Duke

FLYERS ASSOCIATION NEWS

Number 91-1 April 1991

A reminder; our fly-in this year will be held at Centennial Airfield (Denver) September 20, 21, 22, 1991. Our hosts will be the Dick Bacon's and Glen Kooi's. Registration forms will be in next newsletter.

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We receive FAA printouts of aircraft problems. Very few on the Duke, but here is one. "While troubleshooting cause of left generator intermittently dropping off line, found voltage and load rheostats showing signs of water contamination. Also found water in and around voltage regulator control panel. Water leakage was determined to be coming from emerency exit hatch. Submitter recommends inspection of seal on hatch and one time inspection of voltage regulator and rheostats for water contamination." P544

Electrical Power

D.C. electrical power for the Duke is supplied by a 24 volt Ni-Cad or Lead Acid battery. The battery is maintained by two 125 amp Lear Siegler generators, belt driven, and located on the lower left side of each engine. The generators are connected to the electrical bus by a generator control relay and a reverse current diode, both located beneath an access plate on the left side of each engine nacelle. Output of the generators is controlled by carbon pile type regulators, overvoltage, and paralleling relays; all located in the battery compartment of the left nacelle.

Power is distrubuted via two dual fed busses and two single fed busses. Generator brushes should be inspected at routine intervals, and replaced when necessary. Each generator has four brushes. Beech recommends that overvoltage relays be functionally tested at 500 hour intervals and that isolation diodes be tested every 600 hours. This is called a "dual bus conformity inspection" and the procedure is outlined in detail in the aircraft maintenance manual. In addition to these maintenance items, specifically recommended by Beech, it would be prudent to inspect the generator bearings at regular intervals.

When a generator fails to produce power, you should inspect the drive belts to insure that the generator is turning. Also check the current limiter on the firewall, the large "button type" circuit breaker in the battery compartment, and the small fuse located on the generator control relay. If you fail to uncover a problem, then a qualified mechanic can check the wiring, the generator control switches, relays, and reverse current diodes. If all these components are operating normally, and your mechanic determines that the generator has failed, there are a number of accessory shops that still work on these generators.

One of the best is:

Aircraft Systems Greater Rockford Airport
Rockford, Illinois 61109
815/399-0225 Terry Norris

Remember, whenever the aircraft is being powered through the APU plug, Beech recommends that the battery switch be ON to limit the voltage spikes that may be present in the APU output.

Ralph Cohen

Reason #60 "Why I'm glad I fly a Duke"

Continental GTISO-520 engines. A proposed AD would affect about 3200 engines and cost operators at least $3,000 for parts and 30 man-hours of labor per engine (make that read $8500 for each 421 Cessna). The proposed AD would mandate replacement of crankshaft counterweights.

Trivial Information

In addition to "Duke Flyers", we belong to other organizations. Listed is a breakdown of the most popular.

AOPA	(Aircraft Owners and Pilots Association)	130
EAA	(Experimental Aircraft Association)	24
ABS	(American Bonanza Society)	23
SC	(Staggerwing Club)	9
WBS	(World Beechcraft Society)	8
NBAA	(National Business Aircraft Association)	5
QB	(Quiet Birdman)	5
SPA	(Is this Seaplane Pilot's Association or Sportsman Pilot's Association?)	5

There are 13 Duke's in Australia.

This is our annual membership roster issue. Please advise me of any needed corrections.

Jim Gorman