

# Flying The Self-Launching 2-Place Nimbus-3DM

This is one large sailplane (24.6 Meters) and yet has the capability to self-launch at close to 1,800 lbs. with a wing loading of 9.7 lbs/sq. ft. It is powered by a liquid cooled Rotax 535C 2-stroke that develops 60hp. at about 7,200 rpm. The cockpit engine controls are relatively simple to operate and a single 3 1/4" instrument provides data and control of the engine extraction/retraction, battery status, fuel indicator, RPM, Coolant Temp., engine hrs., magnetos and ignition system. A typical startup, takeoff and engine stow involves the following:

**STARTING:** Master switch on, extend engine, release prop brake, fuel on, set throttle at 1/4, choke on. ignition on, press start button and come off the choke as soon as engine running smoothly. And run it does without any problem. Check mags at 3000 RPM and full throttle at 6,500 RPM. The brakes

will hold the big bird at full throttle but the nose will come down allowing the nose wheel to contact the surface. Care should be taken to "ease the throttle off" as the tail will drop heavily to the ground if the throttle is "chopped". For TAKEOFF, set minus 2 on the flaps and ease the throttle forward. Directional control is simple and a wing runner is necessary. Aileron control is immediate and after setting plus 2 on the flaps, the big bomber is rotated at about 50 kts. Lift off and climb are not spectacular but somewhere between 1,000 and 1,200 ft. (at 4720' msl-Minden) liftoff occurs and the nose is then eased down slightly to attain 57kts which is the best climbing speed. The engine is very smooth at full power and a climb rate about 200 fpm was found to be "normal" for flights out of Douglas County Airport. Naturally you are looking for lift....continued on page 2—

## **Self-Launching Sailplane Pilot's Assn.** **NEWSLETTER**

JULY - AUGUST 1990

Published Bi-Monthly by SLSPA, Inc. // Pete Williams, President and Editor // Jim Culp, Vice President // Issue # 11, Volume I

### **Transition to Motorgliders- FAA Requirements**

FAA Advisory Circular No. 61-94 defines the requirements and outlines two Syllabi:

A. For a pilot who has at least a Private Cert. with a Single-Engine Land Rating AND a Glider Rating.

B. For a pilot who has at least a Private Pilot Cert. with a Glider rating.

The pilot giving the checkout must hold a Commercial Cert. with Airplane Single-Engine land Rating AND a Glider rating PLUS hold a current FAA Flight Instructor Cert. with a Glider rating (CFIG). He must also meet the requirements of Syllabus A.

**Syllabus A:** At least 3 dual takeoffs and 3 dual landings in a motorglider to a full stop. Such a check to be given by a CFIG who is authorized to conduct flight checks in a motorglider per the above paragraph.

**Syllabus B:** Five hrs. flight time in motorgliders, at least two of which should be solo. Ten takeoffs and...

ten landings to a full stop in a motorglider. At least five landings with the engine off/stowed. A dual cross-country and a solo cross-country flight with a landing at least 25 miles from origin of flight. A flight check by a CFIG authorized to conduct such a check.

### **NEVILLE SWAN'S SELF-LAUNCHING SF-27M**

Neville Swan soars his Scheibe SF-27M near Auckland, New Zealand after purchasing same from Bob Gaines. Bob originally purchased this ship from the University of Mississippi. Originally owned by Fred Jacobs, this steel tube, wood, fabric design will self-launch and perform with the early glass sailplanes with no problem. Neville recovered the fuselage and did extensive clean up prior to licensing in New Zealand. Wings are next, he reports. the photo shows Swan in company with an Astir over the North side of Auckland. An extinct volcano (Rangitoto) is seen in the background.



Nimbus 3DM continued.. to increase the climb rate and most pilots will accept 1-2 kts at this point to get up and going. This also makes for shorter engine runs. The 3DM is easy to center in thermals and "grooves" well in spite of the span. The feel is the same as a 17-meter ship as far as rate of roll and responsiveness to aileron. The ride is smooth and cushioned. Once you are ready to put the engine away, throttle back for about a minute and switch off the ignition. Watch the prop in the mirror and activate the prop brake to stop the blades in the vertical and hit the retract switch. Turn off the master switch and the fuel valve and you are at once a 57:1 high performance sailplane. It seems you can just think about 100 kts and you are there and hardly coming down at all. Engine control can be passed to the rear cockpit but make sure that if the engine is running that the co-pilot switches on the ignition or the engine will quit. Several touch and goes with engine running were made as well as a touchdown/extract/start/takeoff sequence. This is not recommended on short runways. At 10,000' msl the engine was used but climb rate was marginal. Right: Pilot/Owner Jerry Wenger and his Nimbus-3DM

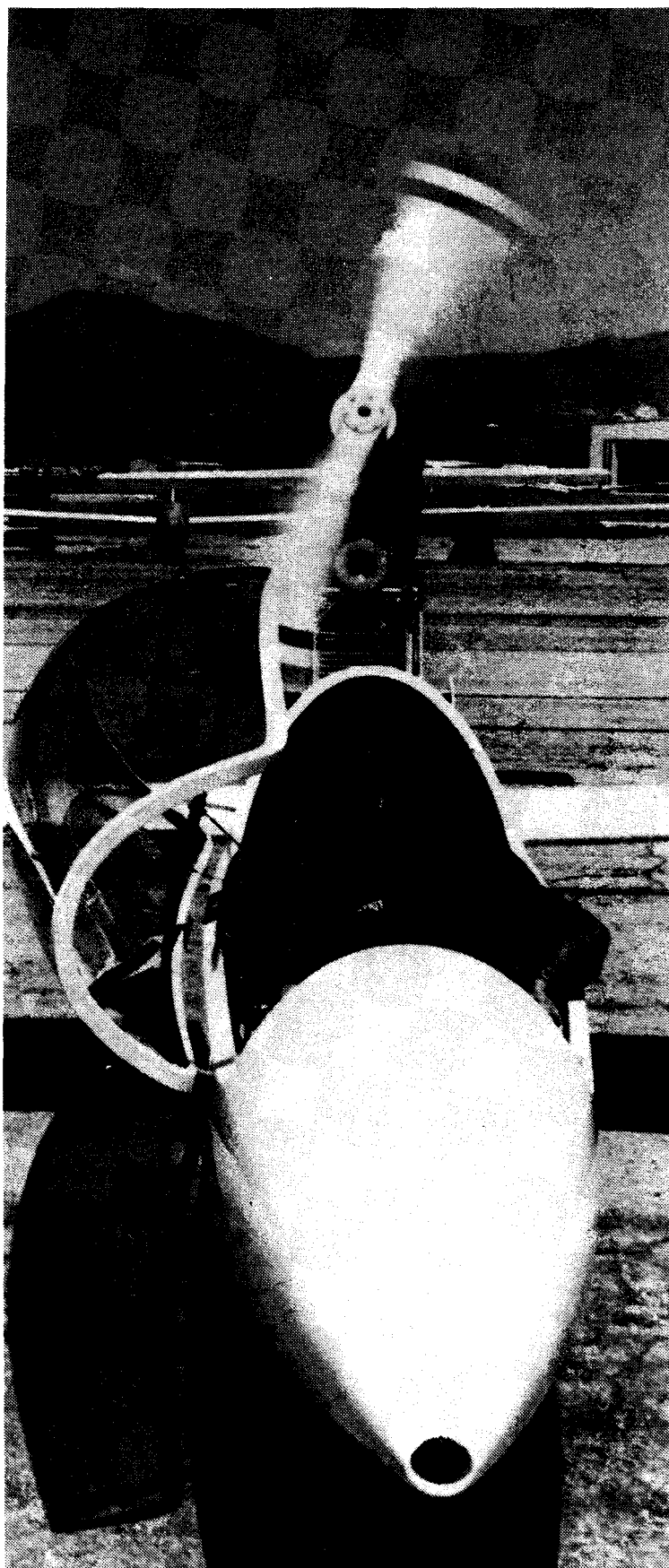
#### **DG-400/Rotax 505 Combustion Chamber Damage**

During the changeout of connecting rod bearings on a Rotax 505 (Rotax Tech. Bull 505-05), the aft piston top and combustion chamber was found to be pitted. Investigation revealed one of the aft carb. throttle butterfly valve retaining screws had come loose, entered the combustion chamber and finally came to rest imbedded in the head of the piston. A small score was found on the bottom skirt of the cylinder bore below the compression line. The piston wall was scuffed on the intake side. This engine had over 100 hrs. and was operating normally in all respects. The caged needle bearings were found to be o.k.

A new throttle shaft assy P/N 28-840 965 and screw P/N 37 840 965 (Parts List # 357/Rotax) plus a new piston and ring set was installed. Additionally, new piston pins and cageless needle bearings were installed. When ordering Tillotson Carb. Parts mention Model No. HR- 177B carb. as used on Rotax 505. These parts may be hard to come by as Tillotson Carb is no longer in production.

It is suggested that all Tillotson-equipped Rotax 505 engines be inspected to assure the integrity of both the choke and throttle butterfly valve retaining screws (there are 4 in each carb). Simply remove the cover over the carb intakes and look down the throats using a flashlight.

*It is interesting to note that these screws are not secured in a positive way by staking or using locktite. Suggest remove and secure with locktite to be on the safe side./ Ed.*



## SLSPA UPDATE...

As this newsletter goes to press SLSPA is underway to becoming a Division of SSA (Fall SSA BOD Meeting Sept Carson City NV). Current status: 142 U.S. members  
23 Foreign members  
165 Total members

The results of the recent questionnaire sent to all members was a response of 43 which represents a majority of the 70 U.S. members who own a powered sailplane.

The consensus of opinions expressed was over 80% of those responding desired:

1. That an SLSPA member sit on the SSA Competition Rules Committee.
2. That motorized sailplanes be permitted to fly in Regional Sports Class category when less than 3 are entered. Scoring to be under current Aux. Pwrd. Rules. If 3 or more powered sailplanes enter a Regional contest, then an Aux. Pwrd. Class will be declared and scored under existing rules.

A memo was sent to SSA via Paul Schweizer requesting that the SSA Board place the above items on their Fall Agenda. Since SLSPA represents the majority of self-launcher and sustainer sailplane pilots in the U.S., we will continue to be the advocate for this class of sailplane to become firmly established in racing, records and badges. Any and all comments are requested from the membership regarding these matters.

### World Motorglider Championships Results...

Open Class: (15 entries)

1. Lherm/Nimbus 4T/France
2. Bougard/Nimbus 3T/Britain
3. Leidinger/ASH-25T/Germany
9. Shea/Nimbus 3T/USA
12. Wenger/ASH-25T/USA
14. Schurmeier/DG-500/USA

18-Meter Class (18 entries)

1. Treiber/Ventus CT/Germany
2. Huttner/Discus T/Germany
3. Guntert/DG-600M/Swiss
13. Buchanan/Ventus CM/USA
14. Pollard/Ventus CM/USA
16. Greer/Ventus CM/USA
17. Nelson/Ventus BT/USA

Jerry Wenger reports the weather was rainy and on two consecutive days he logged 8 hour flights! Don Aitken flew with Bud Schurmeier and Marion Barrit flew with Wenger. A total of nine contest days were flown out of Issoudun France, 100 miles south of Paris.

### MAIN PROP SHAFT FAILURE ON DG-400 S/N 160

Andy Johnson-Laird experienced failure of the eccentric prop shaft during takeoff on June 13, 1990. A digest of his report to Glaser-Dirks follows:

All preflight checks normal. Prop checked for fore/aft play. Engine run for 5 minutes on ground test. Mags checked normal. Fracture occurred during takeoff at 5,800 rpm and at a height of 2 meters. Throttle reduced to idle immediately and engine shut off with less than 2 seconds overspeed. landed straight ahead without incident. The prop struck the right wing in two places causing what appears to be surface damage only.

Investigation showed an almost clean fracture right at the surface of the vertical mounting plate 4M2. The engine had a total of 27 hrs 45 minutes time with TN 826/22 and the annual inspection completed just recently. The propeller and drive belt were destroyed.

FAA was advised of this failure and Andy is submitting a Malfunction and Defect Report.

As of this newsletter, we have no further amplification but Andy indicated he was going to have a magnaflux or dye penetrant test on the failed shaft. The area of failure is not visible for inspection without removing the shaft from the vertical support. SLSPA knows of no other failures of this type. Andy is also replacing the front belt retaining ring for the upper pulley and a complete bearing assembly for the eccentric shaft. It was the opinion of the inspecting mechanic and the FAA people that this fracture started some time ago. More to follow.

Fracture line here

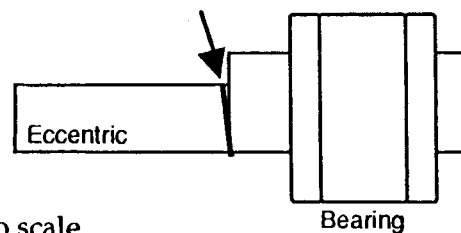


Diagram not to scale

