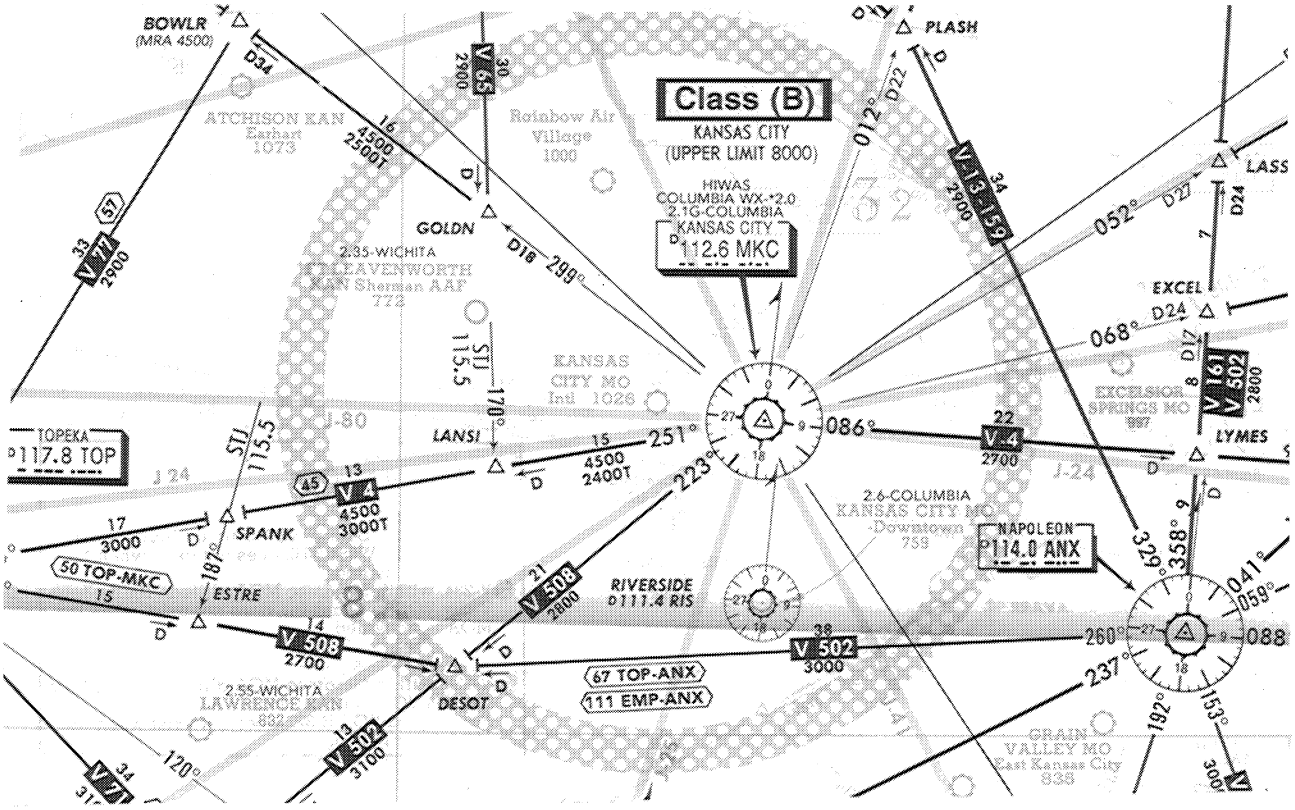
FLYERS ASSOCIATION NEWS

NUMBER 98-1 APRIL, 1998



1998 FLY IN WILL BE HELD IN KANSAS CITY, MO
OCTOBER 8-9-10
MORE DETAILS IN NEXT NEWSLETTER

PRESIDENT	VICE PRESIDENT	SECRETARY-TREASURER
MIKE GREENBLATT	MAX COHEN	MARGE GORMAN
P-590	P-412	P-596

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
3 - T10541 Cylinder Assemblies
1 - Gear Motor
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

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 3 times more than O/H at 500 hours.

A NOTE OF CAUTION

Many have received mailings from American Aviation promoting their intercoolers. One fact is indisputable, the only way to go faster is to take more power out of the engine. Which is fine providing one does not exceed engine limits set by Lycoming. American's latest mailing shows a cruise condition with intercoolers at 25,000' - 31.5" MAP at 2400 RPM. We have determined 31.5" intercooled is the same at 33.5" nonintercooled (See newsletter 89-1). Your POM section "Cruise Control" limits you to 32" nonintercooled at 2400 RPM. Any higher manifold pressure is listed as "non-operating area". Those operating intercooled airplanes should be aware of possible damage to your engines at 31.5" (33.5") 2400 RPM. In fact 32" limit (30" intercooled) extends to 2650 RPM. Might be interesting to review newsletter 89-1.

Those of us at the Tullahoma fly-in well remember Tom Clements review of a tragic accident. NTSB Reporter, 9 Romar Avenue, White Plains, NY 10602 has given us permission to reprint this report. Also, review newsletter 97-2, Page 3 on same subject. Morale of this story - don't let anyone except Allied Signal (Garrett) overhaul your turbocharger.

FATIGUE SEPARATION: Investigation showed an improper repair to a turbocharger shaft.

MAKE/MODEL - BEECH A60 AIRCRAFT DAMAGE - Destroyed

	FATAL	SERIOUS	MINOR/NONE
CREW	1	0	0
PASS	2	0	0

ENGINE MAKE/MODEL - LYCOMING TIO-541-E1C4
NUMBER OF ENGINES - 2
OPERATING CERTIFICATES - None
TYPE OF FLIGHT OPERATION - Business
REGULATION FLIGHT CONDUCTED UNDER - 14 CFR 91

LAST DEPARTURE POINT - Same as Accident
DESTINATION - Local

AIRPORT PROXIMITY - Off airport/airstrip

CONDITION OF LIGHT - Daylight

WEATHER INFO SOURCE- Weather observation facility

BASIC WEATHER - Visual (VMC)
LOWEST CEILING - 3300 FT Broken
VISIBILITY - 0010.000 SM
WIND DIR/SPEED - 300 /012 KTS
TEMPERATURE (F) - 36
OBSTR TO VISION - None
PRECIPITATION - None

PILOT-IN-COMMAND AGE - 36

CERTIFICATES/RATINGS
Airline transport
Single-engine land, Multi-engine land
INSTRUMENT RATINGS
Airplane

FLIGHT TIME (Hours)

TOTAL ALL AIRCRAFT - 2746
LAST 90 DAYS - Unk/Nr
TOTAL MAKE/MODEL - 209
TOTAL INSTRUMENT TIME - 157

Occurrence# 1 LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF
Phase of Operation CLIMB - TO CRUISE

Findings
1. - 1 ENGINE
2. - EXHAUST SYSTEM,TURBOCHARGER - FATIGUE
3. - MAINTENANCE,MAJOR REPAIR - IMPROPER - OTHER MAINTENANCE PERSONNEL

Occurrence# 2 LOSS OF CONTROL - IN FLIGHT
Phase of Operation CIRCLING (IFR)

Findings
4. - AIRSPEED(VS) - NOT MAINTAINED - PILOT IN COMMAND
5. - STALL - INADVERTENT - PILOT IN COMMAND

Occurrence# 3 IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation DESCENT - UNCONTROLLED

The National Transportation Safety Board determines that the Probable Cause(s) of this Accident was:
THE PILOT'S FAILURE TO MAINTAIN AIRSPEED DURING A SINGLE ENGINE APPROACH RESULTING IN AN INADVERTENT STALL. FACTORS WERE A FATIGUE SEPARATION OF A SHAFT IN THE LEFT ENGINE TURBOCHARGER DUE TO IMPROPER REPAIR BY MAINTENANCE PERSONNEL, AND THE RESULTANT LOSS OF POWER TO THE LEFT ENGINE.

HISTORY OF THE FLIGHT: At 1835 mountain standard time, a Beech A60 was destroyed during an approach to the Silver City/Grant County Airport near Hurley, New Mexico. The Airline Transport Pilot and the two passengers received fatal injuries. An instrument flight plan was filed for the business cross country flight.

The airplane arrived at the Silver City/Grant County Airport at 1350. It departed from runway 26 at 1828. Subsequently, the pilot reported a loss of engine power, and the flight was cleared to return to the airport.

At approximately 1840, the airplane, with the landing light on, was observed with the left wing low, in a nose low attitude executing a turn toward the airport. Within 30 seconds, the airplane crashed, exploded and burned on a ground area near the airport.

PERSONNEL INFORMATION: A review of the pilot's logbook indicated that the pilot had been flying Beech A60's for about 3½-years and had 2,746 total flight hours with 209 in A60's. He held an ATP certificate with single- and multi-engine ratings. He also held a valid first class medical.

AIRCRAFT INFORMATION: The airplane, a twin-engine six-seat model, had undergone its last annual inspection about 26 flight hours before the accident. About 6 years before the accident, the left engine was replaced with an overhauled Lycoming TIO-541-E1C4 which had accumulated 293 flight hours at the time of installation. An overhauled turbocharger was installed on this engine.

METEOROLOGICAL INFORMATION: National Weather Service data for surface observations in the area west through southeast of Silver City/Grant County Airport reported winds from the west-southwest at 10 knots with peak gusts to 29 knots. AIRMET Sierra issued for New Mexico advised of low level wind shear potential below 2,000 feet above ground level throughout New Mexico.

COMMUNICATIONS: The pilot obtained an abbreviated weather briefing and filed instrument flight plans to Mesa, Arizona, and Provo, Utah. A clearance was issued at 1751:28 for departure from Silver City/Grant County Airport to Falcon Field, Mesa, Arizona, with a cruising altitude of FL 200 assigned.

At 1809:48, Albuquerque Air Route Traffic Control Center (ABQ ARTCC) established radar contact as the pilot reported the flight climbing through 10,500 feet MSL for FL 200. At 1811:02 the pilot reported the tops of the clouds at 12,000 feet MSL.

At 1816:58, the pilot reported "I've just lost one of my engines, I'm going to need a vector to an airport."

At 1820:12, the flight was cleared to descend at pilot's discretion to 10,000 feet MSL and at 1826:34 was given a heading of 040 degrees to intercept the 128 degree radial of the Silver City VOR and to expect the VOR-A approach.

At 1829:08, the flight was cleared for the VOR-A approach and to maintain 10,000 MSL until established on the 128 degree radial inbound.

The pilot reported a flight intercept of "VOR Alpha inbound course" at 1833:05. Radar contact was lost at 1833:15.

WRECKAGE AND IMPACT INFORMATION: Site terrain was rolling desert and the airplane came to rest on a measured magnetic heading of 095 degrees, 3,960 feet short of runway 26 at Silver City/Grant County Airport. Both engines were separated from the airframe with the left engine located under the left wing. The left engine turbocharger was found in the nacelle area. The left engine propeller was buried in the ground 31 feet from the main fuselage. The left propeller's blades were close to the "feather" position. The right propeller remained attached to the engine which was partially buried in the ground 27 feet from the airplane. There was no evidence of an in-flight fire.

Cabin and cockpit areas were destroyed by the post impact fire. Flight control continuity was confirmed. One landing gear actuator arm (not destroyed by fire) was found in the in-transit position. Deice/anti-ice equipment status could not be determined.

Shafts for the left engine magnetos were rotated by hand. The left engine-driven fuel pump shaft could be rotated by hand and fuel was found in the pump. The oil pump rotated, lubrication was present at the pump, and an oil sample was collected and forwarded to a laboratory in Gardena, California, for analysis. Left engine continuity was established through 360 degree hand crankshaft rotation and compression was noted on all cylinders. The engine was disassembled and no anomalies were noted that would have contributed to a loss of engine power.

Pieces of one right engine magneto were visually examined; however, due to impact damage the operation of the parts could not be verified. The second right engine magneto was not located and is presumed to have been destroyed by the fire. Right engine continuity was established during 360 degree hand crankshaft rotation, compression was noted in all cylinders, and there were no anomalies that would have contributed to a loss of right engine power.

Twisting, rearward bending, and chordwise scratching was found on all 3 blades of the right propeller with gouges noted at the leading edge tip ends of two of the blades. Two blades of the left propeller were bent and all three blades exhibited

chordwise scratches.

The left engine turbocharger's turbine and compressor impeller shaft did not have continuity. Shaft continuity was confirmed for the right engine turbocharger's turbine and compressor impellers.

MEDICAL AND PATHOLOGICAL INFORMATION: Toxicology for the pilot was positive for atenolol. According to the Federal Aviation Administration Southwest Region, atenolol (blood pressure medication) is approved by the FAA.

TEST AND RESEARCH: The left engine oil sample analysis indicated a "high aluminum" content. The source of the metal could not be determined.

Physical evidence for the left engine propeller preload plates "equate to a blade angle of 71 degrees, 72 degrees, and 60 degrees," respectively. The airframe manufacturer's representative reported maximum pitch range as "81 degrees." The right engine propeller counterweight puncture marks indicated the "R2 blade was at about a 60 degree angle." Marks on the propeller preload plates for "blades R1 and R3 equated to blade angles of 21 degrees and 27 degrees," respectively. Low pitch for the propeller blades is approximately 13.5 degrees, while "feather" is approximately 81.7 degrees.

When the turbochargers were examined, the right turbocharger exhibited rotational scoring and blades bent opposite to the direction of rotation. There were no anomalies that would have precluded operation of the right turbocharger.

The left turbocharger shaft, connecting the turbine and the compressor wheels, was separated where the shaft joins the turbine wheel. The locating pins for the center housing thrust collar were identified as the type found in "diesel" applications and there were no identifying marks or part numbers on the compressor and turbine bearings. Extruded material was found on the inside diameter of the turbine bearing journal and the bearing oil passages were plugged with a "carbon-like material." The land (between the bearing journals on the turbine shaft) was the same diameter as the bearing journal areas. According to the manufacturer's representative, "the land is normally ground undersize to a maximum of 0.026 inch." The turbine wheel assembly, center housing, and bearing were forwarded to the NTSB metallurgical laboratory.

Metallurgical examination revealed features indicative of fatigue cracking and torsional overload for the separated turbine wheel assembly. The diameter of the land area contained no reduction in middle area. Major peak positions along the land contained chromium and the radius contained iron (specified material for the shaft is a medium low alloy steel). Further examination revealed that in the original construction, the land area of the shaft was reduced. This reduction in diameter of the land area had been eliminated by a chrome-plating operation. The aircraft overhaul manual states that "chrome plating, plasma spray or equivalent restoration of shaft journals...are not permitted."

EXCERPTS FROM RADIO TRANSMISSIONS:

A/C = AIRCRAFT
ATC = Albuquerque Air Route Traffic Control Center

1816:58 A/C: I've just lost my uh one of my engines I'm going to need a vector to uh a airport in the San Simon area.

1817:05 ATC: Okay and what three lima papa you need the closest airport or you want something right around San Simon or you wanna go back to Silver City?

1817:14 A/C: (Unintelligible) I'm about halfway to San Simon is that correct?

1817:17 ATC: Uh you're a little less than half way to San Simon ah let me do some measurements for you right quick I show forty one miles to San Simon ah and eighteen miles back to Silver City

1817:38 ATC: And three lima papa I got Lordsburg just to the south of ya

1818:01 ATC: Three lima papa I've got Lordsburg out there just to the south of ya you wanna try for that one

1818:11 A/C: Standby three lima papa

1818:13 ATC: Uh Lordsburg about fourteen miles on a bearing of uh two one two degrees

1819:42 ATC: Uh three lima papa maintain uh one zero thousand if able uh and let me know if your intentions

1819.50 A/C: Uh I can maintain uh I can go down to uh sixteen here it looks like stay on top three lima papa

1819:56 ATC: Okay three lima papa roger uh understand it's it's uh the clouds start the cloud layer starts about uh fifteen thousand or so there

1820:06 A/C: Affirmative I might uh be in the tops here shortly if I can maintain this altitude

1820:12 ATC: Three lima papa roger uh altitude at your discretion there's nobody in the way of ya

out there just let me know what you wanna do

1820:18 A/C: (Unintenlligible) papa

1820:51 ATC: Three lima papa a far as IFR approaches Silver City is gonna be it

1821:02 A/C: Okay would uh give ma a vector back to uh Silver City

1821:16 ATC: Three lima papa uh roger can ya take a heading of about uh one zero five to join uh victor ninety four and I'm gonna I can go ahead and get ya down to about eighty one hundred there pick up the approach out of Demning

1821:34 A/C: Okay uh one zero five on the heading three lima papa

1821:42 A/C What altitude ya want me down to

1821:45 ATC: Okay three lima papa can descend and maintain one zero thousand at this time pilot discretion descent you can stay up as long as you want let me know what you need if we need to if you need to short cut more than that we'll work on it uh we're just trying to figure out most we can do for ya here

1822:01 A/C: Lima papa

1824:42 ATC: Okay uh three lima papa fly heading zero three five vectors for Silver City

1824:49 A/C: Zero three five lima papa

1826:19 ATC: And three lima papa understand you are gonna have to have an IFR approach in there you're ya you know you just came out it's not VFR conditions at the airport

1826:27 A/C: I've had a pretty high ceiling uh when we *(cu) when we just come out three lima papa and I'm picking up the AWOS now and I'll listen to that

1826:34 ATC: Okay three lima papa tell ya what why don't you fly heading zero four zero to pick up the uh one two eight radial off the Silver City VOR then we'll set ya up for the VOR/GPS A approach

1826:48 A/C: Lima papa uh zero four zero to intercept the one two eight lima papa

1828:16 ATC: Three lima papa advise accepting the radial inbound and I can getcha lower you're gonna intercept it about uh five miles southeast of the airport

1828:27 A/C: You want me to uh advise of what three lima papa

1828:30 ATC: Three lima papa advise me when you intercept the uh one two eight radial inbound as soon as ya do we can get lower

1828:36 A/C: Lima papa

1828:53 A/C: Three lima papa I was uh cleared down to eight five is that correct

1828:58 ATC: Three lima papa maintain one zero thousand maintain ten thousand for now

1829:02 A/C: K ten thousand until the intercept three lima papa

1829:08 ATC: And three lima papa if ya like I can go ahead and give ya approach clearance fly present heading join the the Silver City one two eight radial inbound maintain one zero thousand until established on the radial cleared VOR or GPS A approach to Silver City and uh as soon as ya get on the on the ground there call fight service cancel let us know you got down okay or if you run into anything else you're welcome to stay on this frequency monitor and to ah and let us know what whatcha need

1829:38 A/C: Okay zero four zero to intercept the one twenty eight inbound and that's for the VOR alpha is that correct

1829:44 ATC: It's the VOR or GPS alpha

1829:48 A/C: Lima papa

1829:50 ATC: Three lima papa do we need to uh get any assistance for you at at Silver City

1829:55 A/C: Uh if you could call the uh flight service I believe it's grimes aviation and tell em we're comin' back they were they were hangin' around when we left

1830:04 ATC: K three lima papa roger grimes aviation we'll do it

1831:55 A/C: (Unintelligible) intercepting the uh VOR alpha inbound course

1832:01 ATC: Three lima papa roger we're in the process of trying to get in touch with grimes right now

1833:05 ATC: K three lima papa change to advisory frequency is approved uh if there's anything else ya need just let us know and uh call us as soon as ya get get down on the ground with a safe landing

1833:15 A/C: Lima papa

WELCOME NEW MEMBERS

Cris Dowhie	P-592	John Tucker	P-480
John Dewane	P-594	Thomas Alexender	P-42
Robert McEwan		Joseph Gibson	P-245
Darrel Stucki	P-359	L. D. Perry	P-212
Henry Rosenthal		Tom Ertel	P-361
Peter Greig	TC Baron		

CURRENT SOURCES OF USED PARTS

Dodson International
1-800-255-0034
P-32, P-125

Select Air Parts
1-800-318-0010
Mostly New Duke Parts

White Industries
1-800-821-7733
P-235, P-325

Atlanta Air Salvage
1-800-237-8831
P-104, P-113, P-106, P-151

Air Salvage of Dallas
1-800-336-6399
P-68, P-217, P-275, P-377

SVA
916/279-2111
P-59, P-71, P-80, P-135, P-539

Member - Fred MacKerodt
201/307-1991
P-103

U S Air Salvage
1-800-849-8692
Have 3 A60

Global Aircraft
1-800-561-6448
P-33, P-149

As Larry Schuler Wrote in newsletter 97-3 he experienced almost a complete electrical failure after leaving the 1997 fly-in. While this is a rare occasion, you might consider a portable standby battery available from Electra.

ELECTRA

The ELECTRA is a emergency start or reserve power device that incorporates the latest in battery technology. This unit is available in 12 volt, 24 volt or both voltages. The following specifications are provided:

	12 Volt	24 Volt
Peak Cranking Amps	900	900
Cold Cranking Amps (30 Seconds @ 0 degrees)	250	225
Reserve Capacity (# of minutes @ 25 amps 80 degrees)	50	44
Weight (lbs)	28	46

In addition it is equipped with its own built in battery charger. This charger is the newest pulsed type technology and can be left plugged in indefinitely. A power outlet is also provided and can be used to back feed a electrical system though its cigarette lighter receptacle (max current 12 amps). The ELECTRA can be stored in any position, virtually anywhere, with the only limitation that for maximum performance it should be stored above 50 degrees F. When used to jump start, do not use for more than 6 seconds without a 3 minute rest. Recharge time will vary depending on the number starts between chargers.

The Electra comes with a "Anderson" connector to which you may connect several different types of power cords (booster cable clamp or specialized plug). The unit will be shipped with a 16 foot booster cable clamp and "Anderson" end cables. Optional cables are available in either round or oval plug styles.

Prices are $399.00 for the 12 volt and the 24 volt is $499.00. Included is one set of 16' jumper cables and a 8' male to male power outlet (cigarette lighter) cord. Orders can be sent to:

ELECTRA
P O BOX 602
RUSHLAND, PA 18956

For additional information FAX 215-598-3105