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Munsch & Company Aeromechanics
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For the attention of: Mr Don Munsch

APACHE BLADE PIN ALIGNMENT TOOL

Dear Don,

The Blade Pin Alignment Tool (BPAT) has been introduced into service by the United Kingdom (UK) Ministry of Defence (MOD) as an enhancement to the AH Mk 1 helicopter maintenance procedures. Its' function is to align the main rotor blade and main rotor head bushes during installation of the main rotor blade attachment pin. Prior to its introduction, the MoD had nothing in its tool inventory capable of fulfilling this task, therefore aircraft were sustaining damage due to incorrect alignment and force fitting of parts.

The UK fleet of 67 AH Mk1 helicopters have recently achieved the landmark of 50,000 flying hours since the introduction into service in 2000. As well as being based in the UK, the aircraft are deployed on overseas operational duties supporting multi-national troops in an extremely hostile environment. Maintenance practices and procedures have evolved over time ensuring maximum aircraft availability to meet the demands placed upon them and the time spent on maintenance activities must always be kept to a safe minimum if the strategic planning and mission capability is to be achieved to the satisfaction of the operational commanders.

Historically, helicopters operated by the British Army do not fold, spread or remove their main rotor blades on a routine basis. However, due to the current harsh overseas operating environment which is a contributing factor to main rotor blade erosion and also the formation of a bespoke unit for Depth Maintenance in the UK, main rotor blades are being removed and installed more frequently. Also, the requirement for Air Transportation has now to be considered as main rotor blades are sometimes removed prior to loading in the ferry aircraft, and with aircraft overseas, this adds to the number of removals normally seen.

As the main rotor blade remove and install procedure is not a regular maintenance activity, it is difficult to quantify in savings of time, however the BPAT has proved to be a valuable asset for the aircraft maintainer and its ease of use allows this procedure to be carried out in an expedient manner. By allowing correct alignment of the main rotor blade pins, a reduction in damage and extension to serviceability has been demonstrated to costly main rotor head and main rotor blade components.



The BPAT can therefore be summarised as a tool which has made an acceptable contribution to the current maintenance man-hour per flying hour figures of the AH Mk 1 helicopter.

Yours sincerely,
For and on behalf of
WESTLAND HELICOPTERS LIMITED

Bob Shadbolt
Customer Service Supplier Manager