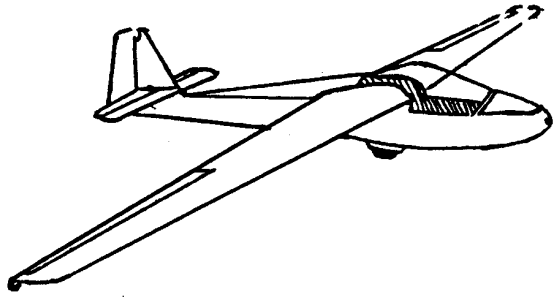


The HOMEBUILT SAILPLANE
ASSOCIATION

P.O.Box 503
LOXTON,5333
Sth Australia
AUSTRALIA.

No-4,June 1995

EDITORS CORNER

G'DAY, How are we all keeping?No-4 issue here should make for some intresting reading. Gary Sunderland has been busy putting pen to paper and his thoughts will be put to print in this issue.
IT's GUNNA HAPPEN, the **FIRST Regatta** of our little group, it will take place on Jan--uary the 4th to the 7th,we will be holding the regatta in conjunction with the Vin--tage Soaring Assoc's regatta at the Ararat airfield,the home of the Grampians soaring Club,we plan to have evening talks etc and Gary Sunderland has kindly offerd to do a talk on designing and testing of homebuilt gliders.
Also we could do some show and tell type of things if members wish to bring their idea--s and gadjets along,if any of you have other idea's for entertainment or whatever,let me know and we will see what we can do.
The Vintage group are a friendly crowd and the style of flying will suit our needs very well,with informal,fun type of flying being the order of the day,normally,the V.S.A.set a small cross country task just for fun and the glider performance ranges are similar for most homebuilts and vintage aircraft so it should be fun to mix the two styles of gliders.
We hope to mix our first presentation dinner in with the Vintage group as well,this should also make for a good night,I still have to confirm this but I think they norm--ally hold their dinner on the Saterday night,I'll let you know.
Final details are yet to be aranged,but it is definetly **ON** so clear your calender for those dates and we will see you there.
By the way,for anyone intrested,the Vintage regatta runs from January the 1st to the 7th so you can go there earlier if you wish.
As the date draws nearer,I will want to know numbers attending so I can orginize the catering for the presintation dinner.
Winch and Aerotow will be available at the regatta to keep everyone happy.

In this issue we also have news on the FALCON kit glider being built by John Absolon of Turramurra in N.S.W.
Also a report on a new design called the GENESIS,it is expected to be sold as a 51% kit glider and is of compisite construction.
We also continue the series by Gary Sunderland(his name keeps coming up!) for the newcomer to homebuilding,"hammer and soar".
Anyway thats enough from me so we will gwt on with it.

Being a sometimes efficiant type of bloke(only rarely though),I have since writing the editors corner,spoken to Allan Ash of the VGA and have confirmed that we will mix our presentation dinners on the Saterday night,it will be a casual,fun type affir,costing is yet to be worked out,but as the event draws nearer,I'll let you all know the price, as I've said,as it draws near,I'll need to know the numbers that wish to attend the dinner,OK, on with the rest of this newsletter.

OK,the energitic Gary Sunderland has as I said before,put pen to paper and sent me a story on his years cruising around the country with his MOBA-(**M**y **O**wn **B**loody **A**ircraft!) I'll print it as he's written it as it's pretty good reading as well as makeing one's brain do a little thinking about things,so without further rambling on,here it is.

THIS year I managed the usual eight flights in MOBA,for about 30 hrs.The Yellow beast only gets flown at club camps mostly and seldom at Bachus Marsh,MOBA has yet to fly 400hrs total!!!,
This year I flew at Stalwell a bit(it rained) and at Horsham.I also tried to fly at Ararat,the day looked great,but they were putting the roof on their new hangar!
As usual,the most pleasent flying was four hours at Mount Beauty,soaring Bogong and along the ridges to Falls Creek.Great to be among all those expensive gliders in a little **homebuilt** which only cost me **$3,000 total** to build.
For a contrast I also had a couple of hours soaring in Roger Druce's new JANUS CT, which cost something like **$100,000!!**
The JANUS was very smooth,but not **THAT** much better than MOBA in a thermal,or even between thermals.Somehow,my little Yellow glider is so much more fun to fly and operate genrally,that I never regret the time taken to build it. Actually I enjoyed building my own glider,so I really cannot complain about anything.

These days MOBA seems to be flying better than ever,all the teflon bearings are now worn in and very smooth,so the handling is quite nice,not as good as a LIBELLE,but then,what is?
Talking about nice gliders,on the way back to Melbourne,I called in at Benalla and spied a superb little blue and white homebuilt in a hangar,this was the EP-2 "SUPER--GOOSE",built some years ago by Allan Higgins in Victoria.
Evidentaly some lucky pilot at Benalla has bought this little beauty,I hope he or she has as much enjoyment soaring this little bird as I have in flying mine.

We in the HSA,should really spread the message about **SOARING** being for **ENJOYMENT**,not just spending megga buck's on compitition and record flying.
If the GFA really is serious about expanding the membership,surely they should not be concentrating on cometition flying and performance coaching quite so much? **What about FUN flying?** How about we ALL start talking about the **enjoyment** gained in **ALL** aspects of gliding?,On this basis the HSA should be promoted by GFA,as WE are involved in building "**for education and recriation**", and the **vast majority of GFA members fly for fun,not for records**,so they want to hear from us,not the hot shots.
Garry's letter has a P.S. on the end,it go's: Not to much slagging from you wood butchers please,the MOBA has a metal structure,covered with fibreglass,with a wood tailplane and fabric covered rudder!,so don't sling off at metal or fibreglass gliders please,I can join any catogory in this argument!

Thanks Gary for your thoughts,no problem on my end,except that I work on the so called "plastic fantastic" all week and I normally can't wait to get out of there and go to my WOODSTOCK shed and get covered in sawdust,then on weekends,go and fly my beloved little WOODEN ES-56 NYMPH,oh the joy of it all,heaven on earth and so on!,I wasn't going to say anything but since you brought it up,but anyway I won't say anything(HA--HA) I'll just get on with the newsletter.

I think Garys ideas of what we are really about are fairly spot on,the pure **FUN** of soaring is my main intrest,aerobatics is my other mainstay in why I LOVE flying glider-s BOTH of these are done JUST FOR THE PLEASURE,I'm not really into comp flying or super high performance ships,although I can see that this type of flying is what gives some pilots their PLEASURE,and thats great,but the avrage pilot can niether afford or wants to spend $140,000 on the latest supership,just so they can be compeditive,anyway everyone for their own,but me,I'll stick to my pure fun machines. **WHOCH ALL THINK?????**

On the next page is an article sent to us by Peter Raphael on the Annealing,cleaning and care of perspex,since our canopys are made of the stuff,it's worth having a read.

8 Annealing

Annealing means that plastic parts are first heated up and then cooled down slowly.

Plastics withstand considerable tensile stress as long as they are not exposed to corrosive media at the same time. Causes for tensile stress are, for example:

- machining operations like sawing, milling, turning and grinding
- thermoforming
- varying heat levels
- shrinkage of adhesive
- distortion during installation (clamps, drill holes, screws)
- shrinkage after local overheating due to incorrectly ground tools or polishing
- impeded thermal expansion
- in the case of PLEXIGLAS XT and MAKROLON, and especially with tubes, internal stress caused by the extrusion process
- external loads

If corrosive media are additionally present – e.g. solvents and thinners during printing or painting, monomer vapours during laser cutting, plasticisers from PVC insulation material, sealants, foils and aggressive cleaning agents – crazing may be the result and the parts become useless, even though the same media do not harm parts which are free from stress. Therefore the simultaneous presence of tensile stress and corrosive media is to be prevented.

Since it is impossible to rule out that the material will be exposed to harmful substances in use, any tensile stress should be eliminated by annealing. To this end the parts of PLEXIGLAS GS, PLEXIGLAS XT or MAKROLON are put into suitable ovens and are heated to a temperature below their softening point for a period of time depending on their thickness. Then they are cooled down slowly. Fast cooling results in a cold, stiff exterior skin, and more tensile stress is built up since the material shrinks on the inside during cooling.

The following annealing conditions apply:

Temperatures

- PLEXIGLAS GS: 80 °C (unformed parts up to 100 °C)
- PLEXIGLAS XT: 70 to 80 °C (unformed parts up to 85 °C)
- MAKROLON: 80 to 95 °C (embrittlement sets in above 100 °C)

Annealing time

- PLEXIGLAS GS and PLEXIGLAS XT: the material thickness in mm divided by 3 is the annealing period in hours, but the minimum is 2 hours.
- MAKROLON 'overnight', at least 8 hours or longer

Cooling

- The cooling time in hours is the material thickness in mm divided by 4. The cooling rate to be strictly observed is 15 °C per hour.
- The temperature on removal from the oven must not exceed 60 °C.

9 Cleaning and care

Only clear water is needed to clean and preserve PLEXIGLAS GS, PLEXIGLAS XT and MAKROLON. If the dirt pickup is more pronounced, the water should be warm and contain a mild household detergent. Dry rubbing is to be avoided in all cases. Before drying the material – e.g. with a sponge, shammy leather or glove lining fabric – care must be taken that all dirt particles have been removed.

Especially after intensive rubbing, plastics become statically charged, whereupon they attract dust. Therefore they should be treated with the antistatic cleaning and preserving agent by BURNUS, which is sprayed directly onto clean or slightly soiled material (or after careful cleaning) and spread with a soft cloth without wiping the material dry. The dust-repellent effect lasts for a good while.

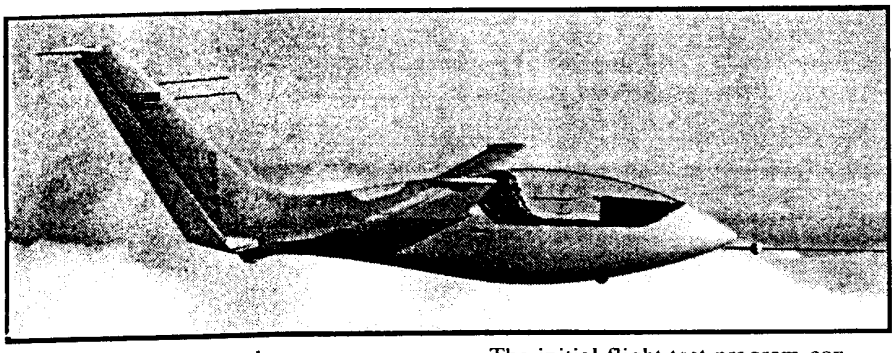
Windows and other glazing areas can be cleaned by means of a high-pressure spray-cleaning unit, if necessary with the addition of some dishwashing liquid.

Fig. 42: Cleaning agents

Genesis glider flown

New aircraft review by Stephen Mitchell

The prototype of the Genesis 1 kit built glider has made its first flight and the flight test program appears to be progressing well.



As far as high performance gliders go the Genesis is of unconventional configuration in that it is a swept forward flying wing. There is a small horizontal tail surface located on the top of the vertical fin but this is only used for pitch control; it is not required for longitudinal stability. The wing is stable in its own right.

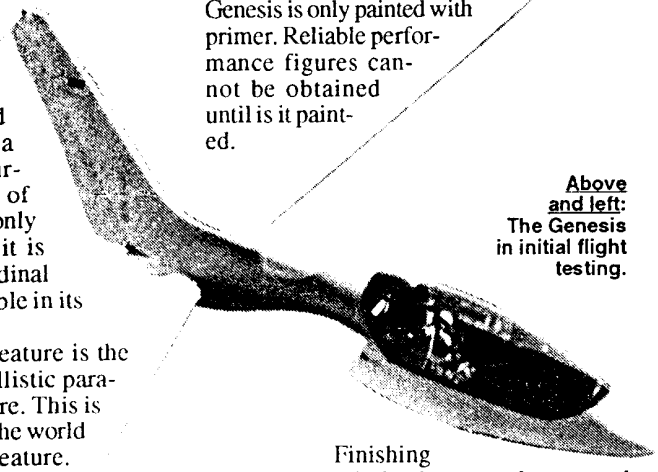
Another noteworthy feature is the installation of a BRS ballistic parachute as a standard feature. This is one of the first gliders in the world to make this a standard feature. The BRS parachute system was tested on the ground before serious flight testing began.

The Genesis is designed to be competitive in standard class (15m wing without flaps) with an estimated L/D of 43:1.

This is however subject to completion of inflight performance testing. Provision has been made for the addition of water ballast in the wings as is common practice in competition sailplanes.

The static load test program has been completed with no problems. The wing was loaded to +5g and -3g or 2700lb and 1600lb respectively. At 5g the wing tips deflected 23". The vertical tail was also tested for loads corresponding to full rudder deflection at 115 kt. A total of 535lb of test load was applied with no problems.

The initial flight test program concentrated on the expanding the flight envelope, spin testing, stability and control. At this point the Genesis is only painted with primer. Reliable performance figures cannot be obtained until is it painted.



Above and left: The Genesis in initial flight testing.

Finishing and painting is now underway and a full performance report should be available in mid February:

Flight testing with water ballast has not been completed.

The flight test results to date have been very encouraging. The handling is described as superb and docile. A concerted effort has been made to produce an aircraft with good control harmony and good stability margins. From all accounts the designers seem to have succeeded. The stall has lots of warning and there is no tendency to spin or depart from controlled flight – just ease the stick forward and you are flying again.

The ailerons and rubber are fully effective through the stall. The Genesis is highly resistant to spinning. Even holding pro-spin controls, a stabilised spin will not develop. The Genesis will recover from a spin by itself independent of control input in less than one turn.

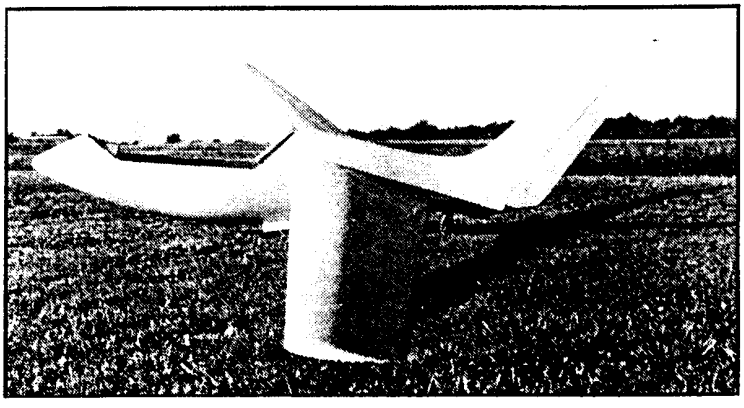
The Genesis is to be marketed as a 51% kit. It is intended (subject to FAA agreement) to supply the major assemblies bonded together; the wings will be supplied with the wing skins already bonded to the wing spar and the fuselage halves will be joined in the factory.

The wings will also be factory jigged and mated to the fuselage. Builders should expect to spend 300 hrs plus finishing and painting to complete the kit. The kit price is US $25995 including the ballistic parachute.

The Genesis glider is designed by Group Genesis, Inc. located in Ohio, USA. The group includes such notables as John Roncz who was responsible for the aerodynamic design and Jim Maske who is well-known for his work on flying wing gliders and for the design of the Pioneer and Monarch homebuilt glider projects. Also under contract to the group is Einar Enevoldson a well known NASA flight test engineer. He is responsible for optimising the control characteristics and for carrying out the spin test program.

For further information on the Genesis contact:

Group Genesis
Marion Municipal Airport
1530 Pole Lane Rd
Marion Ohio 43302
Ph +1 (614) 387 WING (Yep it's right!)
Fax +1 (614) 387 0501



Right: the Genesis just before completion.

As part of Gary Sunderland's(there's that name again!) dutys in the "Design and Devel--opment" committee he has been involved in the **PW-5**,the world class glider.
Gary has forwarded a letter to FAI Enterprises in Switzerland with the aim of trying to have the PW-5 made available in kit form for amateur builders around the world,in "the tradition of the GRUNAU BABY,OLYMPIA and the SCHWEIZER 1-26 " as Gary put's it.

The main aim of the world class glider is to bring the sport of soaring back to an affordable level for the avarage club or person wishing to own their own glider that will be compeditive for many years to come.
There are at the moment some PW-5's being manufactured in Poland and some have been sold,so this is the start of hopefully a new breed of glider and LOW COST compitition.
There are many countrys including Australia that had glider manufacturer's at one stage,but they have ceased production,other countries have never had a manufacturer of gliders and may not have available funds to be able to afford the cost's involved in importing even a basic standard class glider,this is where a glider like the PW-5 would come into the picture,it would allow small clubs to be formed,buy a kit from the manufacturer,and have a nice glider that is a good all rounder for club and one class compititions,also the individual person could buy a kit,learn valuable insite into the airworthiness side of things and could then also have him/herself a relitavly cheap glider that will still be compeditive in the one class compitition,after the glider is finished,just think, you could be compeditive in a oververly compeditive world!!!
Another thought is that a local manufacturer could import the kits and sell them as a finished sailplane,the mind boggle's,someone acctually building a glider IN AUSTRALIA JUST TO SELL!!!!!!!!
As I hear more on the PW-5,I'll put it in the newsletter,if you have any comments on the PW-5 in kit form,please let either Gary or myself know.
Garys address is 70 Underbank Blv,BACHUS MARSH,Vic,3340.

Next is an article on a much modified KINGFISHER that is flying under the 95.10 catogorie of the Astralian Ultralight Federation,the story tells why.this is reprinted from **Pacific Ultralights** magizine.

Innovation

Is it Possible
to fly for about $6 an hour?

Well Read On
Joseph Kostevc
2 Dale Place
Lismore. NSW 2480
Phone: (066) 21 4633

I found an old Kingfisher sailplane made from plywood in a farm shed; it was so badly deteriorated that I pulled it to pieces, copied it and made a new one. All the hardware was retrieved from the old aircraft and I obtained new cables and pulleys. These were installed in the new aircraft.

With some modifications, like engine and strut's as well as a two piece wing which one man could de-rig, I had the new Kingfisher approved and registered VH with the Gliding Federation of Australia.

Due to some staff changes at the Gliding Federation of Australia, I was left waiting for the permit to fly. I couldn't wait any longer so it is now registered with the Australian Ultralight Federation under 95.10.

Since registration, I have now logged over seventy five trouble free hours in my new aircraft.

Operating Details

Since flying, I have found the aircraft will handle very adverse weather conditions and will land with 20 kts cross wind.

Proof loading was to 5 G's with a 95 kg pilot.

I normally cruise 60 kts. Top dive speed in smooth air is 114 kts. Stall speed 35 kts. No wing drop and no nose drop. With full aft stick it just continues at a high rate of descent.

Endurance on three gallons is about two and a half hours; more with the thermalling.

With electric starting, empty weight is 275 lb.

Wing span is thirty four feet.

Inexpensive Flying

This powered sailplane is not a competition ship, but it sure is fun and cheap to fly in most weather conditions.

The best part is at the end of the day, when flying is finished, in about twenty - thirty minutes, I can de-rig the aircraft, load it onto

INNOVATION

my 6 x 4 open box trailer and drive it home to my garage. No hangar fees

For Sale

If you are interested to fly or drive this aircraft to your garage (with trailer included) for only $8000, ring me up, make me an offer. Joseph -- (066) 214 633. ✪

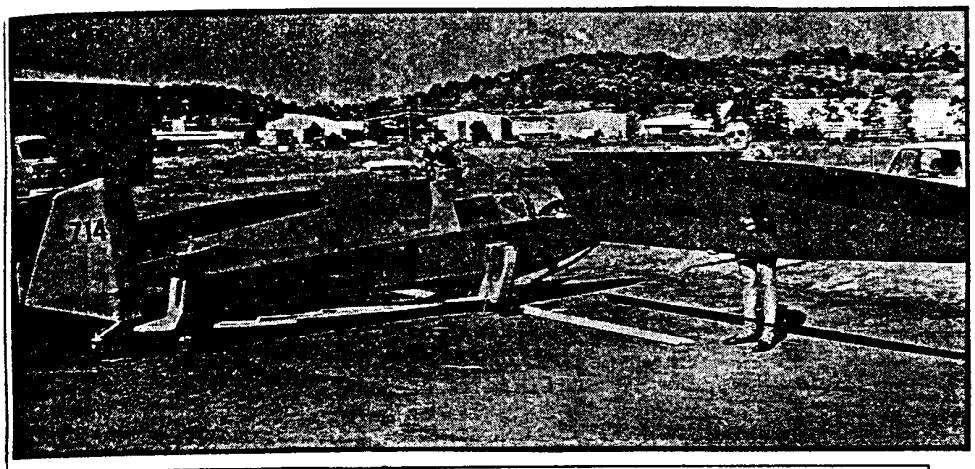


Photo credit: Paul Felstein, Northern Rivers action Photography, Lismore.
Joseph is shown dismantling his powered sailplane; this shows just how light the wings are; he de-rigs it himself and loads the aircraft onto an open 6 x 4 trailer. Empty weight is 275 pounds.

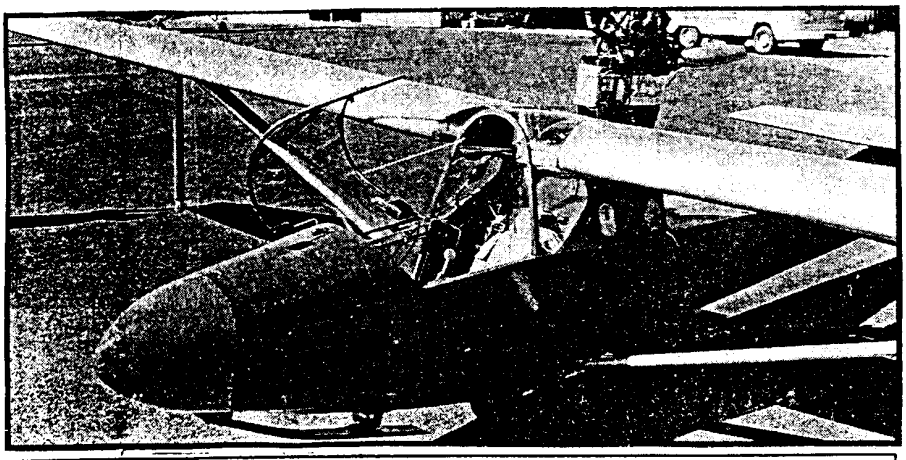
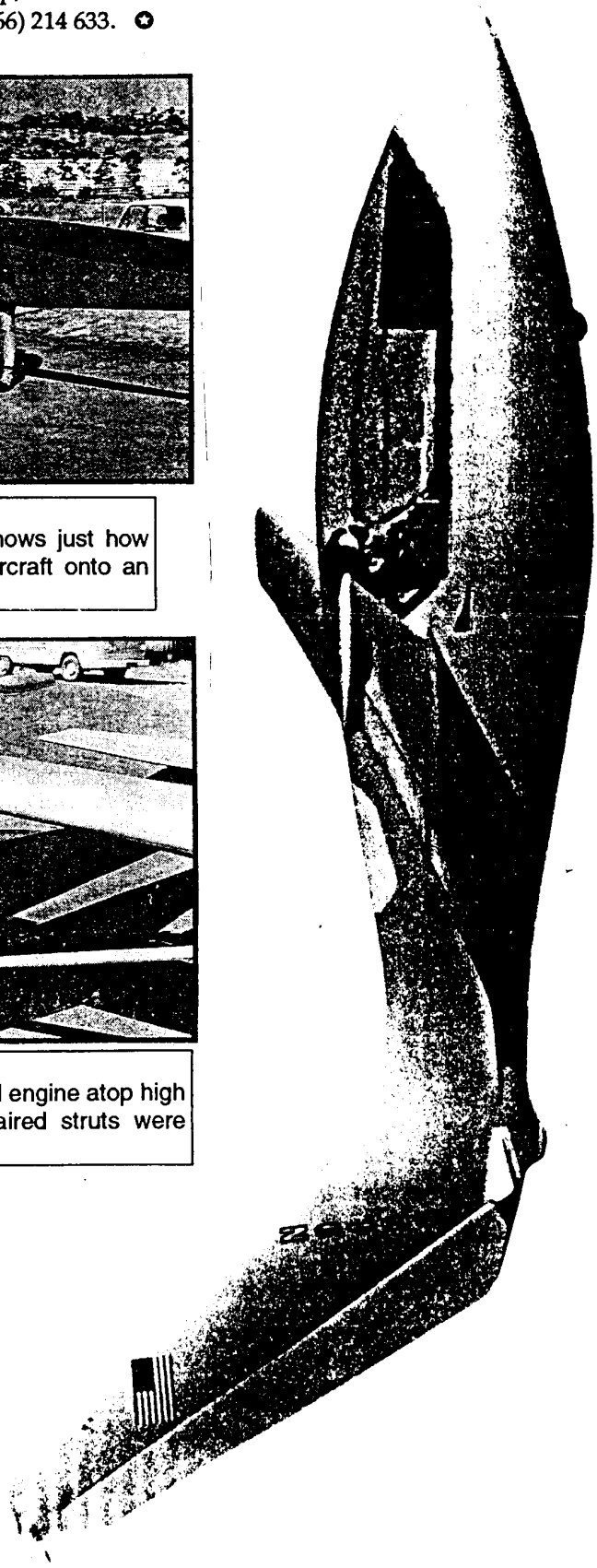
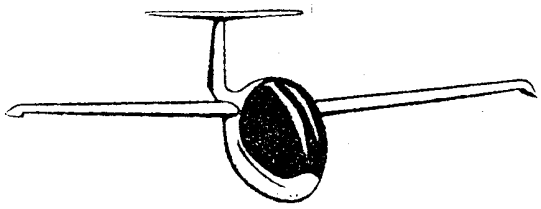


Photo credit: Paul Felstein, Northern Rivers Action Photography, Lismore.
Powered sailplane is constructed of ply, powered by small engine atop high wing. Single wheel undercarriage and skid nose. Faired struts were added. Aircraft is for sale.



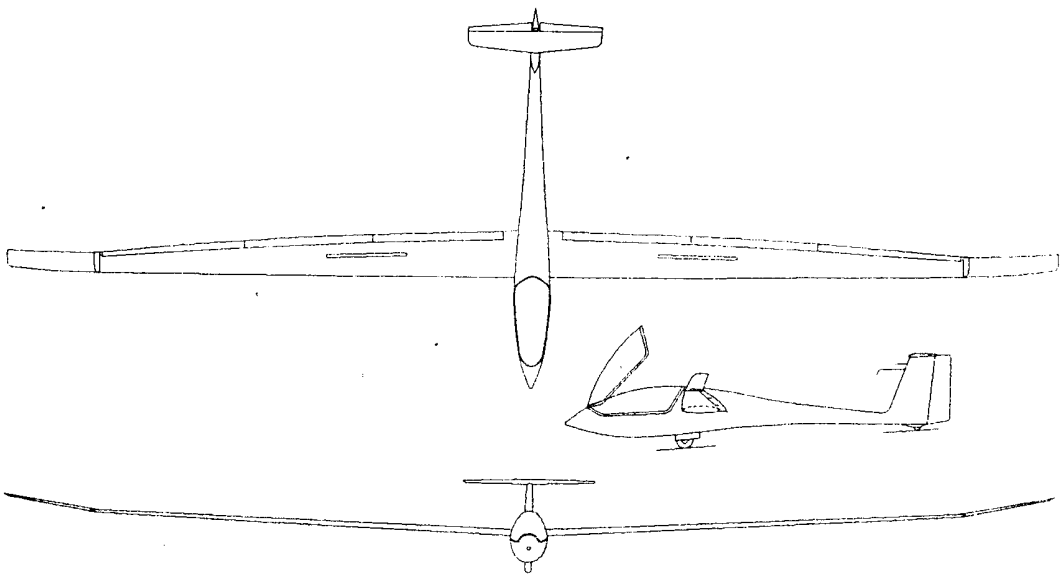
The following is a progress report on John Absolon's FALCON,which comes from Advanced Soaring Concepts Inc in California,USA.
Most of you would have seen the advertisments in A.G. for this glider and also the SPIRIT. so I won't go into to much detail here.

John's kit arrived in Australia on the 23rd of July,1994,after sorting through things, construction was started on the 19th of August,the brochre that John sends out say's that a SPIRIT can be built by a first time builder in around 6-700 hrs of work,the first owner built SPIRIT was completed in 475 hrs by a first timer.
John said he has spent just under 82 hrs on his FALCON and has completed all of the aluminium components for the aircraft,has completed the spoiler arms and mixing unit, has completed the tailplane,elevators,has most of the ruddercompleted(inc joining) and only requires fitting to fuslarge,has manufactured a dolly for the fuselarge in the trailer,and has started on the fin spar+fittings.
He's pretty happy with the progress so far with only a couple of very minor problems allong the way,John has also put together a recommended tool and workshop requirments list which will be a good aid for the first time builder,for further imfo on the FAL--CON abd the SPIRIT,give John a call or write to him at:"Advanced Soaring Australia, 7 Lyon ave,TURRAMARRA,NSW,2074,Ph-(02)-449 6142,fax-(02)449 8206.
As John progress's with the FALCON,we will try to keep you up to date.



Introducing the Falcon

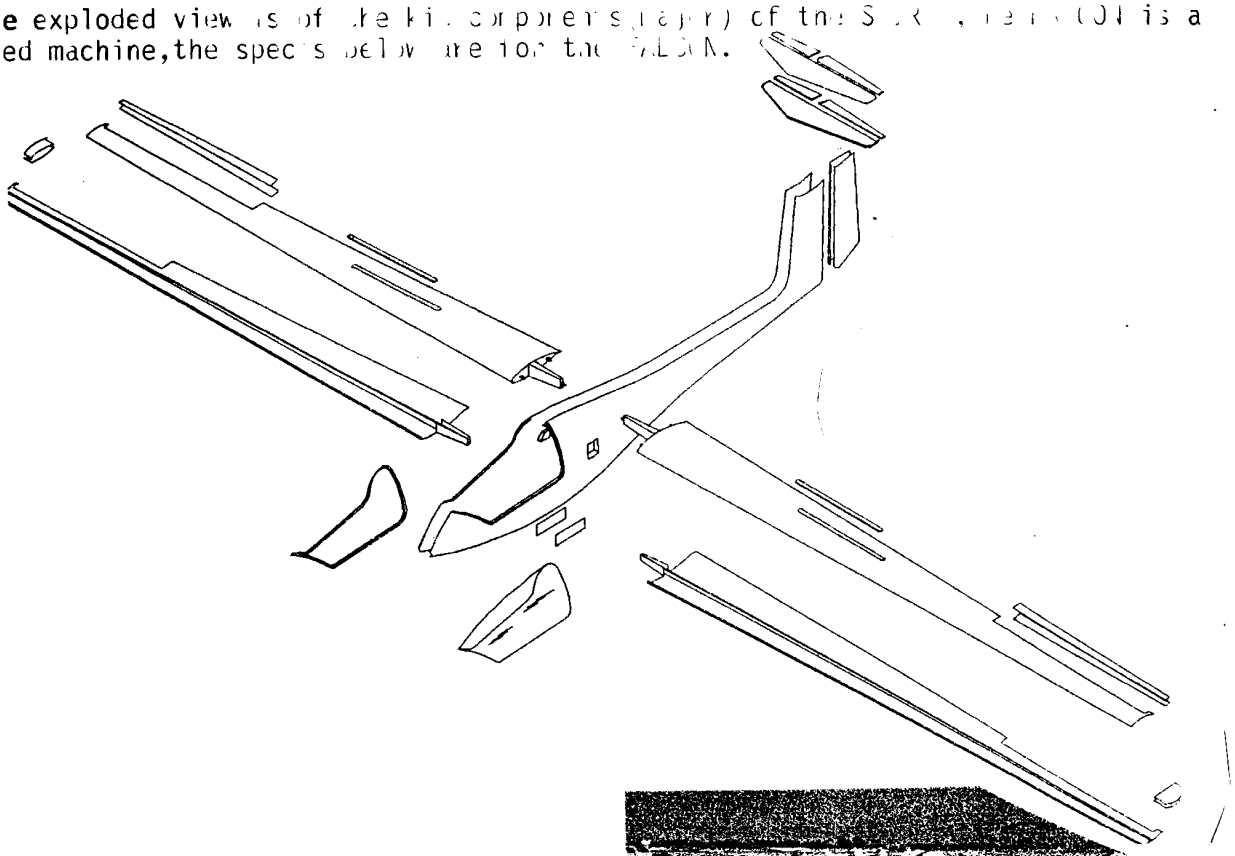
The Falcon is a 15 metre Racing Class variant of the standard class Spirit kit. The Falcon incorporates camber changing flaps that are interconnected and geared with the ailerons to improve roll rate. The Falcon uses the same fuselage and wing planform as the Spirit.



Eighteen metre wing tip extensions are also included as standard for the Falcon. These will improve the glide performance well beyond the 44:1 of the 15 metre Falcon, in fact to better than 49:1. The Falcon first flew in September '93 and one example is now under construction in Australia. (July '94)

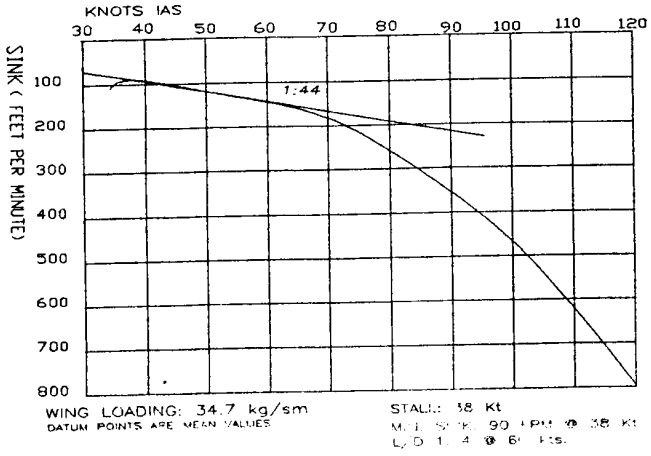
The Falcon features an ergonomically designed deluxe cockpit that has a pre-molded, contoured seat pan and cockpit liner, thereby finishing off the inside the same as any higher priced European machine.(Deluxe molding is optional on the Spirit) Nobody would ever know you built this yourself.

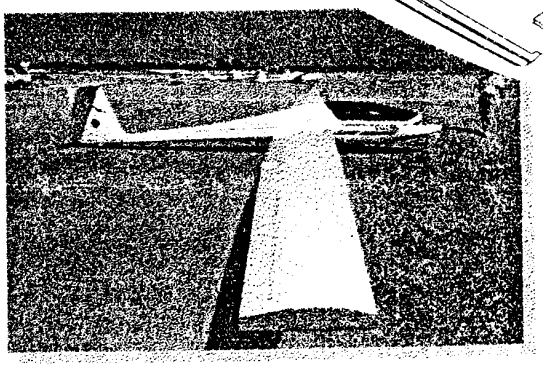
The exploded view is of the kit components (tape) of the S.A. version (OK) is a flapped machine, the specs below are for the FALCON.



FALCON POLAR DATA

(*Interim Dec'93)





SPECIFICATIONS

Span	15/18 m.
Area	9.85/10.78m^2
Aspect Ratio	22.8/30.1
Empty Weight	236/246 kgs.
Max. Gross Wt.	525 kgs.
Max Wing Loading	53.3/48.7 kgs/m^2
Min Wing Loading	34.1/32.1 kgs/m^2
L/D Max	14/50+:1
V_{NE}	115 kts IAS

OK, lastly is "hammer and soar", this issues is on modifications, one by Gary Sunderland, (theres that name **AGAIN!!!!)** and the other article by Mike Burns from 1986. when you read these articles, remember they are a little dated and it is advisable to check on the currency of things if you wish to proceed with anything in the articles. I suppose I should do that for you but I do acctually get out in the shed and get on with my WOODSTOCK!
Well, that will be it for this issue so have fun and how about sending in a few prog-ress reports on what you are up to in the shed?????Aslo if you wish to sell any glider bits etc, drop me a line and I'll put it in the next newsletter, BYE FOR NOW, MARK STANLEY.

...while commenting on the construction of a certain detail on his aircraft which could be improved. At least the builder thinks that the original design could be changed for the better. This may not necessarily be the case.

There may be many perfectly good reasons why the designer has chosen a particular solution to a problem. Even seemingly minor details can have a profound effect on the structural integrity of a finished aircraft. For example the direction of the grain of plywood and of reinforcing blocks are vital to the strength of a spar.

For this reason it is essential that any changes in construction are approved by a competent authority before the aircraft is flown. It is in the best interests of the builder if such changes are approved before they are incorporated into the structure.

A design is best checked through at the "paper work" stage. A sound rule for building is to measure three times and cut once. The rule for making changes is to think it through ten times and get it approved, if possible, before going too far.

In Australia we have a system of Type Approval, or its equivalent, for all aircraft designs. Each aircraft is described by a set of drawings which are set down on an official list. Once the type is "approved" any change from those official drawings constitutes a MODIFICATION.

Modifications may be minor, such as a change in the location of a joint, or they can involve major alterations. For example increasing the wing span will involve a complete re-stress of the structure, leading to strengthening some parts and a complete flight test program to check the aircraft's handling.

In Australia we have people appointed by the Secretary of the Department of Aviation to approve modifications.

These people hold formal engineering qualifications and are experienced in the theoretical side of aircraft design, modification and repair. The GFA Chief Technical Officer for Airworthiness is one such person and there are a few other GFA members who also hold similar appointments. Your RTO/A should be able to advise you of those consulting engineers in your vicinity with experience in modifications to gliders.

It is worth noting that, even if your modification has been approved by the CTO/A or another authorised person there is still no guarantee it will work. Their approval will be based on largely theoretical considerations whereas there may be some other reason why the designer incorporated that feature in his plans. For example to gain access in a corner at a later stage in the construction for drilling a hole or clearing another part. It does happen that way sometimes.

Another good reason to avoid changes is the need for weight control. As Charlie Lambeth says, it is a rare modification that does not add weight. A builder needs to be extremely weight conscious. Although each modification may only add a few grams they soon add up to become kilograms.

Extra gussets here and there, a few more bolts here, or perhaps increasing the gauge of the metal somewhere else, "improving" this bit and beefing up somewhere else and before we know it we have a tail heavy and overweight airframe.

HOMEBUILDER'S CORNER
by Gary Sunderland

That is not to say that a FEW modifications may not be good and desirable. Even the best and most experienced professional designers make mistakes which have to be corrected later in service.

Many of the amateur designs can often be improved in many details. Some of these modifications may be mandatory and REQUIRED by the Gliding Federation.

For example an American-style latch release will have to be changed for an approved European-type release. The harness installation may require alterations so that the upper straps terminate at shoulder level and are not angled downwards, so as to compress the spine in an accident.

Once again these changes should be sorted out well in advance and approval obtained before incorporation. Structural modifications will be required for both the examples given so it is not just a matter of drilling a few extra holes in any location to suit.

Then we come to the problems involved in adopting local hardware to suit the design. Even if there is a comprehensive kit, not all the parts may be suitable. I have already mentioned the change of release type.

The Monerai is designed to have two small sprung wingtip wheels. Very suitable for runways but not so good for some of the rough fields we use in Australia. Large tip wheels, as on the Pik 20E, would be a good investment.

The Monerai kit comes with mainwheel but other designs leave the builder with the task of finding a local substitute. The traditional solution for home-builts in Australia was the Anson tailwheel but unfortunately these are now history.

Industrial wheels have the load capability but generally tend to be too heavy and the tyres are of small cross section. Most gliders are without springing and depend upon the tyre to absorb the energy of landing. Thus we need to match the cross section of the tyre shown on the plans. There is a light industrial pressed steel wheel made in South Australia which might be a possibility for a small glider.

For a 15 metre sailplane like Moba 2 there is really no alternative to a commercial glider wheel and brake, such as the German Tost. Unfortunately these cost more than $400.

If your glider is of less weight, under 400 kg gross, then it might be worth investigating the local motorbike shop for a suitable for runways but not so good for that the Glasflugel Libelle was originally fitted with a wheel adapted from a Honda motorcycle.

Another modification that is a worthwhile improvement is a removable tailplane on the Woodstock. The combination of a wooden airframe and an open trailer is not one which appeals to me.

This is a more difficult proposition as it involves all sorts of complicated problems with rigging connections and clearance as well as calculations to prove the structural integrity of the design. Ken Davies tackled this by adopting the system used in Hutter H17 and I was able to help with the calculations.

The design is going together now and looks quite well, although it is too early to say that all the difficulties have been overcome. That can only be proved conclusively by flying the aircraft.

...Mike Burns

...sure that the sailplanes we operate offer the minimum risk to us as pilots, minimum risk to persons and property we fly over and minimum risk to other pilots using the same airspace, our sailplanes are required to be "type accepted".

The term "type accepted" simply means that the manufacturer/designer/builder has been able to show that the sailplane meets a reasonable minimum standard of design and engineering.

Having received "type acceptance", a Certificate of Airworthiness can be issued which is the basis for insurance policies covering the sailplane for flight risks, 3rd party property and Personal risk, personal Life insurance held by the pilot plus providing a basis for Glider Inspector certifications.

This principle of certification is used world-wide, with few exceptions, differentiating our aircraft from "minimum aircraft", "hang gliders", "gyroplanes", etc, all of which have tight operational limitations, because they lack certification.

Despite the work done to ensure a high standard of design and engineering integrity, we still have occasional mechanical, structural and aerodynamic problems which arise from time to time.

When problems are found, quite often the question must be asked "Do we **modify** the item in question to stop it happening again, or simply return it to original?"

The writer believes that if a modification will reduce pilot effort, improve in-flight safety, increase operational reliability, etc, then the responsible thing to do is to examine the modification possibility and, if shown to be practical, have the modification incorporated.

However, any modification legally suspends the "type acceptance" until it can be shown that there are no unnoticed aspects of the mod that will reduce the airworthiness of the sailplane.

This is the background behind the requirement that GFA approval should be obtained for any modification carried out to our sailplanes.

We get a mixed reaction to this requirement. Some members see it as an intrusion by the "Bureaucracy" and go their own way, other members act more responsibly and seek assistance with what they intend to do.

One of the major commitments that GFA has to its members in 1986, far more than in years past, is to ensure that the **legal** repercussions of member activities are clearly understood.

These legal considerations do not originate from GFA, they originate from the Air Navigation Regulations which control all Australian aviation activity, and the general social pressures that exist today which generate legal actions, in ever-increasing numbers, with damages being awarded almost daily, totalling millions of dollars.

SUMMARISING:–

(1) Modifications, soundly based, are in the interest of safer operations.

(2) Non-approved modifications and repairs legally violate the airworthiness certification of the sailplane involved.

(3) Working with the RTO/A or CTO/A may provide you with details of an existing modification that you can use.