



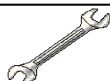
Civil version(s): B, B1

ALERT SERVICE BULLETIN

SUBJECT: MAIN ROTOR DRIVE - Main Gear Box (MGB)

**Periodic check of MGB magnetic plugs,
and replacement of MGB planet gears**

ATA: 63

For the attention of

Revision No.	Date of issue
Revision 0	2017-06-13

Summary:

The purpose of this ALERT SERVICE BULLETIN is to:

- 1) Perform a periodic check of the manual and electric magnetic plugs of the MGB after each last flight of the day, without exceeding 10 flying hours.
- 2) Identify the part numbers (P/N) of MGB planet gear assemblies.
 - For planet gear assemblies of Type Y: replace the planet gears within 50 flying hours, without exceeding June 30, 2019.
 - For planet gear assemblies of Type Z: leave as is.

Compliance:

Airbus Helicopters renders compliance with this ALERT SERVICE BULLETIN mandatory.

1. PLANNING INFORMATION

1.A. EFFECTIVITY

1.A.1. Helicopters/installed equipment or parts

On all MGB part numbers.

1.A.2. Non-installed equipment or parts

On all MGB part numbers.

1.B. ASSOCIATED REQUIREMENTS

Not applicable.

1.C. REASON

Following the EC225 accident off Norway in April 2016, and Airbus Helicopters subsequently working closely with the Norwegian Accident Investigation Board and other authorities, a cracked outer race in a second stage planet gear was identified as the cause of the helicopter's mechanical failure.

During the investigation into the 2016 EC225 accident, one of two types of planet gear was identified as being susceptible to developing cracking because of higher roller contact pressures generated in the Main Gearbox. As part of the protective measures developed and approved with EASA to ensure safe operation of the EC225/AS332 L2 fleet, this type of planet gear has been permanently removed from service.

In pursuit of its commitment to ensuring total safety across all its products, Airbus Helicopters has reviewed its entire range of helicopters in regard to this particular issue.

As a result, Airbus Helicopters has decided to implement precautionary measures on the Dauphin family (AS365/AS565/EC155) to improve the reliability of the Dauphin Main Gearbox.

This additional safety measure is made as a precaution notwithstanding that as of today, the Dauphin fleet has logged around 6.5 million flight hours, with no accident or serious incident related to the Main Gearbox planet gears.

Three types of planet gears from three different suppliers, each with different characteristics, are currently in service across the Dauphin fleet. Among those, two types have been identified as having characteristics comparable to the planet gear removed from service on the EC225/AS332 L2 fleet.

After verification, it appears that a large proportion of the in-service fleet is not equipped with the types which are to be removed from service.

Airbus Helicopters stresses that this retrofit is a precautionary measure, which is entirely unrelated to any accident involving a Dauphin helicopter, and is intended to enhance the safety of the helicopters concerned.

1.D. DESCRIPTION

Compliance with this ALERT SERVICE BULLETIN consists in:

- periodically checking the MGB magnetic plugs after each last flight of the day, without exceeding 10 flying hours,
- identifying MGB planet gear assemblies of Type Y or Z (See the list in APPENDICES 4.A. to 4.C.),
- replacing the MGBs equipped with at least one planet gear assembly of Type Y within 50 flying hours, without exceeding June 30, 2019,
- leave MGBs equipped with five planet gear assemblies of Type Z as they are.

1.E. COMPLIANCE

1.E.1. Compliance at H/C manufacturer level

Comply with paragraph 1.E.2.

1.E.2. Compliance in service

Magnetic plugs must be checked by the operator.

Planet gears must be replaced by a maintenance repair center approved by Airbus Helicopters (See [paragraph 2.D.](#)).

1.E.2.a. Helicopters/installed equipment or parts:

- 1) Upon receipt of Revision 0 of this ALERT SERVICE BULLETIN:
 - . Check the Log Card (FM) of the MGB to identify the Part Numbers of the five installed planet gear assemblies (See [Appendices 4.A.](#) to 4.B.).
 - .. If the Log Card gives the Part Numbers of the bare planet gears specified in [Appendix 4.C.1.](#), refer to [Appendix 4.C.2.](#) to identify the Part Number of the planet gear assembly of Type Y or Z from its Serial Number (S/N).
 - .. If the Part Number of at least one planet gear assembly cannot be identified from [Appendices 4.A.](#) to 4.C., contact Airbus Helicopters at TechnicalSupport.Helicopters@airbus.com, or the approved repair center which delivered the MGB, to obtain information on the installed planet gear assemblies.
 - . For helicopters equipped with an MGB which includes at least one planet gear assembly of **Type Y**:
 - .. Remove the MGB to replace the planet gear assemblies as per [paragraph 3.B.1.](#) within **50 flying hours** following the issue of this ALERT SERVICE BULLETIN Revision 0, without exceeding June 30, 2019.
 - .. It is prohibited to install MGBs equipped with at least one planet gear assembly of **Type Y**.
 - . For helicopters equipped with a MGB which includes five planet gear assemblies of **Type Z**:
 - .. Leave as is.
- 2) Upon receipt of Revision 0 of this ALERT SERVICE BULLETIN:
 - Comply with [paragraph 3.B.2.](#) (Check of MGB magnetic plugs) after each last flight of the day, without exceeding 10 flying hours.
- 3) Complete the Information Sheet in [Appendix 4.E.](#) and send it to Airbus Helicopters at the following address: TechnicalSupport.Helicopters@airbus.com
- 4) Helicopters equipped with a MGB which includes at least one planet gear assembly of Type Y will be unfit for flight from July 01, 2019.

1.E.2.b. Non-installed equipment or parts:

- 1) Before installation, refer to the MGB Log Card to identify the Part Numbers of the five installed planet gear assemblies (See [Appendices 4.A.](#) to 4.B).
 - . If the Log Card gives the Part Numbers of the bare planet gears specified in [Appendix 4.C.1.](#), refer to [Appendix 4.C.2.](#) to identify the Part Number of the planet gear assembly of Type Y or Z from its Serial Number (S/N).
 - . If the Part Number of at least one planet gear assembly cannot be identified from [Appendices 4.A.](#) to 4.C., contact Airbus Helicopters at TechnicalSupport.Helicopters@airbus.com, or the approved repair center which delivered the MGB, to obtain information on the installed planet gear assemblies.
 - .. Pending information, do not install the MGB.
 - . MGB equipped with at least one planet gear assembly of **Type Y**:
 - .. Do not install the MGB.
 - .. Refer to [paragraph 2.D.](#) for the material return conditions.
 - . MGB equipped with five planet gear assemblies of **Type Z**:
 - .. MGB installation is authorized.
- 2) Complete the Information Sheet in [Appendix 4.E.](#) and send it to Airbus Helicopters at the following address: support.technical-dyncomp.ah@airbus.com

1.F. APPROVALApproval of modifications:

Not applicable.

Approval of this document:

The technical information contained in this ALERT SERVICE BULLETIN Revision 0 was approved on June 13, 2017 under the authority of EASA Design Organization Approval No. 21J.700 for civil version helicopters subject to an Airworthiness Certificate.

1.G. MANPOWER

For compliance with this ALERT SERVICE BULLETIN, Airbus Helicopters recommends the following personnel qualifications:

To check the magnetic plugs (paragraph 3.B.2.):

Qualification: 1 Mechanical Engineering Technician or 1 Pilot with the appropriate training and certification for compliance with paragraph 3.B.2.

To replace the MGB (paragraph 3.B.1.):

Qualification: 2 Mechanical Engineering Technicians.



The time for the operations is given for information purposes, for a standard configuration.

Time for the operations: - approximately 40 hours for both Mechanical Engineering Technicians,
- approximately 2 hours for the Pilot or the Mechanical Engineering Technician.



The estimated helicopter downtime is approximately two days (excluding the time to analyze the particles found at the magnetic plugs) for MGB replacement.

1.H. WEIGHT AND BALANCE

Not applicable.

1.I. POWER CONSUMPTION

Not applicable.

1.J. SOFTWARE UPGRADES/UPDATES

Not applicable.

1.K. REFERENCES

The documents required for compliance with this ALERT SERVICE BULLETIN are as follows:

Aircraft Maintenance Manual (AMM):

Task: 05-50-01-211: Transmission Gearboxes - Steps to do when you Find Particles on the Magnetic Plugs
and/or on the Oil Filter of the Gear Box

Task: 60-00-00-911: Standard Practices - Rotor - General Safety Instructions - Power Transmission Systems

Task: 63-20-00-061: Main Gearbox (MGB) - General - Removal / Installation - Main Gearbox

Task: 63-40-02-211: Metal chip Detectors - Inspection - MGB Electrical Magnetic Plug

Standard Practices Manual (MTC):

Work Card: 20-08-01-601: Periodical monitoring of lubricating oil checking elements - Monitoring of
lubricating oil contamination on mechanical assemblies equipped with magnetic
plugs

SIN No. 3095-S-63

1.L. OTHER AFFECTED PUBLICATIONS

Not applicable.

1.M. PART INTERCHANGEABILITY OR MIXABILITY

Not applicable.

2. EQUIPMENT OR PARTS INFORMATION

2.A. EQUIPMENT OR PARTS: PRICE - AVAILABILITY - PROCUREMENT

For any information concerning the modification kits and/or components or assistance, contact the Sales and Customer Relations Department.

Order as required from:

Airbus Helicopters
Etablissement de Marignane
Direction Ventes et Relations Client
13725 MARIGNANE CEDEX
FRANCE

NOTE 1

On the purchase order, please specify the mode of transport, the destination and the serial numbers of the helicopters to be modified.

NOTE 2

*For ALERT SERVICE BULLETINS, order by:
Telex: HELICOP 410 969F
Fax: +33 (0)4 42 85 99 96.*

2.B. LOGISTIC INFORMATION

Not applicable.

2.C. EQUIPMENT OR PARTS REQUIRED PER HELICOPTER/COMPONENT

Kits to be ordered for one helicopter or one assembly:

For MGB identification and replacement, refer to the Illustrated Parts Catalog (IPC).

Consumables to be ordered separately:

As per Work Cards and Tasks mentioned in this ALERT SERVICE BULLETIN.

The consumables can be ordered separately from KLX AEROSPACE SOLUTIONS.

Website: <https://www.klxaerospace.com/klxaero/>

Telephone: +1.305.925.2600

AOG: +1.305.471.8888

2.D. EQUIPMENT OR PARTS TO BE RETURNED

The retrofit of MGB planet gears is a depot level maintenance operation that can only be performed by Airbus Helicopters or Airbus Helicopters approved repair centers.

A retrofit solution will be proposed to you, based on the information you sent us in accordance with [Appendix 4.E.](#)

The practical procedures for the helicopters concerned by the retrofit will be provided to each customer.

Specific commercial conditions will be proposed to process this retrofit.

3. ACCOMPLISHMENT INSTRUCTIONS

3.A. GENERAL

Read and comply with the general mechanical instructions as per AMM Task 60-00-00-911.

3.B. WORK STEPS

3.B.1. Replacement of MGB planet gears

- Remove the MGB as per AMM Task 63-20-00-061.

NOTE 1

REMINDER: When the main rotor mast is removed, blanks must be installed immediately to prevent foreign matter ingress.

Furthermore, when an MGB is shipped or stored, blanks must be installed immediately to prevent the foreign matter ingress.

- Refer to the procedure described in paragraph 2.D. for the material return conditions.
- If the MGB is not blanked after the rotor mast is removed:
 - . Before installing the rotor mast, visually check that there is no foreign object in the MGB.
- Install an airworthy MGB as per AMM Task 63-20-00-061.

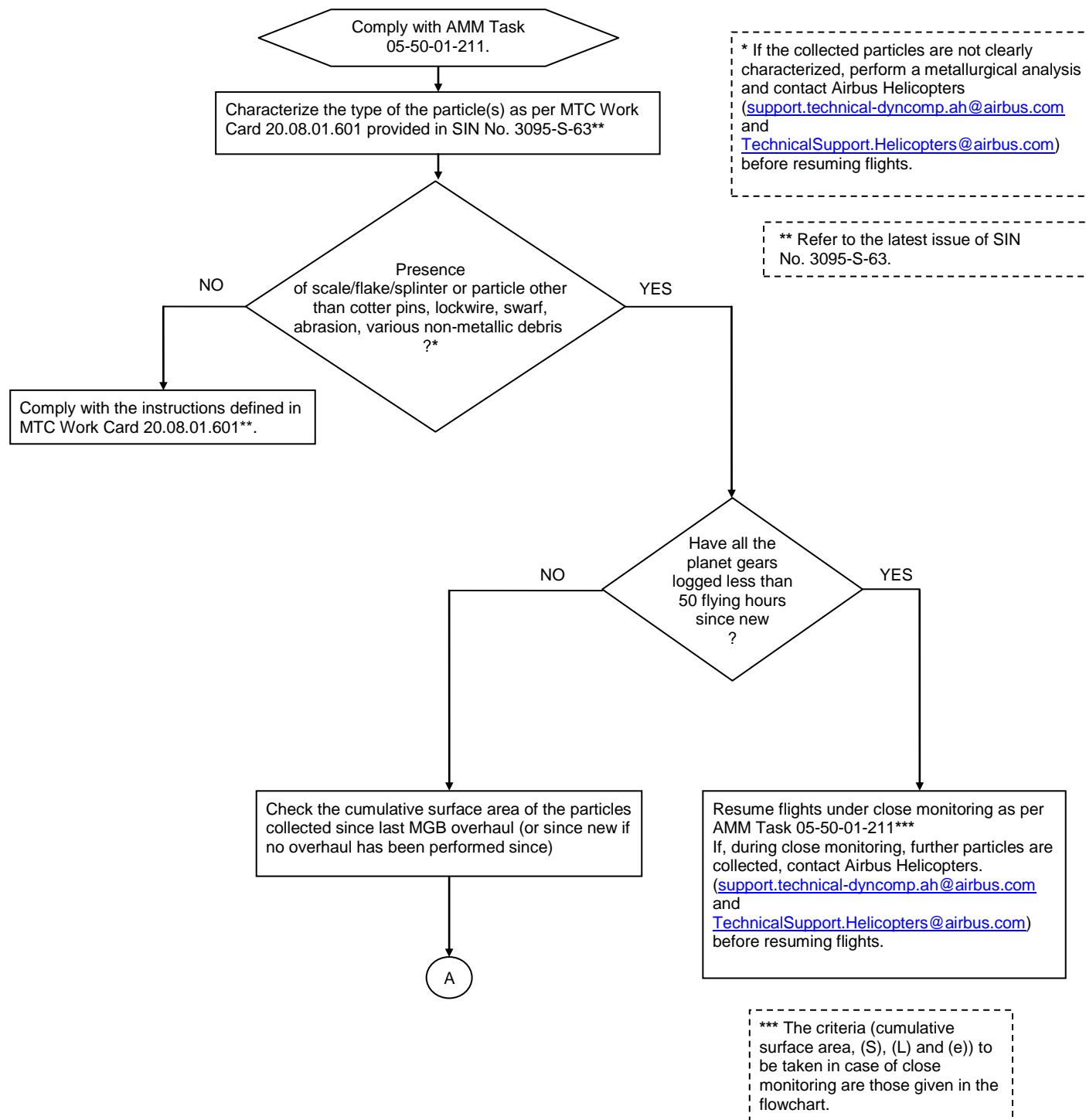
NOTE 2

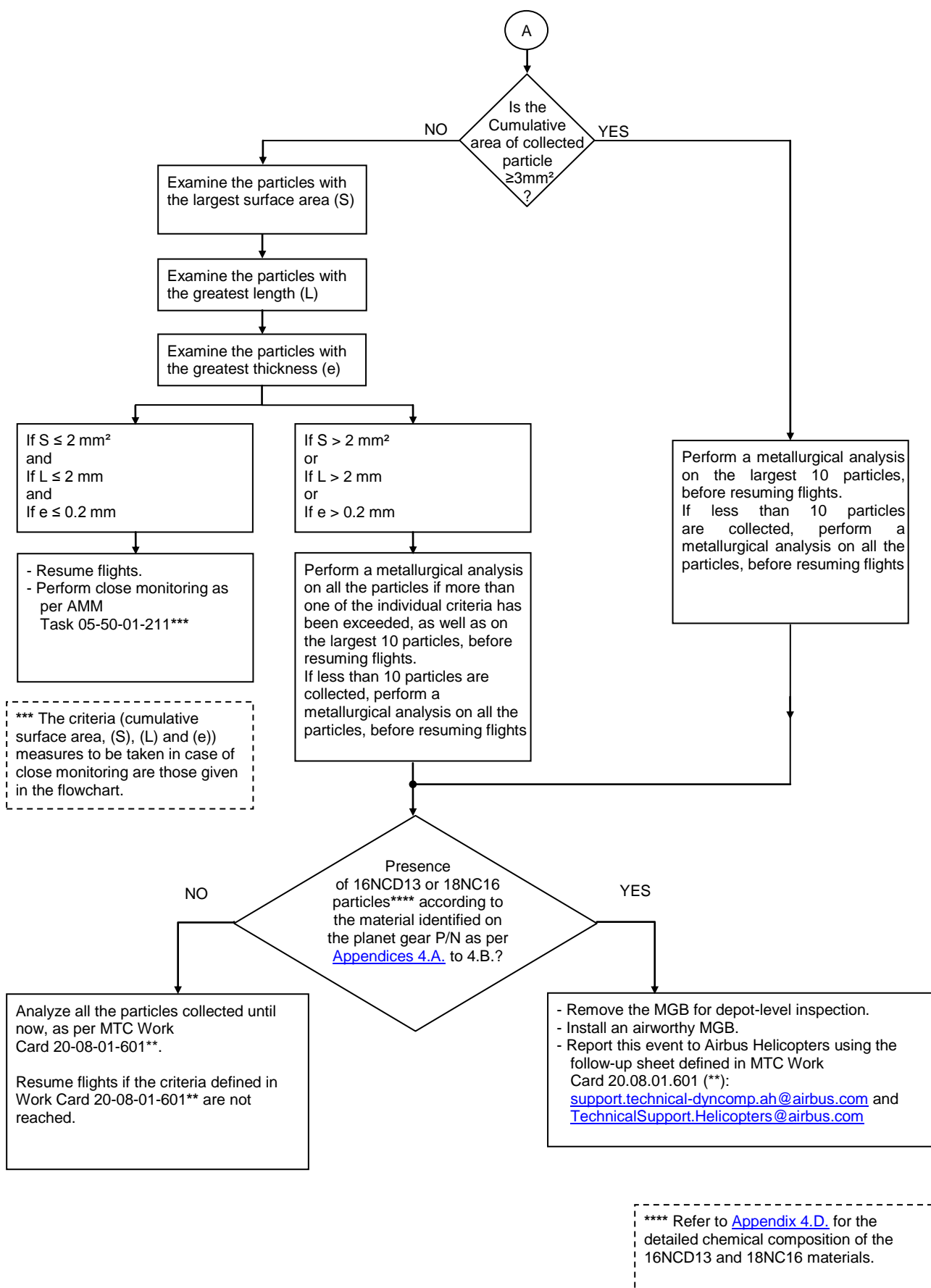
An airworthy MGB is an MGB complying with paragraph 1.E.2.b.

3.B.2. Check of MGB magnetic plugs

Check that there are no particles on the two magnetic plugs at the lower part of the MGB, as per AMM Task 63-40-02-211.

- a) If there are no particles:
 - Install the magnetic plug and resume flights.
- b) If there are particles:
 - Refer to the following flowchart.





3.C. COMPLIANCE CONFIRMATION

Compliance with this document:

Record compliance with this ALERT SERVICE BULLETIN, with its revision number, on the Log Card (FM) of the MGB.

3.D. OPERATING AND MAINTENANCE INSTRUCTIONS

Not applicable.

4. APPENDIX**4.A. APPENDIX: Part Numbers of planet gear assemblies of type Y**

P/N of planet gear assemblies	Material
365A32 9013.00	16NCD13

4.B. APPENDIX: Part Numbers of planet gear assemblies of type Z

P/N of planet gear assemblies	Material
365A32 9011.00	16NCD13

4.C. APPENDIX: List of bare planet gears**4.C.1. Part Numbers (P/N) of bare planet gears**

P/N of bare planet gears	Type	Material
365A32 7023.21	Type Y or Z	16NCD13

4.C.2. Serial Numbers (S/N) of bare planet gears

S/N	Type	S/N	Type	S/N	Type	S/N	Type
FAC65782	Type Y	FAF15523	Type Z	FAFG9951	Type Z	FAG62722	Type Z
FAC66681	Type Y	FAF15524	Type Z	FAFG9956	Type Z	FAG62726	Type Z
FAC66682	Type Y	FAF15532	Type Z	FAFG9960	Type Z	FAG62734	Type Z
FAC66684	Type Y	FAF15533	Type Z	FAFG9962	Type Z	FAG62742	Type Z
FAC66685	Type Y	FAF15537	Type Z	FAFG9965	Type Z	FAG62749	Type Z
FAFN7954	Type Y	FAF15539	Type Z	FAFG9967	Type Z	FAG87081	Type Z
FAH34325	Type Y	FAF15541	Type Z	FAFG9969	Type Z	FAG87085	Type Z
FAH34326	Type Y	FAF66968	Type Z	FAFM1279	Type Z	FAG87088	Type Z
FAH34330	Type Y	FAF66977	Type Z	FAFM1296	Type Z	FAG87089	Type Z
FAH34344	Type Y	FAF66978	Type Z	FAFM1300	Type Z	FAG87091	Type Z
FAH34347	Type Y	FAF66983	Type Z	FAFM1301	Type Z	FAG88708	Type Z
FAG99718	Type Y	FAF66985	Type Z	FAFM1303	Type Z	FAG88709	Type Z
FAGA0754	Type Y	FAF66997	Type Z	FAFM1310	Type Z	FAG88719	Type Z
FAGA3511	Type Y	FAF67003	Type Z	FAFM9997	Type Z	FAG88721	Type Z
FAGA3513	Type Y	FAF73114	Type Z	FAFN2512	Type Z		
		FAF74685	Type Z	FAFN2518	Type Z		
FAE68785	Type Z	FAF74688	Type Z	FAFN2520	Type Z		
FAE93472	Type Z	FAF74690	Type Z	FAFN2521	Type Z		
FAE93479	Type Z	FAFA6602	Type Z	FAFN2523	Type Z		
FAE93483	Type Z	FAFA6615	Type Z	FAFN4182	Type Z		
FAE93484	Type Z	FAFC7858	Type Z	FAFN4183	Type Z		
FAE98451	Type Z	FAFC7861	Type Z	FAFN4189	Type Z		
FAE98452	Type Z	FAFE1572	Type Z	FAFN4190	Type Z		
FAE98458	Type Z	FAFE1573	Type Z	FAFN4198	Type Z		
FAE98459	Type Z	FAFE3852	Type Z	FAFN4202	Type Z		
FAE98461	Type Z	FAFE3853	Type Z	FAFN5174	Type Z		
FAE98467	Type Z	FAFE3875	Type Z	FAFN5180	Type Z		
FAE98468	Type Z	FAFE3876	Type Z	FAFN5182	Type Z		
FAE98469	Type Z	FAFE3887	Type Z	FAFN5189	Type Z		
FAE98479	Type Z	FAFE3888	Type Z	FAFW6918	Type Z		
FAER8541	Type Z	FAFF4420	Type Z	FAFW6920	Type Z		
FAET1628	Type Z	FAFF4426	Type Z	FAFX3404	Type Z		
FAET1633	Type Z	FAFG8125	Type Z	FAFX3405	Type Z		
FAET1634	Type Z	FAFG9937	Type Z	FAFX3407	Type Z		
FAET1635	Type Z	FAFG9939	Type Z	FAG20814	Type Z		
FAET1636	Type Z	FAFG9940	Type Z	FAG20818	Type Z		
FAEV6168	Type Z	FAFG9942	Type Z	FAG29760	Type Z		
FAEV6172	Type Z	FAFG9944	Type Z	FAG29764	Type Z		
FAEW7919	Type Z	FAFG9947	Type Z	FAG43080	Type Z		
FAF15522	Type Z	FAFG9948	Type Z	FAG44835	Type Z		

4.D. APPENDIX: Chemical composition of planet gears

Only the components identified in the table below must be taken into account during a metallurgical analysis.

For example, oxygen and carbon must be excluded from the analysis.

(*): The iron content is not used as an identification criterion but as the element used to balance the weight percentage values calculated. It must therefore be taken into account.

Other designations	Material	% weight	Si	S	V	Cr	Mn	Ni	Mo	Cu	Fe
SAE 9315MILS	16NCD13										
7393		Min	0.15	0	/	0.8	0.3	3	0.2	/	(*)
MILS 8690		Max	0.4	0.02		1.1	0.6	3.5	0.3		
Ø	18NC16	Min	0	0	/	0.8	0.3	3.75	/	/	(*)
		Max	0.35	0.015		1.1	0.6	4.25			

4.E. APPENDIX: Information sheet
Response Form for ALERT SERVICE BULLETIN
No. 05A034

Complete the form and send it to the indicated fax number or by e-mail or

<https://kneo.airbushelicopters.com/web/guest/asb-dolphin>

Airbus Helicopters - Etablissement de Marignane

Customer Support

 Fax: +33 (0)4 42 85 99 66 or e-mail: TechnicalSupport.Helicopters@airbus.com

Date:

Customer (Name):

Aircraft:

Type:

Version:

Serial Number:

Total Time Since New (TTSN):

Aircraft location:

Country:

Main base:

Mission (type):

Oil used:

Trademark:

Reference (name):

Main gearbox identification:

P/N:

Serial number:

Time Since Overhaul (TSO):

AMS 0763C52 embodied (Yes or No):

Planet gear identification:

Planet gear	No. 1	No. 2	No. 3	No. 4	No. 5
Part Number					
Serial Number					
Total Time Since New (TTSN)					

Attach a copy of the MGB Log Card (FM)
Remarks:

Date:

Signature:

Please make a copy of this page. The original form must remain in the ALERT SERVICE BULLETIN.