AIRCRAFT ENGINEERING DIRECTORATE
OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION
OPP: TO SAFDARJUNG AIRPORT
NEW DELHI - 110003

(**PROPOSED** / ~~EMERGENCY~~) **AIRWORTHINESS DIRECTIVE**	**PAD No:** 19-001 **Issued/Date:**XX-XX-2019

No person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of that Airworthiness Directive unless otherwise agreed with the Authority of the State of Registry.

Type Approval Holder's Name: Rotary Wing Research and Design Centre (RWR&DC), Hindustan Aeronautics Limited, Bangalore.	**Type/Model designation(s):** All civil variant Advanced Light Helicopters (Dhruv)

Type CertificateData Sheet Number	5-8/96 – RD	
Foreign AD Number	Not applicable	
Supersedure	Not applicable	
ATA Chapter Name: 71–Power Plant	**Name of the affected part/ system:** Abnormal sound/banging noise and erratic response of TM 333-2B2 Engine	**Required action:** Pilot actions as indicated in the Alert SB 201 712 A457 Rev A dated 05/01/2019, if any abnormal sound or banging noise or jerk/vibration in cockpit or Torque/$N_g$split or on ground flame is observed.
Manufacturer	Helicopter Division, Hindustan Aeronautics Limited, Bangalore	
Applicability	**Model number** — **Serial Number** Dhruv (C) — PTC2 Dhruv (CFW) — DW 28, DW 77, DW78, DCWF 01 to 04, DCWF 06 and DCWF 07 Dhruv (CS) — DS 35, DS 51, and DS 65	
Reason	Multiple occurrences of abnormal sound/series of banging noise and erratic response of TM 333-2B2 engines installed on ALH Dhruv Civil Helicopters with vibration and jerks in cockpit during flight.	
Effective Date	With immediate effect	

Compliance	**A) For all civil ALH in operation:** If any abnormal sound or banging noise or jerk/ vibration in cockpit or Torque/$N_g$split or on ground flame is observed, immediate pilot action is required as indicated in the Alert Service Bulletin 201 712 A457 Rev A dated 05/01/2019 and the same is reproduced below: (i) On ground: ***Shut down affected engine immediately*** (ii) In flight, if affected engine recovers (no power loss warning) ***a) Reduce collective immediately, maintain speed below 80 kts.*** ***b) If Abnormal noise/vibration stops, no power loss warning, check Q/Ng matches and all engine parameters are within the limit, then move collective gently to check both engine responding.*** ***c) Maintain the lower power setting.*** ***d) Avoid large and rapid collective changes.*** ***e) Land as soon as practicable using both engines power.*** ***Note:-Advisable to maintain shallow approach as for OEI, Abnormal sound may reappear while landing.*** (iii) In flight, if affected engine doesn't recover (power loss warning ON) ***a) Reduce collective immediately, maintain speed below 80 kts.*** ***b) If abnormal noise/vibration stops with power loss warning ON, then make small collective changes to identify the affected engine. (affected engine doesn't responds or responds erratically or sluggishly, It may be necessary to make several small collective inputs up and down to judge which engine responds correctly to collective and rotor load conditions)*** ***c) Avoid large and rapid collective changes.*** ***d) Land as soon as practicable using available power*** ***Note:-Advisable to maintain shallow approach as for OEI, Abnormal sound may reappear while landing.*** (iv) If Abnormal sound/Vibration continues ***a) Reduce the collective immediately, maintain speed below 80 kts.*** ***b) If Abnormal sound/vibration still continues, then make small collective changes to identify the affected engine (affected engine doesn't responds or responds erratically or sluggishly, It may be necessary to make several small collective inputs up and down to judge which engine responds correctly to collective and rotor load conditions)*** ***c) Shut down the affected engine following emergency engine shut down procedure.*** ***d) Follow single engine landing procedure (Flight Manual Para3.2.6) to land as soon as practicable.*** **B) For Type Certificate/ Approval holder:** Within 7 days of issuance of this AD, RFM shall be amended.

Ref. Publications	HAL Alert Service Bulletin No. 201 712 A457 Rev A dated 05/01/2019.
Remarks	1. If requested and appropriately substantiated, Joint Director General, in charge of Aircraft Engineering Directorate, DGCA,New Delhi may accept Alternative Methods of Compliance (AMOCs) for this AD. 2. Enquiries regarding this AD should be addressed to Joint Director General, in-charge of Aircraft Engineering Directorate, Office of the DGCA, Opposite Safdarjung Airport, New Delhi-110003.e-mail :rajasekar.dgca@nic.in 3. For any questions concerning the technical content of the requirements in this AD or above referred SB, please contact the Customer Service Department, ALH-Civil, Helicopter Division, HAL, Post: Vimanapura , Bangalore-560017, India. Telephone Number : +91-080-25224088, Fax: +91-080-25223713e-mail:csdcivilalh.hcop@hal-india.com

This AD, which prescribes/mandates action to be performed on the helicopters as stated above to restore an acceptable level of safety, is hereby issued pursuant to CAR 21.3B. TC holder and operators are required to comply with the above stated AD within the stipulated time.

(Rajasekar G)
Joint Director General
For Director General of Civil Aviation