Illustrated parts data publication - Introduction

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Table 1 References

Data Module	Title
39-A-00-00-00-00A-94DA-D	Illustrated parts data - List of abbreviations
39-A-00-00-00-00A-94BA-D	Illustrated parts data - List of approved manufacturers for standard parts
39-A-00-00-00-00A-94EA-D	Illustrated parts data - List of effectivity codes
39-A-00-00-00-00A-94CA-D	Illustrated parts data - List of unit of issue codes

Description

1 General

This publication is the Illustrated Parts Data (IPD) of the AW139 helicopter.
It includes the data that are necessary for the requisition, storage, identification and issue of the spare parts for the helicopter.
This publication obeys the instructions given in the Specification 2000M (Issue 3.0, October 1998). The European Association of Aerospace Industries (AECMA - Association Européenne des Constructeurs de Matériel Aerospatial) prepared the document.

2 Publication layout

The illustrated parts data publication contains:

- The Introduction data modules
- The Illustrated Parts Data (IPD) modules (figures and the related detailed parts lists)

3 IPD modules contents

The IPD modules gives the data for the systems written in Table 2.

Table 2 Index of systems

System	Title
00	Helicopter general
11	Placards and markings
18	Vibration and noise analysis and attenuation
21	Environmental control
22	Auto flight
23	Communications
24	Electrical power
25	Equipment/furnishings
26	Fire protection
28	Fuel
29	Hydraulic power
30	Ice and rain protection
31	Indicating/recording systems
32	Landing gear
33	Lights
34	Navigation
45	Central maintenance system (CMS)
46	System integration and display
52	Doors
53	Fuselage
55	Stabilizers
56	Windows
62	Main rotor
63	Main rotor drive
64	Tail rotor
65	Tail rotor drive

System	Title
67	Rotors flight control
71	Power plant
73	Engine fuel and control
74	Ignition
75	Air
76	Engine controls
78	Exhaust
91	Helicopter wiring
93	Surveillance
95	Crew escape and safety
97	Image recording

4 Illustrated parts data module

All the IPD are included in data modules. A code identifies each data module.
Refer to (See Para 5. Data Module Code (DMC)) for the structure of the Data Module Code (DMC).
Each Illustrated Parts Data (IPD) module includes a figure and the related text (detailed parts list). More than one sheet can show an IPD figure if necessary.
Refer to (See Para 6. Detailed parts list) for the structure of the detailed parts list.

5 Data Module Code (DMC)

The structure of the DMC for the illustrated parts data is shown in Table 3.

Table 3 DMC structure

DMC	39	A	XX-XX-XX	NNA	XXXA	A
Para.	(See Para 5.1. Model identification code)	(See Para 5.2. System difference code)	(See Para 5.3. Standard Numbering System (SNS) code)	(See Para 5.4. IPD figure number and IPD figure number variant)	(See Para 5.5. Information code and information code variant)	(See Para 5.6. Item location code)
eg: 39-A-29-11-01-010-941A-A						

5.1 Model identification code

The model identification code for the AW139 is 39.

5.2 System difference code

The system difference code is a letter (letters I and O are not used). This letter identifies two or more sub-systems that can be installed as alternative items because they do the same function.

5.3 Standard Numbering System (SNS) code

The SNS code includes three pairs of digits which show:

- The system (eg: 29, hydraulic power).
- The sub-system and sub-subsystem (eg: 11, Number 1 main hydraulic system). When the sub-subsystem code is zero, the two digits show all of the sub-system.
- The component (eg: 01, Number 1 power control module).

5.4 IPD figure number and IPD figure number variant

The IPD figure number is a number in a sequence where 01 is the first number. You use it when more data modules are necessary for the same SNS.
The IPD figure number variant shows the changes to the data module. "0" is the number of the first data module for each SNS. When variants are necessary because the parts include a modification, or new data modules must be added, the disassembly code variant is used. This code is A for the first variant, then B, C etc. (letters I and O are not used).

5.5 Information code and information code variant

The information code is a three-digit code. The information codes used in this publication are:

- 018 Introduction
- 941 Illustrated parts data
- 94A List of NATO supply codes for manufacturers
- 94C List of unit of issue codes
- 94D List of abbreviations
- 94E List of effectivity codes

5.6 Item location code

For IPD modules the item location code is A (on the helicopter).

5.7 Examples of parts data module codes

39-A-29-10-00-010-941A-A:

- Parts data module
- 29-10-00 Main hydraulic system
- IPD figure number = 1
- IPD figure number variant = 0 = initial DM within 29-10-00.

39-A-29-10-00-010-941A-A:

- Parts data module
- IPD figure number = 1
- IPD figure number variant = A = new DM.

6 Detailed parts list

The detailed parts list is a table. Each column of the table has a heading that gives the contents. The columns include the information that follows:

6.1 Figure and item number column (FIG ITEM)

This column shows the figure number and variants that identify the figure to which the parts list text refers. These data are shown only one time at the first line of the parts list text.The item number and variant show the callout number which identifies the item on the related figure. If an item is in the parts list, but is not shown in the figure, there is a dash before its item number.

6.2 Part number and NATO stock number column (PART NUMBER NSN)

Under the PART NUMBER heading you find the combination of characters assigned to identify an item.
Under the NSN heading you find the NATO code given to the item. There is no code here when this publication is for civil helicopters.
A Dummy Part Number (DPN) is shown in this column to identify the installations and the assemblies that have not a part number given by the related manufacturer. The DPN is as follow:
DPNXXYYY where

- XX is the chapter number
- YYY is a sequence of numbers that start from 001.

6.3 Description column (DESCRIPTION)

This column gives the name of the item. There are dots before the name. They show the position of the item in the breakdown. Each dot agrees with a number (1 through 9) and you can see this number on the top of the column. The number shows the relation of the item with the assembly. If the item is an attaching part, there are no dots, but asterisks. The description column shows more information in brackets. Slashes (/) are the separation between different information. This different information is given in the sequence that follows, when applicable.

6.3.1 Description for location

The description for location gives you more data about a part, and tells you where you can find them. Also, the description for location shows:

- The data related to interchangeability if there is also an interchangeability code 6 in the interchangeability column
- INCOMPLETE BREAKDOWN when you cannot do a full breakdown of an assembly or sub-assembly. This occurs when the part number does not identify the part fully. Use the applicable indenture code to identify the part as correctly as you can.

6.3.2 Storage or shipping parts

STORAGE PART or SHIPPING PART is shown when applicable. The storage parts and the shipping parts are the parts that you must remove before you install an item. Packing is not a shipping part. The shipping parts are the protection of the item or a part of it during transportation. The storage parts are the protection of the item from unwanted materials that can go in it.

6.3.3 Calibration marker

CALIBRATION REQUIRED is shown when applicable. These words tell you that the calibration of the item is necessary.

6.3.4 Fitment code

MINOR FITTING REQUIRED or MAJOR FITTING REQUIRED is shown when applicable. These words tell you that you cannot install the item as is, but you must do some operations on it before or during the installation.

6.3.5 Refer to

"Refer to" makes a link between the two positions of an item when the item is shown in two figures. The item is shown in the first figure, and referred to a different figure with a different level of breakdown.
"Refer to" also makes a link between:

- The position of an item in the breakdown of its next higher assembly, and
- The publication specific for the item.

6.3.6 Select or manufacture from identifier

This location shows that the installation of an item in a given position must agree with some conditions.
When you read SELECT ON FIT, you must use the item in the available range, that has the correct size.
When you read SELECT ON TEST, you must use the item in the available range, that has the correct electrical properties.
When you read MANUFACTURE FROM, you can make or program the item locally.
When you read REWORK FROM you can make the item from a pre-modification item. A reference to the modification instructions is also included.

When you read REPAIR FROM, you can repair an item with special repair parts, repair kits or parts kits.
When you read FROM/TO, you know that a range is applicable to the conditions given above.

6.3.7 Unit of measure and quantity per unit of issue

The unit of measure is the unit you must use. The quantity per unit of issue gives the number of units of measure that each unit of issue contains. For example: SUPPLIED IN 5 LI shows that the item is supplied in a 5 liters can. CN is the code for the unit of issue.

6.3.8 List of unit of issue codes

Refer to 39-A-00-00-00-00A-94CA-D.

6.4 Usable on code assembly and model version and effectivity column (UOCA MVEFFECT)

6.4.1 Usable on code assembly (UOCA)

Identifies assembly variants and configurations, It also shows the relation between the single parts and their assemblies. Two asterisks are written in the column when a UOCA is used.
The assemblies are identified with a single alpha code in a specific position. The remaining characters are left blank.
Example (b=blank):
** A b b b b b
** b B b b b b
** b b C b b b
When the UOCA refers to a part of an assembly the blanks are replaced with dashes.
Example:
** A - - - - -
** - B - - - -
** - - C - - -

6.4.2 Model Version (MV)

Identifies the specific version of the Customer's Helicopters.
SN= identifies the specific parts applicable to Helicopters AW139 Short Nose from S/N 31005 thru S/N 31200 and from S/N 41001 thru S/N 41200.
LN = identifies the specific parts applicable to Helicopters AW139 Long Nose from S/N 31201 thru S/N 31399 and from S/N 41201 thru S/N 41299.
EN = identifies the specific parts applicable to Helicopters AW139 Enhanced from S/N 31400 thru S/N 31699 ,from S/N 41300 thru S/N 41499 and from S/N 60001 thru S/N 60999.
EP = identifies the specific parts applicable to Helicopters AW139 Enhanced Plus from S/N 31700 and subsequent , from S/N 41501 and subsequent and from S/N 61001 and subsequent.

6.4.3 Effectivity (EFFECT)

Identifies the service bulletins, modification and configuration differences. Refer to 39-A-00-00-00-00A-94EA-D.

6.5 Interchangeability column (ICY)

The ICY shows that two or more items are interchangeable in the same location either for the same configuration. Or it shows that they are interchangeable in two configurations, if the part number changes.
There are two characters in the column. The first character shows the ICY of the item with the item before it. The second character shows the ICY of the item with the item after it. There is a dash in the blank space if the ICY is of one character only, to show the correct position of the item ICY.
The ICY column is left blank when the interchangeability is not given.
These ICY codes are used:

6.5.1 Code 0

Code 0 indicates that the items are not interchangeable. The code 0 applies only at different configurations.

Example		
Part Number		ICY
A	(PRE-MOD 1)	- 0
B	(POST-MOD 1)	0 -

6.5.2 Codes 1 and 2

Codes 1 and 2 indicate full interchangeability and can be used for two items at the same or different configurations.
Items A and B are fully interchangeable, but B is preferred and A is “running-out” of the supply.
Items A and B are fully interchangeable.
For two interchangeable items at the same configuration, code 1 identifies the item whose source of supply is “running-out” and code 2 identifies the preferred replacement item.
When the two interchangeable items are at different configurations the code 1 item is the pre-modified item and the code 2 the post-modified item.
For technical or supply reason the code 1 items can not longer be supplied, but the existing stocks can be used until available.

Example (same configuration)	
Part Number	ICY
A	- 1
B	2 -

Example (different configurations)		
Part Number		ICY
A	(PRE-MOD 1)	- 1
B	(POST-MOD 1)	2 -

6.5.3 Code 3

Code 3 indicates an item that has a one-way interchangeability with another code 5 item.
A code 3 item must be always used with a code 5 items at different configurations. Code 3 applies to pre-modified item and code 5 applies to post-modified item.
A code 3 item must only be used to replace a code 3 item. A code 5 item must be used to replace a code 3 item or a code 5 item.
B can replace A and B, but A cannot replace B.
A can be replaced by A, B or C. B can be replaced by B or C. C must be replaced by C.
A and B can be replaced by A, B or C. C must be replaced by C.

Example 1		
Part Number		ICY
A	(PRE-MOD 1)	- 3
B	(POST-MOD 1)	5 -

Example 2		
Part Number		ICY
A	(PRE-MOD 1)	- 3
B	(POST-MOD 1)	5 3
	(PRE-MOD 2)	
C	(POST-MOD 2)	5 -

Example 3		
Part Number		ICY
A	(PRE-MOD 1)	- 4
B	(POST-MOD 1)	4 3
C	(POST-MOD 1)	5 -

6.5.4 Code 4

Code 4 indicates an item which is fully interchangeable, but not the same item as the other item code 4. It is used only when the items have the same configuration.
When the items have different configuration, the codes 1-2 or 3-5 must be applied.
A and B are fully interchangeable.
A and B and C and D are fully interchangeable.

Example 1	
Part Number	ICY
A	- 4
B	4 -

Example 2		
Part Number		ICY
A	(PRE-MOD 1)	- 4
B	(PRE-MOD 1)	4 3
C	(POST-MOD 1)	5 4
D	(POST-MOD 1)	4 -

6.5.5 Code 5

Code 5 indicates an item that is interchangeable with a code 3 item.
The code 5 must be always used with a code 3 item at different configurations.
For examples (See Para 6.5.3. Code 3) .

6.5.6 Code 6

Code 6 indicates an item which has a qualified interchangeability with another code 6 item. The condition for which is qualified interchangeability is operative is provided in the description for location.

6.5.7 Codes 7 and 8

Not used

6.5.8 Code 9

Code 9 indicates an item which is fully interchangeable, and identical to, other code 9 items.
It is used when a secondary part number is shown (for example a Vendor part number and a proprietary firm part number).
Code 9 is used only when the items are at the same configuration.

6.5.9 Dash (-)

Dash is used as a filler to make clear the position of a single numerical code in the ICY field.

6.6 Quantity per next higher assembly and unit of issue column (QNHA UI)

6.6.1 Quantity per next higher assembly

Under the QNHA heading you find the number of times an item is installed in one unit of the next higher assembly.
AR is written when you cannot give a quantity. AR is also written when you cannot tell the necessary quantity of the items.
REF is written when an item is included in the list only for reference. The items on top of all the figures are reference items.
For the select-on-test items, the correct quantity (usually 1) is given for the first item in the range. AR is written for the other items in the range.
For the select-on-fit items, AR is usually shown for all the items in the range. The quantity is the dimension or the number of the items. If these are not applicable, it is the container or the shape of the item as necessary for requisition and issue to the user. Refer to (See Para 6.6.2. Unit of issue)
.

6.6.2 Unit of issue

Under the UI heading you find the codes used to identify the physical measurement, the count or, when neither is appropriate, the container or the shape of an item for the purpose of requisitioning by the end user.
For the list of the unit of issue codes refer to 39-A-00-00-00-00A-94CA-D.

6.7 Source, maintenance and recoverability code column (SMR)

The SMR code shows:

- Source (S). This is how you must get the items for the maintenance, repair or overhaul of the end items.
- Maintenance (M). This shows the maintenance levels approved to do the maintenance.
- Recoverability (R). This shows what you must do with the items that are unserviceable.

6.7.1 Source code (1st and 2nd positions)

The Source Code shows the items that the service must supply for maintenance, repair and overhaul:

- PA - Code applied to the items the procurement and stockage of which are done because you know that they are surely to be installed at some time.
- PB - Code applied to the items the procurement and stockage of which are done because they are critical. A number of the each critical item must be kept in stock because they must always be available.
- PC - Code applied to the items equivalent to those with code PA, but that cannot be used after some time because of deterioration.
- PE - Code applied to the support equipment the procurement and stockage of which are done for the first supply. Also codes for the spares for specific repairs.
- PF - Code applied to the support equipment that is not kept in stock. The procurement of this equipment occurs centrally as necessary.
- PG - Code applied to the items the procurement and stockage of which are done for sustained support. These items are specific for an equipment. Usually, PG applies to the items the cost of new production of which becomes too high after they are out of initial production.
- KF - Code applied to the maintenance-kit components the procurement of which is done only with that of the kit.
- KD - Code applied to the repair-kit components in depot-kits, the procurement of which is done only with that of the kit.
- KB - Code applied to the kit components included in a depot overhaul/repair kit and a maintenance kit.
- MO - Code applied to the items made at organizational level.
- MF - Code applied to the items made at intermediate level.
- MD - Code applied to the items made at depot level.
- AO - Code applied to the items assembled at organizational level.
- AF - Code applied to the items assembled at intermediate level.
- AD - Code applied to the items assembled at depot level.
- XA - Code applied to the items the procurement and stockage of which are not done. This because you must replace the next higher assembly if the item becomes unserviceable.
- XB - Code applied to items the procurement and stockage of which are not done. If you cannot repair this item, you must get it through your supply organization.
- XC - Code applied to installation drawing, diagrams, instruction sheets, field service drawings etc. the identification of which is a manufacturer"s part number.

6.7.2 Maintenance code (3rd and 4th positions)

This code shows the maintenance levels approved to do the necessary maintenance. The maintenance code includes the use code and the repair code.

6.7.2.1 Use code (3rd position)

This code shows the lowest level of maintenance approved to remove, install and use the item:

- O - Organizational level for the removal and installation of the Line Replaceable Units (LRU).
- F - Intermediate level for the removal and installation of the items off the line. Also for the repair of the unserviceable Shop Repairable Units (SRU).

- D - Depot level for the removal and installation of units off the line. And for the repair of unserviceable SRUs. At depot level you have all the shops, tools and equipment necessary for the overhaul and repair of the components and systems. Also you have all what is necessary to do all the maintenance procedures.

6.7.2.2 Repair code (4th position)

This code shows that you can repair the item at the correct cost during a given time. Usually this time is less than the life-time of the assembly which includes the item. It also shows the lowest level of maintenance approved to remove and install the item:

- O - The organizational level is the lowest level at which the item can be repaired.
- F - The intermediate level is the lowest level at which the item can be repaired. Less important repairs can be done at the organizational level if the persons and equipment are available.
- D - The depot level is the lowest level at which the item can be repaired. Or the lowest level at which the item overhaul can be done. Less important repairs can be done at the organizational or intermediate level if the persons and equipment are available.
- Z - The item cannot be repaired.
- B - The item can be adjusted, lubricated, made straight, etc. at the user level. But no parts, tools, technical repair instructions etc. are given to help the user do so.
- L - The depot level is the lowest level at which you can repair / overhaul the item fully.

6.7.3 Recoverability code (5th position)

This code is given to items that have a source code "P". The code tells you what you must do when the item becomes unserviceable. This applies only to items of supply:

- Z - you cannot repair the item.
- O - you can repair the item. When the cost of the repair is too high, discard the item at organizational level.
- F - you can repair the item. When the cost of the repair is too high, discard the item at intermediate level.
- D - you can repair the item. When the cost of the repair is too high, discard the item at depot level.
- A - special procedures are necessary when you discard these items (they are toxic, or contain precious metal).

7 List of effective pages

Each chapter of the IPD includes a List Of Effective Data Module (LOEDM). The LOEDM shows the data module codes of all the data modules in the chapter.
The LOEDM gives the information that follows for each data module:

- Document title column. This column shows the title of the data modules included in the chapter.
- Data Module code column. this column shows the Data Module code (See Para 5. Data Module Code (DMC)) .
- Page column. This column shows the total number of pages in the data module.
- Issue date column. This column shows the date of the issue of the module. Before the date there is a letter. This letter shows if the module is changed (C), deleted (D), status (S), new (N), rinstate (X), revised (R). No letter identifies the modules unchanged with the last issue.
- “Applicable to” column. This column shows if the data module can give information about service bulletins, modifications and configuration differences.

8 Updating of publication

8.1 General

The first issue of the publication is identified "Issue 001". An update can be prepared as a "change" or a "new issue".
The number of the issues is as follows:

- The first completed issue after the first issue is the "Issue 002".
- The issues that follow are the "Issue 003", the "Issue 004", etc.

The numbers of the changes are in sequence from "change 1", until the "new issue".
A change to the publication contains replacement Data Modules (DM). The replacement DM of each chapter include:

- A new title page with the issue number and issue date
- A new highlights page
- A new list of effective data module (See Para 7. List of effective pages) .

The highlights page tells the cause of the change for each DM included in the "Data Module Code" column.
It is possible to revise a DM as an alternative to the change. This occurs when the DM is changed more than 80% of its contents.
When more than 80% of the DM of a chapter are changed/revised, a new issue is prepared.

8.2 Change marks

The change marks show the changed material (text, tables and figures). The changes are marked with highlighted text to identify the modifications introduced.
The change marks are not used:

- To identify editorial changes
- In the list of effective data modules.
- In the revised data modules.

8.3 Temporary revisions

The temporary revisions are issued when the data modules must be included in the publication immediately. They are printed on blue paper. The numbers of the temporary revisions are in sequence. The first is 001.
The page “List of Temporary Revisions” (LOTR) is also sent at the time of the issue of the first “Temporary Revision” (TR).
This page lets you record, for each TR:

- The issue date
- The insertion date of the data modules (or data module) that make the TR in the applicable chapters (chapter) of the publication.
- The signature of the person who does the insertion
- The removal date of the data modules (or module) when they are included in a new Change
- The signature of the person who does the removal.

The LOTR page must be kept in the publication, and is the page immediately after the cover page.
Each TR includes:

- A title page
- A “List of Effective Data Modules” (LOEDM) page.

The LOEDM shows the data module codes of all the data modules in the TR.

9 List of abbreviations

Refer to 39-A-00-00-00-00A-94DA-D.

10 List of approved manufacturers for standard parts

Refer to 39-A-00-00-00-00A-94BA-D.

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