

Continuing Airworthiness Notice 51-002



Robinson R44 Hydraulic Hoses – Clearances from Adjacent Structure

31 August 2022

Issued by the Civil Aviation Authority of New Zealand in the interests of aviation safety. A Continuing Airworthiness Notice (CAN) is intended to alert, educate, and make recommendations to the aviation community. A CAN contains information and guidance about an airworthiness concern that does not meet the criteria for an Airworthiness Directive (AD). The inspections and practices described in this CAN must still be carried out in accordance with the applicable NZCAR Parts 21, 43 and 91.

CAN numbering is by ATA Chapter followed by a sequential number for the next CAN in that ATA Chapter.

Applicability:

All Robinson R44 Helicopters.

Purpose:

This Continuing Airworthiness Notice (CAN) is issued to draw operator's and maintainers attention to the potential for contact between the fuel tank supporting structure and the braided hydraulic line.

Background:

This CAN is prompted by a recent incident where an R44 engineer found evidence of chaffing between the aircraft fuel tank support structure and the stainless-steel braiding of the hydraulic pump suction hose. Refer to Figure 1 in this CAN for bladder fuel tank chaffing damage.

It appears that the hydraulic pump fittings, to which the hydraulic hoses attach, were incorrectly orientated on installation. This resulted in insufficient clearance between the hydraulic suction hose and the fuel tank.

The chaffing could have resulted in rupture of the bladder fuel tank if the insufficient clearance between the hydraulic suction hose and the fuel tank had remained undetected.

Recommendation:

Maintenance engineers are reminded of the following:

- The importance of correctly orientating the hydraulic fittings on the hydraulic pump. Refer to figure 2 in this CAN for hydraulic pump fitting orientation.
- The clearance requirements between the fuel tank structure and the adjacent hydraulic lines as detailed in the R44 maintenance manual.
- Ensure that appropriate clearances are maintained when installing fuel tanks. Refer to figure 3 for a pictorial of the R44 hydraulic flight control system.

Note:

If any hydraulic hose and fuel tank chafing damage is found, complete a CA005 Defect Report form and submit the completed form to the CAA at CA005@caa.govt.nz or report findings via the online reporting system available at <https://occurrences.caa.govt.nz/ProdUI/>

Please include all findings and any other relevant technical information. A CA005D Defect Report form can be obtained from <https://www.aviation.govt.nz/about-us/forms/Filter/?SearchTerm=&Rule=8>

Figure 1 - Damaged fuel tank structure:

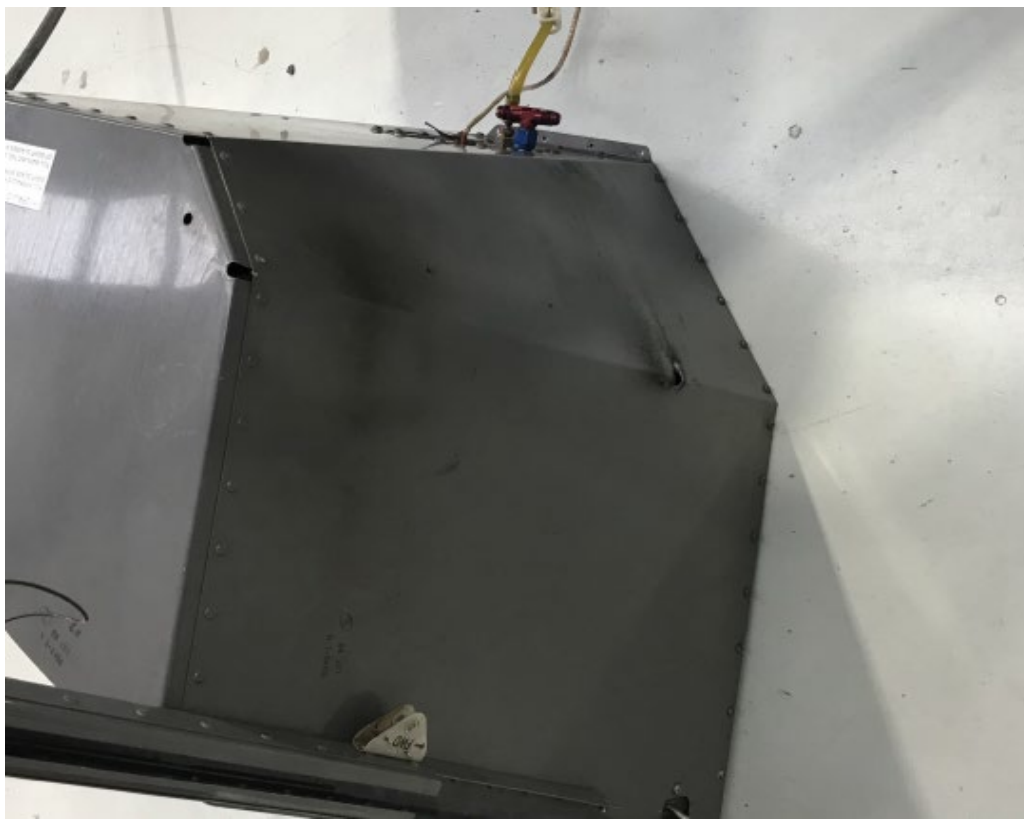


Fig 2. Example of correct orientation of the fittings and hoses



Figure 3 - R44 8-1A Hydraulic flight control system:

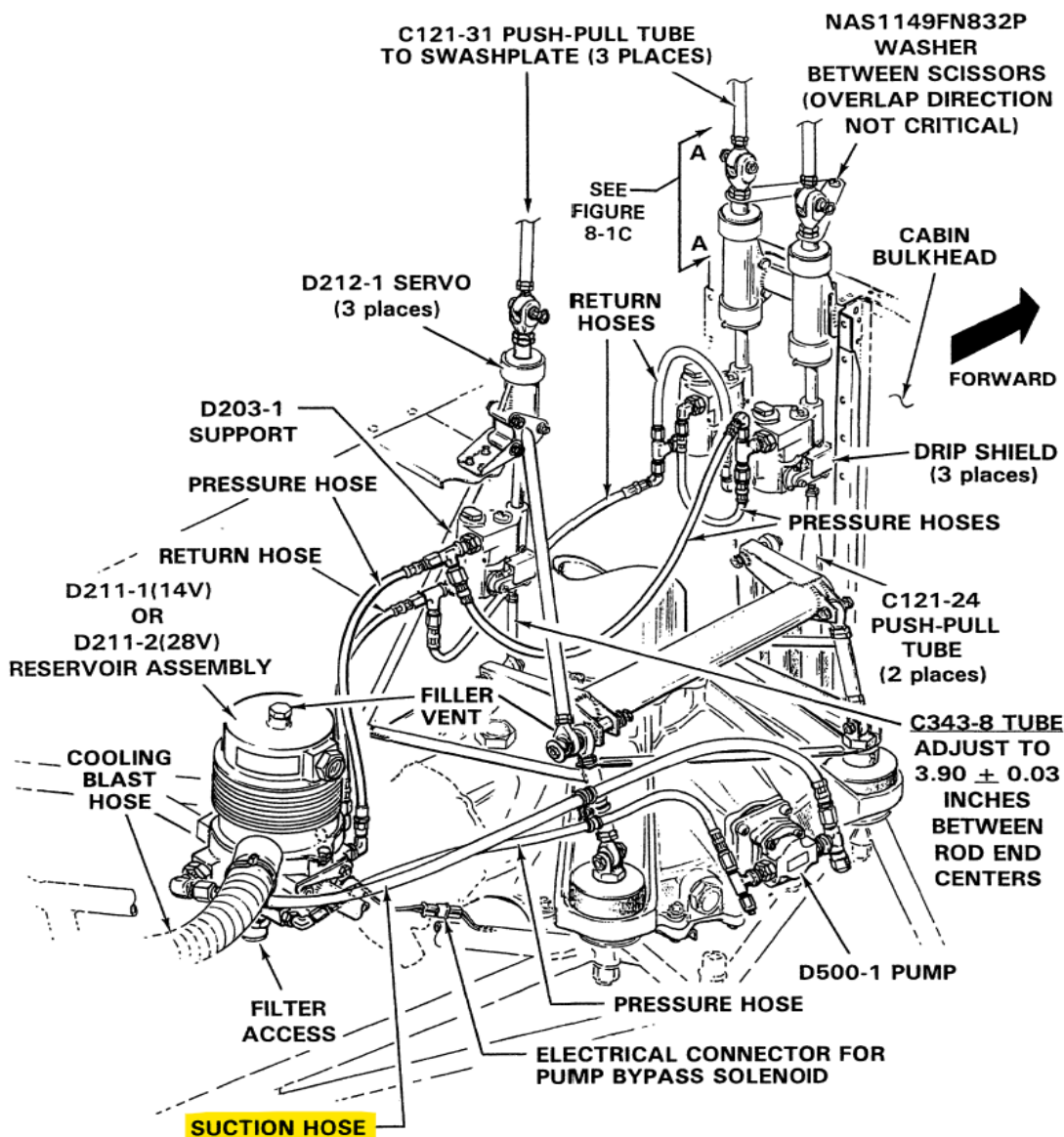


FIGURE 8-1A
HYDRAULIC FLIGHT CONTROL SYSTEM