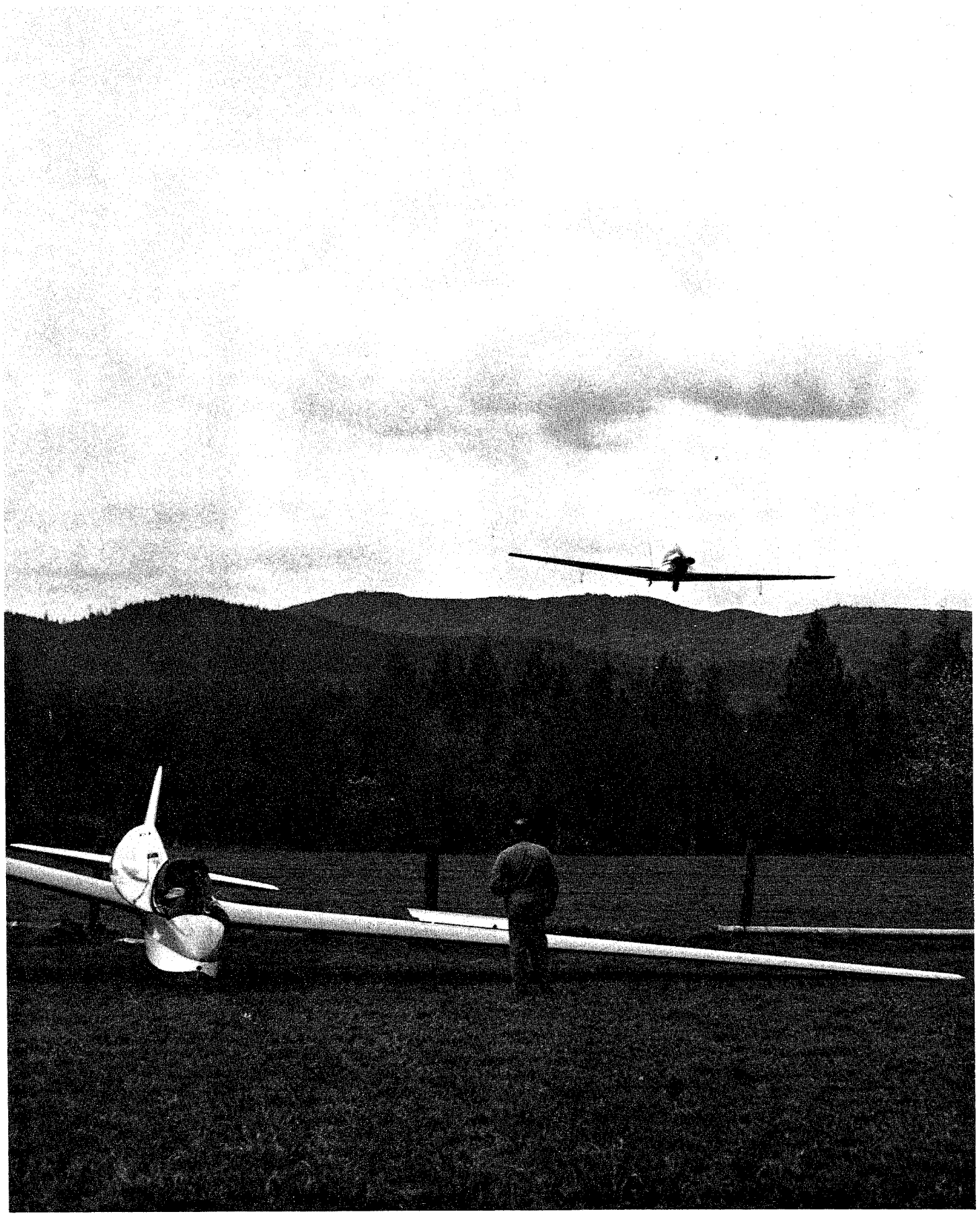
MOTORGLIDING

JULY 1973



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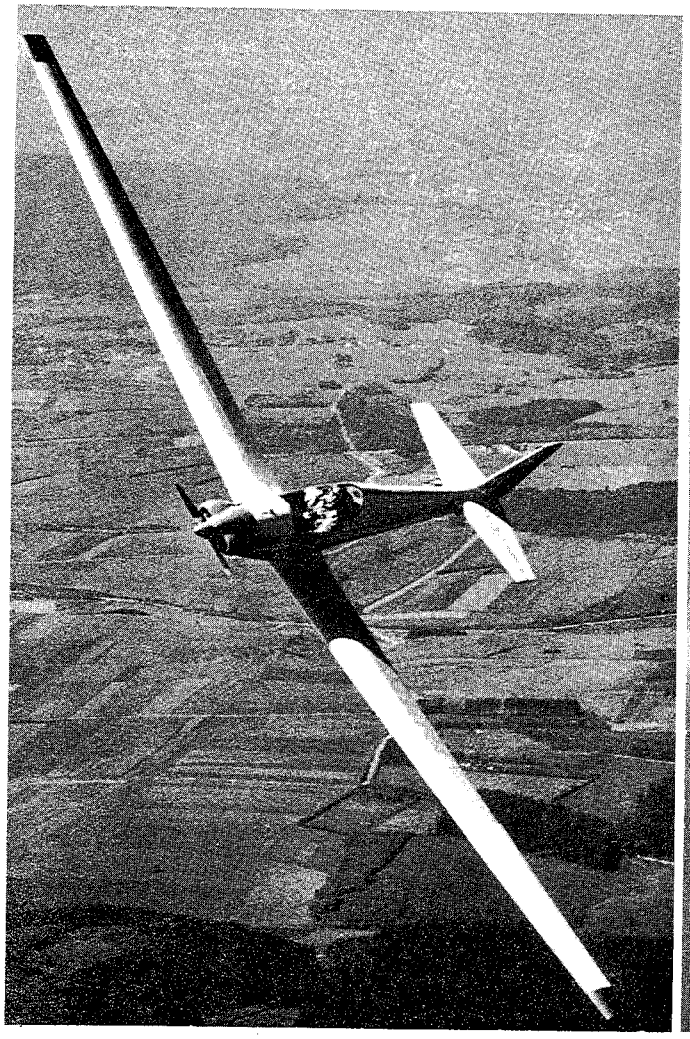

SFS 31

RF 5 B

Type	Span	L/D	Cost*	Delivery	Seats	HP	Engine	Rt. Sink
RF-4D	37 ft	20	DM 33,600	6 month	Single	36	VW	4.0 ft/sec
SFS-31	49 ft	29	DM 37,800	6 month	Single	36	VW	2.8 ft/sec
RF-5	46 ft	22	DM 50,400	6 month	Dual	68	VW	4.6 ft/sec
RF-5B	57 ft	26	DM 52,390	6 month	Dual	68	VW/Frank	2.8 ft/sec

Standard equipment includes: Airspeed indicator(s), Altimeter(s), Variometer(s) Magnetic compass, Gear warning light and horn, Safety harness(s), Seat cushion(s), Tail antenna, Cabin vent(s), Recording tachometer, Oil pressure gauge, Battery, Oil temp. gauge, Ammeter, Starter (elec.), Exhaust silencer(s).

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MOTORGLIDING

Elena Klein, Editor

Vol. 3, No. 7 Published by The Soaring Society of America, Inc. July 1973

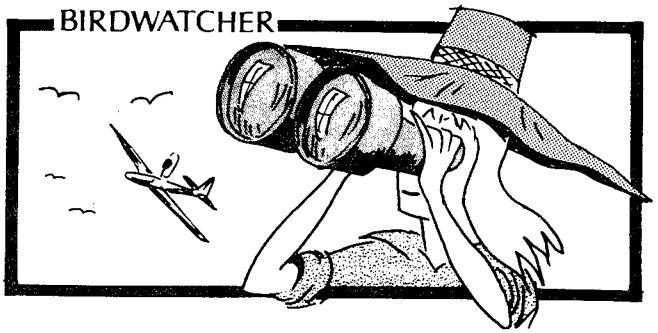
Contents

	Page
BIRDWATCHER	2
LETTERS	2
IS "MADE IN THE USA" MOTORGLIDING REALLY IN THE CARDS? by Stan Hall	3
STATE OF THE ART OF SELF-LAUNCHING SAILPLANES, by H. N. Perl	4
BURG FEUERSTEIN '73, by Landon Cullum	7
MOTORGLIDER WITH A DIFFERENCE, by Ray Stafford Allen	9

Cover: RF-4D on approach, by Donald P. Monroe

The address for *Motorgliding* is Soaring Society of America, Box 66071, Los Angeles, California 90066. Subscription to *Motorgliding* is $5.00 ($6.00 outside of U.S.) for 12 issues, beginning with the current issue. Back issues are available at $0.50 each. Make checks payable to The Soaring Society of America, Inc. Readers may wish to correspond directly with Harry N. Perl, Chairman, Powered Sailplane Committee, 3907 California Way, Livermore, California 94550; or Richard Schreder, Chairman, Airworthiness and Certification Committee, Box 488, Bryan, Ohio 43506.

Circulation of the June 1973 issue was 1110.



Birdwatchers do a lot of people-watching and once in a while come up with an observation, such as hey! There are no lawyers in the glider field. Well, I know that isn't true, but more glider types are manipulators of numbers and materials than of people. Stan Hall, for instance, is an engineer and designer of the *Cherokee* who is putting his "Made in U.S.A." counsel into practice.

Harry Perl estimates that it would take about one million dollars to get a motorglider ATC'd. If I remember correctly, it cost about $250,000 twenty years ago to certificate the *Bumblebee*. Evidently what U.S. designers need besides competition is an endowment or a generous grant from a foundation. Does anybody know a foundation that wants to give a grant to an American glider project? We are reprinting Harry's "State of the Art" from the M.I.T. *Proceedings*.

We were glad to hear from Landon Cullum about the German scene. Is there a future for road-map makers over there? We're always happy, incidentally, to receive an encouraging word from our readers. Thank you, everybody. We don't always have room for all our letters to make the Letters page. The magazine is assembled in the L.A. office and final decisions as to what to eliminate are made on a space-available basis. So if you don't see your letters in print or if I don't get around to acknowledging them personally please don't stop writing. Feedback is necessary for the care and feeding of editors.

LETTERS

July 3, 1973

Dear Ed:

I am very much concerned about a statement in the May 1973 issue of *Motorgliding*, specifically on page 15, last column near the lower 1/3 of the page; it refers to a meeting of motorgliding enthusiasts and FAA personnel at Elmira in 1973. I quote: "...The FAA concern to prevent a possible use of an (auxiliary-powered sailplane) for transportation purposes has its justifications...."

While the particular discussion referred to a proposal to restrict fuel supply for the sole purpose of preventing engine use except during takeoff and climb, the entire concept of arbitrary restriction is the issue. The statement quoted is absolutely irresponsible and it is seriously in error philosophically. There is no reason whatsoever why an aircraft capable of transporting its owner in safety from A to B should be restricted from doing so.

It would appear that someone is arbitrarily endeavoring to keep the powered sailplane in some limited category through the method of restricting its use. But if the aircraft is capable of transporting its owner and he wants to use it for his personal transportation, ferrying, or any other use, and assuming there is no safety hazard or danger of damage or injury to others, and so long as the well-being of "innocent" or ignorant people is not endangered or jeopardized by this use, then there is no justification for restricting the owner from using it privately in any way he chooses. Practical limitations may logically justify restriction, but, in all fairness, not category of size, design or purpose.

The sole purpose of the FAR and whatever rules FAA makes is to ensure the safety of the public and the uninformed persons who may be affected detrimentally or hurt in some way unknowingly by use of the aircraft. Thus the FAA is logically responsible for seeing that the design and construction are reasonably sound, and if this has not yet formally been proven, then they might justifiably have some responsibility to protect the person who

(continued on page 10)

IS "MADE IN THE USA" MOTORGLIDING REALLY IN THE CARDS?

by Stan Hall

Any thoughtful soaring or motorgliding enthusiast will have to admit that just as sailplane design has become, by default, the sole purview of foreign designers, so is the design of motorgliders becoming so. And in my view the reason it hasn't already, is because the sport is relatively new.

Predominantly among us, both in soaring and motorgliding, are those who don't see this state of affairs as anything particularly distressing. After all, so long as we can afford to buy the machines we want, who cares who designs or builds them, right?

Wrong. The absolute shallowness of this point of view continually astonishes me, more so by the fact that it seems to be becoming more widespread year by year.

The presumption that American design creativity, craftsmanship, quality and intellectual curiosity are to be so summarily relegated to the scrapheap is not only repugnant to me as a flag-waving American, but should be recognized for the corrosive it really is.

Whereas our foreign counterparts leap out of bed every morning at the crack of dawn and think, act and work as if the devil himself were behind them, we seem to be interested only in making enough money to buy their products. They deserve their success. We deserve our failure. Why can't we design and build our own, in quantity? Must we forever be a nation of consumers rather than contributors? *Must* we suffer the humiliation of taking a back seat in motorglider design as we have in the design of sailplanes?

There is such a thing as national pride, and we see evidence of it wherever we look—*if*, that is, we don't look too hard at motorgliding. We lead the world in science, medicine, aerospace and, regularly, in international sport. I realize that motorgliding can't be viewed in the same light as these vast endeavors but the point is that technology is no less represented in motorgliding and, this being the case, why don't we also lead in this, too, even if it *is* new?

I've already put the finger on what I believe to be one reason. The reader can think of others, I'm sure. However, simply identifying a reason does not always identify a solution—and we need *several* of them.

Maybe one solution can be derived by looking again at soaring. I don't think anyone could successfully debate the point that the advanced state of soaring has come as the direct result of competition flying. Competition has made soaring what it is today.

Everybody wants to be a winner, and the way to become a winner is to fly the highest performance machine available (admittedly, one also needs a pinch of skill!). So long as there are people willing to pay the cost of advanced design it will keep advancing.

If this be the aim of motorgliding, then why not encourage competition among motorgliders? Because there are only a few motorgliders presently in existence such competition would likely be very modest at the beginning. Nothing like a regional soaring contest. But one has to start somewhere, and all one needs to mount a competition is two competitors.

There have been occasions in the past where motorgliders were allowed to officially compete with sailplanes, but this usually was less a competition than a form of entertainment—for the sailplaner.

We need to pit motorglider against motorglider. One such competition might logically be to see who can fly the farthest or the fastest on a specified quantity of fuel. This could be made a safe competition as well as an enjoyable one by installing two fuel tanks in the aircraft, one for emergency use. This latter could be sealed by the competition officials at takeoff and reinspected upon landing of the aircraft. If the seal were to be broken, in order, say, to get emergency fuel to the engine because the thermals and the competition fuel ran out at the same time, or to avoid an accident, the competitor would be disqualified—but safe.

Since the competition fuel supply would be fixed for all competitors, contests of this type would lead to the development of lighter, smaller, more efficient

engines and propulsion devices. It would also lead to improvements in the design of the aircraft itself.

I see the overall impact of this type competition to be the same as that presently enjoyed by soaring: advancement in the state of the art, increase in the number of people partaking of the sport, improvement in the economic base for potential manufacturers.

Given the precept that competition will spur development the only question is, will the foreign designers beat us to it again? Probably—because, in the U.S., national pride in the design of sailplanes and motorgliders is a sometime thing.

Keeping in mind that every revolution begins as a private opinion, where is that man or woman who can see the potential of made-in-the-USA motorgliding as it really is, a challenge to those who like to be challenged, a moneymaker to those who like to make money? I know you're out there, somewhere. Make your move!

Motorgliding can be of inestimable value in stimulating action on this front—if it elects to do so. I don't think the people behind *Motorgliding* realize the influence the magazine has. *Motorgliding* is far more than a paper which reports on the goings-on of its readers. It is also a *force* and, like the media of which it forms a part, has a responsibility in developing thought and influencing opinion. The action will follow. It always does.

STATE OF THE ART OF SELF-LAUNCHING SAILPLANES

by H. N. Perl

The evolution of the self-launching sailplane began, in the United States, some 40 years ago during the era of the primary glider. Several enterprising enthusiasts installed powerplants in these very basic aircraft with varied degress of success. The major problem in those days (and in the general sense, even today) was the availability of suitable powerplants. Many of these aircraft employed modified motorcycle engines and a few installed small experimental-type aircraft engines. These engines ranged from 25 to 40 horsepower, but, unfortunately, were quite heavy and bulky. In this same time frame there were a few serious attempts to produce a powered trainer. Two such aircraft, the *Cycloplane* and the *Crawford* were designed basically as powered gliders to be used as trainers. The depression of the early 1930's took its toll of these and many other aviation activities.

The relevance of this bit of history is to illustrate that even in the early phases of glider activity and development the problems of glider launching and training were recognized and many activities were undertaken in an attempt to provide solutions.

Germany also investigated this problem area. I discovered a photograph, in a 1937 issue of *Soaring* magazine, of a fleet of *Baby Grunau* sailplanes, all with small engines mounted on the fuselage. These engines were developed by Wolf Hirth and had an output of approximately 25 H.P. The present day Hirth engine now being used on many powered sailplanes is undoubtedly an outgrowth of this early development.

The SLS* activity in the U.S. during the late 1930's and during the World War II years was sporadic with no significant developments taking place. However, at the close of the war interest was again renewed. Ted Nelson and the late Wm. Hawley Bowlus began a modest program to explore the feasibility of producing a satisfactory SLS. I had the very good fortune to participate in this early activity.

The initial phase of this program began with the installation of a small two-cylinder target drone engine on the nose of a *Baby Albatross* sailplane. The flight tests were conducted by Bowlus and for the most part were highly successful. A considerable amount of enthusiasm was generated among the group as a result of these tests and opened the way for further exploration. (As in many projects of this nature we had no idea as to where it would eventually lead.)

* SLS - self-launching sailplane

Nelson and Bowlus then proceeded to form a small company (Nelson Aircraft Corporation) and we were off and running. The chosen aircraft configuration was essentially that of a *Baby Albatross* sailplane and featured a side-by-side seating arrangement in a pod-like fuselage with a fixed engine in the rear. The project eventually culminated in the FAA type certification of a powered sailplane. This aircraft was the first, and to date, the only SLS to receive such an approval. The aircraft was called the Nelson *Dragonfly* and seven were eventually produced. Incidentally, the type certificate was issued in October 1947—just twenty-five years ago.

Coincident with the development of the *Dragonfly*, Nelson undertook personally the the development of the engine for the aircraft. This engine later became the first two-stroke cycle engine to receive an FAA type certificate. (It is certified for use both in conventional aircraft and helicopters.) The *Dragonfly* project was terminated in late 1947 due to adverse national economic conditions; all was not in vain however. The wealth of test data obtained during the type certification process of the *Dragonfly* was invaluable in the later development of the *Hummingbird*. This aircraft is a two-place, tandem, retractable engine, high performance (circa 1950), self-launching sailplane. Seven of these aircraft were constructed on an experimental airworthiness certificate. To my knowledge four are still actively flying (including the prototype).

I have used this brief resume of history (with a bit of nostalgia, I might add), to set the stage for a review of the present state-of-the-art regarding self-launching sailplanes. As far as I can determine no other effort of the magnitude of the *Dragonfly* and *Hummingbird* projects has since been undertaken in this country. Current rumors have it that the Ryan Aeronautical Corporation of San Diego, California has a project under development involving a new self-launching sailplane. They are planning to make an announcement of the project in the next few months—at present everything is very hush-hush. I believe Richard Schreder has a project in this category also.

Other present day efforts in this country appear to be individual "one of a kind" projects and on a very small, limited scale, particularly when compared to the European efforts. For instance, the 1971 census for self-launching sailplanes shows only approximately 60 to 70 such aircraft in the U.S. Incidentally, a large fraction of these sailplanes are of European manufacture.

The state of self-launching sailplane activities in this country, as I see it, is still in the very preliminary phase of development. We have yet to optimize the design parameters for this type of aircraft. Factors which will have a major influence and impact on the future of self-launching sailplanes will be those Federal regulations which are now under consideration by the FAA. Proposed regulations include full certification requirements for powerplants, propellers, and ancillary equipment. It is also proposed that airmen's requirements will include a power rating for operation of self-launching sailplanes—this will also apply to flight instructors.

Technically, I feel there exists adequate, or perhaps a better word—sufficient, expertise, (in the general sense), to produce a sound, high performance, reasonably priced, self-launching sailplane. State of the art in such fields as aerodynamics, airfoil sections, structures, materials, powerplant design, etc., together with new, sophisticated analytical techniques are, to my mind, more than adequate to design and build a superior aircraft of this type.

The major problem areas, as I view them, lie basically in:

1. the field of economics,
2. acceptance of the concept by the soaring fraternity (and other related aviation circles),
3. formulation of reasonable, non-restrictive, Federal regulations, and
4. creation of an organization devoted to the promotion and development of self-launching sailplanes.

The big question yet to be answered in the realm of economics are those related to providing sufficient financial resources for development and production, and the creation of an adequate market to justify the investment. Otherwise, supporters of developmental and promotional activites will be forced to seek aid from philanthropic or governmental sources. It should be mentioned in passing that a major reason

for the success of the *Hummingbird* project was adequate financial resources.

That the soaring fraternity, in general, has yet to put its stamp of approval on such aircraft is self-evident. The "purist" philosophy is still all too prevalent in many areas and cannot be ignored. Certainly much work needs to be done to develop more interest in this field.

One must also be realistic about the ever-increasing number of Federal regulations pertaining to such items as airworthiness certification requirements, etc., as applied to self-launching sailplanes. These factors can create a significant impact on development and production costs, and on flight training costs.

Indirectly related, and not only confined to self-launching sailplanes, but to all soaring and general aviation activities, are the new airspace limitations now being put into effect. For example, we in the San Francisco Bay Area are just beginning to feel the impact of the new Terminal Control Area (TCA) which goes into effect in December 1972. I feel we must institute more effective liaison with the Federal agencies if we wish to maintain soaring as a viable, on-going sport in this country.

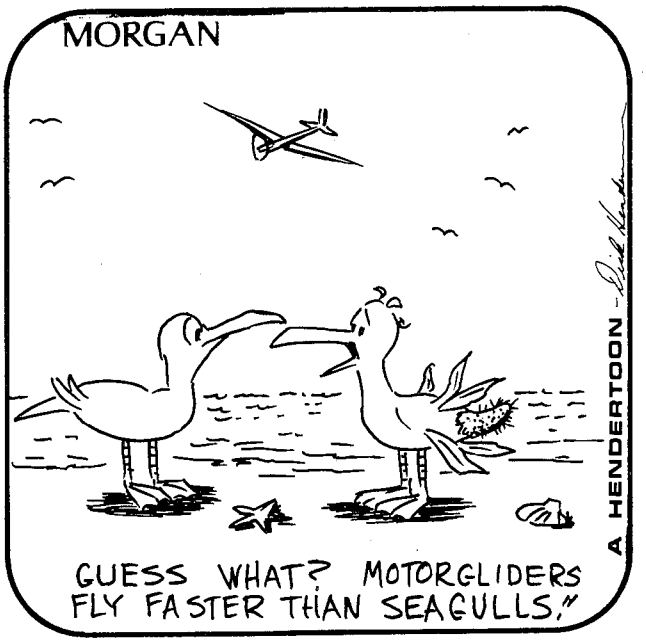
Considering the issues just reviewed it is obvious that some type of formal organization devoted to self-launching sailplanes is in order and long overdue if this facet of the sport of soaring is to succeed. There is a definite need to coordinate the many loose-end activities, formulate standards, and prepare a statement of objectives.

In conclusion, and to repeat my earlier statements, I feel that the technical expertise exists to produce a satisfactory, high performance self-launching sailplane. True, there are many technical fields such as powerplant design, propeller design, materials and fabrication technique improvements, etc., which need further investigation and study to better optimize the aircraft; however, there is no question but that such goals can be achieved. The solutions to the economic and regulatory problems, unfortunately, are not as straightforward as to their solution—but they cannot be ignored if successful self-launching sailplanes are to be built and marketed.

That there is an ever-increasing interest in this field of soaring can be attested to by the fact of this symposium, the recent self-launching sailplane contest held at Rosamond, California this last summer, and also the appearance on the scene of the new magazine *Motorgliding*. This publication is sponsored by the SSA.

That the movement has caught on in Europe is obvious, particularly from the number of new self-launching sailplane models now on the market. Whether the U.S. will step to the forefront in this most interesting and challenging endeavor only the future will tell.

(From *Proceedings of the First International Symposium on the Technology and Science of Motorless Flight*, Massachusetts Institute of Technology, October 18-21, 1972.)



SUBSCRIPTION RENEWAL

Since only five issues of *Motorgliding* were published in 1972, subscriptions for that year were extended through the seventh issue of 1973, this one. Thus, for many of you, it is renewal time. We have enjoyed publishing *Motorgliding* during 1973 and we hope you have enjoyed reading it, too, and wish to renew for another 12 issues. If so, please send your check for $5.00 ($6.00 foreign), payable to The Soaring Society of America, Inc., as requested in the recent renewal letter sent to you. Our continued success depends on a high renewal rate, so if your subscription is expiring, we hope to hear from you soon.

BURG FEUERSTEIN '73

by Landon Cullum, Jr.

I happened to be in Germany and came down to the meet at Burg Feuerstein to see what I could learn, expecting to spend two days, but, finding my comprehension of German road signs and maps rather meager, consider having spent one day at the meet rather an accomplishment. This report, therefore, is from a beginner at motorgliding, who never saw a contest before, observing on an overcast day with poor lift that probably resulted in no scores being counted. Also, I speak no German, so found little enlightenment as to the details of what was going on as the only one or two people I could find that spoke English were rather busy with flying the contest.

First impression was astonishment at the attendance. I counted 43 motorgliders on the airport and may have missed some. Wonder if there are that many in the entire U.S. Much enthusiasm in evidence and busy flying til late afternoon—even on a dead day. One pilot, if I interpret correctly, got the idea over to me that he ran his engine 16 minutes on an 18-mile triangle. Two-place ships were in the majority with 11 SF-28's, 10 SF-25's, 4 RF-5's, and 1 MII 23. Scores for the first three days that were posted indicated the SF-28's (tandem version of the SF-25 *Falke* which doesn't exist in the U.S. yet) seemed to have a slight edge over the RF-5B's. On the second day, 3 SF-28's scored above 1,000 with a high of 1,456 while only 2 RF-5B's made 1,000 with a high of 1,230. The 3rd day had 4 SF-28's scoring above 2,000 with a high of 2,456. No RF-5B made 2,000; top being 1,990.

The single place gliders included 7 AS-K 14's (one powered by a Sachs engine), 4 SF-27's, 2 *Kausch's*, and 1 AK-1 experimental. The AS-K 14's and SF-27's were mixed about evenly on the score sheet from an amateur's point of view.

The little AK-1 experimental was interesting to me. It has beautifully-made aluminum-covered wings, with the aluminum apparently bonded to the ribs as flush rivets showed only at spar and trailing edge. Its two-cycle engine appeared slightly larger than the SF-27's Hirth and it retracted into the fuselage behind the pilot on a folding mount that would appear to change the C.G. very little. It also seemed to throttle and taxi better than the Hirth. It had retractable outriggers and the fuselage looked much like a *Diamant*. The builder had evidently had engine door trouble as he was flying it with them removed and undoubtedly paid a heavy performance penalty.

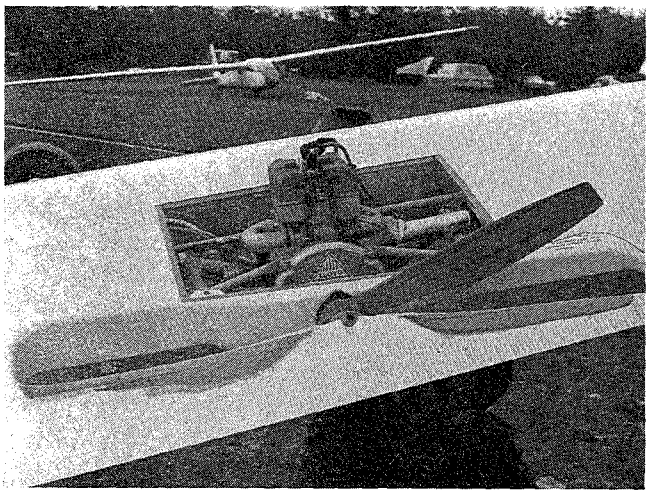
AK-1 by Landon Cullum

Another experimental had an engine mounted behind the spar in the right wing turning a pusher prop that was stopped in its slot in the wing about eight inches ahead of the trailing edge. Its owner also was having engine cowling trouble and was not shown on the score sheets. The little plane appeared beautifully built and seemed to fly well on takeoff and landing.

I was impressed also with the way the large majority removed their outrigger wheels before takeoff on task flights and rolled off on that rocky ground after landing. I didn't see any serious damage, but it sure hurt to see those beautiful machines scuff their wing tips. The crews sometimes tried to catch them and most braked hard at the last second to stop quickly, but this was rarely completely effective.

For normal taxiing and non-contest

flying the nylon-stalk type outriggers are installed and appear tremendously effective. Apparently all the 2-place ships have gone to them and it's easy to see why. They taxi rapidly wherever they like as most pilots would in a Cessna 150 or the like. I'm sure my RF-4D outriggers would have failed quickly on that surface under much less severe treatment than they were giving their machines.



by Landon Cullum

It will sure be a grand day in the U.S. when we can have a get-together like this of motorglider enthusiasts. I'm not hopeful, though, for the near future, unless we can someway get the FAA to more reasonably recognize the existence of this kind of machine, its flexibility and its usefulness.

Finally, perhaps a few words of advice to any of our members who might, as I did, have a chance to drop in on one of these meets in the future. First, gliderports appear to be designated as near a large town but may be further than you expect. Burg Feuerstein is near Nuremberg, true. About 1½-hours-driving near unless you are pretty skilled at reading German road signs. A much better procedure would have been to stay in Forscheim about 15 minutes away. Also, to learn much you do need to understand the language to some extent--or have a friend along that does. English-speaking natives are commonly found in the tourist places over there, but I did not find this so at the glider meet. Those running the contest or crewing in it that have time to visit while the tasks are flown seemed to speak very little English. Some of those flying spoke excellent English, but were too busy before and after to have time to satisfy a beginner's need for knowledge. (Final scores of top 6 of the 2-place gliders were 1 - 4: Tandem *Falke*, 5 and 6 RF-5B).

An additional report on the little I saw in Germany with respect to motorgliders may be in order.

This note concerns my visit to the Sportavia factory at Dahlem that is known for producing the Fournier RF-4, RF-5, and RF-5B motorgliders. I drove over from Wiesbaden (about 3½ hours around by Autobahn and 8 hours direct by regular road thru all the little towns) and found a much larger operation than I expected. They not only produce the RF-5B presently and the RF-4 or SFS-31 on special order, but do rather extensive inspection and repair on all types of light aircraft and gliders (except the fiberglass ones) and produce many of the major parts of the Schiebe *Falke* motorgliders.

A number of their people speak excellent English, so an American can get the information he wants quickly and easily. After a visit with Mr. Cooper of their management staff, he turned me over to Mr. Irmer, one of their engineers, for a tour of the plant and a flight in a RF-5B *Sperber*.

As anyone familiar with one of their aircraft would expect, their woodworking facilities and methods are excellent and all component assemblies produced in jigs. The workmanship is first class all the way including fungicide base paint on woodwork interiors. It was interesting that the box spars for the RF series aircraft were laminated from pine, while the Schiebe spars were laminated from hardwoods. They reported that wood for spars was becoming hard to get while the beautiful plywoods were not.

The plant also had a complete engine test stand where each engine was test-run prior to installing in the aircraft. There was also a prototype RF-5B with the little two-cylinder Franklin engine which they reported has worked out well, but further development had been discontinued because of uncertainty about continued availability of the engine. Their experience with the Limbach and Rectimo conversions of the Volkswagen engines has been excellent and

are evidently fully accepted by the European aircraft authorities in contrast with our FAA.

My ride in the RF-5B was appreciated and interesting. Although there was no appreciable lift on the overcast day, their motorglider seems to glide considerably better than my RF-4. This RF-5B had a three position Hoffman propeller that provides a cruise setting between climb and feather, but that in my opinion would be useful mainly if one planned to use the plane for considerable power cross-country. I flew it very poorly, finding the metric instruments awkward and roll-rate and rudder effectiveness completely different from the RF-4. It is, of course, much larger, and handles that way to one spoiled by the agility of the RF-4 and little biplanes.

One question that was answered for me by my trip to Dalhem concerned the possibility of getting some of their aircraft in something of a kit form that would qualify under the U.S. homebuilt rules. The thought was that this might be a practical way of getting away from the present U.S. Experimental-Exhibition restrictions. My feelings and those of Mr. Cooper were that the airplanes they build now simply are not designed for this and would involve far too much jigging for one-at-a-time methods to be useful or result in any appreciably cost reduction. The Sportavia people are aware of the advantages, though, and may consider this later with their RF-7. This won't help those of us with motorglider interests, however, since the RF-7 is a short winged RF-4 with the Limbach engine.

ADVERTISING RATE INCREASE

Due to the increasing circulation of *Motorgliding*, we have found it necessary to raise our rates for display ads to $40 for a full page, $25 for one-half page, and $15 for one-quarter page, effective with the August issue.

IF YOU MOVE...

...even though you may be an SSA member, please send a separate change of address notice for *Motorgliding*, or state on the notice you send for *Soaring* magazine that you get *Motorgliding*, too. Thanks.

MOTORGLIDER WITH A DIFFERENCE

by Ray Stafford Allen

Some time ago I had the opportunity to fly a most unusual glider, a Ka-7 with two detachable two-stroke engines which are mounted on steel tubes and fitted on each side underneath the wings.

This is a true motorglider in the sense that it will not takeoff under its own power (though I understand that it has in fact done so on one occasion), as the rate of climb is well below the safe limit. It has to be flown as a glider, but with both motors running you can climb at about 0.5 m/s.

The immediate reaction of most folk is, "What is the use of the thing if it will not take-off?"

Having flown it one realizes that it has great potential as a training glider, because it means that flights can be extended as long as required, whether or not there are thermals about, and also the machine can be flown cross-country to ridges, etc., which would otherwise be out of reach.

Flying it is great fun. After testing the engines on the ground, the glider is launched in the normal way by winch, car or aerotow. Once in free flight, all that is needed is to turn on the fuel to each engine, turn on the switches, and you are ready to start the engines.

This is done, one at a time, by closing the choke lever, and pulling the starting toggle, and, as soon as the engine fires, opening the choke lever. The engine at once speeds up to 6,000 rpm and you then get busy doing the same thing to the other engine.

You can fly on one engine if you like, in which case the glider descends at about 1:60. Flying on one engine is perfectly simple and there appears to be no yaw whatever from the asymmetric thrust. Apart from the noise, which is considerable, there is no difference at all in the behavior of the glider engine on or off, and this is one of the great features of the machine.

Engines Easily Removed

From the pupil training point of view, all his training takes place in the same machine. In fact his first solo can be done in the same machine, since the engines are quickly removable. All his launches will have been glider launches, so there is no conversion to a new type. When there are thermals around, the engines will of course be left off, and you then have a perfectly good Ka-7 for training.

The glider can also be flown cross-country from one aerodrome to another on the engines, though it is true that the speed is not all that high. It is, however, far and away the cheapest method of transporting the glider.

The only modifications on the glider consist of two sockets welded on the fuselage just behind the rear pilot, a fuel tank mounted in about the same place, two petrol pipes and cocks in reach of the front pilot, two switches for the ignition and two toggles on the floor of the front cockpit with pulleys to take the starter cables, which have to be led back to the recoil starters of the engines.

Each engine takes about ten minutes to fit. The engine mounting tube is slid into the socket and the locking bolts tightened, the ignition wire is plugged into the switch socket, the choke wire is coupled up and the fuel line is connected. The starter cable is then connected and the engine is ready for flight.

There are Problems

Of course the machine presents problems. It could not be flown by a chap with a PPL alone, though legally I suppose he would be entitled to do so. There are no throttles, so the machine cannot be landed with the motors running, they have to be switched off and the machine reverts to an ordinary glider and is landed with the use of the brakes in the usual way.

You could put any competent glider pilot into it and he could fly it without trouble. Even if he could not start the engines this would not affect the issue since he would simply have to land again, and this is as simple as in any other glider.

In Germany this system of auxiliary engines is used to a fair extent. It is quite the cheapest and quickest way to retrieve a glider, and one of these engines can drive a Ka-6E or similar type of glider. Most two-seaters require two engines. The engines themselves are Stihl engines, and are the same as the power plants in the Stihl chain-saws.

As against the normal type of self-launching motorglider, you lose the ability to do repetitive circuits quickly and cheaply. You gain by the fact that there is no conversion; all the training is done in the same glider which can be used for soaring, competitions or what you will, simply by removing the engines.

I enjoyed my flight in this machine enormously, and I cannot help feeling that there is a very bright future for this type of motorglider. (Reprinted from April-May 1973 *Sailplane & Gliding*.)

LETTERS (continued from page 2)

would not be expected to know about such dangers or risks. The "experimental" category certificate has been shown to work very well and its protective aspects are clearly noted by a large printed placard on the entrance door. This is a good thing and I for one am very suspicious of removing the "EXPERIMENTAL" placard in favor of some innocuous notation and justifying this by super restriction.

The tragic accident in California where a surplus civil-licensed military jet flown, it appears, irresponsibly and under an Experimental Airworthiness Certificate crashed into an ice cream parlor filled with children, is the basic reason for all this new restrictive thinking. One might look further into the incident before going off half-cocked and might even question why an ice cream parlor should be permitted to be placed at the end of a busy runway that was there first, or why the air show was permitted there at all in the face of such obvious hazards. Common sense should have prevented the incident under the existing rules. From what I have read, the accident was associated with violations of the regulations, so why make more rules, when the ones already in existence failed to be heeded or

enforced. We know that a certain congressman tried to capitalize on this "outrage" for political advantage by attacking the concept of Experimental Airworthiness Certification. We also know that a five-ton jet filled with aviation fuel is different from a sailplane with a snowmobile engine unit. Could someone be trying to cover up a failure to act responsibly? Could this underlie the efforts to restrict an owner from using his little powered glider for whatever purpose he finds useful and practical, or even for fun?

Come gentlemen, let us not allow ourselves to be restricted just to satisfy some peculiarity of bureaucratic rule-making. We have rights as U.S. citizens philosophically to do pretty much as we wish so long as it does not cause hazard to the safety of body and property of others.

The basic responsibility of our government agency the FAA (and note my use of the possessive "our" for FAA; it is *ours* as citizens, created by us through our congress and it exists for the sole purpose of protecting citizens), is to protect the essentially innocent or uninformed third party and not primarily categorize and restrict Americans from their "pursuit of happiness", by preventing them from reasonable use of their personal property as they choose, so long as it does not bother, harm, or threaten others.

This is the issue, gentlemen, not only with powered gliders but in all general aviation, so let us face up to it and demand that the personnel of our government agencies, who are meant to be our servants, not our masters, do likewise.

Stephen du Pont
Fairfield, Connecticut

July 8, 1973

Dear Mr. du Pont:

Thank you for the copy of your letter of July 3rd to Editor of *Motorgliding*. While most of your comments seem to have some merits you obviously overlooked a little, but important detail of the article on p. 3 of May *Motorgliding*, "Motorgliders, the FAA, and Us" by B. S. Smith. Specifically that sentence in the first paragraph, right top column which reads:

"SSA recommendations were made to the FAA on the matter of criteria to be used in developing rule-making to establish a new category, namely powered sailplanes."

This in turn means, according to the FAA presentation during that meeting that FAA is willing to relax the present certification standards for powered aircraft (FAR Volume III, Part 23), applicable at present to certification of any motorglider, by creating a new category covering SLS (APS). However, FAA wants assurance that any aircraft certificated as a SLS would be used for the sole purpose of soaring activities and not for personal transportation.

The impact of this proposed category is far-reaching: due to small cost of certification as compared to current certification of powered aircraft, more manufacturers would be willing to enter the SLS market. This would stimulate competition resulting in better-performing SLS designs, which are needed.

Is anything wrong with this new proposal? If anything, it is long overdue. With the dual ignition requirement dropped, the only thorny item, fuel tank capacity limitation, needs to be given an overhaul in order to preserve the basic idea of an auxiliary powered sailplane (SLS). Thus the reason for my "Appeal".*

The proposed regulations (excluding the fuel tank capacity requirement) appear to be a good start after many frustrating years of trying in vain to make progress in this matter.

Thus your charges of irresponsibility and philosophical errors are unfounded, to say the least. Since I have no connections with FAA, author B. S. Smith might provide you with further comments and information regarding this matter.

S. O. Jenko
Mansfield, Ohio

July 13, 1973

Dear Mr. Jenko:

This is in reply to yours of July 8 which commented on my July 3rd letter to the Editor of *Motorgliding* of which I sent you a copy.

Please understand that it was not clear to me that *you* had written the statement I criticized. Had I known that, I would have written to you. Nevertheless,

*p. 15, May 1973 *Motorgliding*

I reiterate that I can see no logic in restricting the *use* of the self-launching glider, except insofar as its mechanical or aeronautical reliability or limitations would restrict it, and that this should be a part of the individual flight limitations, not a blanket restriction of use on a type.

Let us not ask for restriction, above all, where restriction is not warranted. If restriction is logically applied to a particular design because of factual limitations, that is another matter.

Stephen du Pont

July 12, 1973

Dear Ed:

A short, but important point regarding the article in May *Motorgliding* on the report of the meeting with the FAA in Elmira concerning motorgliding certification needs to be corrected. The boxed summary as printed was not entirely right on the matter of single vs. dual ignition. The listing showed "none" as the present FAA position on dual ignition when in fact it should have read "single ignition" as their present thinking with the asterisk to indicate as noted the potential internal problem. They accepted, at the meeting, the proposal of single ignition as a logical one to make.

B. S. Smith
Fremont, California

J. L. Baker, FAA

July 2, 1973

Dear Mr. Baker:

It has been noted that you are considering a Notice of Proposed Rulemaking with regard to Self Launching Sailplanes or Aux. Powered Gliders.

At present I am constructing such a vehicle. It will be a single-place self-launching sailplane using Schweizer 2-33 wings and tail feathers. The engine is a Fichtel-Sachs Wankel 24 hp which will drive a buried ducted fan in the fuselage. It will be constructed to Experimental Homebuilt Category specs and licensed in that group.

My background goes back many years in aviation, working with Douglas Aircraft from 1935 through 1943. Attached to the 9th Air Force in Africa during WWII as a tech rep. FBO and major repair shop since. Presently A & P Rating with Inspection Authorization; also hold Commercial ASMEL and Private Glider. EAA Designee Inspector #36. I have rebuilt many aircraft and engines plus building a Senior Aerosport D-260-C from scratch, N3123G.

Now to the matter at hand. It has been suggested that the fuel requirement be changed from the present five-gallon limit to only enough to get the ship airborne and up to some specified altitude. In the interest of safety, this is not enough. I think the basic reason for any power in a glider is for safety reasons. We have very rough country around here for any type of flying. The capability of restarting the engine and seeking out a more suitable landing spot is the most important consideration from a safety standpoint. This is the primary reason I have for building my self-launching sailplane. If I cannot pick my landing spots I am risking myself and my equipment and I do not choose to do this.

Surely the five-gallon limitation with a cruising speed in the range of 50 mph would not place this equipment in the aircraft category of transportation equipment. It is calculated that this five-gallons of fuel would give about two hours at the most at normal engine speeds. I would consider this a minimum for safe flight, seeking thermals, wave lift or what have you and still return to the point of start.

We are talking about sport machines, gentlemen, not transportation. Please let us keep our perspective.

C. L. McHolland
Sheridan, Wyoming

Dear Jack Lambie:

Many thanks for your articles in *Motorgliding*. You tell of the beauties of flight in a manner that gets through to people! I hope that you will tell us more of your encounters with condors, hermits and the mysteries of the air! Don't worry about a "plot" for your stories. When you tell it from your heart—that's all we need!

I flew my Ka-8 for five hours last Sunday. My butt still aches—I'm long and lanky *and boney!* and my nose is peeling—but what a fine time I had!

I'm all for a powered sailplane—maybe Schreder's HP-17 will do it for me.

I surely hope so.

Must write to him.

Don Santee
Phoenix, Arizona

Dear Ed:

Well, I see I finally made big time. In your column you mention that if my column goes un-edited and uncensored it will evoke a response from angry readers—I hope I don't get anyone really angry, just a friendly argument or two. OK, here we go—part of the column was retyped in error—I can get in enough trouble without help from the typist. A notation would be in order so that everyone doesn't go out and buy a 23 hp engine expecting 200 pounds thrust.

Dick Henderson

Dear Dick:

Sorry, sorry! Your copy said: "A 15 hp 1 cylinder 2 cycle direct drive JLO with a 30 x 12 propeller develops 70 pounds thrust - A 23 hp 1 cylinder JLO with a 42 x 16 develops 115 pounds thrust - A 45 hp 2 cylinder JLO with a 48 x 24 prop develops 200 pounds thrust - Banks-Maxwell claims the 45 hp JLO is equivalent to the 40 hp VW." The typist skipped a line, obviously...Ed.

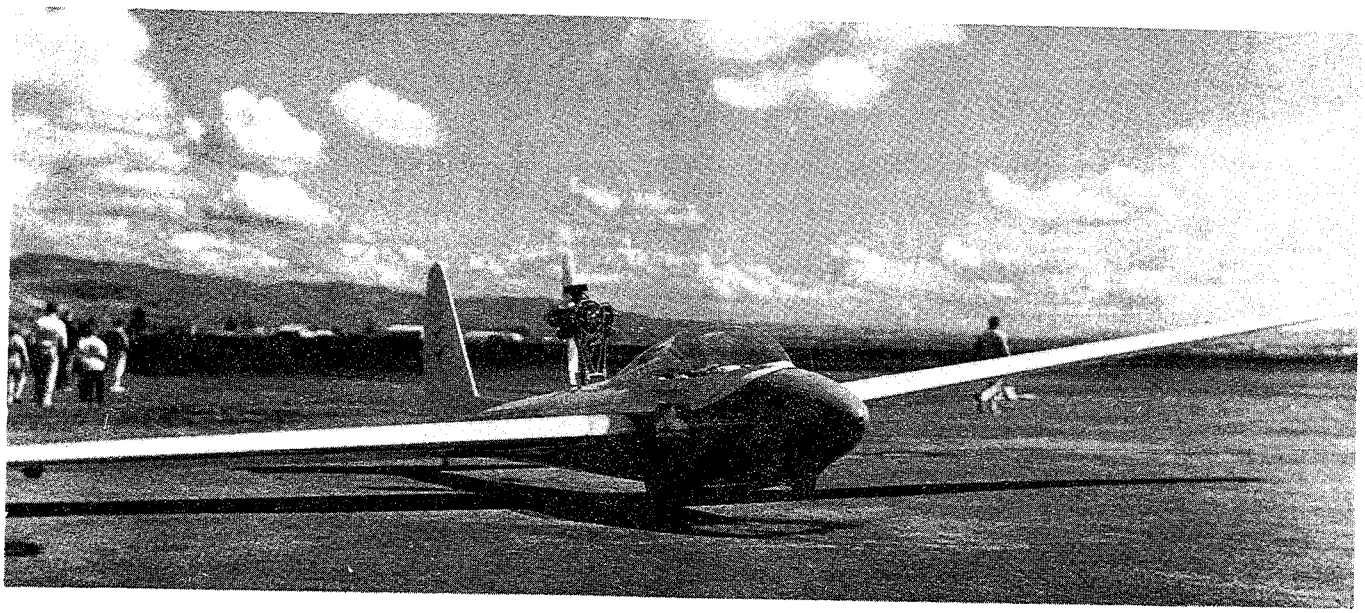
June 3, 1973

Dear Ed:

I was pleasantly surprised to find *Motorgliding* is again alive and well, with double the circulation!

Thanks to your effort, Jack Park's work will not have been in vain. I sincerely hope SLS owners and enthusiasts will keep their publication alive and well. Hopefully, the idea of a powered sailplane association will now become a reality. In 1971, I applied for, and remitted $50.00 for life membership in the PSA. A rather humorous gesture: technically the organization didn't really exist! I have never regreted the donation, but if and when PSA becomes a reality—I hope to be first on the list.

James von Schmidt
Boise, Idaho



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