

Robinson R22 Series Helicopters

AD/R22/41
Amdt 1

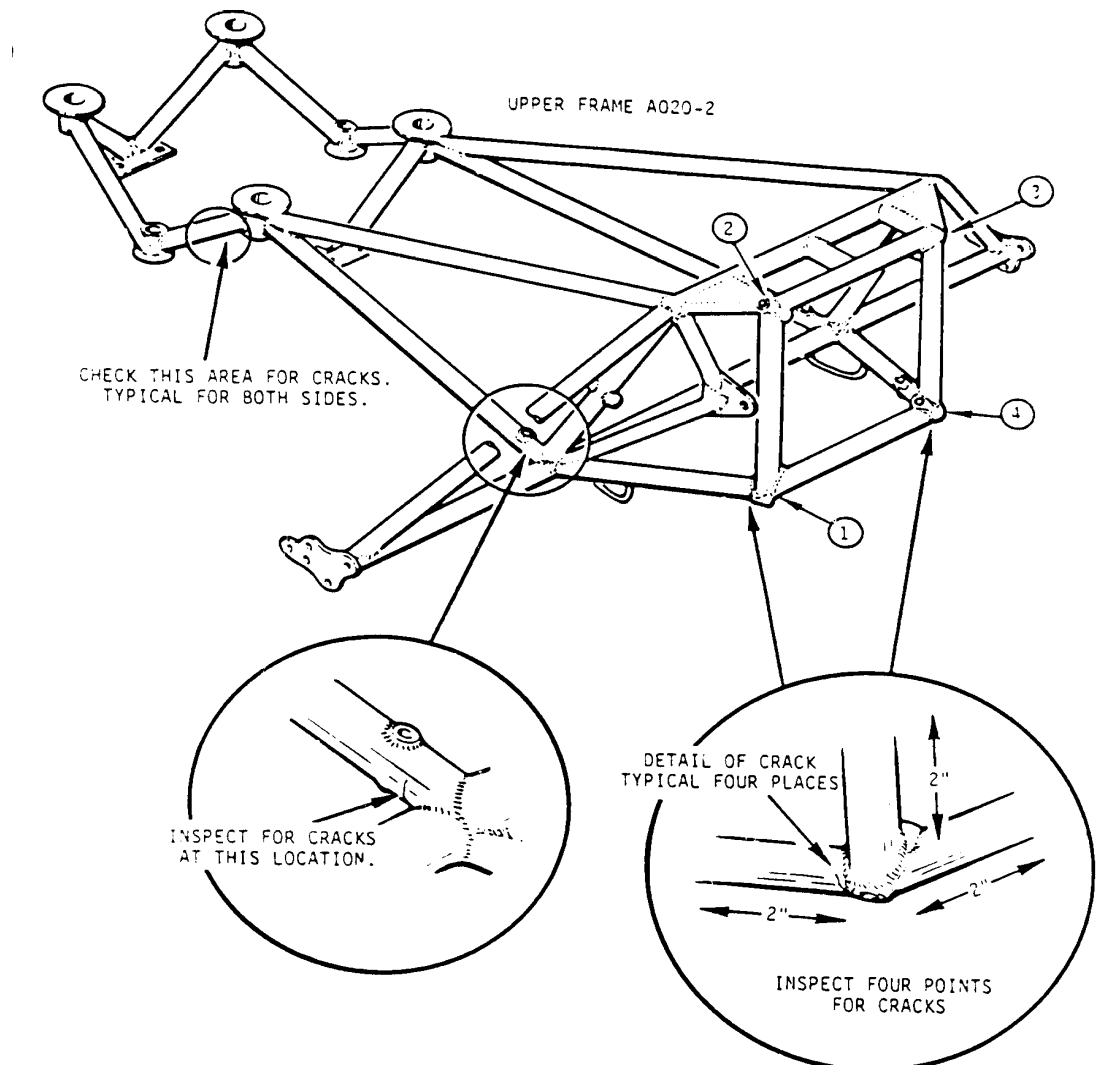
Upper Steel Tube Frames - 2

2/96
DM

Applicability: All model R22 helicopters with P/N A020-2 steel tube frames serial numbers 0400 and higher installed.

Note: The A020-2 frames below serial number 0400 are subject to inspection according to AD/R22/12 Amdt 2.

Requirement: Remove the centre rear cowling skin, P/N A032-3, above the upper steel tube frame, P/N A020-2. With the aid of a torch and a large mirror (greater than 50 mm diameter) visually inspect all welds and tubing of the A020-2 frame for cracks or corrosion. Pay particular attention to areas indicated in the figure below (from figure 2-10 of the Robinson R22 Maintenance Manual). Replace the centre rear cowling skin, P/N A032-3, at the completion of the inspection.



INSPECT ALL TUBES FOR CRACKS WITH PARTICULAR ATTENTION TO THE AREAS INDICATED ABOVE

SCHEDULE OF AIRWORTHINESS DIRECTIVES

Compliance: 1. a. For aircraft used in aerial work operations: Inspect before 25 hours time in service after 20 December 1995. Re-inspect at intervals not to exceed 25 hours time in service.

The initial inspection must be done by a licensed aircraft maintenance engineer. Subsequent inspections may be performed by the pilot in command except where the aircraft is undergoing an inspection for maintenance release. A copy of this Directive must be carried in the aircraft and the required inspections marked on the maintenance release.

An aerial work aircraft is to include any aircraft with an unknown history of operation since new or since overhaul of the A020-2 frame. Aircraft which have been used for aerial work for any period of time since new or since the last overhaul of the A020-2 frame are also to be classed as aerial work aircraft.

1. b. For all other aircraft operations: Inspect before 100 hours time in service after 20 December 1995. Re-inspect at intervals not to exceed 100 hours time in service.

Background: Fatigue cracks were found on early A020-2 frames in areas that may not have been included in regular maintenance. These areas have now been included in the normal 100 hourly inspection. The early frames have special inspection instructions in the Robinson R22 Maintenance Manual and are covered by AD/R22/12 Amdt 2. All frames also have a retirement life in the Maintenance Manual which is mandatory.

The Authority received reports that indicated later A020-2 frames were also failing before reaching the retirement life. This Directive was raised to highlight the directed visual inspection in the Maintenance Manual for later A020-2 frames.

Since issue of this Directive several more frames have been found cracked and two reports of frames failing in flight have been received. Most failures occurred on aircraft used in mustering roles in which the fatigue loads on the frame may be more severe. This reduces the fatigue life and requires more stringent inspections.

This Amendment reduces the visual inspection interval for aircraft engaging in aerial work. An immediate inspection is recommended if any unusual vibration is felt when the aircraft is in flight.

The inspection intervals may be extended if the frame is strengthened appropriately. Any such scheme must be approved through a CASA District Office and by the manufacturer before being incorporated in the aircraft.