

(Fouga Sylphe), Germany (Heinkel Greiff and Huetter) and Russia (A-13). In all of these experiments, the small turbo-jet has proven itself as the best answer for an auxiliary power system for sailplanes. None of the small turbo-jets which are in use today ever have been mass produced. Most of them still are in the experimental stage, except the French Turbomeca Pimene engine, so this may be the reason why they are still very expensive.

Myself, full spare time-wise, I have been designing, building and experimenting for the last 17 years with small turbo-jet and gas turbo-shaft engines. So far, I have built seven prototypes with good success. At the present, I have just finished lab testing my latest pet, a 14-in.-long turbo-jet engine which has been combined with the fuel tank system in a single package weighing only 14 lb. dry. It carries fuel for 20 minutes and develops 20 lb. of thrust at 75,000 rpm. The engine has a single-stage, mixed-flow compressor, an annular-type combustion chamber with six injection nozzles, and a single-stage gas turbine. The rotor is suspended on two highspeed ball bearings which are lubricated and cooled through an oil-air mist spray. The rotor is started with compressed air via the turbine.

This jet pack I will test fly soon on top of my Prue 215A sailplane where it is simple to install or to remove for easy maintenance. Of course, with 20 pounds of thrust I cannot take-off by myself but I can keep altitude after being towed aloft.

To solve this problem, I already have a turbo-jet of 80-100 lb. total thrust (with afterburner) under construction. Basically, it is the same engine as described above but 25% larger. The rotor speed has been increased to 95,000 rpm to boost the compression ratio. The compressor and turbine wheel will have several aerodynamic improvements and increased mechanical strength. The annular combustion chamber contains a newly-developed swirl-type fuel injection system. The lubrication system remains the same, with cooled bleed air from the aft diffuser section.

With 100 lb. thrust I should be able to take-off without any type of tow. The afterburner will be in use

only to lift the ship to a safe altitude over the field, then the rest of the climbing will be done with just the main engine.

The final solution will be with the engine mounted inside the fuselage and the jet nozzle at a suitable place where the hot exhaust air will not do any harm to the skin of the sailplane. The air intake will be on top of the fuselage, where rocks, etc., cannot be sucked into the engine, because it would be quite harmful to the compressor wheel. After the engine is shut off in the air, the air intake will be closed to give the sailplane aerodynamic cleanliness once again.

I don't know how long it will take until the baby turbo-jet engine is available on the market (at a price near \$800 to \$1,000), but I am sure it will come and give the soaring pilot new equipment with which he can explore many new challenges. It may bring in many newcomers to the wonderful sport of soaring, people who may so far have hesitated because of the towing method. Also, new rules for contests could easily be made, if necessary, for the self-launched sailplane. So I am looking forward to more success in the future with my jets. Meanwhile, I would be

glad to learn the thoughts of other soaring pilots concerning jet-powered sailplanes.

Bibliography on Soaring

Recent articles or items on soaring which have appeared in non-soaring publications.

Flight, Oct., p. 41, photo of winners of 1-26 Regatta at Elmira, N.Y.

Flying, Oct., p. 61, photo of Adam Witek in Polish Foka sailplane at U.S. Nationals; p. 88, photo of Dick Johnson as new U.S. National Soaring Champion and news item on the Nationals; p. 92, photo and news item on David Perry acquiring a glider rating.

National Aeronautics, Aug.-Sept., p. 4, news item on Ben Greene's world goal record claim, p. 12-14, "SSA Sky-Sailors Had a Ball," illustrated account of the 1963 Nationals; p. 23, news item on Paul Bikle's 557-mile flight.

The Airpower Historian, July, pp. 69-73, "Our Silent Ones—The Combat Gliders," the story of the background and development of the WW II glider program, the military uses, and the liquidation of the program.

Sport Aviation, Oct., pp. 29, 34, 36, 56, list and of photos of sailplanes at the 1963 EAA Fly-In.

FLY WITH THE FLYING GEHRLEINS

AT THE

THERMAL-G-RANCH GLIDERPORT

RD4 HAMOT RD., WATERFORD, PA.



- INSTRUCTION
- PASSENGER RIDES
- LINK TRAINER
- WINCH TOWS
- HANGAR, TIE DOWNS
- SCHWEIZER DEALER
- WINCH MFG.

- DORMITORY & FAMILY CABINS
- SWIMMING, FISHING, BOATING
- RESTAURANT, HOME COOKING
- CHILDREN'S PLAYGROUND
- SCHOOL OF HORSEMANSHIP
- TRAIL RIDES
- TRAILER MFG.



PRICES ON REQUEST

ERIE, UN 6-1131

Glider - Port Vacation Land

