Duke

FLYERS ASSOCIATION NEWS

NUMBER 00-1 **MAY 2000**

DUKE FLOOR LIFT BY
ROBERT DALE
OCALA, FLORIDA

Make your plans now for 2000 fly-in: Rockford, Illinois - September 21 - 23
Contract: Larry O'Connor
815-338-8513 (Days)

Spare parts on hand for your Duke

1 - Generator
1 - Starter
1 - Pilot Hydraulic Seat Control
1 - 5 x 6.0 Nose Wheel Tire
4 - Prop Brush 3E1206-2
6 - T10541 Cylinder Assemblies
1 - Gear Motor
4 - Voltage Regulators (see below*)
2 - Oil Coolers
1 - Magneto
1 - Lycoming Exhaust Pipe Part No. 77429
1 - 19 x 6.75-8 Main Gear Tire
1 - 19 x 6.75-8 Main Gear Tube
1 - Flap Motor
Recognition Light Bulbs, DN25-3

The arrangement we have with Aircraft Systems, 5187 Falcon Road, Rockford, IL 61109, is they will ship an O/H generator, starter, magneto, or motor to you by UPS or Federal Express. You return to them (same day) your part. They will overhaul, charging for work done and the item becomes Association emergency part. Phone number 815/399-0225.

For oil cooler contact Bill Passey, 602/969-2291 (office).

For other items contact Jim Gorman 419/755-1223 (office).

Remember: Overhaul of generator at 900 hours will cost you three times more than O/H at 500 hours.

*Fire Wall Forward have donated 4 voltage regulators for generator equipped airplanes. These are used but serviceable. Two types were available . . . Bendix and General Electric. If one is needed, there is no charge except for $25.00 Association handling fee. Specify Bendix or GE.

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The Newsletter 99-3 suggested replacing fuel cap metal chains with rubber - available from Boundary Layer Research, Everett, WA 206/353-6591.

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With Tom Clements phasing out flight training, listed below are two more organizations recommended by members:

Bob Hoffman
Hoffman Aviation Services
6828 Glen Arbor Drive
Florence, KY 41042
606/282-0474

Ron Cox
Aviation Training Management
P.O. Box 2611
Vero Beach, FL
561/778-7815

Scott Stipp reports American Aeronautics has produced a quick and easy method of computing weight and balance - a loading template which is simple and easy to use. If interested, contact them at:

6107 Forest Hills Road
Rockford, IL 61114
815/633-1933
Fax - 815/633-1938
1 - 800 Fly in CG

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Again, Al and Debbie Uhalt have produced an up to date index for the Newsletter - many thanks!

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During the 99 fly-in, there was a discussion of problems with or about to be problems with R-12 Freon used in the Duke air conditioning system. A conversion kit which uses R134A is available from:

API Conversion Air
3778 Distriplex Drive North
Memphis, TN 38118
800 -950-0111
Fax - 800-950-1411

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Enclosed is current membership roster. Please check for current information **especially area codes**. They are changing so fast, it is hard to keep up. Advise Marge Gorman of any corrections. 419/529-3822, Fax: 419/529-5654, email: mng19sl@aol.com or POB 2599, Mansfield, OH 44906.

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WWW - DUKE FLYERS.ORG

We are making progress on the Duke Flyers web site, including a members bulletin board.

The site is still under construction but check the site over the next few weeks for progress.

WELCOME NEW MEMBERS
(ALL LISTED ON ROSTER)

Bruce Creedy
James McCormick
Wayne Martin
Joe Buzzetta
Richard Probert
Fred Cripps
Greg McAdoo
Glen Adams
Edward DeLong
Robert Wallick
Jack Arrant
Corbi Aircraft Sales
Terry Norris
Robert Pluese

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Bob Hoffman has written an interesting article on "The Cabin Air Control."

THE CABIN AIR CONTROL
"The NO! NO! Knob"

The Duke is a wonderfully designed and uniquely styled piece of Beech craftsmanship that was built ahead of its time. Unfortunately, the technical manuals that support this fine craftsmanship were not ahead of its time. As Duke Aficionados we want to know our aircraft in intimate detail; and are often frustrated when confronted with technical manuals that simply do not completely describe a system, cockpit control, or associated operating procedure. A glaring example of this shortcoming is the technical writing to support the description, operation and control of the CABIN AIR control knob located on the right subpanel.

The CABIN AIR control knob is easily the most misunderstood and misused control in the cockpit. This is in part due to the fact that Beechcraft technical writers did not include a direct reference to the CABIN AIR control in the Pilots Operating Manual.

The CABIN AIR control is located on the right subpanel in the environmental control section just to the right of the CABIN TEMP MODE selector and above the CABIN TEMP selector. The control knob is labeled CABIN AIR PULL ON and is an important component of the cabin environmental control system. On page 9-20 of the Pilots Operating Manual the Beechcraft technical writer offers a brief description of the Environmental System and associated operating controls: "An environmental section on the right subpanel provides for automatic and manual control of the system. This section, just to the right of the flap control lever contains all the major controls of the environmental function; the mode selector switch for selecting automatic or manual heating or cooling, a vent blower control switch, and a temperature level control." The writer continues with the location of the pressurization air temperature controls and the pressurization air shutoff controls to complete the discussion of the environmental system controls. Note that there is NO discussion of the CABIN AIR control on page 9-20.

The only reference to the CABIN AIR control is found on page 9-24 of the Pilots Operating Manual. The reader finds an indirect reference to CABIN AIR control included in the paragraph titled VENTILATION MODE. The Beechcraft technical writer states: "With the aircraft unpressurized, open the ram air vent inlet (CABIN AIR) and move the mode selector to BLOWER. Choose HI or LO as desired on the vent blower switch. In this mode the isobaric and safety dump valves are open (with the pressurization switch in DUMP position), to exhaust the cabin air. If the ambient air is cool and no vent blower is desired, move the temperature mode selector to OFF." The Beechcraft technical writer instructs the reader to pull the CABIN AIR knob when operating the aircraft unpressurized to ventilate the cabin, but does not tell the reader how the system works, or why. Go figure.

The CABIN AIR control is part of the manual environmental control system. See the ENVIRONMENTAL SCHEMATIC on page 9-23 of the Pilots Operating Manual. The manual system consists of a ram air scoop; a ram air shut-off valve, and a ram air inlet door. The CABIN AIR control manually operates a ram air shut-off valve that is located just forward of a spring loaded ram air vent inlet door. The ram air shut-off valve is a butterfly type valve designed to block ram air flow from forcing the ram air inlet door open during pressurized flight, and to allow ram air to enter the cabin through the ram air inlet door to ventilate the cabin during unpressurized flight. The ram air shut-off valve is manually closed by pushing the CABIN AIR CONTROL IN for pressurized flight so that ambient ram air entering the nose through the ram air scoop does not force the spring loaded ram air door open. The ram air shut-off valve is opened manually by pulling the CABIN AIR CONTROL KNOB OUT for unpressurized flight so that ambient ram air from the ram air scoop may pass the ram air shut-off valve and enter the cabin through the ram air vent door to ventilate the cabin.

During normal pressurized flight the CABIN AIR control should always be IN. Tom Clements, a superb Duke instructor, tells us (tongue in cheek of course) the CABIN AIR control should be "Painted red, safety wired shut, and labeled EMERGENCY CABIN AIR - PULL WHEN UNPRESSURIZED". Another superb Duke instructor, Bill Brunton, calls the CABIN AIR control the "NO! NO! KNOB". This is why: If during pressurized flight the CABIN AIR control is OUT, the ram air shut-off valve is open allowing ram air from the ram air scoop to hold the ram air door open during the initial portion of the flight. When cabin differential pressure reaches about .5 psi, ram air pressure on the front the door is overcome by pressurized air pushing on the back of the door, forcing the ram air door to slam shut, and causing a significant pressure bump. Ouch! On approach and landing as the cabin again approaches about .5 psi, ram air on the front of the door overcomes pressurized air holding the door closed, the door pops open causing another pressure bump. Ouch! Again.

So there you have it. In pressurized flight the CABIN AIR control does not control cabin air at all; it controls pressure bumps. Go figure.

"FLY YOUR PRIDE AND JOY TO ROCKFORD-ILLINOIS"
September 21st thru 23rd
DUKE FLYERS MILLENNIUM FLY-IN

Believe it or not the fly-in is fast approaching. A full program for both pilots and passengers is being put together. In order to get a handle on expenses, I need to get an idea of how many of you are planning on attending. We will be headquartering at the Clock Tower Resort & Conference Center (www.ClockTowerResort.com). Please fill out the following:

I will probably attend _____ /maybe _____ /will not attend _____.

Name _____ N# _____

Please fax your response to 815/338-8525. Mail: Larry O'Connor, 665 West Jackson Street, Woodstock, IL 60098. Email: www.larryoc@shamrockfib.com.

Those of you who replied to my earlier correspondence do not need to reply.

Attention!
Beechcraft Owners and Enthusiasts

You are invited to:

"Beech Party 2000"

WHAT: **The Annual Travel Air, Staggerwing, Twin Beech 18 Convention**
Sponsored by: The Staggerwing Museum Foundation

WHERE: Tullahoma, TN Regional Airport
WHEN: October 18 - 22, 2000

Witness the History of the Beech Aircraft Company!
The on-site museum has the following aircraft:
S/N 1 Travel Air (1924)
The Thompson Trophy Travel Air Mystery Ship (1929)
S/N 1 Staggerwing (1932)
plus an example of every model Staggerwing built ("B" through "G")
Twin Beech 18 (1937, 3rd oldest); D18S and C45

And Much More **- Approximately 50 early Beeches fly in!**

** Pre-Registration Required **

Write or call for information package:
Cindy at 931-455-8463 (8am-noon, Mon. - Fri.)
or
Staggerwing Museum
P.O. Box 550
Tullahoma, TN 37388
(931) 455-1974 or fax: (931) 455-2577