APS *NEWS*

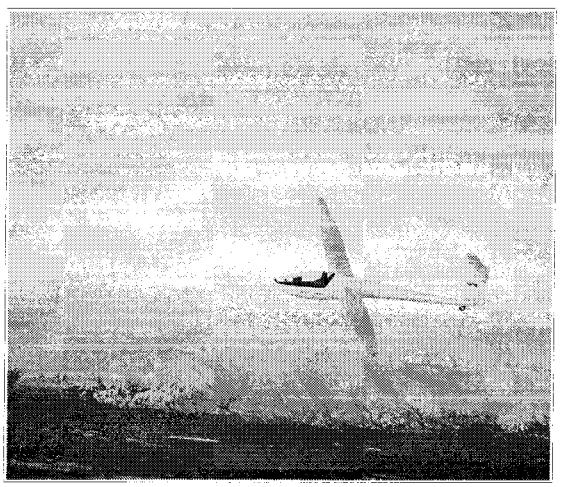
The Official Publication of the Auxiliary-powered Sailplane Association, Inc.

Volume XVII Issue # 102 **ASA Web Site: <www.motorglider.org>** **January-February 2005**

Alaska Winter Flight Operations in a DG-400

Bob Adams recently purchased a DG-400 from its original owner in Florida and trailered it approximately 5,000 miles to Birchwood Airport which is 20 miles north of Anchorage, Alaska.

Here's some of Bob's comments about flight operations in Alaska. "The flying has been going real good and I have put in about 20 hours since arriving here. I have not had any problems with cold restarts in +10 F. Even after a 2 hour soaring flight an air start needs about 1/2 choke. The first flight of the day seems to need more. I store the 400 in my heated hanger so its pretty easy.



The 4,000ft runway has been glare ice for the last week but landing and stopping on it has been no problem at all.Its real nice being able to taxi out to the active and take off and do a restart after landing and taxi back into the hanger. On one flight I climbed to 9,500ft msl and flew over some of our glaciers that are only 15 miles from home base. I am looking forward to wave season"

Adams is a pilot and big game guide in Alaska. His DG-400 was built in 1990. Pho 907-688-1499 E: kipchuck1@taonline.net

ASA WELCOMES THE FOLLOWING NEW MEMBERS

John Hodgson
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Dunn, David A.
Mikula, Allen
Ginther, Eric
Ishkanian, Albert
Labahn, Edward
Stewart, Fred
Baldwin, Mike
Adams, Bob

The listed ASA Members below have experience with flying, servicing and maintaining specific models:

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DG MOTORGLIDER FUEL HOSES

I have been following emails regarding DG fuel hoses. With 10 years experience flying DG-400 and now six years flying a DG-800B I have learned a lot about fuel hoses. The fuel hoses are the same types in both birds. I changed to US SAE hoses in both birds after experiencing leaks. In each case the interior rubber walls of the leaking hoses were crumbly. I believe this condition is caused by the fuel/oil mixture attacking the rubber of the German-made automotive fuel hoses used in DG motorgliders.

If I purchased a new or used DG retractable engine motorglider the first thing I would do is have all hoses replaced with heavy duty, durable SAE approved hoses. Yes I know the fittings on the system are metric and reaching the "hidden" hoses just forward of the firewall is very difficult but its worth the hassle. I have even had the refueling hose set start leaking for no reason at all.

Bottom line: fuel leaks can cause fires in the engine compartment. Also different climatic conditions (the super dry desert conditions in America) can affect life of the hoses. DG is now using brass fittigs at the fuel pump replacing the plastic fittings used normally in the tubing for the total energy system.

Frankly, in the interest of safety, DG should review their options and select aviation quality hoses and issue a TN. Another welcome change to the fuel system would be screwed unions rather that hose clamps. One final recommendation: When a fuel leak is discovered, change ALL hoses. Otherwise you will find yourself changing hoses piecemeal usually over a 3 year period. *Gary Evans has completed research of U.S. sourced possible replacement hoses for DG-800B/808B which is on* *Page 7.* *Pete Williams*

Pacific Aero Sport New Western U.S. Dealer for DG/LS Sailplanes

PAS of Arlington, Washington is also a dealer for the Twister Kit Plane and the Symphony Light Plane. Services for glider pilots includes:

- FAA Annual Inspections
- Pre-Buyer Inspections
- Airframe Major Alterations and Repairs
- Assistance in Obtaining Airworthiness Certificates
- Sailplane Equipment & Instrument Installations
- Motorglider Engine Servicing & Maintenance
- Complete Composite Work
- Weight and Balance Services

Checkout their address, phone, fax and email on the left and contact Owner Chris Klix for more information.

A 5,000km Soaring Safari in NE Brazil Sep. - Nov. 2003

Part I

by Thomas Milko

JUNDIAÍ – FRANCA – 03/09/2003 – 290KM

I woke up very early and was very tense. After arriving at the Jundiaí Aeroclub about 45 minutes by car from São Paulo I stowed all the gear in the small baggage space before assembling the glider. Takeoff in my DG-800B was uneventful. I had 30 liters of fuel, enough for a long motorized flight if necessary. I was able to slowly glide away from the São Paula TMA area. Cloudbase was about 1000m agl, in an almost blue sky. Going after the small cloud wasps, I got very low (200m) and lost a lot of time. I finally climbed back up. As I continued my motorless flight, thermals were not anymore than 2-3m/s and they were getting weaker by the hour. Cloud coverage was increasing and I was down to 200m agl near Guaxupé and I saw that I would not make it to Araxá, my original objective so I landed Franca, which turned out to be a good option. The runway was almost 2000m long and the reception was very good from the people of the local airclub. I even had a hangar for the DG800B, where I let the batteries be charged during the night.

FRANCA - PARACATU 04/09/2003 – 376km

I lost my flight report of this day , landing at Paracatu.

PARACATU – FORMOSA 05/09/2003 – 194km

This was the easiest leg. I took off at 10:30. The headwind now turned to the NE, making my arrival at Formosa a bit later than forecasted. I did not need to contact Brasilia APP , as I flew well to the east of Brazil 's capital. I landed at Formosa just after 1pm, said hello to my friends there, and took off again for a local flight. This day I flew more than 6:30 hours proving that even at this time of the year it's possible to fly longer hours at this part of the country. The Brazilian National's was starting in 2 days time, so the next day I decided to rest, and visited a very nice nearby National Park.

FORMOSA 7 TO 13th of September 2003

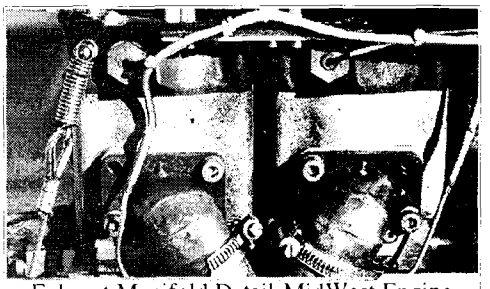
During this week I flew in the Brazilian Nationals, with the usual AAT tasks, we had about 25 gliders all together, from a Nimbus 4DM to a Libelle, using our handicap system to try to accommodate all performance differences. On the last contest day, at 21:00 we were advised to check our glider tie-downs, as there was a forecast of strong rain and winds which was very unusual for this time of the year. I went back to airport and reinforced all the tie downs from the DG 800B and the Nimbus4DM.

FORMOSA – BOM JESUS DA LAPA 14-09-2003 – 495km

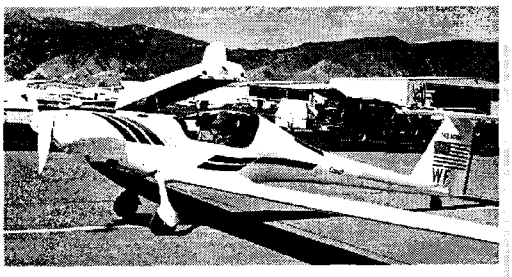
We self-launched at 11:00, with the 3 motorgliders the DG800B (TO), Nimbus 4DM(ZG) and the DG500M (HK). The weather was very strong till 100km enroute, than it started to deteriorate, and we jumped from one "mesa" to the other, at 500m agl. The Chapadão Ocidental da Bahia is a rough area sparsely populated with few roads, no airfields or cities. However some huge farms which gives some outlanding options. The heavy cloud cover made for a difficult flight. A huge fire saved the day, with the climb rate of 6m/s to a good altitude. In the sunshine areas we had 3m/s, but these sun "oasis" were scarce during this day. After the fire, we were able to make a long glide to an area near Bom Jesus, where the sky was clear, and thermals were booming again. This was the last AVGAS airfield, for a few a weeks, as our final destination was Juazeiro do Norte where there is also no fuel. We purchased 200 liters for the 3 gliders as this fuel was meant to last for 4-5 weeks of pure soaring. We pre-mixed with the Castrol Super TT oil, so there would be no mistakes when refueling the motorgliders. The fuel cans were transported for us by the DG-500 and Nimbus 4DM trailer' crews.

BOM JESUS DA LAPA – JACOBINA 15/09/2003 – 390 km

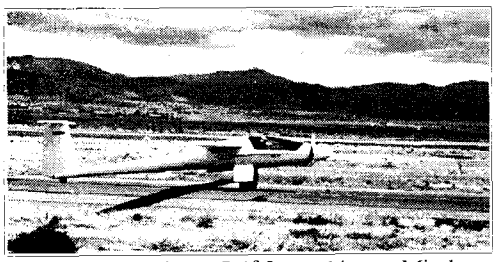
The Chapada da Diamantina rises the terrain substantially, and we saw the cloudbase coming down and down. Near Morro do Chapéu, the highest region of the leg, cloudbase was at 1000m, very low for such an inhospitable area with no outlanding possible in this rocky area. It was growing late and the head wind at 35/40km/h did not help. The computer showed no reserve when I started the final glide towards Jacobina hoping to find lift at the edge of higher terrain, which is 200-300m higher than the valley below. My altitude for the final glide was not acceptable. The good news was the Nimbus 4DM ahead of me, was able to "surf" on the edge of the Jacobina valley. I was now at 600m agl and used the old technique of making a small mark on the canopy and see if it was getting higher or lower vs. the edge of valley. The mark did not climb or sink, showing that I was in fairly flat glide. At less than 300m agl I accelerated against the headwind. At only 150m agl I crossed the edge into the valley. I was now low, and starting the engine was not a good option. However, I was able to slowly to climb using the wind that made dynamic soaring possible. I climbed 400m, and made a safe final glide to a landing at Jacobina. This was a successful day for me.



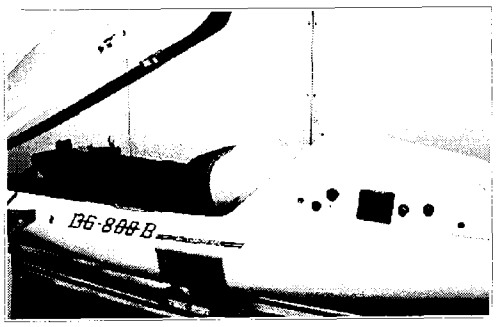
Exhaust Manifold Detail-MidWest Engine



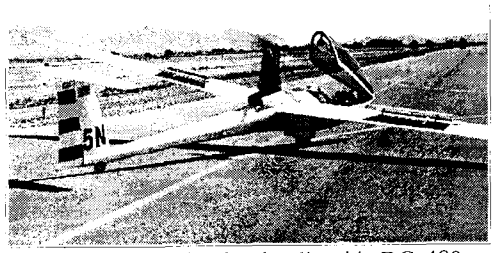
Oliver Dyer-Bennet Taxiis First Carat in the USA



Martin Hellman Self-Launching at Minden

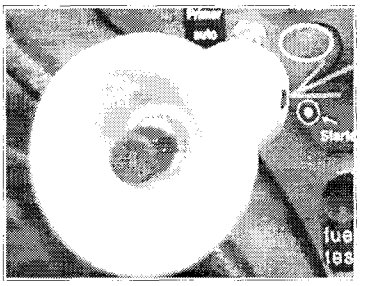


Working on Fuel Lines in a DG-800B



Pete Williams taxis after landing his DG-400

Schempp-Hirth Duo Discus Turbo



Sticky Starter Button

My DG 808B s/n 308 was delivered Jan 04. I got a big surprise after landing last Tuesday. After taking off the wings I switched on the engine master and then the ignition to raise the engine and prop for a post flight inspection. I was standing beside the fuselage as the engine came up and then .... it started, on its own! I quickly shut it down with the engine master.The starter button/switch had failed in the "on" position and everything else was set for it to start. The UK agent told me that he had seen 2 other failures of the starter button one other in the "on" condition and the other in the "off". On examination, the button/switch must have had a failed spring inside or other material failure. Normally I keep my thumb on the starter button as the engine is being raised so that the engine will start as soon as it is erect when I want to do an air start and I wonder if I am holding it down a bit too hard and I have broken something. In future I will keep well away from the prop when raising the engine on the ground.
Richard Arkle, Aboyne, Scotland

Bob Bromwich had a similiar problem with his DG505MB:

"The problem with the button was mechanical, and it was noted that it was possible to pull the button back out with the fingers when it had stuck in - this is the most important point to remember in case this happens to anybody in flight. On removing the switch, it was found to have a weak spring, and the design of switch was not robust. When reinstalling the throttle handle on the shaft, do not overtighten the two grub screws as they strip out quite easily."

Jet-Powered Motor Glider

Bob Carlton of Silent Wings Airshows absolutely stunned crowds with his Jet Powered Alisport Motorglider. At Joplin Regional Airport last summer Bob's unique not-so-silent, low-altitude twin-jet glider performance thrilled the spectators. All routines included his trademark wingtip pyrotechnic smoke trails, high speed low level passes and inverted flight.
www.bob@silentwingsairshows.com
The modified 12m-wingspan Silent Club sailplane uses two 45 pound thrust AMT-USA turbine engines mounted on a retractable pylon. For the pure glider routines, the engines are used both to self-launch & for climb to altitude and, for the jet shows, remain deployed & running throughout the low-level routines, which include sustained inverted flight. This is the second-generation engine installation and is vastly improved over the previous proof-of-concept installation. This latest version, which has significantly better climb rate and top speed, includes numerous refinements such as a low-profile engine pylon for reduced drag, engine-bay doors fully closed during flight, increased Jet-A fuel capacity, inverted fuel system, on-board compressed-air and propane engine-start bottles, and improved electronic control units.

Although the exciting aircraft has met all design objectives and is performing exceptionally well, it should still be viewed as a one-off concept aircraft that is best technically matured gradually and flown by an experienced air show performer. In light of this, we ask that enthusiasts please continue to understand that Alisport is currently not accepting inquiries about the present or future availability of production versions of this unique aircraft. Additionally, we must remind readers that this is a modified aircraft and that Alisport series production gliders are not rated for aerobatics.

Leo Benetti-Longhini
Alisport USA Representative
931-455-5994 info15@alisport.com

Photos by Stan Nelson at Moriarty Airport, NM November 27, 2004.
Text edited by Pete Williams and Leo Benetti-Longhini

The ASA News Group

An Auxiliary-Powered Sailplane News Group has been established to promote communications between interested members. The intended purpose is to provide a quick method of asking questions, sharing information and problem solving. The News Group can be viewed at the following address;
http://groups.yahoo.com/group/ASA-NewsGroup/

The News Group can be viewed by anyone but posting is limited to ASA members. If you wish to join and are already registered at Yahoo just click on the **JOIN THE GROUP** button and you will need to fill in the specified information to join. When your request is submitted an E-mail stating that you have applied will automatically be sent to the News Group administrator who will approve your request. You will then be able to post messages. If you are not registered at Yahoo you will first have to click the **SIGN UP NOW** button to be register before joining the APS group. There is no charge for registering or joining. If you,re not familiar with news group,s information can be communicated in one of 2 ways.

1) You can book mark the web address and go directly there to read and/or make posts. Or-

2) You can receive each post by E-mail so you do not have to visit the web site after joining to keep up with what,s being discussed. If you reply to the E-mail it is automatically posted to the News Group and sent to the other members as E-mail. Any questions and/or suggestions on our NewsGroup can be posted at the site or sent directly to either of the following moderators.

Gary Evans
garyevans@cableaz.com
Eric Greenwell
engreenwell@charter.net

DG-808B Cold Start Primer

By Gary Evans

Two cycle engines are utilized on sailplane due to their simplicity, relative low weight and high power to weight ratio but they do have some down sides. The important one for this subject is their sensitivity to the correct air/fuel mixture especially during cold starts. DG and SOLO recognized this air/fuel issue and employed an electronic choke on the SOLO 2625 power plant. It consists of an automotive fuel injector and simple DEI software logic, which delivers both pre and post start enrichment based upon cylinder head temperature. This is basically the same start logic employed on almost all modern cars and can be credited with their instant cold start ability. The SOLO engine however does not have this instant start characteristic and it is more typical to crank the engine for around 5 seconds before it fires and the often uneven initial idle signals that something may not be ideal in the air/fuel ratio. At least part of the slow start may be attributed to the injector mounting method. Fuel injectors are normally installed in the intake tract of the engine, which on a car is under the throttle blades or as close as possible to the inlet valves. This is done to speed fuel delivery to the combustion chamber and improve throttle response.

On the SOLO 2625 the injector is remotely mounted and connected to the carburetor with a 12-inch long fuel line. The injector in mounted upside down, which creates an upward loop in the line before turning back down towards the carburetor. Upon pressing the starter button the control system delivers a metered pre-start shot of fuel and then a post-start volume depending on cylinder head temperature.

This should result in an almost immediate start but doesn't because of the relatively long distance between the injector and carburetor plus about 2cc of fuel is trapped in the upper fuel line loop before any can reach the carburetor. When this first hose section is filled then fuel will be delivered to the carburetor but not at the right time or necessarily the planned rate. The result is excessive cold start cranking and a rough initial idle.

Upon engine shut down and retraction as the engine is rotated the fuel trapped in the hose gravity drains down into the carburetor. Every extraction and cold start therefore requires refilling the hose loop before any enrichment can get to the carburetor.Unless the injector were mounted directly on the carburetor it will never provide an immediate cold start but it can be improved somewhat by a modified mounting position. I tried inverting mine and by doing so reduced the hose length by 50% plus any fuel dispersed by the primer is immediately delivered to the carburetor. My engine now normally cold starts in 1.5 - 2 seconds. I have forwarded this modification on to the factory for their consideration.

New DG/LS Dealer Network for North America

Ed Hollestelle from Solaire is handling Canada and SSA regions 1, 3, 6, and 7.

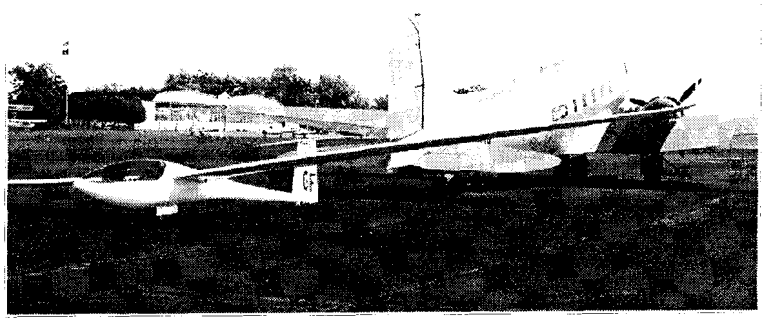
Knut Kjenslie from Seminole Lake in Florida has regions 2, 4, 5, and 10, and

Christian Klix located in Arlington, Washington, providing sales and service to the western US, SSA 8, 9, 11, and 12.

Customers can contact any of these dealers for parts. The retail price should be the same however the shipping costs may be less if you order from the dealer closest to you. For parts availability the dealer network will try to check with the other dealers before going overseas to get parts to customers as soon as possible.

One issue customers had was the distance they needed to drive to get any warranty work done. DG has agreed to approve work on an individual basis, with various shops around the country, so the customer can take their ships the nearest repair facility. Any established sailplane repair shop interested in doing such work should contact DG and request to be listed on their web site.

According to Chris Klix, the new Western USA Dealer for DG/LS Sailplanes: "Our goal is to provide the best customer service in the industry. We ask everyone to be patient while we work to get all the systems in place. We are looking at everything and are communicating with DG to make things flow efficiently. If anyone has some feedback please send an e-mail or respond on my web site by clicking on "Contact Us". I would love to hear from you. My hope is this transition goes smoothly and the customer is the one that will gain in the end."



Gary Flandro's DG-800B sits at the Tullahoma, TN airport near a vintage Douglas DC-3 transport. This airfield was a Army Air Corps base in 1943 and was one of 345 federally funded military airbases constructed between 1939 and 1943.

DG-800B/808 Factory Hoses & Possible U.S. Sourced Replacements

Ed Note: The Source of this information was a post on the DGSoloUsersGroup which was edited by Pete Williams.

The latest factory recommendation is to replace the braided engine compartment lines every 3 years. The factory hoses consist of a solid core of some type of synthetic rubber and an external covering of either metal braiding or cloth. There is no internal fiber braiding which makes the hose very flexible and easy to slip onto the barbed fittings used on the 800/808. The exact cause of the short service life has yet to be determined.

On the DG-800B/808 there are three different hoses sizes used.
1). A short section of 8mm connects the OEM primer (fuel injector) to the fuel distribution block. The primer has this hose section permanently attached to the inlet by the manufacture (Bosch) so unless it's leaking I wouldn't replace it. If its needs replacement the choices are either a new OEM primer at close to $400 delivered or a piece of U.S. sourced fuel injection hose such as Goodyear 5/16 SAE 30R9. The short section used with the OEM primer mount does not require external braiding.

2). The braided engine compartment hose is 6mm with an external metal braid covering. The actual I.D. measurement on mine was .210 inch. External metal braiding for protection is needed but choices are limited to what will fit the barbed connections. For off the shelf material the best choice I have found is Parker Stratoflex 156-4 Medium pressure hose. This hose has an I.D. of .219 and an O.D. of .484 which is slightly larger than OEM. The hose has good high temperature resistance and it provides an essentially unlimited shelf life. The inner core is covered with internal fiber braiding and layers of external S.S. braiding. It is compatible with most petroleum based oils, JP fuel, aviation gasoline and many synthetic base fluids and is unaffected by alcohols and Avgas. This Stratoflex hose is designed for use with special AN style fittings but will work with barbed fittings and clamps. Not a perfect solution because of the fittings issue but the best choice I've found for non-OEM braided hose. The price for this material is high at over $11/foot from Aircraft Spruce.

Braided hose can be a difficult material to work with. The hose is best cut by wrapping it tightly with about three turns of masking tape and using a fine tooth hack saw. This will still leave rough edges of wire on the end and can be trimmed with either small metal cutting shears or a grinding wheel. Care must be taken to clean out any cutting residue inside the hose before installation. The hose ends should be covered with shrink tubing. I used Breeze brand S.S. hose clamps, as the OEM clamps are a little too small for the slightly larger O.D. of 156-4 hose. Both the hose and Breeze clamps are available from Aircraft Spruce as part #6504 (clamp) and part #156-4 (hose).

3). The hoses within the fuselage are shown in the manual to be 8mm but the hose is stamped as 7.5mm. The actual I.D. measurement on mine was .250. This hose also has no internal braiding and a cloth external covering.

It looks like ~~¼ inch~~ 5/16 SAE30R9 would work but I have not yet tried it. With the difficulty of changing the hoses inside the fuselage how it fits on the barbed connections becomes very important, as much of the work is a one-hand operation. I would definitely try a small section before purchasing a large quantity. The best price is about $5/foot.

Gary Evans

Disclaimer:
This information in no way constitutes a recommendation but rather the results of experiments conducted at the Arizona Desert Beta Test Facility.

ASA Mission

The Auxiliary-powered Sailplane Association, Inc. was founded in 1988 as a non-profit organization to encourage the design, development and safe use of motorgliders, self-launching and sustainer engine sailplanes.

ASA Membership

Membership in ASA is open to anyone interested in powered sailplanes. Write or call: Brian Utley, ASA Membership Chairman, 9541 Virginia Ave. South Bloomington, MN 55438 Pho: 952-941-5683 EMail: <Utleyb@aol.com> USA Dues: $20-1 yr, $38-2 yrs, $55-3 yrs. International Dues: $25-1 yr, $48-2 yrs, $70-3 yrs.

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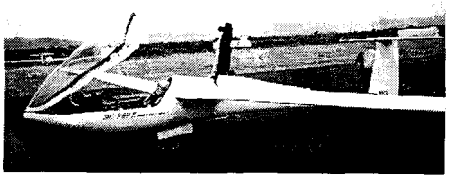


FOR SALE DG-800B

18M TTAF: 767 TTE: 113 LX5000, Cobra/One-Man, Jaxida, 02, GelCoat pristine, Full Panel, NDH, One Owner, $95,000 fl18@pyramid.net 775-265-3877 NV

FOR SALE//PIK-20E

1979 454hrs TTAF Rotax 501 Oxygen Factory Trailer, Parachute $38,000 303-790-1907 (CO)

FOR SALE *Alisport SILENT-IN, #036, 2002*

TTAF 38 hrs. TE 3.0 hrs. easy start FADEC engine, forward hinged canopy, steerable tail wheel, Microair Radio, Cambridge 302 flight computer, gooseneck IPAQ cradle, Factory Clamshell Trailer.

$35,000 ($32,000 without 302)

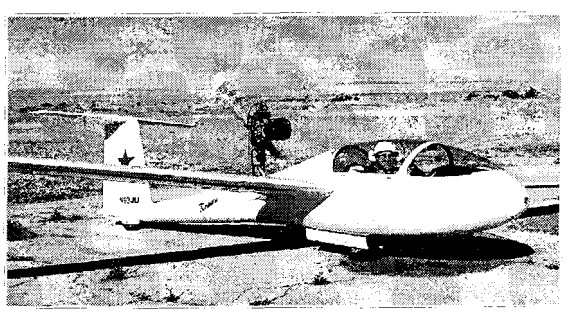
727-784-5421 (FL) **Email:** rogerb@tampabay.rr.com
Roger Buchanan (n/d-j/f)

FOR SALE // GROB 109A

1983 TTAF 550, NDH, GPS/Com Ilec Variometer, Transponder, Turn Coordinator, Strobes $45,000 602-770-9245 (AZ)

DG-808B For Sale

2002 , SN: 8-248B TTAF12 hrs 15-18 meter wings with winglets, leather interior, Cobra trailer One-man assembly, full instruments with transponder & iPAQ, 02, Fully loaded DG & always hungered. Price $125,000 US Russell Steiner at 954 630-8574 or <russ1085@bellsouth.net> (FL)



FOR SALE..... Russia AC-5M

New Engine TTAF 50 TTE 6 /Trailer/ Microair B-40/ Colibri/ All Ground handling Equip/$30,000 Will Deliver. 972-775-5578 (TX) 1bchbum@flash.net n-d;j-f;m-a