



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

<b>(PROPOSED / EMERGENCY)</b> <b>AIRWORTHINESS DIRECTIVE</b>		<b>PAD No</b> : 19-001, Rev A <b>Issued/Date:</b> 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.										
<b>Type Approval Holder's Name:</b> Rotary Wing Research and Design Centre (RWR&DC), Hindustan Aeronautics Limited, Bangalore.		<b>Type/Model designation(s):</b> All civil variant Advanced Light Helicopters (Dhruv)								
<b>Type Certificate Data Sheet Numbers</b>	5-8/96 – RD									
<b>Foreign AD Number</b>	Not applicable									
<b>Supersedure</b>	Not applicable									
<b>ATA Chapter Name:</b> 71 – Power Plant	<b>Name of the affected part / system:</b> Abnormal sound/Possible surge and power loss of TM 333 2B2 Engines	<b>Required action:</b> Pilot actions required as indicated in Alert SB 201 712 A457, Rev B, dated 15/06/2019 for any abnormal sound/possible surge and power loss or Torque/Ng split or jerks/vibration in cockpit or on-ground flame is /are observed.								
<b>Manufacturer</b>	Helicopter Division, Hindustan Aeronautics Limited, Bangalore									
<b>Applicability</b>	<table><thead><tr><th>Model number</th><th>Serial Number</th></tr></thead><tbody><tr><td>Dhruv (C)</td><td>PTC2</td></tr><tr><td>Dhruv (CFW)</td><td>DW 28, DW 77, DW78, DCWF 01 to 04, DCWF 06 and DCWF 07</td></tr><tr><td>Dhruv (CS)</td><td>DS 35, DS 51, and DS 65</td></tr></tbody></table>		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
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									

<b>Reason</b>	Multiple occurrences of abnormal sound/possible surge and power loss of TM 333-2B2 engines installed on ALH Dhruv Civil Helicopters along with vibration and jerks in cockpit during flight.
<b>Effective Date</b>	Within 15 days from the effective date

<b>Compliance</b>	<p><b>A) For all civil ALH in operation:</b> A briefing session for the operating crew to be conducted by the CAMO to communicate the actions to be taken. The extract of the briefing would be as follows: In case of any abnormal sound/possible surge and power loss or jerks/vibration in cockpit or Torque/Ng split or on-ground flame is observed, the pilot has to take the action as indicated in the Alert Service Bulletin 201 712 A457, Rev B, dated 15/06/2019 and the same is reproduced below:</p>
	<p>(i) On ground: <b><i>Shut down affected engine immediately</i></b></p>
	<p>(ii) In flight, if affected engine recovers (no power loss warning)</p> <ul style="list-style-type: none"> <li>a) <b><i>Reduce collective immediately, maintain speed below 80 kts</i></b></li> <li>b) <b><i>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</i></b></li> <li>c) <b><i>Maintain the lower power setting</i></b></li> <li>d) <b><i>Avoid large and rapid collective changes</i></b></li> <li>e) <b><i>Land as soon as practicable using both engines power</i></b></li> </ul> <p><b><i>Note:-Advisable to maintain shallow approach as for OEI, Abnormal sound may reappear while landing.</i></b></p>
	<p>(iii) In flight, if affected engine doesn't recover (power loss warning ON)</p> <ul style="list-style-type: none"> <li>a) <b><i>Reduce collective immediately, maintain speed below 80 kts.</i></b></li> <li>b) <b><i>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)</i></b></li> <li>c) <b><i>Avoid large and rapid collective changes.</i></b></li> <li>d) <b><i>Land as soon as practicable using available power</i></b></li> </ul> <p><b><i>Note:-Advisable to maintain shallow approach as for OEI, Abnormal sound may reappear while landing.</i></b></p>
	<p>(iv) If abnormal sound/Vibration continues</p> <ul style="list-style-type: none"> <li>a) <b><i>Reduce the collective immediately, maintain speed below 80 kts</i></b></li> <li>b) <b><i>If abnormal sound/vibration still continues, then make small collective changes to identify the affected engine (affected engine</i></b></li> </ul>

	<p><i>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)</i></p> <p><i>c) Shut down the affected engine following emergency engine shut down procedure.</i></p> <p><i>d) Follow single engine landing procedure (Flight Manual Para 3.2.6) to land as soon as practicable.</i></p> <p>Immediately after the briefing session, attendance sheet to be submitted to concerned DGCA Directorate as compliance.</p> <p><b>B) For Type Certificate/Approval holder:</b></p> <p>Within 15 days from date of issue of this AD, RFM shall be amended.</p>
<b>Ref. Publications</b>	HAL Alert Service Bulletin Number. 201 712 A457, Rev B, dated 15/06/2019.
<b>Remarks</b>	<ol style="list-style-type: none"> <li>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.</li> <li>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 : <a href="mailto:rajasekar.dgca@nic.in">rajasekar.dgca@nic.in</a></li> <li>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.</li> </ol> <p>Telephone Number : +91-080-25224088, Fax: +91-080-25223713 e-mail: <a href="mailto:csdcivilalh.hcop@hal-india.com">csdcivilalh.hcop@hal-india.com</a></p>

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/ 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