

AD PROPOSAL WORKSHEET

This worksheet contains informational tips and some examples for filling out the requested information. To view each tip and its corresponding example individually, place your pointer directly in front of the open bracket. To view all the tips and examples simultaneously, or to view them while you complete this worksheet, double-click on the bracketed information box or, from the menu bar, select VIEW and then COMMENTS.

PROPOSED ACTION: *[Place an X on the appropriate line.]*

<input type="checkbox"/> Emergency AD	<i>Is this action one of the following?</i>
<input checked="" type="checkbox"/> Final Rule; Request for Comments	<input type="checkbox"/> AD Supersedure (Docket No. _____)
<input type="checkbox"/> Notice of Proposed Rulemaking	<input type="checkbox"/> AD Revision (Docket No. _____)
<input type="checkbox"/> Other	<input type="checkbox"/> Supplemental NPRM (Docket No. _____)

(If one of the above is checked, complete Attachment A)

1. Applicability (Make/Model/Component/Part or Serial Number).

Eurocopter SA-365N, SA-365N1, AS-365N2, AS365N3, SA-366G1, EC155B, and EC155B1 helicopters with a main gear box base plate, P/N 366A32-1062-03 or P/N 366A32-1062-06 installed

2. Responsible Engineer:

Name/Branch (Office): Ed Cuevas/ASW112

Telephone: (817) 222-5355

Fax: (817) 222-5961

3. Directorate Project Officer:

Name/Title/Branch: Gary B. Roach/Aviation Safety Engineer/ASW-111

4. What will this AD require? What is the initial compliance? How often or at what intervals should those actions be accomplished?

On AS 365 N,N1 and SA 366 G1 aircraft:

If equipped with a MGB that has logged less than 9,900 cycles and has never been overhauled or repaired, comply with paragraph 2.B.1. of the referenced Eurocopter Alert Telex corresponding to the aircraft version, at the latest at 9,900 cycles, then every 15 flying hours thereafter.

If equipped with a MGB that has logged 9,900 cycles and more and has never been overhauled or repaired, comply with paragraph 2.B.1. of the referenced Alert Telex corresponding to the aircraft version, at the latest before the first flight of the day following receipt of this AD, then every 15 flight hours thereafter.

If equipped with a newly overhauled or newly repaired MGB, comply with paragraph 2.B.1. of the referenced Alert Telex corresponding to the aircraft version, at the latest before the first flight of the day following receipt of this AD, then every 15 flight hours thereafter.

On AS 365 N2 and N3 aircraft:

If equipped with a MGB that has logged less than 7,300 cycles and has never been overhauled or repaired, comply with paragraph 2.B.1. of the referenced Alert Telex corresponding to the aircraft version, at the latest at 7,300 cycles, then every 15 flight hours thereafter.

If equipped with a MGB that has logged 7,300 cycles and more and has never been overhauled or repaired, comply with paragraph 2.B.1. of the referenced Alert Telex corresponding to the aircraft version, at the latest before the first flight of the day following receipt of this AD, then every 15 flight hours thereafter.

If equipped with a newly overhauled or newly repaired MGB, comply with paragraph 2.B.1. of the referenced Alert Telex corresponding to the aircraft version, at the latest before the first flight of the day following receipt of this AD, then every 15 flight hours thereafter.

On EC 155 B and B1 aircraft:

If equipped with a MGB base plate that has logged less than 2,600 cycles, comply with paragraph 2.B.2. of the referenced Alert Telex corresponding to the aircraft version, at the latest at 2,600 cycles then before each first flight of the day, without exceeding 9 flight hours between inspections.

If equipped with a MGB base plate that has logged 2,600 cycles and more, comply with paragraph 2.B.2. of the referenced Alert Telex corresponding to the aircraft version, at the latest before the first flight of the day following receipt of this AD, without exceeding 9 flight hours, then before each first flight of the day, without exceeding 9 flight hours between inspections.

Installation of a MGB held as spare

If installing an MGB held as a spare, comply with the actions required by the above paragraphs.

5. List service information (if any) that pertains to the subject of this AD. Attach an original or photo ready copy of that service information to this worksheet.

Eurocopter Alert Telex Nos. 05.00.45, 05.29 and 05A005, dated February 5, 2004

6. Is Incorporation by Reference (IBR) necessary to accomplish the procedures in this AD? If yes, specify which paragraphs from the service bulletin to use.

Yes, § 2.B.1, §2.B.2. and §2.B.3 of Eurocopter Alert Telex Nos. 05.00.45, 05.29 and 05A005, dated February 5, 2004

7. If IBR is not necessary, write specific accomplishment instructions and, if necessary, attach photo ready drawings, diagrams, or tables needed to explain procedures or differences from the service instructions.

DNA

8. What are the terminating actions for the requirements of this AD?

No terminating action, only interim action

9. If this AD is considered interim action, is the manufacturer developing terminating action? What is the source of your information?

Terminating action being developed per the Alert Telex Nos. 05.00.45, 05.29 and 05A005, dated February 5, 2004

10. What is the unsafe condition AND its cause?

A crack was detected in the MGB base plate, very close to the attachment of one of the laminated pads, and runs to the inside of the MGB base plate and then on the MGB casing. This is the first time a crack has been discovered in this part and may also occur in other aircraft. The cause may be due to a design issue.

11. What is the end-level effect on the helicopter if the unsafe condition is not detected/corrected?

If the crack is not detected or corrected, in time, the growth of the crack may lead to the loss of the rotor torque-to-structure transfer function, i.e., failure of one of the MGB attachment points to the frame. This failure would result in severe vibration and the crack would allow leakage of transmission oil.

12. If this action relates to a non-U.S. product, has the foreign civil airworthiness authority (FCAA) issued a parallel AD? If not, explain. If yes, provide the following information and a copy of the MCAI:

FCAA AD Number: UF-2004-023(A) and F-2004-023, dated March 3, 2004

Date of issuance: February 6, 2004

13. What are the differences between the manufacturer's service information, other ADs (foreign or U.S.), and the requirements of this AD? For example, does the compliance time of this AD action differ from that recommended in the referenced service information? If so, explain these differences and the reasons for each.

No differences

14. If there is a reporting requirement in this AD, what office should receive the response?

No reporting requirement

15. If this action is related to an NTSB safety recommendation, attach a copy of that recommendation and the FAA response.

No NTSB safety recommendation

16. If replacement parts are **required**, are they available for all aircraft? Indicate your source for obtaining this information (name, organization, phone number).

No parts are required

17. Number of helicopters/products that will be affected? (Use numerical figures)

142.....Domestic

677.....Worldwide (including domestic)

18. For the economic analysis, answer the following questions. Be as specific as possible.

a. How many hours will it take to perform each action? List each required action separately (for example, give total hours for an inspection, then total hours for a modification, etc).

30 minutes to perform initial inspection, 15 minutes to perform each subsequent inspection.
4 hours to remove and replace the MGB if a crack is found on the base plate.

b. What is the total cost for each replacement part required for this AD? Has the manufacturer given any warranty considerations? If yes, where is that information stated? Will the warranty cover costs for parts, labor, or both?

Standard manufacturer’s warranty applies.
Cost to repair MGB with cracked base plate at repair station is approximately \$25,000

c. What is the cost of termination action, if any?

Terminating action is not available. This AD is only for interim action.

d. Does this AD require a one-time inspection or repetitive inspections? If repetitive, how many inspections do you anticipate per year? (If the inspections are based on hours TIS, assume 200 hours per year for Part 91 operators and 600 hours per year for commercial operators (133, 135, 137).

Repetitive inspections, anticipate 200 inspections per year per EC 155 helicopter (based on one inspection per operating day). All other models, 40 inspections per year per helicopter (based on 15 hr inspection intervals)

e. What rationale or assumptions were used for determining the cost impact?

Assume only one cracked MGB base plate is found.
Assume EC 155 helicopters operate 200 days per year.
Assume AS 365 N, N1 and SA 366 G1 helicopters have MGB that has logged 9,900 cycles or more
Assume AS 365 N2, N3 helicopters have MGB that has logged 7,300 cycles or more
Assume inspection performed with a 10X magnifying glass and dentist mirror (dye pen not required)

19. Should a special flight permit be permitted?

- Permitted
- Permitted with limitations (List the limitations.)
- Prohibited

20. If this is an Emergency AD, in general, how is the product utilized?

External Loads (Logging) Firefighting Other Law Enforcement
Offshore Support Agriculture
 Air Ambulance Airtaxi

21. Do you have reason to believe that this action would be considered "sensitive?" If yes, explain below.

No

22. Indicate Yes or No to the following questions:

 No Are other Directorates involved in any similar actions?

 No Does this action affect the Presidential fleet?

 No Does this action affect the FAA fleet?

 No Have the proposed procedures been verified (i.e., by MIDO, AEG, FSDO)?

 No Does this AD affect intrastate aviation in Alaska?

 If so, are regulatory distinctions appropriate to accommodate the extent to which Alaska is not served by transportation modes other than aviation?

23. Check each category that describes **the cause of the unsafe condition** addressed by this AD:

 X Design Problem Maintenance

 Unapproved Parts Other _____

 Quality Control Problem

24. If this is a QC problem, notify the MIDO. Indicate your point-of-contact, their phone number, and date of conversation, or include a copy of cc:Mail message regarding this action. List the enforcement status and EIR Number, if applicable.

Not a QC problem

AD Economic Evaluation

Docket No. Helicopter Model: AS 365 N, N1, N2, N3,
SA 366 G1, EC 155 B, B1

Number of Helicopters (U.S. Operators): 142 total (EC 155 helicopters: 7)

The Airworthiness Directive requires repetitive inspections of the MGB base plate for cracks at 15 hour intervals for the AS 365 and SA 366 helicopters and before the first flight of the day for EC 155 helicopters.

Costs:

Parts per Helicopter	\$	0.0
Labor per EC 155 Helicopter (50.25 work hours x \$65/hour)	\$	3,266.25
Labor per helicopter (all other models) (10.25 work hours x \$65/hour)	\$	666.25
Other (Explain)		
Assume only one cracked MGB base plate is found. Approximate cost to repair at authorized repair station	\$	25,000.00
Labor to remove and replace one MGB with cracked base plate (4 work hours x \$65/hr)	\$	260.00
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Total Labor Cost per Helicopter (for inspections)	\$	666.25/\$ 3,266.25
Total Fleet Cost (inspection only)	\$	112,807.50
Total Fleet Cost (inspect w/one cracked base plate	\$	138,067.50

Labor per helicopter (EC 155 only):
200 inspections/yr, 1 insp(0.5 hr) = 0.5 hr, 199 insp(0.25 hr) = 49.75 hr
Total labor hrs = 49.75 + 0.5 = 50.25 hrs

Labor per helicopter (All other models):
40 inspections/yr, 1 insp(0.5hr) = 0.5 hr, 39 insp(0.25) = 9.75 hr
Total labor hrs = 9.75 + 0.5 = 10.25 hrs

Labor cost for fleet (all models)
135 x \$666.25 = \$ 89,943.75 (for all models except EC 155)
7 x \$ 3,266.25 = \$ 22,863.75 (for EC 155 only)
Total labor cost for fleet = \$ 89,943.75 + \$ 22,863.75 = \$112,807.50

Total cost for fleet (all models)
\$112,807.50 + cost to R & R (labor) and repair MGB
Total cost for fleet = \$112,807.50 + \$ 25,260.00 = \$ 138,067.50

Executive Order 12866:

Could the AD be considered a “significant regulatory action?” Yes () No (X)

DOT Regulatory Policies and Procedures:

Is the AD significant? Yes () Explain Below No (X)

Regulatory Flexibility Act:

Will the AD have a significant economic impact on a substantial number of small entities?

Yes () No (X)

Project Engineer: Edwin Cuevas

Office Symbol: ASW-112



Signature Section

Signature indicates concurrence with proposed action.

Edwin Cuevas
Responsible Engineer

May 18, 2004
Date

ACO Manager (n/a if MCAI)

Date

Project Officer

Date

Attachment A

[Complete When Superseding, Revising, or Withdrawing an AD]

25. What has happened since the issuance of the existing AD to warrant a supersedure, revision, or withdrawal??

26. Provide the following information about the AD to be superseded, revised, or withdrawn. Also provide a Federal Register copy of the existing AD.

AD No:

Amendment No: 39-

Docket No:

Federal Register Citation:

27. If this AD will revise or supersede an existing AD, are there any alternative methods of compliance (AMOC) that should remain valid? If yes, state what portion of the proposed AD the previously approved AMOCs satisfy.