

No: 000360

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Send To: 915 CANOPY KIT

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Subject: OIL LEAKAGE FROM 915  
CANOPY SNUBBERS ON  
EAGLE II AIRCRAFT

A telescoping brace with hydraulic snubbing action was added to the Eagle II aircraft in July, 1983. The snubber supports the canopy in the open position to allow taxiing in high winds or on rough terrain without risk of damage to the canopy support arms and bearings. The snubber telescopes freely when the canopy is drawn closed, but it extends slowly against the hydraulic snubbing action when the canopy is opened. If the canopy is released when partially opened, it will extend slowly to the fully opened position under the force of its weight alone. The snubber provides a light dampening action during closing and on the initial pull-back for opening, and it protects the canopy from damage if it is drawn open accidentally by propeller blasts.

The canopy snubber was made standard in all 915 Canopy Kits beginning with 915 Kit Serial 0262. It was also made available for retrofit as a 915-SN Canopy Snubber Kit. Many are now in use with good results.

Several builders have recently reported occasional leakage of oil from the snubber strut at both the top (shaft) and bottom ends. Investigation has confirmed that leakage is not only possible but very probable as a result of a condition not originally accounted for in the design of the snubber.

The snubber contains silicone hydraulic oil which was selected because of its stable viscosity over a broad temperature range. In the design of the snubber inadequate consideration was given to the low surface tension of the silicone oil, a characteristic which allows the oil to "wick" or migrate past O-ring type seals in low pressure applications. As a result, oil randomly seeps past both the top and bottom seals of the snubber, regardless of usage.

The solution to the leakage problem was simply to use a synthetic oil with equal viscosity stability, but with sufficient surface tension to eliminate the "wicking" problem. The snubber has been tested vigorously with a new oil, and the problem of leakage has been completely eliminated. All future snubbers will be assembled with the new oil beginning with Serial 0278 for the 915 Canopy Kit and Serial 0088 for the 915-SN Canopy Snubber Kit.

All Eagle owners should remove their canopy snubber at the clevis pin attach points and return it to the factory for re-assembly with the new oil. The conversion will be made at no charge within 24 hours of receipt of the snubber, and it will be returned UPS Blue Label prepaid. The conversion requires special tools and facilities and it cannot be performed in the field.