that is not explicitly approved by the NDMA or Lockheed Martin must provide an approval from one of the above agencies for the part to be authorized for use on the Norwegian P-3 aircraft.

There are systems used by the P-3 where the Design Activity is the NDMA. For those cases only the NDMA can approve an I&S for a part belonging to the applicable system.

E.2.2. Approved Distributors and Manufacturers

Lockheed Martin (LM) has approved distributors and manufacturers for the P-3 aircraft on their web page as denoted in Appendix 2. When a part has been purchased by a LM approved distributor or manufacturer, the sourcing responsibility has been transferred to LM. This implies that the CAGE found in the technical documentation not necessarily have to match the part delivered by the LM approved distributor or manufacturer.

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 recognition

Every engine and propeller has its own technical documentation where the parts catalogue shows the P/N and the belonging Cage. 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 NMMA has granted a substitute.

E.4. Interchangeability and substitution of type specific parts

The NDMA may authorize other organizations with engineering capability to do substitution evaluations depending on material class and weapon system. These organizations are listed under each 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 have procedures that ensure the following:

1. Identification of the applicable material class as defined in chapter C and Table 4.
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

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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 7: (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 shortcomings 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 provider 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 organizations 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.

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- The following material types: Raw materials, petroleum, oil, lubrication and chemicals as defined in Para C.1.

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

G.1.3. Handling before reauthorization

For parts in, 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. If a new or equivalent part with approved marking and documentation can be supplied, the unauthorized part shall be disposed of or returned to the supplier.

G.2. General requirements

In order for a non-conforming part to be a candidate for reauthorization by this technical order, 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 NDMA 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 Chief 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 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

These requirements and privileges are only valid for a maintenance provider with parts originating from a Norwegian Defence warehouse. Quality Manager and local workshop leader or equivalent is responsible for:

1. Approve qualified personnel for executing of a reauthorization. The approval shall be listed in the company personnel register
2. Include procedures in company 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 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 in lieu of the original documentation. 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 NDMA 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 NDMA.

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

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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 NDMA.
 - c. For general purpose non-destructive inspection, use LM Aero specification NDTs-1500K dated August 18 2004 or later.
 - d. The NDMA 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 NDMA 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 have occurred that can have an impact on the part of interest, the NDMA shall perform an assessment of the incident and give recommendations on which parts that can be authorized for use and what sort of action that must be done 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)

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, NCAGE 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 evaluated by the Norwegian Military Airworthiness Authority with respect to its rules and regulations for part logistics.

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

NOTE

Verify that complete history is enclosed. As this is used or old material, the history may have been issued in various formats. In particular, verify that flight hours/calendar time is continuous 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 NDMA. 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-1500K dated August 18 2004 or later.
 - a. If NDTs-1500K 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 NDMA to obtain further instructions.
 - b. If the material fails to pass all such inspections/tests, the NDMA shall be contacted to 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 SAP. For critical parts, the NDMA 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 considered to be a maintenance activity and shall be accomplished under the control of a maintenance organization approved by the NMAA, see Appendix 2. Serviceable aircraft components removed from other state registered aircraft withdrawn from service may be issued with an EMAR Form 1 (or equivalent) subject to compliance with this subparagraph.

- a) 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 organization 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.
 - i. The organization should ensure that the component was removed from the aircraft by an appropriately qualified person.
 - ii. The aircraft component may only be deemed serviceable if the last flight operation with the component fitted revealed no faults on that component/related system.
 - iii. The aircraft component should be inspected for satisfactory condition including in particular damage, corrosion or leakage and compliance with any additional maintenance data.
 - iv. The aircraft record should be researched for any unusual events that could affect the 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 NMAA.

- v. A maintenance history record should be available for all used serialised aircraft components.
- vi. 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.
- vii. Compliance with known applicable airworthiness directives should be established.

Subject to satisfactory compliance with this 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 F.

- b) Irrespective of whether the aircraft holds a certificate of airworthiness or not, the organization 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.
- c) A structured plan should be formulated to control the aircraft disassembly process. The disassembly is to be carried out by an appropriately rated organization 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.
- d) 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.
- e) 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 (see) 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 NMAA will not specifically approve subcontractors, but reserves the authority to reject subcontractors. A complete list of subcontractors shall be made available to the NMAA.

H.2. General maintenance organization requirements

Maintenance organisations (provider) shall be approved by the NMAA before maintenance is performed on Norwegian Military Aircraft or its parts and components. Either of the following is accepted as basis for an application:

- The organisation must be EMAR 145 approved either by NMAA or a foreign EMAR compliant military airworthiness authority
- The organisation must be EASA 145 approved
- The organisation must be compliant to an accepted alternative means of compliance (H.2.1).

The maintenance organisation shall apply for approval to the NMAA using EMAR Form 2 or equivalent.

GM 8: (Ref. H.2) Application prerequisites

The application may be submitted to the NMAA independently of contractual status.

AMC 8: (Ref. H.2) Acceptance of foreign military EMAR 145 approval

A foreign military EMAR 145 approval is generally accepted as equivalent to an NMAA approval as long as the subject foreign military authority is EMAR compliant. The maintenance organisation must still apply for approval to the NMAA for the applicable aircraft type and scope of work.

AMC 9: (Ref. H.2) Acceptance of EASA 145 approval

A civilian EMAR 145 approval is generally accepted as equivalent to an NMAA approval. The maintenance organisation must still apply for approval to the NMAA for the applicable aircraft type and scope of work.

AMC 10: (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 NMAA.

AMC 11: (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 MAA or a CAA, the application to the NMAA is only required to contain proof of approval by the foreign MAA/CAA and the approved MOE. If the approval scope is the same, the NMAA will only validate the approval. If any additions to the scope of work or capability lists are required (ie additional type version), the application to the NMAA shall include all information required to approve the change.

AMC 12: (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 organizations not capable of obtaining an EMAR145 approval

If the maintenance organisation is not capable of obtaining an EMAR145 approval, the following three alternatives are accepted:

1. Maintenance providers approved by a foreign national military airworthiness authority.
 - a. The approval shall be issued in the nation where the maintenance organisation certifying staff is based, for the same type of aircraft or component.
 - b. The national military airworthiness authority must be recognized by the NMAA.
2. Maintenance providers that are the current Design Activity or have a current license or approval from the current Design Activity (OEM), see Appendix 2.
3. NMAA-specific approved maintenance providers.

In these cases, the NMAA will issue an approval valid for external maintenance for one or more components (capability list) listed in Table 4 dependent on aircraft type.

The following additional requirements shall be fulfilled:

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 NDMA ASD.
 - 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 NDMA ASD.
2. Either of the following requirements shall be fulfilled if an EMAR 145 approval is not present:

- a. The Maintenance organization shall be certified to the AS9100 or AS9110 Quality Management System with a relevant scope for the intended maintenance, or;
- b. The Maintenance organization shall be ISO9001 certified and compliant to the AS9100 or AS9110 Quality Management System with a relevant scope for the intended maintenance.
- c. The Maintenance organization shall be part of the Norwegian Armed Forces and compliant to the AS9100 or AS9110 Quality Management System with a relevant scope for the intended maintenance.

Compliance must be verified by the quality assurance department in the Norwegian Armed Forces in order for maintained material to be authorized for use.

H.2.2. Continued oversight

The maintenance provider shall be subject to oversight by the NMAA or an authority or agency recognised or otherwise enabled by the NMAA.

If another authority than the NMAA will perform any of the oversight, the scope shall be documented in an implementation agreement between the NMAA and the applicable authority.

AMC 13: (Ref.H.2.2) Minimum information to be included in the implementation agreement

PROJECT	OVERSIGHT RESPONSIBILITY	LIMITATIONS OR CAVEATS	COMMENTS
<specify and describe the applicable Project> (i.e. EMAR 145 maintenance of aircraft type X)	<specify whether the continued oversight shall be done by the NMAA or by the Recognised MAA>	<specify any limitations or caveats that may apply>	<specify any comments that may apply>
<specify and describe the applicable Project> (i.e. EMAR 145 maintenance of aircraft type Y)	<specify whether continued oversight shall be done by the NMAA or by the Recognised MAA>	<specify any limitations or caveats that may apply>	<specify any comments that may apply>

AMC 14: (Ref. H.2.1.a.2) Relation between AS9100 and AQAP 2130/2131

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

GM 9: (Ref. H.2) AS91XX certification verification

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

3. If the Maintenance organisation is not at Part 21-level, the Maintenance Provider must have an engineering support contract with the Design Activity (OEM) for any repair procedure or activity not covered by the technical documentation.
4. The NMAA or its representative reserves the right to audit the Maintenance Provider and facilities.

5. Either of the following must be fulfilled if the Maintenance provider does not have a current license or approval from the current Design Activity (OEM):
 - a. For components that are not on an FAA, Transport Canada (TC) or EASA capability list, and for components where EASA does not issue any component rating (i.e. components unique to State Aircraft), the Maintenance Provider must hold a current Part 145 capability for components of the same category. Refer to Table 4 for component categories.
 - b. For Maintenance providers that hold a USAF approval, the approval must be specific to the applicable Part Number or Assembly. All maintenance activities shall be documented in accordance with TO-00-20-1; Aerospace equipment maintenance inspection, documentation, policies and procedures.
 - c. For avionics components, category C2, C3, C5, C8, C14 and C18, the maintenance provider shall document prior experience on equipment in the same category and from the same Design Authority.

Table 4: Component categories, ref EMAR 145 app 2 table 1

COMPONENT CLASS	CATEGORIES
COMPONENTS EXCEPT COMPLETE ENGINES OR APU'S	C1 Air Conditioning and Pressure C2 Auto Flight C3 Comms and Nav C4 Doors - Hatches C5 Electrical Power & Lights C6 Equipment C7 Engine - APU C8 Flight Controls C9 Fuel C10 Helicopters - Rotors C11 Helicopter - Trans C12 Hydraulic Power C13 Indicating/Recording Systems C14 Landing Gear C15 Oxygen C16 Propellers C17 Pneumatic & Vacuum C18 Protection ice/rain/fire C19 Windows C20 Structural C21 Water Ballast C22 Propulsion Augmentation

H.3. Acceptance of maintained components

BL3307 Certification of Conformity or equivalent is required by the NMAA for identification of airworthy components.

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

AMC 15: (Ref. H.3) Relation between Form 1, Form 8130-3 and BL 3307

EASA/EMAR Form 1 or FAA form 8130-3 is recognized as equivalent to BL3307.
 The Test report can be integrated or separate from the CoC (Release to Service document).

H.3.1. Test report

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

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

- Item serial number, if applicable.
- Maintenance activity performed.
- 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 organizations with CAGE (not exhaustive)

ORGANIZATION 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 Association 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		

J EFFECTIVE DATE

The document is effective 2020-05-02.

K REQUEST FOR REVISIONS OR CHANGES

Request for revisions or changes shall be forwarded to the NDMA ASD as a Technical Manual Change Recommendation, AFTO Form 22¹.

¹ AFTO Form 22 may be found at http://www.e-publishing.af.mil/?txtSearchWord=afto22&client=AFPW_EPubs&proxystylesheet=AFPW_EPubs&ie=UTF-8&oe=UTF-8&output=xml_no_dtd&site=AFPW_EPubs