AIRBUS

EC 120
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Chapter 04
AIRWORTHINESS LIMITATIONS SECTION (ALS)

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IMPORTANT NOTE

The practical value of this manual depends entirely upon it being updated correctly by the operator.

The successive revisions should be recorded on the relevant page of the manual.

RECORD OF REVISIONS

Rev. No.	Issue Date	Inserted Date	Inserted Name

Rev. No.	Issue Date	Inserted Date	Inserted Name

APPROVAL

1 EASA - Approval

The airworthiness limitations section is approved and variations must also be approved by EASA.

Revision	LOEDU Identification	Approval Date	No EASA
			–
REV 000	1999.02.04	DGAC: 04.05.99	–
REV 001	1999.11.12	DGAC: 03.12.99	–
REV 002	2000.07.17	DGAC: 18.09.00	–
REV 003	2000.12.04	DGAC: 01.06.01	–
REV 004	2001.07.02	DGAC: 29.10.01	–
REV 005	2002.06.30	DGAC: 05.07.02	–
REV 006	2002.10.06	DGAC: 12.11.02	–
REV 007	2003.02.06	DGAC: 19.05.03	–
REV 008	2003.07.24	DGAC: 25.09.03	–
REV 009	2004.01.16	EASA: 13.04.04	2004-3720
REV 010	2004.07.08	EASA: 03.12.04	2004-11702
REV 011	2005.01.21	EASA: 11.04.05	2005-3226
REV 012	2005.07.27	EASA: 11.10.05	2005-2870
REV 013	2006.03.10	EASA: 02.06.06	R.C.01700
REV 014	2006.05.12	EASA: 02.10.06	R.C.01870
REV 015	2006.12.08	EASA: 24.04.07	R.C.02179
REV 016	2007.07.16	EASA: 04.09.07	R.C.02037
REV 017	2009.05.15	EASA: 05.06.09	R.C.03491
REV 018	2010.10.21	EASA: 05.01.11	10033236
REV 019	2013.05.10	EASA: 18.06.13	10045358
New REV 000	2014.05.15	EASA : 09.10.14	10050759

Revision	LOEDU Identification	TFSAC number	Change Approval Date	APPROVAL No
REV 001	2017.07.10	14.120.0001.a	04/03/2015	LH/2014/200 (EASA 10052457)
REV 002	2019.03.11	18.120.0001.a	01/06/2018	EASA 10065692
REV 003	2022.07.18	22.120.0001.a	03/05/2022	EASA 10079218
REV 004	2023.07.17	22.120.0003.a	06/03/2023	EASA 10081397

The technical content of these revisions are approved under DOA N°EASA.21J.700 authority. This approval means that the revisions have been prepared with already EASA approved data and minor changes approved under DOA N°EASA.21J.700. The revisions are issued under DOA procedure.

The list of chapter 04 effective pages given in the "LOEDU" which is identified by 2023.07.17.

The "LOEDU" identification does not correspond to the EASA approval date, it is a documentation handling code provided at the bottom of all pages.

End of the Document Unit

LOEDU

1 Update

Refer to the **"Update of the ALS" Document Unit**

2 "Type" Column Code

N-New, to be inserted
R-Revised, to be replaced
D-To be removed from the manual
- (No code) Unchanged with respect to the previous issue

D.U.	Type	Date	D.U.	Type	Date
TITLE	N	2023.07.17	UPDATE OF THE ALS	-	2014.05.15
APPROVAL	N	2023.07.17	BREAKDOWN OF THE ALS	-	2017.07.10
LOEDU	N	2023.07.17	USE OF THE ALS	-	2014.05.15
TABLE OF CONTENTS	N	2023.07.17	SB INCORPORATED	-	2022.07.18
HIGHLIGHTS OF THE REVISION	N	2023.07.17	04-10-00	R	2023.07.17
GLOSSARY	-	2017.07.10	04-20-00	-	2022.07.18
STRUCTURE OF THE ALS	-	2014.05.15			

End of the Document Unit

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End of the Document Unit

HIGHLIGHTS OF THE REVISION

1 GENERAL

- Check that the content of the sections is in accordance with the List Of Effective Document Units (LOEDU).
- Return the acknowledgment card.

2 OUTLINE OF THE REVISION

The revision is codified as follows:

- Revision 004 : 2023.07.17

3 DETAILED DESCRIPTION

3.1 Section 04.10.00

63-22 MGB MAIN MODULE

- 63/22/00/000/000/500 — 9500 FH
  Output wheel
  Limit modified
  MP/N modified

End of the Document Unit

GLOSSARY

(-):	Not indicated
&:	And
//:	Or
§:	Paragraph
ALL MP/N:	ALL Manufacturer Part Numbers
ALS:	Airworthiness Limitations Section
AMM:	Aircraft Maintenance Manual
ASB:	Alert Service Bulletin
CHK:	CHecK
CLN:	CLeaNing
CM:	Condition Monitoring
CMM:	Component Maintenance Manual
CSS:	Chapter / Section / Subject
D:	Day
DI:	Detailed Inspection
DRN:	DRaiNing
DS:	DiScard
DU:	Document Unit
EASA:	European Aviation Safety Agency
ED:	Expiry Date
EMM:	Engine Maintenance Manual
EXC:	EXCept
FC:	Functional Check
FH:	Flight Hour
FLM:	FLight Manual
FM:	Log card
FS:	Frequency Start
FT:	Functional Test
GR:	Ground Run
GRT:	Spread-out major inspection
GVI:	General VIsual check (visual inspection with access equipment and standard tools)
HC:	Hoist Cycle
HT:	Hard Time maintenance
LC:	Landing Cycle
LOEDU:	List Of Effective Document Units
LUB:	LUBrication
M:	Month
MC:	Maintenance Code
MGB:	Main Gear Box
MMEL:	Master Minimum Equipment List
MP/N:	Manufacturer Part Number

MRH:	Main Rotor Hub
MSM:	Master Servicing Manual
NPT:	New Proof Test
OC:	On Condition
OEM:	Original Equipment Manufacturer
OPT:	OPTion
OTL:	Operating Time Limit
P/N:	Part Number
PO:	Perform Once
RC:	Roping Cycle
RIG:	RiggInG
RS:	ReStoration
RTQ:	Readjustment of the TorQue loading
SB:	Service Bulletin
SC:	Sling Cycle
SDI:	Special Detailed Inspection
SLL:	Service Life Limit
S/N:	Serial Number
TA:	Turn Around check
TBO:	Time Between Overhauls
TC:	Torque Cycle
TCK:	Torque CheckK
TGB:	Tail Gear Box
TL:	Type of Limit
TRH:	Tail Rotor Hub
TSI:	Time Since Installation
TSM:	Time Since Manufacture
VC:	Visual Check
VLV:	Inspection associated with the flights of the day
WC:	Work Card
WGH:	WeiGHing

End of the Document Unit

STRUCTURE OF THE ALS

1 GENERAL STRUCTURE OF THE ALS

The Airworthiness Limitations Section (ALS) is broken down into two parts.

The first part comprises general information which explains how the ALS operates and how it must be used.

The second part which defines the limits comprises the following sections:

- 04-10-00, which specifies the components subject to a Service Life Limit (SLL),
- 04-20-00, which specifies the mandatory airworthiness inspections (CHK) and provides various specific information to be performed on the helicopter, periodically or a limited number of times, regardless of the operating conditions.

2 BREAKDOWN OF THE ALS

The various parts of the ALS are presented in the form of Document Units (DUs).

2.1 Identification of the DUs

Each DU is unique and is identified by the following:

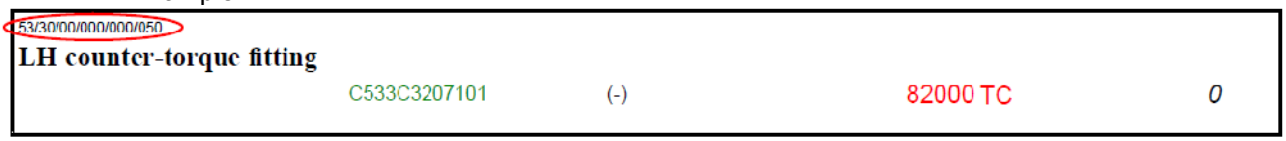
- The title of the manual at the top right hand side of the page,
- The effectivity (helicopter type and version) marked at the bottom left hand side of the page,
- The date code of the DU at the bottom left hand side of the page below the effectivity (format: year.month.day),
- The number or title of the DU at the bottom right hand side of the page,
- The page number at the bottom right hand side of the page.

The end of each Document Unit is identified by "End of the Document Unit" on the last page.

2.2 Task codes

The DUs in sections 04-10-00 and 04-20-00 comprise maintenance tasks. These tasks are identified by a unique code specific to Airbus Helicopters, comprising a group of 15 characters.

Example:



The first four digits (**53/30**/00/000/000/050) correspond to the ATA chapter/section breakdown.

The fifth and sixth digits (53/30/**00**/000/000/050) are used to subdivide an ATA chapter/section comprising several subjects into individual subjects.

The seventh to fifteenth digits (53/30/00/**000/000/050**), are used to identify the task per ATA chapter/section/subject.

2.3 List Of Effective Document Units (LOEDU)

The LOEDU specifies the following information, for each DU, in a table:

- the Document Unit (DU): this column specifies the number of the DU or the title of the DU (example: 04-20-00).
- the type: this column is coded with the letter "R" if the DU is revised, "D" if the DU is deleted, "N" if the DU is new, or has no code for DUs which are unchanged.

- the date: this column indicates the DU date code.

3 CLASSIFICATION OF INFORMATION

The DUs in sections 04-10-00 and 04-20-00 are classed in increasing order according to ATA 100 numbering.

End of the Document Unit

UPDATE OF THE ALS

1 REVISION OF THE ALS

The ALS is revised approximately once a year.

The ALS cover page bears the issue date code (first issue), the current revision number taken in chronological order followed by the revision date code (example: Issue date: 2010.01.30, Revision 002: 2010.07.30, the last applicable revision is revision 002 with a date code of 2010.07.30).

The date code marked on the new or revised DUs corresponds to the revision date code marked on the cover page.

2 UPDATE OF THE ALS

2.1 Update procedure

The user is responsible for updating his documentation each time he receives a revision or a new issue from the manufacturer. The ALS is updated using the new LOEDU which specifies which DU must be inserted (new DU), replaced (revised DU) or removed (deleted DU). A deleted DU is issued with the wording "DU TO BE REMOVED FROM THE MANUAL" in the revision concerned.

Once the ALS has been updated, the date code of each DU indicated at the bottom right hand side of each page must correspond with the LOEDU.

The beginning of the ALS includes a "HIGHLIGHTS OF THE REVISION" page which explicitly summarizes the modifications made to each revision or new issue.

NOTE

After updating, the "RECORD OF REVISIONS" page at the beginning of the ALS must be completed (date, name and signature).

2.2 Identification of the modifications

Modifications are identified by a revision mark in the form of a vertical line in the right hand margin of the page. Revision marks are not used in the following DUs:

- LOEDU,
- Table of contents,
- Highlights of the revision.

3 EFFECTIVITY

The operator must check the effectivity of the ALS used (correctly updated) for the helicopter concerned.

The effectivity (helicopter type and version) is indicated on the cover page and is repeated at the bottom of each page comprising the ALS DUs.

End of the Document Unit

BREAKDOWN OF THE ALS

1 PURPOSE OF THE ALS

The Airworthiness Limitations Section (ALS) prepared by the manufacturer, draws up a list of all the components subject to one or more airworthiness limitations and defines these limits.

It specifies the mandatory operations and limits to ensure the continued airworthiness of the helicopter (*), in all its varied operating missions.

For the airworthiness limitations and the life limits assigned to the engine components, refer to the engine manufacturer's documentation.

(*) Helicopter (type/version) defined by Airbus Helicopters.

2 CHANGES TO THE ALS

The ALS section is modified by the manufacturer according to changes to the helicopter definition.

Each modification to the ALS is subject to approval by the European Aviation Safety Agency (EASA).

3 AIRWORTHINESS LIMITATIONS SPECIFICATION

The Airworthiness Limitations can be expressed in the form of a life limit, an airworthiness inspection interval or various specific information.

3.1 Components subject to a Service Life Limit (SLL)

Life-limited components are components that are exposed to fatigue deterioration due to in-service stress, and the failure could cause catastrophic effect to the helicopter.

The loads applied to these components cause the latter to deteriorate according to one or more types of fatigue:

- vibration fatigue, which is related to the number of flight hours logged (very large number of low-amplitude load variations),
- low-cycle fatigue, which is related to a limited number of large load variations (example: centrifugal load variations, related to the number of rotor starts, or large torque variations related to takeoff, etc.),
- fatigue related to the number of times certain components are used.

These components must be removed and scrapped from service when the specified limit is reached.

NOTE

The service life limits assigned to components guarantee flight safety with regard to the flight load fatigue alteration of components with no external deterioration. These service life limits are not a commercial guarantee because a component may be removed due to wear, fretting, corrosion or scoring, etc., before expiry of the service life.

The only warranty applicable to the helicopter and any component is the warranty included in the Sales Contract for the helicopter and the components.

3.2 Components subject to an airworthiness inspection

A component subject to an airworthiness inspection must be inspected periodically to confirm:

- that there is no deterioration,
- or that the deterioration found is within the removal or maintenance criteria specified in the documentation.

In both cases, the component is kept in service until the next inspection. The component must be removed from service when it reaches the criterion for removal, or made serviceable again as per the instructions given in the documentation.

The visual inspection is aimed at the overall external appearance of the component (no distortion, failure, cracks, scratches, signs of heating or wear, etc.), which would modify its original condition.

STANDING INSTRUCTIONS RELATIVE TO CONDITION: Surface deterioration and deterioration of protection and paint on all helicopter components must be examined and treated without delay in accordance with the applicable instructions (criteria, then reworking).

When an airworthiness inspection requires the measurement of a physical value (clearance, vibration level, tightening torque, separated surface area, etc.), the value measured at each inspection must be recorded on an appropriate medium (e.g.: follow-up sheet).

4 EFFECTIVITY – RESPONSIBILITY

The limits assigned to the component part numbers listed in ALS are applicable to material:

- acquired directly from Airbus Helicopters or through the Airbus Helicopters subsidiaries or distribution network,
- purchased from the equipment vendors listed in our spare part catalogs, either directly or through their own distribution network.

In all cases, the manufacturing source is specified in the "airworthiness document" (JAA Form One or EASA Form One).

Airbus Helicopters will not carry out repairs on service life limited parts which were procured other than through the Airbus Helicopters distribution network.

IT IS PROHIBITED TO REUSE PARTS, EQUIPMENT OR ASSEMBLIES ORIGINATING FROM A HELICOPTER WHICH HAS BEEN INVOLVED IN AN ACCIDENT, WITHOUT FORMAL TECHNICAL APPROVAL FROM THE AIRBUS HELICOPTERS CUSTOMER TECHNICAL SUPPORT DEPARTMENT.

REMINDER: THE AIR ACCIDENT INVESTIGATION BOARD OF THE COUNTRY CONCERNED IS RESPONSIBLE FOR CLASSING AN EVENT AS AN ACCIDENT.

WARNING

AN AIRCRAFT CONSIDERED DESTROYED CANNOT BE REPAIRED OR REBUILT, WITHOUT FORMAL TECHNICAL APPROVAL FROM THE AIRBUS HELICOPTERS CUSTOMER TECHNICAL SUPPORT DEPARTMENT.

AN AIRCRAFT IS CONSIDERED TO BE DESTROYED WHEN THE OEM-DEFINED MAIN STRUCTURE IS DAMAGED (DEFORMED, CRUSHED, CORRODED, CONSUMED BY FIRE, ETC.) TO SUCH AN EXTENT THAT ITS RETURN TO AN AIRWORTHY CONDITION CAN ONLY BE ACCOMPLISHED BY UTILIZING ANOTHER MAIN STRUCTURE OR BY REPAIRING THE DAMAGED MAIN STRUCTURE UTILIZING AN ORIGINAL EQUIPMENT MANUFACTURER APPROVED RIG OF REFERENCE.

End of the Document Unit

USE OF THE ALS

1 COMPLIANCE WITH THE AIRWORTHINESS LIMITATIONS SECTION

The Airworthiness Limitations Section (ALS) specifies all the components which are subject to airworthiness limitations, which must be complied with in addition to the information given in the maintenance program (MSM).

WARNING

THE LIMITS MUST BE COMPLIED WITH TO ENSURE THE AIRWORTHINESS OF THE HELICOPTER. THE TIME LIMITS MUST NOT BE EXCEEDED AND ANY CHANGE MUST BE SUBJECT TO PRIOR APPROVAL BY THE EASA AND AIRBUS HELICOPTERS.

2 OCCURRENCE REPORTING

Reporting of any malfunction, failure, fault or other occurrence which had or may have an adverse effect on the airworthiness of the helicopter is a key factor in keeping the helicopter safe and airworthy and for the continuous improvement of flight safety.

2.1 Reporting to the airworthiness authorities

The operator shall inform his relevant Airworthiness Authority of any occurrence that shall be reported according to the local regulations he is subject to.

2.2 Reporting to the helicopter manufacturer

As part of the Continued Airworthiness Program, any technical incident, discovered in operation or during maintenance work, must be reported by the operator to the helicopter manufacturer. A technical incident is a technical event which is unexpected.

A few examples of technical incidents are given below. This list is not exhaustive. It is given as an illustration, intended to help the operator to understand the definition of a technical incident which is to be reported to the helicopter manufacturer.

In case of doubt on the need to report an event, the event shall be reported.

Examples of incidents to be reported (non exhaustive list):

- technical difficulty in accomplishing the mission as planned, including but not limited to, difficulty resulting in an aborted mission,
- technical event increasing the crew workload,
- technical event that may jeopardize the airworthiness of the helicopter for the continuation of the mission or the safety of persons onboard or on the ground,
- in-flight loss or rupture of any part,
- abnormal deterioration (wear, scratch, crack, corrosion, delamination, bonding failure, indentation, etc...) to any structural or mechanical part, especially when exceeding the maintenance manual (AMM) removal/repair criteria or in case no maintenance criteria exist,
- system malfunction or loss (including partial or temporary incorrect operation) and interference within or between systems,
- incorrect operation of a system intended to minimize the effects of an accident, including when being used for maintenance or test purposes,
- incorrect operation or malfunction of a system, or deterioration of a part found when complying with an Airworthiness Directive,

- non-conformity of a product, part or equipment with respect to its approved design, or a product of unknown or doubtful origin,
- missing, misleading, incorrect or unclear procedure that could lead to a flight crew or maintenance error,
- abnormal vibration,
- abnormal heating, smoke, fire,
- repetitive instances of any technical event which in isolation would not be considered "reportable" but which due to the frequency at which they arise, form a potential hazard,
- any other occurrence which has resulted in or may result in an unsafe condition.

In case of doubt concerning the need to report an event, the event shall be reported.

3 IN-SERVICE MONITORING OF COMPONENTS

All the components listed in section 04-10-00 of the ALS are to be monitored in service, unless "Not to be monitored in service." is specifically mentioned in the task.

The in-service monitoring of components consists in recording the date of installation, the number of flight hours and/or the cycles logged on the equipment log card (**FM**).

If the component does not have a log card (component monitored via the log card of its higher assembly, etc.), before installation, the operator must organize his documentation in order to comply with the limits relating to this component.

These records must be kept if the component is transferred from one helicopter to another.

All the documentation must be organized to enable recording of all the parameters used to comply with the limits.

4 COMPONENT PART NUMBERS

4.1 Definition

- Manufacturer Part Number (MP/N): This is the identification number of the component marked on the identification plate or directly on the component.
- Airbus Helicopters Part Number (P/N): This is Airbus Helicopters's part number which is associated with the manufacturer's part number (MP/N) for components which are not manufactured by Airbus Helicopters.

The part number of the components which is given in the ALS is the manufacturer's part number (MP/N). In the case of components which are not manufactured by Airbus Helicopters, the MP/N is followed by the associated P/N (in brackets).

Example:

62/21/00/000/000/750

Lead lag damper - Elastomer part

F4T4069-02 (7050A3622030)	15 FH	*0*	*AMM 05-30-00, 6-1*

Operation limited to -30°C (-22°F).
Check.

GVI

In some cases the P/N is not specified, in this case it is replaced by a hyphen.

4.2 Part number with a different letter

In some cases, the MP/N can have a different letter (example: MP/N C623**D**1002104), used for spares, to indicate the installation of an optional component or a specific configuration.

These MP/Ns with a different letter generally do not appear in the ALS.

The limit applicable to a MP/N with a different letter is identical to that of the MP/N displayed in the ALS.

Example: the limit given for assembly MP/N C623A1002104 is valid for assembly MP/N C623A1002104 and assembly MP/N C623D1002104.

4.3 Applicability of the limits

The limit(s) specified for the first MP/N are valid for all the other MP/Ns listed in the same task.

Example:

67/31/00/000/000/050

Servocontrol

SC5091 SC5091-1	(7050A4673005) (7050A4673006)	20000 FH	*0*

4.4 Changes to Part Numbers

Unless otherwise stated, the service life limits and airworthiness inspections apply to the component whose part number is listed in the ALS and to its future changes, including those not already indicated in this section. In this case, contact the Airbus Helicopters technical support department to confirm the installation effectivity of the dash number.

5 EXPRESSION OF THE LIMITS

A component or an airworthiness inspection can be subject to one or more airworthiness limitations, expressed in:

- flight hours,
- calendar time,
- cycles with large centrifugal load or torque variations,
- number of operations (for certain components).
- Infinite limit.

5.1 Flight Hours

- Flight Hours (FH) are counted from takeoff to landing.

5.2 Calendar time

Calendar time can be expressed:

- in Months (M),
- in Days (D),
- in Years (Y).

5.2.1 Initial aging date for a component

The initial aging date for a component to be taken into account is generally the date of first installation or first destorage, to be recorded on the equipment log card.

The storage time before installation is therefore not to be taken into account on the condition that storage was in accordance with the applicable documentation, except for the following specific cases.

For some components, the aging date to be taken into account is the date of manufacture marked on the Log Card (FM). In this case, TSM (Time Since Manufacture) is specified in each task concerned in the ALS.

5.3 Cycles

5.3.1 Cycles with large centrifugal load variation

To limit the number of parameters to be monitored during aircraft operation, the service life limit of the components likely to be deteriorated by large centrifugal load variations has been calculated based on 6 rotor starts/stops per flight hour.

If aircraft operation involves on average more than 6 rotor starts/stops per flight hour over a period of more than 500 FH, the actual service life of some components could be less than that specified in this document.

In this case, you must inform Airbus Helicopters.

5.3.2 Cycle with large torque variation

The number of torque variation cycles varies significantly with the missions that can be performed by a helicopter (example: external load carrying operations, such as logging, can lead to a large number of torque cycles), up to 60 per hour, whereas passenger transport flights of one hour on average lead only to one torque cycle per hour.

Therefore, no fixed number of cycles has been specified in order to avoid premature removal of components that are subject to few torque variations. The life limit of the components concerned is indicated in Torque Cycles (TC).

Consequently, the number of torque variation cycles logged must be monitored carefully and counted as follows:

- **1 landing with or without stopping the rotor = 1 TC**
- **1 external load carrying operation = 1 TC**

The cycles associated with external load carrying operations must be added to the landing cycles.

5.4 Number of operations for certain components

Certain components may be subject to fatigue limits related to the number of operations. In this case, the type of use to be counted is defined directly in the tasks concerned with the permissible number.

5.5 Airworthiness limitation units – Description and counting

5.5.1 Airworthiness limitation expressed in Flight Hours

Tasks for which the airworthiness limitation is expressed in flight hours: count the number of flight hours.

53/30/00/000/000/150

LH MGB attachment bar fitting

C533C3204103	(-)	20000 FH	*0*

5.5.2 Airworthiness limitation expressed in Torque Cycles

Tasks for which the airworthiness limitation is expressed in torque cycles: count the torque cycles as per § 5.3.2 or 5.4.

63/11/00/000/000/000

Shaft connecting

C631A1102601 C631A1102602	(-) (-)	89000 TC	*0*

5.5.3 Airworthiness limitations expressed in Flight Hours and Torque Cycles

Tasks for which the airworthiness limitation is expressed in flight hours and torque cycles: count the flight hours and the torque cycles logged.

XX/XX/XX/XXX/XXX/XXX

Example

C624A100XXXX	(-)		20 000	FH	(P)	0
		//	100 000	TC		0

5.6 Removal of life-limited components

When a limit is reached, the component must be removed and scrapped from service. When a component is assigned several limits, it must be removed and scrapped when the first of the limits is reached (refer to § 5.9).

5.7 Provisional limitations

The limits for which additional fatigue tests indicate the possibility of an extension, are identified by code "P" (Provisional). This code (P) follows the value of the limit in the tasks concerned.

The operator should therefore store the component in question after removal, pending a service life extension.

5.8 Periodic and perform once airworthiness inspections

The maintenance operations associated with the airworthiness inspections indicated in section 04-20-00 of the ALS are to be performed:

- **Periodically**: the maintenance operation must be performed at the latest when the indicated limit is reached.

NOTE

For operational reasons, the maintenance operation can be performed before the limit is reached. However, the maximum interval between two maintenance operations must be complied with.

or

- **Once only**: the maintenance operation must be performed once only, when the indicated limit is reached. It must not be performed before the limit is reached.

  These maintenance operations are identified by a dotted line around the task and by code PO (Perform Once) in front of the limit value.

  These operations can be performed either:

  - After installation of a component removed from the same helicopter,

  - After the introduction to service of a new, overhauled or repaired component,

  - After installation of a component originating from another helicopter,

  - Each time after the component is installed.

  The start of the maintenance operation is specified in each task concerned.

Example:

28/00/00/000/000/250

Fuel tank

PO	10 FH	1 FH	AMM 28-00-00, 6-3
&	100 FH	10 FH	

Each time after the component is installed.
Check after maintenance work.

DI|CLN

5.9 Performance interval

Some components subject to a service life limit (SLL) and airworthiness inspections (CHK) are assigned several performance limits separated by the "**//**" or "**&**" sign.

In the case of limits separated by the "//" sign, at the **first limit reached, the component must be removed and rejected or the airworthiness inspection must be performed**.

The next limit at which the component is to be rejected or the airworthiness operation is to be performed will once again be the first limit reached.

In the case of airworthiness inspections separated by the "&" sign, the maintenance operation must be performed at each limit indicated.

Example 1:

XX/XX/XX/XXX/XXX/XXX

Example

C624A100XXXX	(-)		20 000	FH (P)	0
		//	100 000	TC	0

A component has logged only 100000 TC and 20000 FH: the component has reached the FH limit; it must therefore be removed and rejected.

Example 2:

28/00/00/000/000/250

Fuel tank

PO	10 FH	1 FH	AMM 28-00-00, 6-3
&	100 FH	10 FH	

Each time after the component is installed.
Check after maintenance work.

DI|CLN

The maintenance operation must be performed once at 10 FH and once at 100 FH after installation. The maintenance operation must be repeated only if the component is removed then reinstalled or replaced.

5.10 Specific and severe atmospheric operating conditions

Certain specific and severe climatic conditions are considered as specific operating conditions. This concerns the use of helicopters in the following conditions:

- **Tropical and damp atmosphere**:

  . Combination of high ambient temperatures and humidity levels (from +28°C (+82.4°F) and 75% relative humidity).

- **Salt-laden atmosphere**:

  . Ship-based or,

  . Based for more than 50% of its time less than 1 km from the coast or,

  . Spending more than 50% of its time in offshore flight at low altitude (below 1,000 feet).

- **Sand- and/or dust-laden atmosphere**:

  . Sand-laden wind and/or landing on sandy ground.

- **Cold weather**:

  . Temperatures observed or forecast from -10°C to -30°C (+14°F to -22°F).

- **Very cold weather**:

  . Temperatures observed or forecast from -30°C to -40°C (-22°F to -40°F).

The limitation relating to these operating conditions is covered with all the ALS tasks and the operating conditions should be recorded in addition to the parameters listed in the chapter 3 - In-service monitoring of components - to comply with the appropriate limitations.

5.11 Airworthiness limitations value

The airworthiness limitation value represents the limitation not to be exceeded. No tolerance is permitted on the airworthiness limitation value.

The airworthiness limitation value equals to a limit value + margin value.

5.11.1 Definition of the margin

To introduce "flexibility" into maintenance planning in order to compensate for unpredictable situations (e.g. unforeseeable increase in the helicopter utilization rate), Airbus Helicopters defines a value, called "margin", to be added to a limit value.

NOTE

The margin concept only concerns airworthiness checks (CHK).

No margin is allowed for SLL-type limitations, therefore the margin value displayed is 0.

This margin, added to the limit value displayed in the column "CHK" to which it is applicable, results in the airworthiness limitation value (limit value + margin value) to be taken into account for two consecutive inspections.

5.11.2 Application of the margin

The margin can be used repetitively for each limit value interval (refer § 5.11.4 "Example of how the margin is used.").

However, to maintain certain "flexibility" in maintenance planning, Airbus Helicopters recommends to plan airworthiness checks using the limit value without taking the margin into account.

5.11.3 Specification of the margin

The margin value and its units are specified as shown in the following example.

Example:

64/21/00/000/000/040

Torsion star

C542A0402101 (-)
C542A0402102 (-)

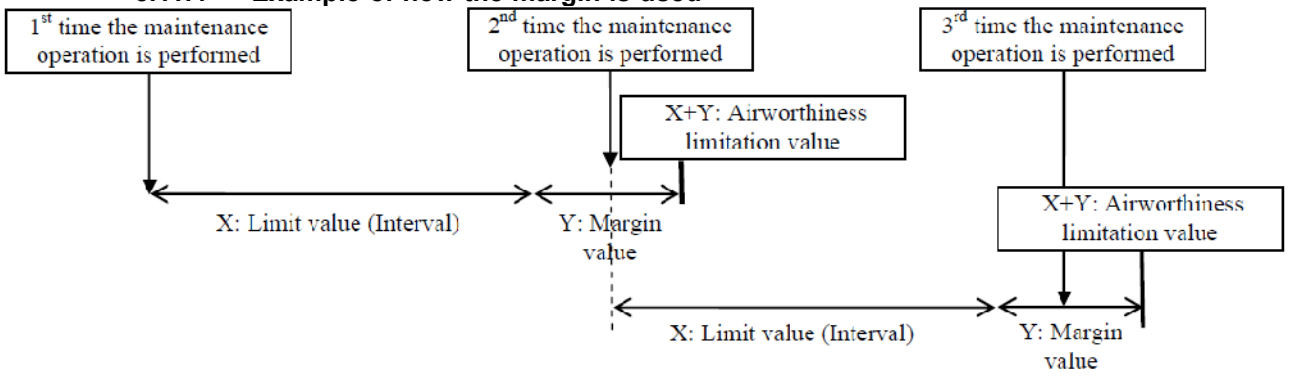
1000 FH | 100 FH | AMM 64-21-00, 6-8

Detailed check.

DI

No units are specified when the margin equals zero.

5.11.4 Example of how the margin is used



X is the limit value for performing the maintenance operation and Y is the margin value added to the limit value.

After using the first margin value (partially or completely), the next maintenance operation is to be performed again within the X+Y interval, that is to say before the next airworthiness limitation value.

6 OPERATION IN VERY COLD WEATHER CONDITIONS

When the outside air temperature is between -30°C (-22°F) and -40°C (-40°F), comply with the following restrictions:

- Application of correction factors to the operating hours of certain components.

  Example:

  Equipped pitch lever: 1 operating hour in very cold weather conditions = 13 FH.

- Operating limitation of a component:

  Example:

  A lead lag damper P/N is limited to -30°C (-22°F).

7 MAINTENANCE CODE (MC)

To make it easier to perform the maintenance operations, each maintenance operation included in section 04-20 is identified by one or more codes as listed below:

- LUBrication/SerViCing **(LUB/SVC)**

  This includes work such as routine lubrication and servicing, filling / topping-up of oils, fluids, liquids and checking of pressures.

- Visual Check **(VC)**

  Visual inspection, without removal of the physical condition of certain components such as oil levels, tire wear, accumulator pressure, etc.

- General VIsual check **(GVI)**

  A general visual check is a visual inspection, without removal, to detect and assess deterioration or incorrect operation of a component or assembly. This check may require access equipment, ladders or platforms, and inspection means, mirror, light or screwdriver. The doors and hatches are opened or removed in order to access the components.

- Detailed Inspection **(DI)**

  A detailed inspection is an inspection to detect and assess deterioration or incorrect operation of a component or assembly. This inspection may require access equipment, ladders, platforms and specific tools, and may require removal of the component or assembly. The doors and hatches are open or removed.

- Special Detailed Inspection **(SDI)**

  A special detailed inspection is an inspection to detect and assess deterioration or incorrect operation of a component or assembly. This inspection may require a specific process such as dye penetrant inspection, radiography, etc.

- Functional Test **(FT)**

  A functional test/check is a test which is performed to determine whether one or more functions of a system operate within stipulated limits. Normally this test is performed without the removal of components and using a maintenance tool.

- CLeaNing **(CLN)**

  To remove dirt and/or foreign bodies from a system or surface. Cleaning may require removal of the component, such as for a filter for example.

- DiScard **(DS)**

  A component is withdrawn from service at a specified limit. Discarding normally applies to parts such as cartridges, containers, cylinders, batteries, etc.

- ReStoration **(RS)**

  This work involves restoring a component to a specific standard. Restoration can vary from cleaning or replacing detail parts to a complete overhaul.

- Readjustment of the TorQue loading (Retorque) **(RTQ)**

  Readjustment is a maintenance procedure which consists in applying the tightening torque to an assembly, without checking its value.

- Torque CheckK **(TCK)**

  The aim of the torque check procedure is to check that the tightening torque of the assembly is not below the specified minimum value.

- WeiGHing **(WGH)**

The aim is to remove the equipment in order to weigh it using scales, to check its integrity and to make sure that there are no losses.

- New Proof Test **(NPT)**

  The aim is to perform a proof pressure test to check that there are no leaks.

- DRaiNing **(DRN)**

  Draining / replenishing consists in replacing all the fluid, liquid, oil or fuel in a component.

- Ground Run **(GR)**

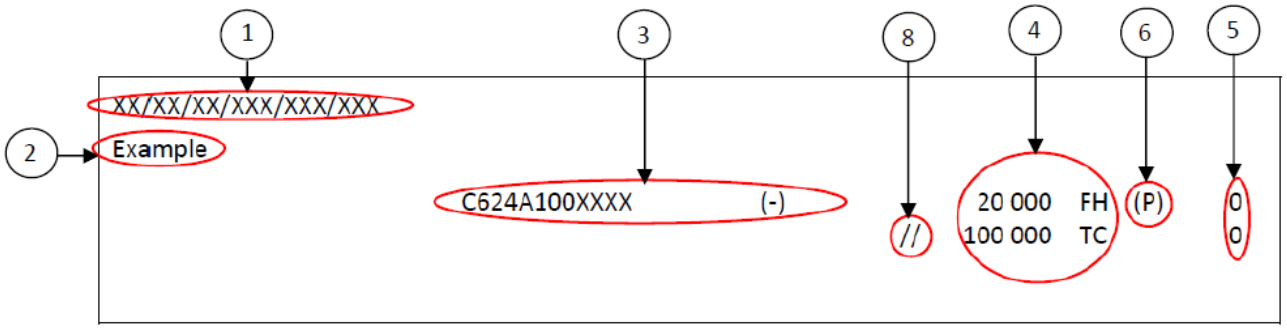
  A ground run consists in checking certain parameters of a component or a function with the rotor spinning or dynamically after operation.

- RiggInG **(RIG)**

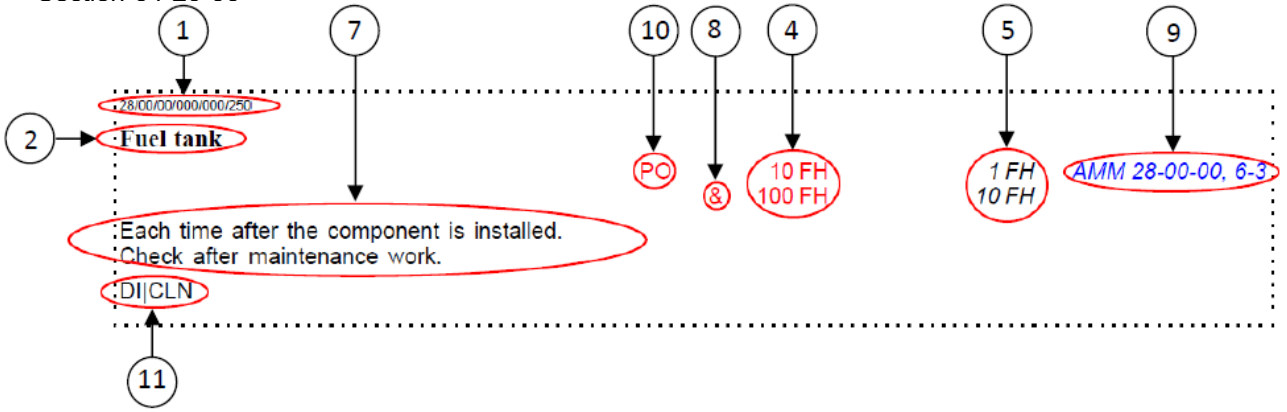
  Rigging consists in adjusting a control channel or a set of components which must have an operating range in operation.

8 CONTENT OF A TASK

Section 04-10-00



Section 04-20-00



- 1 - task number (refer to the DU "Structure of the ALS" in § 2.2)
- 2 - designation
- 3 - equipment manufacturer's part number and Airbus Helicopters's management number (refer to § 4)
- 4 - limit value(s) and unit(s) (refer to § 5.1 / 5.2 / 5.3)
- 5 - margin value(s) and unit(s) (refer to § 5.11)
- 6 - P: provisional limitation for the service life limit in flight hours (refer to § 5.7)

- 7 - comments if necessary
- 8 - //: or - &: and (refer to § 5.9)
- 9 - documentation reference AMM, CMM ...
- 10 - PO: Perform Once operation (refer to § 5.8)
- 11 - maintenance code (refer to § 7)

End of the Document Unit

SB INCORPORATED

Airbus Helicopters is required to issue Service Bulletins (ASB/SB) subsequent to new events (incidents, etc).

The information contained in the SBs is incorporated in the ALS if, and only if:

The SB contains new periodic checks, or modifies the existing ALS limitations and its incorporation is approved by EASA.

The table below specifies for each SB incorporated:

- the number of the SB and its revision number,
- the subject of the SB,
- the ATA chapter/section concerned,
- the number of the associated EASA Airworthiness Directive (AD),
- the date on which the SB is incorporated in the ALS.

SB N°	Subject	ATA	AD number	Incorporation date
04A002	Flight restriction for engine-to-MGB coupling tube assembly and engine support fitting	63-10	2000-058-003 (A)	—
05A003 R3	Check of the engine-to-MGB coupling tube coupling assembly	63-10	2003-325 R1 (A)	—
04A006	Non airworthiness declaration for a few spherical bearings P/N 7050A3622036	62-21	F-2006-040 (A)	—
05A012 R1	Check for crack in the main rotor hub	62-21	2010–0026–E	—

End of the Document Unit

04-10-00

D.U.	TITLE
ATA 53	FUSELAGE
ATA 62	MAIN ROTOR
ATA 63	MAIN ROTOR DRIVE
ATA 64	TAIL ROTOR
ATA 65	TAIL ROTOR DRIVE
ATA 67	ROTORS FLIGHT CONTROLS

Task Number Description/Remarks	MP/N (PN)		Type of limit: SLL	*Margin*

53 - FUSELAGE

53-30 MAIN FUSELAGE

53/30/00/000/000/050 **LH counter-torque fitting**	C533C3207101	(-)	82000 TC	*0*
53/30/00/000/000/100 **RH counter-torque fitting**	C533C3206101	(-)	82000 TC	*0*
53/30/00/000/000/150 **LH MGB attachment bar fitting**	C533C3204103	(-)	20000 FH	*0*
53/30/00/000/000/200 **RH MGB attachment bar fitting**	C533C3203103	(-)	20000 FH	*0*
53/30/00/000/000/250 **Rear MGB attachment bar fitting**	C533C3205102	(-)	20000 FH	*0*

62 - MAIN ROTOR

62-11 MAIN ROTOR BLADES

62/11/00/000/000/050 **Main rotor blade**	C621A1006101 C621A1006102 C621A1006103	(-) (-) (-)	20000 FH	*0*

62-21 MAIN ROTOR HUB

62/21/00/000/000/050 **Equipped main hub**	C622A1002103 C622A1002104	(-) (-)	6400 FH (P)	*0*
62/21/00/000/000/060 **Equipped main hub**	C622A1002105	(-)	10950 FH	*0*
62/21/00/000/000/100 **Equipped scissors drive**	C622A1003101 C622A1003102 C622A1003103	(-) (-) (-)	20000 FH	*0*

Task Number Description/Remarks	MP/N (PN)		Type of limit: SLL	Margin
62/21/00/000/000/150 **Upper adaptor fitting**	C622A1007102	(-)	3500 FH	0
Very-cold-weather correction factor = 9.				
62/21/00/000/000/155 **Upper adaptor fitting**	C622A1007104	(-)	4100 FH	0
Very-cold-weather correction factor = 9.				
62/21/00/000/000/200 **Lower adaptor fitting**	C622A1006102	(-)	3500 FH	0
Very-cold-weather correction factor = 9.				
62/21/00/000/000/205 **Lower adaptor fitting**	C622A1006104	(-)	5200 FH	0
Very-cold-weather correction factor = 9.				
62/21/00/000/000/210 **Upper adaptor fitting**	C622A1007105	(-)	20000 FH	0
Very-cold-weather correction factor = 18.				
62/21/00/000/000/220 **Lower adaptor fitting**	C622A1006105	(-)	20000 FH	0
Very-cold-weather correction factor = 18.				
62/21/00/000/000/250 **Spherical bearing - Metallic part**	579-108-00	(7050A3622022)	7500 FH (P)	0
62/21/00/000/000/255 **Spherical bearing - Metallic part**	LB4-1226-1-1	(7050A3622036)	7500 FH (P)	0
The spherical bearings with serial numbers LK0130, LK0142, LK0155 and LK0158 are prohibited for flight.				
62/21/00/000/000/300 **Spherical bearing special screw**	7050A3622037	(-)	9300 FH (P)	0
62/21/00/000/000/350 **Upper sleeve flange**	C622A2003102 C622A2003103	(-) (-)	3600 FH	0

Task Number Description/Remarks	MP/N (PN)		Type of limit: SLL	Margin
62/21/00/000/000/355 **Upper sleeve flange**	C622A2008101	(-)	11000 FH (P)	0
62/21/00/000/000/400 **Lower sleeve flange**	C622A2004102 C622A2004103	(-) (-)	3600 FH	0
62/21/00/000/000/405 **Lower sleeve flange**	C622A2009101	(-)	11000 FH (P)	0
62/21/00/000/000/450 **Equipped pitch lever**	C622A2002102 C622A2002103	(-) (-)	11400 FH	0
Very-cold-weather correction factor = 13.				
62/21/00/000/000/500 **Lead lag damper - Metallic part**	F4T4069-02	(7050A3622030)	1700 FH	0
Operation limited to -30°C (-22°F).				
62/21/00/000/000/510 **Lead lag damper - Metallic part**	E4069F12 E4069F22	(7050A3622044) (7050A3622059)	20000 FH	0
62/21/00/000/000/550 **Blade pin**	C622A2006601 C622A2006602	(-) (-)	9800 FH (P)	0
62/21/00/000/000/600 **Adaptator end**	1211023P 1211024P	(7050A3622023) (7050A3622024)	20000 FH	0
62/21/01/000/000/050 **Thrust screw**	7050A3622038 C622A1042201 C622A1043201	(-) (-) (-)	13900 FH (P)	0

Task Number Description/Remarks	MP/N (PN)		Type of limit: SLL	*Margin*
62-31 SWASHPLATE ASSEMBLY				
62/31/00/000/000/000 **Equipped non-rotating star**	C623A1001102 C623A1001103 C623A1001104 C623A1001105	(-) (-) (-) (-)	20000 FH	*0*
62/31/00/000/000/010 **Equipped rotating star**	C623A1002102 C623A1002103 C623A1002104	(-) (-) (-)	20000 FH	*0*
62-32 FLARED HOUSING / SWASHPLATES / HUB COUPLINGS				
62/32/00/000/000/000 **Equipped scissor link**	C623A2005101 C623A2005102 C623A2005103	(-) (-) (-)	20000 FH	*0*
62/32/00/000/000/010 **Equipped diapason scissors link**	C623A2004101 C623A2004102	(-) (-)	20000 FH	*0*
62/32/00/000/000/020 **Equipped blade angle rod**	C623A3001102	(-)	20000 FH	*0*
63 - MAIN ROTOR DRIVE				
63-11 MGB / ENGINE COUPLING				
63/11/00/000/000/000 **Shaft connecting**	C631A1102601 C631A1102602	(-) (-)	89000 TC	*0*
63/11/00/000/000/010 **Arm assy**	C631A1101101	(-)	20000 FH	*0*
Aircraft POST SB 71-003 or 71-005.				

Task Number Description/Remarks	MP/N (PN)		Type of limit: SLL	Margin
63-21 MGB EPICYCLIC MODULE				
63/21/00/000/000/050 **Main rotor mast**				
	C632A1110102 C632A1110103 C632A1110104 C632A1110105 C632A1110106 C632A1110107	(-) (-) (-) (-) (-) (-)	78000 TC (P)	*0*
63/21/00/000/000/100 **Tapered case**				
	C632A1004103 C632A1111101 C632A1113101	(-) (-) (-)	20000 FH	*0*
63/21/00/000/000/150 **Ring gear fixed**				
	C632A1102601 C632A1102602	(-) (-)	20000 FH	*0*
63/21/00/000/000/200 **Planet gear unequipped**				
	C632A1103601 C632A1103602	(-) (-)	20000 FH	*0*
Mounted in planet gear assy MP/N C632A1103101 (SNR bearing) and in planet gear assy MP/N C632A1109101 (SKF bearing).				
63-22 MGB MAIN MODULE				
63/22/00/000/000/050 **Bi-bevel wheel**				
	C632A2102603 C632A2102604 C632A2102605 C632A2175601	(-) (-) (-) (-)	20000 FH	*0*
63/22/00/000/000/100 **Lower housing**				
	C632A2104102 C632A2115101	(-) (-)	39000 TC	*0*
63/22/00/000/000/110 **Lower housing**				
	C632A2115102 C632A2117101	(-) (-)	70000 TC (P)	*0*
63/22/00/000/000/150 **Main housing**				
	C632A2105102 C632A2116101	(-) (-)	39000 TC	*0*

Task Number Description/Remarks	MP/N (PN)		Type of limit: SLL	Margin
63/22/00/000/000/160 **Main housing**				
	C632A2116102 C632A2118101	(-) (-)	70000 TC (P)	0
63/22/00/000/000/200 **Sun gear**				
	C632A2106601 C632A2106602	(-) (-)	20000 FH	0
63/22/00/000/000/250 **Box output**				
	C632A2114101 C632A2114102 C632A2114103	(-) (-) (-)	20000 FH	0
63/22/00/000/000/300 **Input bevel gear**				
	C632A2110602 C632A2110603 C632A2176601 C632A2176602	(-) (-) (-) (-)	20000 FH	0
63/22/00/000/000/350 **Shaft free wheel**				
	C632A2111601	(-)	20000 FH	0
63/22/00/000/000/400 **Input flange**				
	C632A2112601 C632A2112602	(-) (-)	120000 TC	0
63/22/00/000/000/450 **Output pinion**				
	C632A2107601 C632A2107602	(-) (-)	8900 FH (P)	0
63/22/00/000/000/500 **Output wheel**				
	C632A2108601 C632A2108602 C632A2108603	(-) (-) (-)	9500 FH	0
63/22/00/000/000/550 **Flange output**				
	C632A2045201 C632A2158201	(-) (-)	20000 FH	0
63/22/00/000/000/750 **Input box**				
	C632A2181101 C632A2181102	(-) (-)	20000 FH	0

Task Number Description/Remarks	MP/N (PN)		Type of limit: SLL	*Margin*
63-32 MGB GEARBOX SUSPENSION				
63/32/00/000/000/000 **MGB rear bar**	B216100-015	(7050A3633015)	20000 FH	*0*
63/32/00/000/000/010 **MGB forward bar**	B216100-016	(7050A3633016)	20000 FH	*0*
64 - TAIL ROTOR				
64-21 TAIL ROTOR HUB				
64/21/00/000/000/010 **Tail rotor hub**	C642A0100103	(-)	9500 FH	*0*
64/21/00/000/000/020 **Equipped blade**	C642A0300102 C642A0300103 C642A0300104 C642A0300105	(-) (-) (-) (-)	8500 FH	*0*
64/21/00/000/000/030 **Stopped pin of torsion star**	7050A3642044	(-)	20000 FH	*0*
65 - TAIL ROTOR DRIVE				
65-11 TAIL ROTOR DRIVE SHAFT				
65/11/00/000/000/000 **Splined flange**	C651A1101201	(-)	20000 FH	*0*
65/11/00/000/000/010 **Rear shaft assy**	C651A3102051 C651A3102052 C651A3102053	(-) (-) (-)	20000 FH	*0*
65/11/00/000/000/020 **Forward shaft assy**	C651A3101101 C651A3101102	(-) (-)	20000 FH	*0*

Task Number Description/Remarks	MP/N (PN)		Type of limit: SLL	*Margin*
65-21 TAIL GEARBOX				
65/21/00/000/000/000 **Housing assy**				
	C652A1104101 C652A1108101	(-) (-)	20000 FH	*0*
65/21/00/000/000/010 **Input flange**				
	C652A1005301	(-)	20000 FH	*0*
65/21/00/000/000/020 **Bevel wheel**				
	C652A1102601 C652A1102602	(-) (-)	20000 FH	*0*
65/21/00/000/000/030 **Bevel gear**				
	C652A1103601 C652A1103602 C652A1103603	(-) (-) (-)	20000 FH	*0*
67 - ROTORS FLIGHT CONTROLS				
67-31 SERVOCONTROLS				
67/31/00/000/000/050 **Servocontrol**				
	SC5091 SC5091-1	(7050A4673005) (7050A4673006)	20000 FH	*0*

End of the Document Unit

04-20-00

D.U.	TITLE
ATA 62	MAIN ROTOR
ATA 63	MAIN ROTOR DRIVE
ATA 64	TAIL ROTOR

Task Number Description/ Remarks	MP/N (PN)	Type of limit: CHK	Margin	Documentation

62 - MAIN ROTOR

62-21 MAIN ROTOR HUB

62/21/00/000/000/700 **Spherical bearing - Elastomer part** 579-108-00 (7050A3622022) LB4-1226-1-1 (7050A3622036) Check. GVI		15 FH	0	AMM 05-30-00, 6-1
62/21/00/000/000/750 **Lead lag damper - Elastomer part** F4T4069-02 (7050A3622030) Operation limited to -30°C (-22°F). Check. GVI		15 FH	0	AMM 05-30-00, 6-1
62/21/00/000/000/760 **Lead lag damper - Elastomer part** E4069F12 (7050A3622044) E4069F22 (7050A3622059) Check. GVI		15 FH	0	AMM 05-30-00, 6-1
62/21/00/000/000/860 **Rotor hub - Damper attachment area** C622A1002103 (-) C622A1002104 (-) C622A1002105 (-) Visual check of absence of crack. VC		15 FH	0	AMM 62-21-00, 6-1

63 - MAIN ROTOR DRIVE

63-11 MGB / ENGINE COUPLING

63/11/00/000/000/040 **Arm assy** C631A1101101 (-) Aircraft POST SB 71-003 and PRE 71-005. Detailed check. DI		25 FH	0	AMM 63-11-00, 6-1

Task Number Description/ Remarks	MP/N (PN)	Type of limit: CHK	*Margin*	Documentation

64 - TAIL ROTOR

64-21 TAIL ROTOR HUB

64/21/00/000/000/040

Torsion star

C642A0402101 C642A0402102	(-) (-)	1000 FH	*100 FH*	*AMM 64-21-00, 6-8*

Detailed check.

DI

End of the Document Unit