



Civil Aviation Authority  
**MANDATORY PERMIT  
DIRECTIVE**



**Number: 2020-005**

Issue date: 28 September 2020

In accordance with 41(1) of Air Navigation Order 2016 as amended the following action required by this Mandatory Permit Directive (MPD) is mandatory for applicable aircraft registered in the United Kingdom operating on a UK CAA Permit to Fly.

Type Approval Holder's Name: <b>Vickers Supermarine</b>	Type/Model Designation(s): <b>Vickers Supermarine Spitfire and Seafire aeroplanes</b>
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<b>Supersedure:</b>	This MPD supersedes MPD 1999-007 dated 9 April 1999
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<b>Title:</b>	Main Landing Gear Support Eye bolts
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<b>Manufacturer:</b>	Vickers Supermarine / Westland Aircraft Ltd
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<b>Applicability:</b>	Vickers Supermarine / Westland Aircraft Spitfire and Seafire aeroplanes (All marks and serial numbers).
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<b>Reason:</b>	<p>In 1999, several examples of cracked main landing gear support eye bolts were found. The affected part is the eye bolt attaching the main landing gear locking pin crescent bracket to the inboard support stay (Drawing. Ref. 30050 Sheet 11). Failure of the eye bolt may lead to collapse of the gear during landing, with potential turnover of the aircraft.</p> <p>MPD 1999-007, which is now superseded, required an initial Magnetic Particle Inspection (MPI) of the eyebolt, with a repeat MPI required at intervals not exceeding 100 landings.</p> <p>In-service cracking of the eye bolt is still experienced to date, although there appears to be a variation in findings from the inspection relative to the runway surface generally used by the aircraft. Considering elapsed time since the issue of the original MPD and with further in-service data and experience gathered from both maintenance organisations and aircraft operators, this MPD has been raised to supersede MPD 1999-007 through clarification of the requirements stipulated in the original MPD. Furthermore, the intervals have further been revised based upon in-service data resulting from the mandatory inspections required by MPD 1999-007.</p>
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<b>Effective Date:</b>	<b>12 October 2020</b>
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<b>Compliance/Action:</b>	<p><b><u>Affected Part(s):</u></b> Original Equipment Manufacturer (OEM) or newly manufactured Main Landing Gear Support Eye Bolts (port and starboard).</p> <p><b><u>Serviceable Part(s):</u></b> OEM or newly manufactured Main Landing Gear Support Eye Bolts (port and starboard), having satisfactorily passed a Non-Destructive Test (NDT) Examination in accordance with an approved technique (See Remark 2).</p> <p><b><u>Accomplishment Instructions:</u></b></p> <p><b>From the effective date of this MPD at the next scheduled Main Landing Gear Support Eye Bolt inspection (iaw MPD 1999-007), or at next Annual, whichever comes first:</b></p> <ol style="list-style-type: none"><li>(1) Verify the configuration of mating parts (eye bolt, lock crescent) and their mod-state to ensure compatibility in accordance with OEM data.</li><li>(2) In accordance with the relevant maintenance instructions, remove the affected part from the aircraft.</li><li>(3) Carry out an NDT Examination on the affected part in accordance with an approved technique (See Remark 2).</li><li>(4) If any affected part is found cracked or an indication is noted after undertaking the actions specified in paragraph (3) above, carry out the actions specified in paragraphs (8) to (11).</li><li>(5) After installation of a serviceable part, ensure the correct geometrical assembly / alignment of the Eye Bolt, Lock Crescent and Crescent Locking Arm Head in accordance with OEM data. The Eye Bolt should sit squarely to the Lock Crescent with appropriate shim washer under the head of the affected part.</li></ol> <p>NOTE: Incorrect geometrical assembly / alignment can significantly affect the pre-loading of the components, which may affect the longevity of said components.</p> <p><b>Depending on the type of runway surface utilized, at the following landing intervals thereafter, accomplish either (6) or (7) below:</b></p> <ol style="list-style-type: none"><li>(6) For aircraft operating from predominantly hard runway surfaces (80% or more in last 1-year period), every 300 landings carry out the actions of paragraphs (1) to (5) above.</li><li>(7) For aircraft operating from grass surfaces for 20% or more landings in the last 1-year period, every 150 landings carry out the actions of paragraphs (1) to (5) above.</li></ol> <p><b>In the event of any recorded hard landing, within 10 landings carry out the actions as specified in paragraphs (1) to (5).</b></p>
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<b>Compliance/Action Cont:</b>	<p><b>Complete the following actions if any affected part is found cracked in service:</b></p> <p>(8) Complete a Mandatory Occurrence Report; and</p> <p>(9) Quarantine the affected part for investigation and replace with a serviceable part; and</p> <p>(10) Carry out the post-installation check as specified in paragraph (5) above.</p> <p>(11) Carry out the actions as specified in paragraphs (1) to (5) within <u>100 landings</u> from installation of a serviceable part before returning to the intervals specified in paragraphs (6) or (7).</p> <p><b>From the effective date of this MPD, do not install an affected part on any aeroplane unless paragraphs (1), (3), (4) and (5) have been complied with satisfactorily.</b></p>
<b>ENSURE COMPLIANCE WITH THIS MPD IS RECORDED IN THE AIRCRAFT/ENGINE LOGBOOK</b>	
<b>Reference Publications:</b>	<p>CAP562: Civil Aircraft Airworthiness Information and Procedures (CAAIPs), Chapter F: '<i>Non-Destructive Examinations</i>'.</p> <p>Supermarine Drawing Reference 30050, Sheet 11</p>
<b>Remarks:</b>	<ol style="list-style-type: none"> <li>1. This MPD was originally published as Proposed MPD 20-03 and closed for consultation on 17 September 2020.</li> <li>2. An NDT technique is considered approved when drafted and approved by a level 3 certified NDT specialist with the authorisation and scope to cover the selected method(s) in accordance with CAA CAP747 Generic Requirement No. 23.</li> <li>3. If requested and appropriately substantiated, CAA can approve Alternative Methods of Compliance for this MPD.</li> <li>4. Enquiries regarding this Mandatory Permit Directive should be referred to: GA Unit, Safety and Airspace Regulation Group, Civil Aviation Authority, Aviation House, Beehive Ring Road, Crawley, West Sussex RH6 0YR.</li> </ol> <p>Tel: +44 (0) 330 138 3495 E-mail: <a href="mailto:ga@caa.co.uk">ga@caa.co.uk</a></p>