FLYERS ASSOCIATION NEWS

94-2 NOVEMBER, 1994

BOUNDARY LAYER WINGLET

32 DUKES WERE IN ATTENDANCE AT SAN JOSE, CALIFORNIA LAST OCTOBER HOSTED BY GREGG JELLINEK AND ART LUND WHO DID A GREAT JOB OF PLANNING AND OPERATING OUR FLY-IN.

BILL WYMAN SENT US "HISTORY OF THE BEECH DUKE" WHICH IS AN INTERESTING STORY AND REPRODUCED FOR YOUR INFORMATION.

PRESIDENT
BILL PASSEY
P-594

V-PRESIDENT
MAX COHEN
P-412

SEC-TREAS
MARGE GORMAN
P-596

HISTORY OF THE BEECHCRAFT DUKE

The Model 60 design concept evolved from a need for a new medium twin. The airplane was to offer a new profile with swept-back styling of the empennage, luxurious interiors, cabin pressurization, turbocharged engines and optional air conditioning. The Lycoming engines selected for the Duke were designed with turbochargers as a integral part (rather than a bolt-on accessory) to provide high altitude performance and maximum engine reliability. The same proven landing gear used on the Bonanza and Baron airplanes was strengthened and incorporated into the Model 60 design.

The production airplane utilized such modern engineering and construction methods as chemical milling of skins to remove weight without reducing strength, metal bonding and honeycomb stiffening for light weight strength in areas of high stress, magnesium skins used in the empennage, and extensive use of flush riveting to provide an aerodynamically "clean" airplane.

The production flight tests began in December of 1966, and the first Duke 60 was delivered in August of 1968. The Duke soon proved to be the best performing, lowest priced, IFR equipped, pressurized twin available for the times.

The Duke Model A60 was introduced in March of 1970, at airplane serial number P-127. New interiors, cabin and cockpit appointments and exterior changes were added. Effective P-144, new turbocharger assemblies and exhaust ducting were added to improve efficiency and service life. Approximately 246 production model 60/A60 airplanes were delivered to customers.

The Duke B60 was introduced in October of 1973, at airplane serial P-247. This third generation of the Duke series aircraft incorporates the following changes; new exterior paint stripe, replacement of the cabin sidewall panel consoles and moving the third and fourth seats outboard to provide more width in cabin aisle. The instrument panel glareshield was mounted in a lower position to provide greater visibility. The pilot and copilot seat tracks were lengthened to provide 1 to 1½ inches additional aft travel of the seats. The cabin floorboards were lowered approximately 2 inches in the area directly in front of the fifth and sixth seats. This flatter floor provided improved ease of entry. The pressurization valves were relocated to the aft side of the pressure bulkhead. New interior appointments included a flush mounted cabin table and choice of interior carpets and upholstery fabrics.

The popular Duke B60 took on new dimensions of performance and a new look in October of 1975. The new developments in air pressurization systems and controllers identical to the C90 King Air were incorporated in the Duke. Effective at P-365 and after the 1976 B60 featured a second optional fuel system increasing the total usable fuel capacity to 232 gallons and the range of the Duke by 20% at 68% power at FL 250.

In 1976, one of the Duke's direct operating costs was decreased 25%. This was achieved by increasing the TBO for the Lycoming TIO-541-E1C4 engine by 400 hours. Extensive testing with Duke's in the field and over 20 significant engine improvements since its first flight in 1966, gave Lycoming the proven confidence to increase the recommended TBO to 1600 hours.

In 1977, new developments included fuel sight gages with the long range fuel option; new cruise performance charts and the Collins Micro-line computerized avionics package, now standard equipment in the Duke.

The 1978 line included the quietest cabin sound level ever offered due to redesigned pressurization airflow and totally new soundproofing materials used on the aft bulkheads and enclosures. Added comfort in the Duke was assured by the redesigned armrests and larger seats. The new wider aisle space provides better accessibility to the cockpit areas as well as convenience to passengers. Further ease of maintenance was provided for by the addition of two economical (12 volt) batteries for longer life and lower maintenance cost.

A two-place couch replaced the fifth and sixth seats in 1980, and added 7 inches to the width of the rear seat area. Sidewalls were scooped out to provide an additional 2 inches more elbow room and the armests include a hydraulic lock so each seat back may be infinitely adjusted. A storage area was provided under each seat.

For 1981, the process of selective refinement of the Duke was continued with the addition of two fresh air/air conditioning vents in the cockpit. A King Air expansion valve with greater capacity was added to the air conditioner system which greatly reduces the temperature of the air. Also, the thermostat was placed higher up on the cabin sidewall to allow for more accurate temperature control. A temperature sensor was added to the heated windshield circuits to prevent excessive heat build up.

DUKE FLYERS ASSOCIATION			
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Jack Carr	574	N200JC	(303) 923-4850
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Larry O'Connor	546	3675D	(815) 338-8513
Bill Passey	594	N643C	(602) 969-2291
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Raymond W. Randolf	538	N777SG	(512) 267-4100
Shaker Razook	389	N3LC	(619) 543-1022
James Rhude	443	N3456A	(218) 262-1023
Frank Singer	583	N9RD	(714) 840-9025
Bob Shank		N8553M	(303) 790-0880
John Streishower		N8DY	
Donald Thompson	249	N2889W	(916) 677-1490
Alfred Uhalt, Jr.	548	N265D	(719) 574-1111
Yan Vinzse	41	N8DY	
Fred C. Vollman	349	N98JM	(318) 346-6627
Evan Yearsley (West Star Aviation)			(303) 243-7500

Saturday morning's session was most interesting and some of the operating suggestions were:

Change all hoses every five (5) years.

To save generators, start both engines before turning them on.

At engine overhaul, replace or overhaul vacuum pumps and engine driven fuel pumps. In fact, it is better to limit vacuum pumps to 600 hours.

If you overhaul your generators at 500 hours, cost will be $600 - $700. At about 900 - 1000 hours, they self destruct resulting in cost of $4000 - $5000.

When starting engines, minimum rpm (below 500) until full oil pressure is noted on gauge.

To test vacuum pumps, start left engine first. Check pressure at 1000 rpm. Next time, reverse procedure.

If you have not complied with Lycoming Service Bulletin #479 on exhaust pipe clamps, do it **now**, as there have been numerous reports of pipe separation.

Don Cary, VP Marketing of Beech, gave an interesting talk on the reorganization of Beech and Hawker Divisions of Raytheon.

Item of interest from Piper Malibu accident reports "according to information provided NTSB by a major manufacturer of pitot tubes, an unheated tube subjected to severe icing conditions will become blocked with ice in less than 10 seconds. Under light icing, it takes 60 seconds." Moral - all deicing on before entering visible moisture.

Ben Morrow of FAA reports the following: Serial Number P470. Vertical air distribution housing in pilots console come loose from outlet ducts and jammed in elevator controls. Duct tape securing parts since new had deteriorated. Recommend mechanically attaching parts together and then seal with duct tape.

Oilamatic Inc., P.O. Box 5284, Englewood, CO 80155, 303/770-0175 have certified with FAA, STC/PMA their engine preoiler. Gives full engine oil pressure before engine start. As much as 70% of engine wear may take place during starting. Weight of system approximately 15 lbs. Price $2095 FOB less hoses. Contact Geoerge McCrillis, President.

Bob Desroche, Boundary Layer Technology, 206/353-6591, displayed N25LC with winglets as shown on front cover. Call and let him fill you in with all the details.

AV Central, 610/982-9760, have T10541-E1C4 180 SMOH for sale plus engine core, generator, starter, plus many other parts.

Gregg Aircraft Services, 903/643-0980, have a T10541-E1C4 engine for sale, 1496 hours first run, no damage. $9650.

David Dick, Metroplex Aviation, 214/250-2342, has his A-60, P-190 for sale $89,000. TT2314 L engine, 560 SMOH, R engine 1344 SFFM King Gold Crown.

George Haas Jr., RTE 2, Box 2141, Melrose, FL 32666, 904/475-2393, would like to correspond with anyone who used Mobile AV1 in the 541 engine. Mobil has discontinued sale of the product.

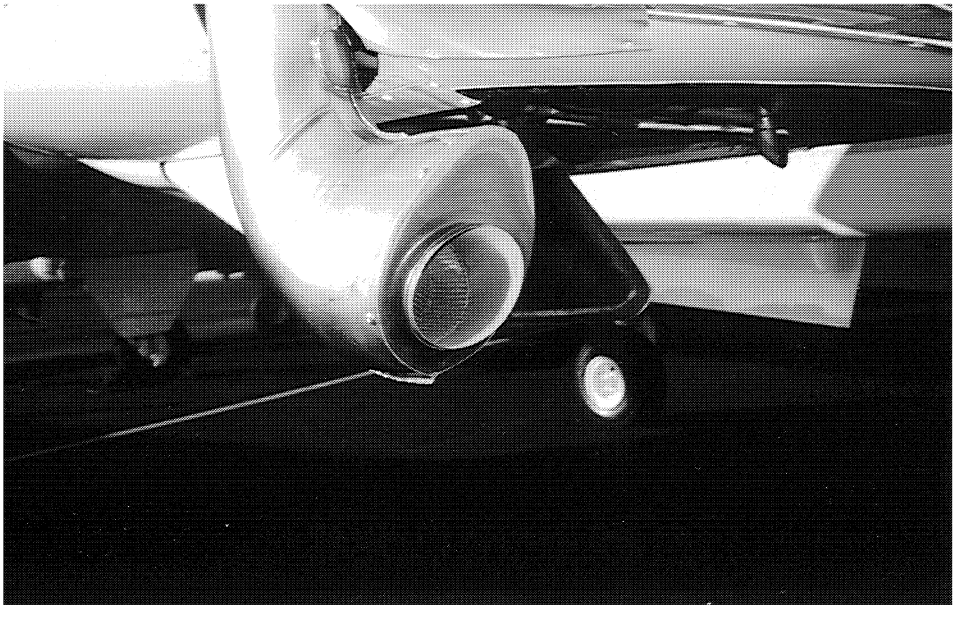
December newsletter will be an updated membership list. Please advise Jim Gorman of any changes.

Fire Wall Forward is reported to have received STC/PMA for alternator installation on Duke. Call Mark Seader at 1-800-444-0556 for full information.

Make plans now for 1995 Duke Fly-in at Spirit of St. Louis, MO airport, October 5-6-7. Our host will be Larry Moskoff. His promise is airport will not be under 12 feet of water as it was in 1993.

ANOTHER VIEW OF WINGLET

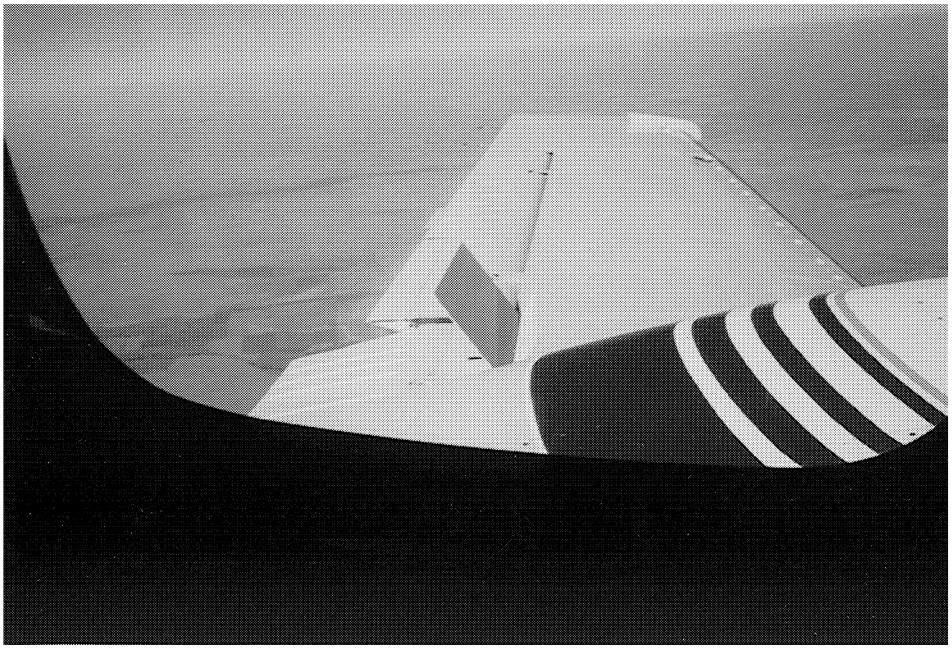
DON CARY EXPLAINS CHANGES IN THE BEECH ORGANIZATION



MUFFLER INSTALLED ON DUKE GOING TO GERMANY TO MEET NOISE REQUIREMENTS

RITT BERRY DURING RECURRENT FLIGHT TRAINING BY BILL BRUNTON OF FLIGHT REVIEW

SPOILERS DEPLOYED
FOR INFORMATION
CONTACT LYNN MACLEAN
206/839-0195



PRESIDENT BILL PASSEY LEADS SATURDAY SESSION ONE OF HOSTS STEVE FROST OF CORPORATE AIR TECHNOLOGY LISTENS

THANKS TO BOB HOFFMAN FOR HIS PHOTOGRAPHS