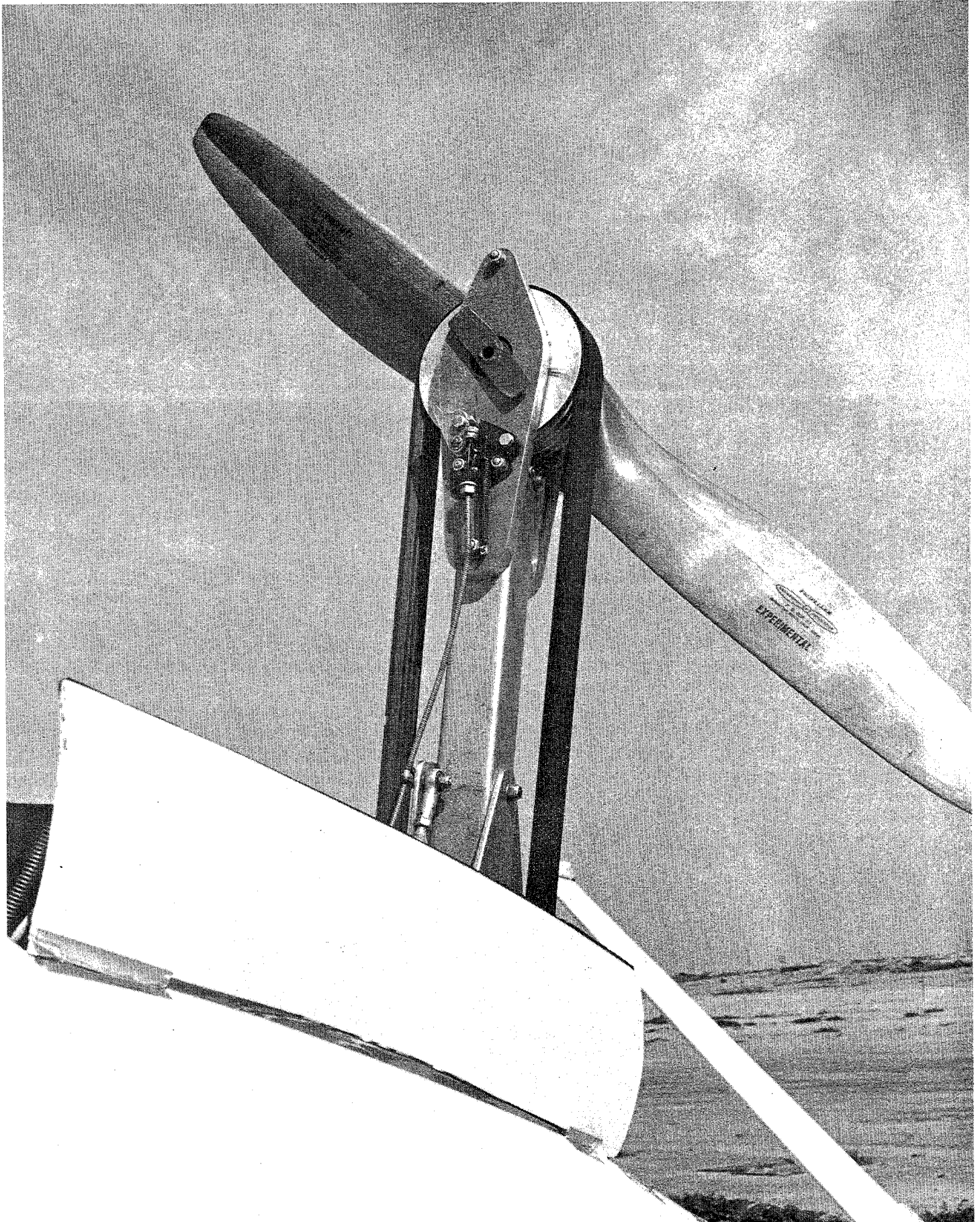


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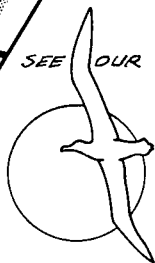
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# MOTORGLIDING

Donald P. Monroe, Editor

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Vol. 6, No. 5 Published by The Soaring Society of America, Inc. October-November 1976

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Cover: Retractable prop, mast on Vern Oldershaw's 0-3,  
by Don Monroe

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## FURTHER ADVENTURES OF DELTA TANGO

by Douglas J. Terman

The tradewinds are hammering away at the galvanized sheet metal roofing of Wings Aviation Hangar Number One. The metal vibrates in the wind and creaks as it contracts in the cooling tropical afternoon.

Four of us stand on the tarmac at the entrance to the hangar, the compressor now silent, the spray gun cleaned; now just waiting. We share a pack of Rothmans, laughing quietly the way men will when a task is almost finished and the best part remains to be done.

Earl the Squirrel laughs and chucks his cigarette to leeward. "Some Yankee plane now," he says, joking and pointing with his thumb over his shoulder into the dark recesses of the hangar.

Hans, who is thick as a stick, Dutch and stubborn, calls her my "yankee doodle strudel."

Ray, who is from Guiana; a Groucho Marxist, wanted to paint her in the symbolic red, green and black of the revolution.

Her color scheme, however, is basic red, white and blue and maybe later on, we'll add the stars. But for now, she is still cocooned in newspaper and masking tape, waiting to be stripped to the nude when the paint has set.

Her old registration from Martinique a Department of France, was F-0GEK. But her old letters have dissolved away under sanding and multiple layers of white polyurethane and the new registration reads N211DT; or to me, Delta Tango.

For the rest of them, the thing is just about over. They will help strip her bare, pat her bottom and wish us well. But for me, the adventures of Delta Tango are just beginning.

Delta Tango picked me up in Martinique. Initially, it was no raving love affair. She really was a bit of a tart; her cosmetics faded, canopy cracked and socially diseased with an acute case of low oil pressure. But I bought her out of bondage, promised her far horizons, unlimited and lavish care and took her home to St. Lucia, forty miles to the south as the fish swims.

Now, she had a new engine in her mounts, new cushions, fresh paint, a hyper-critical annual inspection plus a

three-man life raft strapped in the back seat. And a ferry permit to Vermont.

We crushed out our cigarettes and walked back into the hangar; the remaining twilight tinting the whites to rose. Like boys opening a present, we stripped back the newspaper and masking tape and stood aside. I grinned, suddenly twenty years younger. Delta Tango blushed and grinned back.

Delta Tango is a Sportavia RF-5, the shorter-winger version of the RF-5B *Sperber*. L/D of something like twenty-two, but aerobatic and with a fuel range of five-hundred-fifty miles plus some additional minutes of blue funk staring at the gas gage. At minimum power setting, she can loiter at altitude for some eleven hours, providing, of course, that the SAM-3s don't get us or the canopy doesn't fog up at flight level four hundred plus.

*Powered glider* is a phrase I detest. It implies some form of bastardized sailplane with rude noises under the cowling and oil dripping on the hardstand. Or perhaps instead, some freakish longwinged thing with insufficient room to store the golf clubs, the family hound and three junior thugs. No, Delta Tango is neither of these and yet something more than the whole. *Synergetic*, if you were to define her function.

She would teach me that cross-countries are matters of adventure, not boredom. To stop and loiter in a thermal, to run a ridge, to inspect the cauliflower cumulus as it forms and decays... these things and more; secrets shared between us. And days that the glass ships lie abed for want of local lift, we sniff and hunt the countryside on a gallon's worth of fuel and finally soar alone, a gaggle of one. Or just for fun we loop and roll and point our wingtips at the sun.

St. Lucia is an island imbedded in the stream of trade winds, lolling in the perpetual summer of the tropics; fourteen degrees from the equator and thirty-five hundred miles from Vermont as the plane with one magneto flies. Much of this is over a very flat landing area called the Atlantic Ocean. The ferry permit specified Vermont but Chester, Nova Scotia seemed to be a reasonable turn point to final approach to runway two-two, Sugarbush, Vermont. Totaled on the flight plan, the mileage swelled to

forty-four hundred miles. I had much to learn.

The following morning was to be the commencement of a series of test flights, aircraft familiarization, fuel consumption curves at various power settings and above all, short-field, crosswind landings. The charts were prepared, checklists made and regimen of sane procedures all laid out like precision parts of an infallible master program.

But the more base animal in me had packed two flight bags, collected an assortment of spares and traced a thin penciled line across the reaches of the Caribbean Sea over silver-ringed islands of green.

There is a romance in charts. Dry, paper things, they hint at romance and adventure more than any book will ever do. And the names of the islands! Dominica, Antigua, Haiti, Great Inagua. Names of saints and sinners, navigators and thieves; all long dead.

Symbols in dry ink tell of sunken ships, reef-protected lagoons and dark rain forests. Names like Virgin Gorda, Pull and be Dammed Point, Salt Whistle Bay and Mona Island. I sleep well that night dreaming.

At dawn, the sun splashes gold over the horizon and the wind is now in the southeast, steady at force four. Fair weather cumulus lie in cloud streets as far to the north and south as the eye can see from the hill overlooking Vigie Field. A sane compromise seems to be in flying to Martinique and back. Perhaps to allow Delta Tango to flaunt her skirts to former suitors and sample the ridge lift off Pelee. Perhaps even to stay overnight at La Belle Creole, lifting a glass of the rough red from Algeria and fishing for the fresh water prawns which lurk in the depths of pools of garlic butter and chives. For ten francs service complete.

Goodbyes to Anne and Peter and the rest. Only Anne really knows my mind. But as always, I hate to say goodbye.

A few minutes of awkwardness as there always is. . . shaking hands and kisses. I close the canopy.

Gear down and locked, safety pin in. Master switch on.

Choke on, fuel selector on.

Throttle cracked, boost pump on and fuel pressure up.

Cowl flap open.

Mag "on".

Engage starter.

She fires on the first swing and settles in at 1200 rpm, oil pressure in the high green, temperature coming up. Radio on to 119.1.

"Vigie Tower, November Two One One Delta Tango ready for taxi." I check the runup. Rpm's good and green on the gages.

The tower comes back, thick with West Indian accent garbled by a transmitter which was old when Marconi was a pup. . . "Delta Tango. You're cleared to roll. Low pass approved and Godspeed yankeeman."

And Delta Tango and I roll, both singing at the top of our lungs.

We climb in the sun, Delta Tango and I. It is impossible to convey the joy of doing something which is slightly mad. And what in hell is the sense of living without a bit of madness. And besides, what's so mad about this? I can glide twenty-two miles for every mile of altitude, discounting lift. And what is the difference between this and the trusty, rusty Cherokee 140 which I often will fly from landfall to landfall. One magneto is the only difference. And if we build engines with two magnetos, isn't that an admission that the magnetos which we build are basically unreliable. How about two camshafts, two crankshafts and two oilpumps?

This is the logic we are faced with in aviation. More, not better. Faster, not more efficient. More complex, not more simple.

Delta Tango's heart beats with reassurance, the monitors of her life steady and in the green. And more important, she sounds well. Say what you will of VW engines. Usually, even if they don't run well, they still run. But with maintenance and care, they run exceedingly well. Peter Limbach made this one. The complete test results of the run-in accompanies each engine. They are expensive. How do you measure expense over mountains at night, over open sea and above undercasts. Frankly, I think you get your money's worth from Peter Limbach.

A small story about Peter Limbach. I had ordered Delta Tango's replacement engine from a dealer in the Midwest. I

paid a lot and six weeks later plus a whopping airfreight bill, an engine arrived. It was not remotely suitable, having a different mount setup, different intake and exhaust manifolds, different oil cooler and non-standard prop flange. Cables and calls to the States. Wringing of hands and promises. Finally I called Peter Limbach. The hollow effect of a satellite over the Atlantic gives the conversation a 2001 effect. But Peter understands.

In *two days*, I received his exact replacement engine, suitably crated against the shock of a fall from the 22nd story of the Empire State Building. Included were manuals, spares galore and good advice. Peter did this without charge to me, saying that he would settle with the dealer in the Midwest at some future date. Peter did this because he has a reputation and it is important to him that his service is good and his engines are correct. Do you remember when manufacturers thought in this manner? My dad told me that they used to. . . about 1910.

I correct for drift, passing through eight thousand feet, the shores of Anse Mitian below me and to the right. Martinique Approach Control passes my regards to friends. The air is cool now; the view fantastic. Well to the south, I can see Grenada, all the Grenadines and St. Lucia. And to the north; Dominica, the Saints and Guadeloupe. I guess that I knew that I would never stop in Martinique.

No VORs now until Guadeloupe. Dominica now on the nose. An island of 365 rivers, a few people and foilage which is not recorded as yet by category and type. Carib Indians still live in the hills, basically unconquered by the British who sent punitive forces here two hundred years ago. I have paddled up the Indian River on Dominica which spews into Prince Rupert Bay. And I have seen men leaning on trees of alien foilage along that river, muted and silent, testing their machetes against the growth.

We gain altitude slowly, Delta Tango and I, and I savor the thin, blue air, wary of what is below.

Ahead lie the Windward and Leeward Islands of the Lower Blue Antilles. And beyond that, the British and American Virgins. Then Puerto Rico, the Dominican Republic, Haiti and then the far chain of

the Bahamas; Hemingway's islands in the stream.

Delta Tango and I are a dust mote, drifting in the sunlight over a crystallized sea, static in time. Everything is so far and too near. So I sit, concentrating on my feelings, determined to freeze forever the happiness that is now mired in some far corner of my memories.

We have topped the towering cu, the air smooth and cold, like an iced martini. Thirteen thousand and she still wants to climb. Forty-four miles of glide in the bag and I know that there is lift in the cloud streets over the open sea. Do the "purists" in their glass ships know that?

Far overhead, I can see the sun flash on aluminum; the wink marked by contrails so high that they merge into one thin stroke of white across the indigo blue-black of high altitude. I have been there before as well.

Sometime earlier in life when we all seemed immortal and life's sweetest smells were raw kerosene and French perfume. Later too, when I sat in a wave and watched the canopy frost and listened to the 1-34's airframe creaking in the brutal cold and looked down the Sierra. I think that Delta Tango will have oxygen, if I can find the room.

The contrail disappears to the north and I know that it is the Antigua-Bermuda-London flight. They are serving mid-morning tea and cocktails. Soothing Musak and clipped accents on the intercom. All very reassuring. Delta Tango and I are left far behind and below, quite happy in the company of each other.

I level at fourteen thousand now, true airspeed well over one hundred knots. Nice wind aloft from the ESE probably giving us over one hundred ten. Burning up the sky! Oil temperature at 70° C and oil pressure high in the green. Fuel o.k. but a real unknown. I want to stretch it to St. Martin but decide Guadeloupe is a good refueling point. I can check the oil and gas consumption. The engine has only five hours total on it and I have kept the rpms low with lots of leveling off for cooling.

Iles des Saints are below now; a necklace of islands to the south of Guadeloupe. Iles des Borg below, yachts lying to anchor in the bay and descendants of Breton fisherman flying down the channel in lanteen rigged skiffs, full

of snapper and covallie. My mouth waters; the tongue spongy with altitude. I eat a Snickers bar and it is pure ambrosia. And dying for a cigarette.

Guadeloupe forms from out of the distance; a butterfly shape, stationary in the wind, pinned to the sea. To the west, rugged mountains fringed with clouds and to the east, a plain of checkered fields, flat and dull beneath the sun.

I contact Pointe a Pitre Approach Control and give them a guess of approach time. I hate coming down now; the hassle of immigration, customs and health. And only to buy fuel and a bottle of sticky soda pop. My French is lousy, compounding the problem.

Spoilers out now and we sink toward the sea, beginning to tune into the earth. The haze is thicker at low alti-

tudes. unusual for this time of year.

Boost pump on. Back to sixty knots and drop the gear, giving additional drag. Gear in the green and safety pin in.

Coming down now like a Simonized brick, the variometer pinned at six meters per second.

Pointe a Pitre now beneath me; red galvanized roofs and narrow streets with high rise apartments on the fringe of town. The French Army battled communist-lead crowds here three years ago and they left them bloody in the streets. The newspapers reported fair weather and a good sugar can harvest.

I sweep over a tanker steaming up the inlet, and turn to the west on downwind. A cool, metallic voice clears me to land and Delta Tango and I again touch the earth.

---

PIK-20E FLIES!

by Jukka Tervamaki

On Saturday morning the 2nd of October, 1976, a brand new bird was seen in the Rayskala sky in Finland. The PIK-20E took off for the first time. The "E" or "engine-model" of the famous PIK-20 sailplane is a team project of EIRI AVION and the author, who drew the first sketches of the engine installation almost exactly one year ago. Thousands of man-hours have since been put on the machine by both parties. Of course, we opened a bottle of champagne after the flight with Hannu Korhonen, Technical Manager of Eiri and Markku Hiedanpaa, Chief of Product Development in the same company to celebrate the historical moment. Already the next day, Sunday the 3rd I soared for two hours with my new supermotorglider after a five minute takeoff. This was remarkable because October is a very late autumn in Finland offering usually very rare opportunities for soaring.

The following notes give some brief descriptions of the machine and a few pilot impressions of the first flights.

#### Power Package

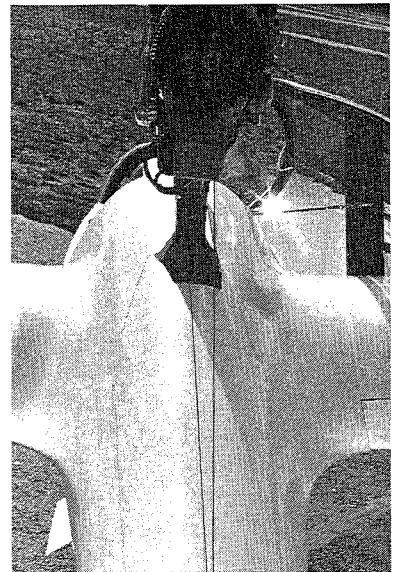
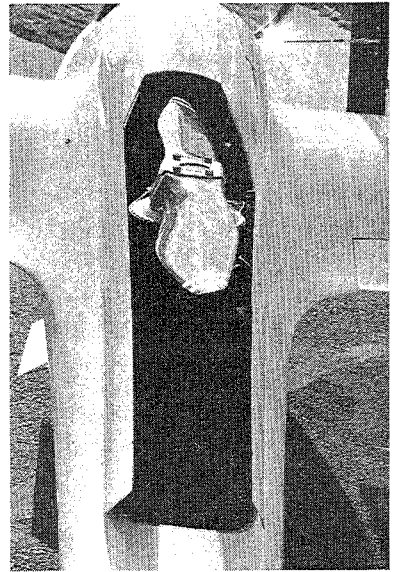
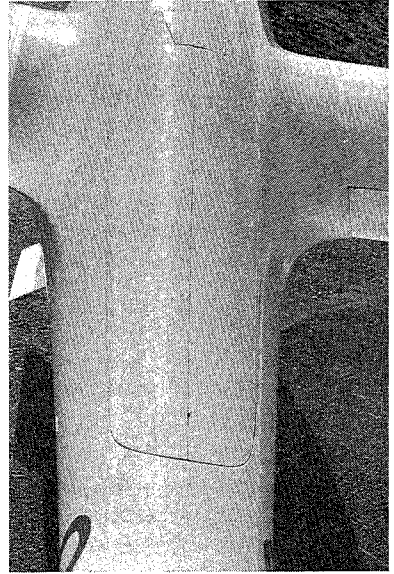
A 32-hp Kohler snowmobile engine is installed with cylinders inverted. The engine retraction mechanism is manual,

incorporating many parts from the PIK-20B flap actuating mechanism, which is also installed in the "E". So, there are two cranking systems in the "E", one on each side of the cockpit. The starter is electrical, a 0.4-hp Bosch and the battery is a 18-Ah Japanese Motorcycle unit. The fuel tank lies between the wing spar joint and the landing gear well having a capacity of 16 liters. The empty weight of the prototype is 302 kg fully equipped with instruments and max. takeoff weight is 450 kg (like the standard PIK-20B). To compensate for the cg shift due to engine weight the wings have about 2 degrees sweepback compared to the B-model. Also the main gear was shifted 10 cm backwards for proper weight distribution.

#### On the Ground

The PIK-20 is equipped with retractable outrigger wheels which move together with the flaps. Of course, there is a steerable tail wheel, too, actually of the same design I used in my earlier ship, OH-440 (Feb.-Mar. 1976 *Motorgliding*).

The first takeoffs and landings proved that this combination works well. Taxiing is easy and visibility excellent. For takeoff the outriggers seem to be very important because the engine is high in the pylon giving a rise to the normal cg position and the ailerons are not very effective during the first mo-





ments in takeoff roll as is usual with the modern glass ships with slim ailerons of today's fashion. But the engine is able to pull the machine to a much faster speed with the outriggers and flaps full down than a wing tip runner is ever able to follow. With increasing speed the pilot then cranks the outriggers and flaps up. And it works, too. For taxiing, the drag of full flaps has a very nice effect. The pilot does not need to touch so much on the wheel brake in spite of the high idle rpm of the two-cycle engine. This was a problem in my AS-K 14 anyway.

#### Powered Flight

The rate of climb, power on, is 2 m/s or 400 fpm. This fulfills the OSTIV requirements for motorgliders but further improvements on this point have been considered either by increasing the power or by modifying the propeller or both.

Engine noise is a problem for the moment since parts of the muffler were sawed off to gain more power. A new muffler is under development.

#### Soaring

Engine retraction in the air works OK. A small mirror was installed in the cockpit to see the propeller position before retraction cycle. Trim changes engine in/out and power on/off seem to be negligible in practice as was anticipated.

Soaring the "E" is sheer fun, of course, as could be expected from a ship which won three first places in the world gliding championships (standard class) a few months earlier. Landings are as easy as with the standard PIK-20B or even easier because the wing tip does not drop down in landing roll. Just crank the engine up and the "E" is readily taxi-able.

#### What Next?

As can be seen from the above notes, there are still things to be refined in the "E" although the basic design is OK. Anyway, I am impatiently waiting for the next soaring season to finally enjoy the high improvement in my soaring performance over the earlier years.

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## FOREIGN SCENE

by S.O. Jenko, Dipl. Ing. ETH  
AMTECH SERVICES

### '76 Burg Feuerstein Contest — Flying Activities

The 6th German Auxiliary-Powered Sailplanes Contest took place from May 29-June 6, 1976 at Burg Feuerstein. Several German aviation magazines carried articles of this yearly event. A summary of flying activities is presented here (last issue of *Motorgliding* described some of the new auxiliary-powered sailplanes appearing at the contest).

The weather was bad — there were only four contest days out of eight. The only good flying day was the last contest day (also the following day!). In spite of the poor weather conditions during the three other contest days the engine time was surprisingly low. Such weather would be unsuitable for any soaring contest but auxiliary-powered sail-

planes demonstrated their ability to cope with the situation.

As in previous years, international participation was welcomed. There were pilots from Austria, Denmark and Switzerland.

Pilots had a choice of competing in one of three classes:  
Class I - single-place high-performance APS  
Class II - two-place  
Class III - single- and two-place training APS.

There were no contestants in the trainers, indicating the unmistakable trend toward the best possible performance.

The participating auxiliary-powered sailplanes consisted of five AS-K 14s, one each: K-12, AS-W 15M, SF-32 and *Nimbus* IIM; five *Superfalke*s, three RF-5B *Sperbers*, two tandem *Falke* SF-28As, one AS-K 16, one *Bergfalke* IV-M, one *Bergfalke* IV with two engines. Two of the participating auxiliary-powered sailplanes featured Wankel rotary engines.

The overall winners were: Class I - W. Collee Class II - W. Jaksland (SF-25E, a participant from Denmark).

By the time the contest closed the weather improved considerably: on the next day (6/6), Hoffmann, who had problems with loose bolts and burned gaskets on two different APSs during the contest, declared a 248-mile triangular flight with Schwarzer, flying the Bergfalke IV-M and set a new record. Three AS-K 14s flew on the same day toward southern France.

While the miserable weather severely curtailed flying activities the non-contest days were spent in meetings and technical sessions. The trend toward high performance APSs suitable for competition flying, already established in soaring, was very much in evidence although the lack of a suitable engine is hindering the technical progress.

Plans were voiced to conduct an international APSs contest in 1978.

The contest closed with a party in the nearby Ebermannstadt where the innkeeper Trombern, himself a flyer and soaring pilot, provided a friendly atmosphere for everyone.

#### ASTIR CSM

When first articles appeared some two years ago about the new German *Astir CS* high performance sailplane we noticed the apparent absence of certain established features which have a detrimental effect on performance: narrow wing and tail chords, broken leading edges, and sharply constricted fuselage behind the cockpit. To some extent we discussed these matters in our earlier articles\* in *Motorgliding*. Thus it is nice to know other designers came to the same conclusions and produced a high performance sailplane, now in production.

The never-ending desire to have an auxiliary-powered sailplane with performance equal to a high-performance (pure) sailplane resulted in several attempts to install an engine in such a sailplane. However, those narrow wing chords and resulting small wing area of a standard class (15-m) sailplane increased the

wing loading beyond the practical and acceptable levels. For this reason high performance standard class sailplanes were unsuitable for any engine installation. In addition, there is no room for engine retraction unless the fuselage is modified — a rather cumbersome task. So, when the first 3-view sketch of the *Astir CS* appeared we recognized the potential of conversion into an APS — without undue penalties (b = 15m, A = 133 sq. ft., AR = 18.2).

Whether the *Astir CS* sailplane was originally designed for a future conversion into an auxiliary-powered sailplane is not known. However, the manufacturer has a flying prototype and this is a significant step forward.

The German *Aerokurier* (6/76) had an article about this prototype without releasing much technical information. Our attempt to obtain more information (8/76) from the American distributor was unsuccessful because none was as yet available. Thus the following summary is based on the article.

While the design of *Astir CS* (CS = Club Standard) sailplane was a group effort (including Prof. Eppler, aerodynamic design) the conversion to an APS, *Astir CSM*, was not. Because the manufacturer, Grob Aircraft Co., had other projects underway, the power package design was carried out by an experienced engineer, Siegfried Goetz, who is also a longtime soaring pilot and instructor. To keep the pure sailplane performance a retractable power package, consisting of a pylon-mounted engine and propeller, is featured. The engine is a Sachs-Wankel KM-24 developing 25 hp (see *Foreign Scene, Motorgliding* 1/74), driving through a reduction belt a 47-in. diameter fixed-pitch, wooden propeller made by Hoffmann.

(The KM-24 is an earlier snowmobile engine, still available but rather unsuitable for an APS installation, compared to the newer models one of which was installed in the AS-W 15M and described in the last issue of *Motorgliding*.)

Power package erection and retraction, and engine starting is performed electrically. Doors open and close automatically, covering the large opening when the power package is erected. The sequencing of the complete operation is such that any mistake is excluded. The complete power package with doors weighs

\*Some Elaborations on Design of Auxiliary-Powered Sailplanes, Part I, II — *Motorgliding* Oct.-Nov. '75, Dec. 75-Jan. '76

143 lb. About eight gallons of fuel can be carried, resulting in four hours of flight time. The cruising speed is 81 mph.

The rate of climb at takeoff is 295 ft/min and the average engine time during takeoff would be about six to eight minutes.

Since the *Astir CS* was designed for a substantial water ballast the weight of the power package produces no problems. The wing loading of *Astir CSM* is 7.4 psf — only slightly higher than the *Astir CS* with full water ballast.

The engine start during flight presents no problems — the moment the ignition switch is turned on the propeller

begins to windmill and the engine starts, without using the battery. Typically it is used only to start the engine for the takeoff.

No firm decision to produce the *Astir CSM* will be made until the market potential and acceptance are explored and established. While the need for a high performance APS is well demonstrated other factors are to be considered, including the price. While Grob Aircraft Company pricing is very reasonable it is expected that this policy will also be extended to the *Astir CSM* version. A projected price of DM 34,000 is mentioned plus another DM 1,200 for the additional instruments.

## FLYING THE *FALKE*

by John Anthoine

This is the story of a soaring pilot who lives in the North country, Sault Ste. Marie. We have a lot of water, very little farm land and the rest is bush.

Anxious to soar, I organized the Algoma Soaring Club, but after three years and a lot of bad luck, we had to give up.

I flew the Cherokee 140, the Cessna 150, the *Cub*, but soon decided that it was soaring that I enjoyed.

Since pure soaring was impossible, I had only one alternative — motorgliding — and the availability of a motorglider in Canada was not very promising.

I tried to buy the only Canadian Four-nier RF-4, but the owner liked it so well that he would not part with it. I also enquired about RF-5, but at the time it seemed so expensive, that I waited for a used ship to turn to.

In April 1975, I phoned Elemer Balint of Provincial Motor Gliding to ask him if he had anything for sale. I had met Elemer a year ago when he stopped at the Soo Airport with his beautiful RF-5 on his way West.

Elemer told me that he had heard a rumour that a *Falke* SF-25B was for sale. Immediately, I got in touch with the owner; I called Bill Budachs in Toronto and asked him if he would go to see the *Falke*, test fly it and give me his opinion on it. I have known Bill for years and value his opinion enough to buy the motorglider on his word. Bill went to Valcourt and sent me a written report 6 pages long that I

think would make a very interesting article.

In less than a week, the *Falke* was bought. I could not justify the high price for a motorglider so I found a partner, an ex-club member who since then, had bought a share in a Cessna on floats. One luncheon together, a couple of pictures, and he was sold on the idea. I got on the phone and asked Bill if he would fly it to the Soo and he did, from Valcourt to Quebec to the Soo in 8 1/2 hours.

And here it was, at 5:30 p.m. at the Soo's Airport, a powered glider that I had never seen before and it was just beautiful.

The *Falke* is a side-by-side two seater with a Volkswagen engine, 1500 cc, 50-foot span, single wheel plus outrigger wheels at mid-wing. This was the answer. I have been accustomed to gliding club activities. Soaring starts when the conditions are good and stops when the conditions are no longer good enough. How many days do we have? Flying a powered glider is not like flying an airplane, even with the power on, it feels like a glider. I can get out at 6 a.m. and go for an hour, wandering about the sky, and fly all day, any day, as long as I have VFR conditions. I can fly after work, for an hour or two in the setting sun, beautiful flying, get up to the last cus, climb alongside, go around, shut the engine off and soar back to earth. One of the biggest advantages is that sometimes conditions are not good within 10 miles of the field but 20 miles away they are excellent. Many a time I have travelled towards beautiful skies, when I would not have taken a 20 mile tow. I have no retrieve crew to recruit and wait for, no off-field landings with their risks of damage to the aircraft -

no derigging and rigging. I have a seven gallon tank that gives me 250 miles at 75-80 knots. I enjoy it because during soaring I find myself too busy to enjoy sight-seeing, but coming back, power on, I can see a lot of things that normally I would have missed - a moose in a swamp, a canoe on a lake....

I relax a lot more in soaring, although I always have a field picked out within gliding range. I do not worry about an off-field landing.

Last Wednesday, at 11 p.m. I went for my coffee break and noticed that cus were forming. At lunch time I took my sandwich with me, a thermos of orange juice and headed for the airstrip, washed the bird, and at 2:20 took off. Five minutes of power, I was at 2000 feet and centered in a thermal. I shut off the engine, and climbed to cloud base at 5800 feet. I flew north about six miles, picked up weak lift, climbed up to 4200 feet, lost my lift, scouted around and went down to 1600 AGL, where I picked up 700 fpm and climbed back to cloudbase. I was about Silver C distance from Sault Ste. Marie and although I had a headwind, and a 22/1 glide ratio, I decided to give it a try. I worked my way northwest, losing 2000 feet as I penetrated from cloud to cloud. Finally, I reached the last farming ground and approximately 16 miles left to go, over bush. I was at 6700 feet, I put the nose down and headed west. I radioed the Soo, the wind was 330 at 10 knots, and I was not moving over ground very fast.

I have no MacCready ring, no idea of the polar of the *Falke* and all I could remember was reading in *Soaring* Tom Beltz saying that in lift he flies slow and in sink he flies fast. So I pushed to 60 knots and when the vario came close to zero sink I pulled up to 45. You know, all I have is a C badge. I have made numerous flights over Silver C distance but never with a barograph, most of them out and return.

The five hours is what gets me. After three hours, I am bushed and when I read about the runners who sit for twelve hours; I can't help but bring them up to the idol level.

Anyway, I am flying west and as I think of all these 1000-mile flights, I am getting close to my destination. I reach the field with 2000 feet and scout for lift, but it is 5 p.m. and all has died out. I restart the engine and the lazy way, return to base - my starting point on St. Joseph's

Island, some 25 air miles away.

To me, this is what motorgliding is all about - the ideal compromise.

I was up for three hours and did not burn a gallon of gas. You go up when you want and go down when you want. Soar, restart, soar -- from morning to night. Lift or no lift, no crew, no towplane, no wing runner, just you the pilot. I love to fly and in my books, there is only one way to do it. Motorgliding. The *Falke* is a beautiful machine and I am very happy with it, but I see in the future when the 29/1 glide ratio of the *Milan* might tempt me enough to justify its price, the reliability of the engine proved to be 100% on restarts.

When I owned my 1-26 I never had the nerve to go over this 16 miles of bush, but with the *Falke*, I never gave it a second thought. I have never had such a beautiful summer, even for the two years when I owned the 1-26. I have flown more often, and have soared more now than ever before. I can see where motorgliding has something to offer to a lot of flying fanatics, the *Falke* is the best investment I have ever made.

Motorgliding is fun and is cheap. The initial cost can be shared by two or more partners, who will share the expenses as well.

I wish to thank the motorgliding committee and Terry Beasley and Elemer Balint who have succeeded to finalize the new regulations with MOT with regard to the licensing of motorglider pilots as glider pilots, with minimal requirements and far less expense, than to go through power pilot licensing. A special thank you to Terry Tucker who has always been so helpful and always answered my letters promptly.

I am doing ten times more flying now than I did soaring before, and if it were not for motorgliding, I would be grounded. To the purist, I say that no one should make up his mind about anything without having a chance to experience thoroughly and then only take a stand.

As far as I am concerned, motorgliding is just great!

Since writing this article for *Free Flight* John Anthoine has had to stop flying due to a health problem and has put his *Falke* up for sale.

Reprinted from *Free Flight*

## A NIMBUS WITH A NELSON ENGINE

by Arnold Skopil

For quite some time I had the desire to motorize a high-performance sailplane. By high performance, I visualize a glide ratio of 38 and above. With today's glide ratios of above 45, one can barely call a L/D of 28 high performance, though this still seems to be generally accepted.

There really was no big choice. Considering the amount of work involved in such a project I decided to go all the way and modify the best available. In 1956 I built a Bergfalke II from a kit and put a retractable Nelson engine in it. Glide ratios of 1:28 (Bergfalke) were tops 20 years ago. It was a pleasant ship to fly and an ideal testbed. Several engine mounts were built and tried. But the plane had no penetration like one expects today. I did my Diamond Goal in it, but could not quite get the Distance. I will never forget the many miles flown and the many hours of soaring with complete independence.

Delivery schedules and money considerations forced me into the used sailplane market. So I bought the only *Nimbus* available last fall, N2511T. Several reasons made me decide on a *Nimbus*. For one, with the wingtips removed it would fit into a standard T hangar. Further it is lighter than comparable sailplanes like an AS-W 17 or a Glasfluegel 604. I also thought the cockpit was roomier.

The powerplant was to remain the same as in the Bergfalke. The Nelson engine has provided good service after a modification of the starting mechanism. The experience of the last almost 20 years of building and flying was to be utilized.

After three months of drawing and figuring I dumped the temptation to build an engine setup similar to the factory *Motor Nimbus* and decided to modify my proven Bergfalke engine mount and retraction system. An electrically-operated hydraulic system was to retract and extend the engine. No cranking by hand as on the Bergfalke. Besides, there really is not enough room for operating a crank in these modern cockpits. Manual operation has its advantage but I feel it is outdated. I used the elec-

trohydraulic unit which operates the tops of the GM convertibles without any changes, except that only one cylinder is used.

The complete engine mount and retracting mechanism was built on a mockup frame and then bolted with four bolts to the steel tubing center section of the *Nimbus*. The push-pull rod for the elevator was moved from the center to the side of the fuselage. This way there is enough room for the engine in the standard fuselage. The two pieces cut out for retracting the engine into the fuselage are used again for the engine covers. These are hinged inside and operated by a handle on the right side of the cockpit. This handle also operates the switch for retracting and extending the engine. It is not possible to operate this switch without opening the engine covers first.

Further there is a switch for the main ignition, secondary ignition, the fuel pump, and pushbuttons for primer, compression release and starter. A voltmeter, engine hour meter, cylinder head temperature gage and a tachometer complete the engine instrumentation. Fuel is carried in the plane's water-tanks which are connected to a small collector tank in the fuselage. An electric fuel pump and a fuel pressure regulator are located close by. The battery was put in front of the pilot's feet for balance. The factory lead was removed from this area. Needless to say, the fuselage was strengthened in the cutout area.

The first flight was made after six months of spare-time work. Everything worked well except for the wing supports. They proved too weak for the prevailing 20 kt winds while taxiing. These presently solid wing supports are to give way to retractable ones to be built next winter. Same applies to the steerable tailwheel. I still like the arrangement of two retractable wheels like I had on the Bergfalke. However, it is doubtful the same landing gear would keep the 20-meter wings of the *Nimbus* stable enough for taxiing, especially on rough surfaces and/or in strong wind conditions. The rate of climb at sea level is 400 ft./min. The plane has been flown for 20 hours during the month of September. There were no problems besides the trouble with the outriggers.

Many little (?) things like sealing the engine covers were not finished because of the strong desire to try it out and to do some soaring. An oxygen bottle remains to be installed, after I find a place for it. Same is true for the barograph.

Summing up, I consider the project a success. Powered sailplanes are fun, interesting, and challenging indeed. After some more work I hope for many years of soaring and exploring the ups and downs in the endless sky.

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In accordance with the provisions of this statute, I hereby request permission to mail the publication named in Item 1 at the reduced postage presently authorized by 39 U.S.C. 3626.

Signed by: DONALD P. MONROE  
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**MOTORGLIDING TO BE DISCONTINUED**

The following is an announcement from Bernald Smith, SSA Publications Board Chairman:

SSA will suspend publication of *Motorgliding* as a separate publication. The final issue (this is not it!) will be announced as soon as plans are completed on handling the matter of crediting subscribers for those issues they won't receive.

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**SPECIAL NOTICE**

A meeting will be hosted by the National Soaring Museum on Friday, May 20 to discuss the proposed NPRM for Motorglider/Sailplane Certification. All interested parties are invited to attend the all-day meeting which will be held at the Museum in Elmira, N.Y.