



CHAPTER 27 NEWSLETTER

Meetings Held on the Second Sunday of the Month at Meriden-Markham Airport, Meriden, CT

JUNE ISSUE

STARDUSTER TOO



Photo shows Phil Hax's Starduster Too at Meriden Airport preparing to take off on a photo mission as his front seat passenger happens to be a professional photographer. We've seen some of the photographs and they are quite good. Chapter 27 should be well represented in the biplane configuration with Charlie Maxted's Wichawk, Jim Simmons' Steen Skybolt, Doug Brady's Starduster, and now George Durkota's new project—another Starduster. By the way, Doug assures us he has pulled all the stops and will definitely have his Starduster at the airport in the near future. Oh yes, the Ercoupe will be flying *THIS SUMMER!*

MONTHLY MEETING

The June meeting of Chapter 27 will be held on Sunday, the 12th, at Meriden-Markham Lounge. Although we've had a terrible spring as far as weekend weather goes, the law of averages has to be in our favor sooner or later. So let's hope this coming Sunday will favor us with a nice day thereby encouraging a LARGE turnout.

T18 RECORD-SETTING FLIGHT TRY

Don Taylor of Hemet, Calif., is planning a July 6 departure in his homebuilt Victoria T18 for a record-setting flight to the North Pole. He's already set one record in his aircraft, becoming the first person to fly around the world in a homebuilt. Taylor said he has a Sperry INS computer donated by the factory for the flight.

REMEMBER—IT'S JUNE 12 AT MERIDEN-MARKHAM LOUNGE—TIME 9:30 A. M.

RADIAL ENGINE AUTO FUEL STC GETS EAA ATTENTION

HALES CORNERS, WI—A North American AT-6D has become the first warbird legally flown on unleaded automobile gas. The airplane, which has been on long-term loan to the EAA Aviation Foundation's Flying Museum, is the largest and heaviest aircraft legally flown on auto fuel to date, according to EAA.

Gene Chase, EAA pilot, put the AT-6D through its FAA-approved flight test April 28. Tests have been conducted on large radial engines since the historic announcement last year that EAA's Aviation Foundation had been granted an auto fuel supplemental type certificate for the Cessna 150.

Radial engine tests have been conducted by Charles and Todd Petersen, Minden, Neb. They have obtained STC's that allow the use of unleaded auto fuel in Pratt & Whitney R-985 and R-1340 radial engines including agricultural-use aircraft such as the Grumman Ag Cat, the Weatherly Thrush, and the Air Tractor.

The AT-6D is owned by Paul Poberezny, who is loaning it to the foundation.

"This is another significant breakthrough in the field of alternate fuels," Poberezny said. "This AT-6D, which is very rarely flown, is an important part of the Museum's flying collection. Perhaps, now that we are able to use a less expensive fuel, it will participate in more air shows, fly-ins, and warbird gatherings."

"This can be an extremely significant development for the agricultural pilots who rely on these large radial engines," he said.

Chase flew the AT-6D between Oshkosh and Minden for the flight test.

The Petersen's are beginning auto fuel flight tests on the twin-engine Beech 18 equipped with Pratt & Whitney 450 hp engines and the DeHavilland Beaver. EAA and the Petersen's may work together on the project. For more information on auto fuel STC's for Pratt & Whitney R-985 and R-1340 radial engines, contact Petersen Flying Service, Route 1, Box 18, Minden, NE 68959.

EAA's current flight research program, which is continuing on the Cessna 182, has now accumulated over 25 hours toward the 500-hour flight test program. For more information on the EAA's unleaded auto fuel STC for the Cessna 150, write Auto Fuel STC, P.O. BOX 469, Hales Corners, WI 53130.

NON-PILOT

A flier with 40 hours in a Cessna 172 was not seriously injured when the plane crashed at Visalia, Calif. The plane stalled during a landing go-around, burned after impact and was substantially damaged. The NTSB said the flier was unqualified to fly the plane because he had no certificate. He had not maintained flying speed which caused the stall.

ADJUSTING PROPELLER

TAVERNIER, FLA—A self-adjusting propeller for ultralights and other aircraft has been developed by Aqua-Prop. The new propeller changes its pitch in flight in response to changes in airspeed, much like the constant-speed props used on high performance airplanes, but it does it without mechanical linkage or other moving parts.

Pitch changes are accomplished by using aeroelasticity—the reaction of a structure to changing aerodynamic loads. It has a curved or "Scimitar" shape leading edge, and a straight trailing edge.

The stiffness of the blades is tailored to hold the blades in a flat pitch when the airflow through the prop disc is fairly slow, such as during climb. This allows the engine to develop its maximum rpm and power for the best climb rate.

At cruise speed, the leading edges of the blades move forward, increasing the pitch. As a result, the engine doesn't overspeed and it can maintain cruise speed at a lower rpm for much better efficiency.

The props can give a pitch change of four to five inches, better climb rate and a 25 percent improvement in fuel consumption.

The props are made from 13 laminations of "rock" or "hard" maple, and are fitted with a leading edge made of a composite of 92-95 percent chrome-moly steel or tungsten carbide depending on application. The composite leading edge makes the props impervious to erosion and other damage from rain, gravel, sand and high grass.

Aqua-Prop makes the Scimitar props for everything from ultralights to homebuilts in diameters up to 96 inches and in any desired pitch.

WESTCHESTER CURFEW GOING BACK TO COURT

Users of New York's Westchester County Airport are taking the county government back to Federal court because it failed to implement a noise monitoring program agreed to in an earlier court stipulation. Court date is scheduled for early July. In the meantime, the curfew will remain in effect.

CHAPTER 27 OFFICERS FOR 1983

President—Doug Brady
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GYRO INSTRUMENTS— HANDLE WITH CARE... AND RESPECT

The heading, attitude and turn indicators in the airplanes you fly are three of your best friends and should be treated accordingly. Each of these instruments provides valuable flight data and helps reduce pilot workload.

As important as these gyroscopic instruments are, however, aviation accident reports indicate that some pilots may not completely understand their operation. Or, perhaps more significantly, some pilots may rely too much on their gyroscopic instruments, occasionally to the point they are almost helpless in the event of a gyro failure.

Your gyroscopic instruments operate according to two basic physical properties—rigidity in space and precession. A rapidly spinning gyro remains rigid in its original plane of rotation, despite movement of the instrument case. Hence, gyroscopic instruments provide a **fixed point of reference**.

The gyro rotor, when up to speed, resists any force attempting to alter its spin axis. The spin axis does move but 90° to the applied force. This movement is known as gyroscopic precession.

Some precession is always present due to bearing friction. Excessive precession, or drift, indicates improper operation within the instrument and causes unreliable displays.

A few operating tips concerning your gyroscopic instruments might be useful at this point. For example, the heading indicator should be accurately set to some magnetic reference such as a properly calibrated magnetic compass just before takeoff, but after the gyro has come up to full speed. (With venturi-driven gyros, this must be done in straight and level flight.)

Use a runway for reference only if it is **exactly** known. Runway numbers may vary as much as five degrees from precise runway magnetic headings.

Non-slaved heading indicators must be periodically compensated for drift. **Three degrees in 15 minutes is normal**. Significantly greater drift rates may signal impending gyro failure.

Panel-mounted gyro instruments, especially attitude indicators, should be caged before aerobatics are commenced.

Impending failure of gyroscopic instruments may announce itself in several ways:

- A heading indicator that shows excessive drift—that of more than three degrees per 15 minutes—may do so because of worn bearings, causing friction and, hence, precession or because of lack of power (air or electric) which keeps the gyro at the proper speed.
- Sluggish response by turn indicators or turn coordinators.
- Noise. Gyro instruments may become noticeably noisy due to internal bearing wear or damage. Such noise can best be perceived **immediately** after engine shutdown, when the cockpit is quiet. Take a moment and listen.
- Attitude indicators may be slow to erect or show deviation from level flight when the aircraft is, in fact, straight and level, if bear-

ings are worn, or the power to spin the rotor is insufficient.

The first step when any of the above symptoms is evident is to check power sources: vacuum gauge, if air driven; electric power indicators (meters or warning lights), and connections (air or electric) to the instrument case.

If your connections are venturi-powered, remember that ice in the venturi will disable your instruments and may form under conditions similar to those conducive to carburetor icing.

Help your gyros breathe! Airborne contaminants will damage the precision bearings in your gyros. Avoid smoking in the aircraft. Ensure that air filters for air-driven units are cleaned or replaced as necessary, particularly if you operate in a dusty environment.

Shock damage is the surest way to turn a gyro instrument into junk. Avoid shock damage to delicate bearings by:

- Proper handling by qualified personnel.
- Use of shock-absorbing shipping containers when taking instruments to or from the aircraft.
- Caging instruments before aerobatics.
- Avoiding abrupt brake use. It can impose acceleration loads on gyro bearings.
- Special care to see that instruments are not dropped or bumped during removal or installation in the shop or in transit.—**AVEMCO**.

CALENDAR OF EVENTS

JUNE 17-19—WATERVILLE, MAINE — Waterville-Northeast Air Show and Fly-in '83. Sponsored by Maine EAA Chapters. Contact Waterville Chamber of Commerce (207) 873-3315.

JUNE 18—TOMS RIVER, N.J.—7th Annual Fly-in. Sponsored by EAA Chapter 315. R. J. Miller Airport, Rt. 530, Berkley Township, near Toms River. Contact Tom Tedrow, Box 451, Three Brooks Rd., Freehold, NJ 07728—(201) 780-0765.

JUNE 25-26—ORANGE, MA—7th Annual New England Regional Fly-in. Sponsored by EAA Chapter 726. Contact Paul Dexter (617) 544-6412.

JULY 1-2-3—MINDEN, NE — The 1983 National Ercoupe Fly-in will be held at Pioneer Village. Fred Weick will be giving a talk at the Saturday evening meeting. Camping facilities are available. For information contact John Wright, No. 4 Flossmoor, R.R. 6, Springfield, IL 62707. Tel. (217) 546-0585.

FOR SALE

SPINNER AND 2 BACK PLATES 10 1-2"x12", \$50—
Advertised in Wag Aero for \$68.95, cat. No. 1-842-000.
Call 272-4922.

0-235 LYCOMING, COMPLETE, CLEANED, DISASSEMBLED—
Within Specs, \$1,500. Contact Frank Gambardella, 48 Voss Road, West Haven, CT 06516. Tel. (203) 933-7700.

CHARLES MAXTED
957 Coleman Road
Cheshire, CT 06410

EAA CHAPTER 27 MEMBERSHIP FORM

Please fill in the following form and mail with your dues to: **MARK WEGMAN, 175 CANTON ST., APT. A8, WEST HAVEN, CT 06516.** (Dues are \$10 per year.)

Name State Zip

City Phone

Current EAA No. Pilot Rating Held

Do you own an aircraft? Make and Model..... Registration No.

Do you have a project? How much completed?

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