

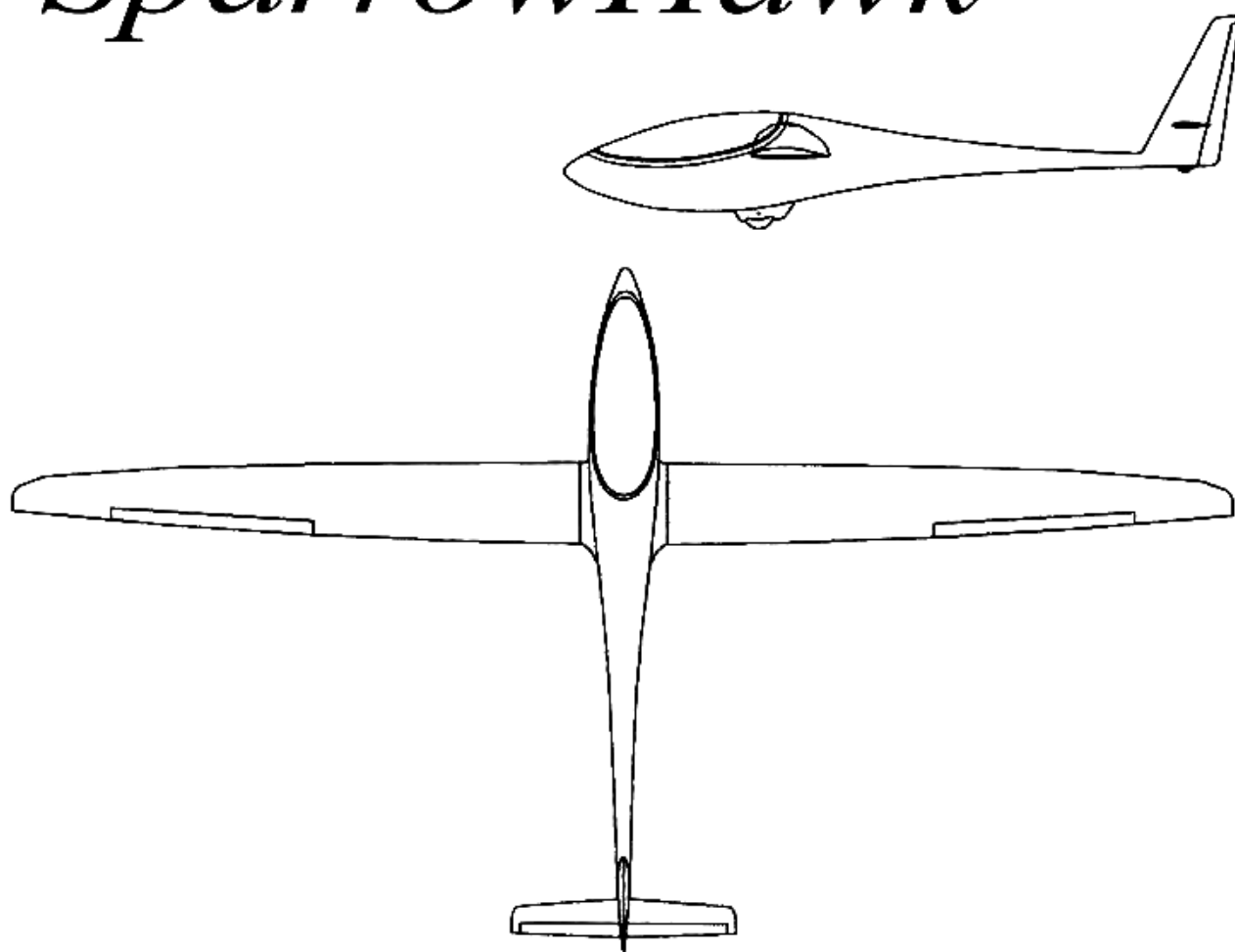
Towline

Vol. 51, No. 5

Newsletter of the Seattle Glider Council

December, 2000

SparrowHawk



An Ultralight Sailplane takes shape

Northwest Soaring Resources

Soaring Society of America

P.O. Box E
Hobbs, New Mexico 88241
505-392-1177
www.ssa.org

SSA Region 8 Director

Steve Northcraft 425-235-0231

Idaho SSA Governor
Tom Dixon 208-376-6718

Montana SSA Governor
Steve Ard 406-388-6887

Oregon SSA Governor
Stew Tittle 503-746-7032

Washington SSA Governor
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NWS Seattle 206-526-6087
FAA Weather 800-992-7433
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Highway Report 206-368-4499

Seattle Glider Council

P.O. Box 7184
Bellevue, WA 98008-1184

Officers and Board of Directors

Chairman
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Vice-Chairman
Steve Northcraft 425-235-0231

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SGC/Ephrata Homepages

www.seattleglidercouncil.org
www.soarephrata.org
Webmaster: Vince Miller
253-863-6960
soarhead@aol.com

SGC Clubhouse

Ephrata Municipal Airport
30 Airport St NE, Building 625
Ephrata WA 98823
509-754-3852

See the Calendar of Events in this issue for information on times and locations for SGC General membership meeting.

Region 8 Clubs/Associations

Boeing Employees Soaring Club
Newsline 206-516-4149
Bob Perry 206-706-7603
perryr@flashcom.net

Cascade Soaring
Arnie Clarke 509-884-2494
www.nwinternet.com/~blanikam/css

Columbia Basin Soaring Assoc.
Tom Seim 509-627-5532

Evergreen Soaring
Newsline 206-772-3002
Harold Broomell 206-772-2112
www.evergreensoaring.org

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Stefan Perrin 253-927-9183
guystefan@usa.net
www.pugetsoundsouaring.org

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Dean Forney 509-928-0495
http://www.kinseyse.com/sss

Vancouver Soaring Association
Hans Baeggli 604-434-2125
http://sd69.bc.ca/~vsoaring/vsa.htm

Silverstar Soaring Association
Hans Kruiswyk 250-763-1788

Willamette Valley Soaring Club
(Portland, OR) 503-647-0913
www.wvsc.org

Commercial Glider Operations

Blanik America, Inc.
Vitek Siroky 509-884-8305

Cascade Soaring
McMinnville, OR 97128
Joe Deem 503-472-8805

Lewiston, ID (Towplane)
Dave Dorion 509-243-9919

Cover Photo

A new Ultralite Sailplane takes shape in Bend, Oregon

Seattle Glider Council Rates

SGC one-year membership renewal (January-December)	US\$25
(SGC Membership is required for all tows behind an SGC towplane.)	
SGC Family Membership (for 14 and older)	US\$10 each
Towline-only Subscription	US\$15
Canadian Postage (add)	US\$ 5
Tows (at Ephrata):	
\$20.00 for first 1500' (minimum fee)	
\$.70 per 100 feet above 1500'	
Tows (any airport other than Ephrata):	
\$22.00 for first 1500'	Aero retrieve or glider ferry:
\$.80 per 100 feet above 1500'	\$70/ tach hour
Ephrata Pilot Use Fee: \$60 for the season, or \$10 per week (Sat-Fri)	
(Notes: maximum limit if pilot fee paid by the week is \$90; SGC membership provides for one "free" week of pilot fee at Ephrata)	
Trailer parking: \$120 for the season, or \$15 per week (Sat-Fri)	
RV parking: \$225/season (+ \$17.55 tax), or \$35 per week (Sat-Fri)	

Towline

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Seattle Glider Council

Editor
Vince Miller

Mailing Address
18720 McGhee Dr.
Bonney Lake, WA 98390
253-863-6960
253-735-5151 fax
soarhead@aol.com

Production Manager
Mike Newgard (and family)

Address Changes
Jim Simmons
Seattle Glider Council
P.O. Box 7184
Bellevue, WA 98008-1184
LS4a@aol.com

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Contribution of articles, photos, artwork and letters to the editor are encouraged. The editor prefers to receive text contributions via e-mail in common formats. Mailed PC or Mac format disks are also acceptable. Other contributions should be typed or legibly written. Scanning capabilities for photos and artwork are currently limited to 8½ x 14 inches.

Out On Ask by Vince Miller

Here's a little something I found on the internet that made for good winter reading. We can only wish all first flights go like this...we'd have a thousand members!

I did it!

Today I took my first flight in a sailplane. Went to the local gliderport and watched from the flightline and ended up in a fine discussion with one of the instructors, a retired Army chopper pilot named Lee. I felt that Lee was a good person to try a 25 minute "discovery flight" with and signed up.

After learning the basics of preflight and a rundown of the different instruments and cockpit controls as well as a discussion on "wave off" and emergency landing options we lined up the ASK-21 behind the Pawnee and gave the thumbs up.

The tow was uneventful with Lee showing me how to use the controls to stay in the proper attitude to the tug. As we climbed he called altitude and showed potential emergency landing areas until the 200 ft level where I was told we could make it back for a downwind landing. My attempts to fly behind the tug with a lot of newbie overcorrection was balanced with Lees gently getting the ASK back into the right attitude.

An unusual occurrence of a cold front passing last night and early development of cumulus lead me to believe this may be more than a glide as one other sailplane (Schweizer 2-32) was working under a cu with a base we estimated to be 5k asl. After I yanked the towline free we were off.

I was tentative as Lee talked me through the turns and my head was spinning as I tried to keep all of the numbers straight and respond to Lees frequent requests for traffic info. When I did spot another plane Lee would immediately say "Is he going to hit us?" to which I thankfully replied "no". We had been working on basic controls and making coordinated turns when I felt a bump in my butt that was followed by Lees voice "Here we go, I am gonna take it for a second while you look for other planes". He proceeded to bank into the thermal and the vario showed a 6kft up and soon we were turning with the Schweizer all the way to cloudbase. What a rush. Lee was truly showing me how it was to be done as I felt his movements in the stick and pedals. I tried to get a feel for what he was doing by the physical input as well as the instruments and I soon got an understanding of the wonderful rhythm and natural feel that makes a soaring pilot.

The lift didn't last forever and soon we were screaming along at "speed to fly" looking for more. Once again I was at the controls as we searched for more lift. Along the way Lee continually gave me input on proper actions as well as keeping a lookout for others. Another bump in the butt and a positive reaction from the vario and Lee had me turn to take advantage. I think at this point it was all so overwhelming that my control of the sailplane was less than satisfactory and I continually tried to do better. Lee took the controls again and had me follow along so that I could get a better feel for it. He made a nice gain before it ended and we soon were off to look for more.

Our 25 minutes had long passed and Lee asked me to work on my speed to fly and turn coordination as we took advantage of the altitude we had gained earlier. I felt like I started to get a feel for it and when the next bump hit my butt, I took it as my signal to prove myself and banked into it. Marginal at best but I was gaining alt and started to feel good about it. Lee was watching for traffic and complimenting me on my flying, a true multitasker!

The lift was spotty and I continued to scratch so that I could impress my backseat and soon found a thermal that showed 4-6 up. I worked it as hard as I could and concentrated like never before. When I felt there was no more to be had Lee exclaimed "Do you realize you just gained over a thousand feet in altitude?!" Needless to say I was ecstatic. We then used the altitude to find one more thermal with a hawk which passed about 60 feet in front of my canopy. A small gain and we were off to find the next one. Encountering an area of real bad sink we headed for the airport and talked about what we would be doing for the landing. Making the radio calls and entering the pattern were uneventful and Lee gave me the stick for the landing while he operated the spoilers. I tried to land the glider about 20 feet off the runway but Lee grabbed the stick and made sure I wasn't embarrassed in front of the clubhouse.

We had been aloft for over one and 1/2 hours and Lee had a smirk on his face that told me he enjoyed the flight and wished we could have stayed up longer. Truly an experience I will never forget!

Safe soaring,
Keth Comollo

SGC Holds Annual Banquet

Members of The Seattle Glider Council gathered at Salty's on November 4th for the Annual Awards Banquet. The evening gave members a chance to visit and enjoy a wonderful buffet. Of course it isn't called an Awards Banquet unless there is hardware...so here goes:

Eagle Eye - It was decided to not award these two trophies this year.

Knight of the Open Field - Awarded for Pilot's first off field landing during a cross-country flight. No Nominees this year. (Did anybody get missed and won't fess up??)

Clodbuster - Awarded for an off field landing during a local flight. Dale Hacker was awarded the local farmin' award.

Student Pilot Achievement - Carl Leach of PSSA. He's flying solo locally, waiting 'till he hits 16. Watch out!

Pacific NW Safety Award - Awarded to the individual deemed to have made the greatest contribution to soaring safety. Bob Chase was presented this award for putting together the Instructor Clinics and his many years of service to the CAP

Robertson Altitude Award - Pilot with greatest gain of altitude. Rudy Alleman posted a 15,600 foot gain for top honors. Pierre Parent was also nominated for a 13,500 foot gain. Oregon guest, Gary Boggs, was also acknowledged for his 26,500 foot high flight across the border in Oregon this fall.

Arnold J. Carson Memorial Trophy - For the longest flight in the Basin. Awarded to Nelson Funston for 335 miles

Columbia Basin Soaring Association Broken Leg Trophy - Longest distance around a course of two or more legs according to FAI rules. (Usually 2nd place to Carson Award) Mike Newgard takes the hardware for flying 318 miles

Cloyd Artman Trophy - For an outstanding flight or pioneering effort in soaring. EC Welch was recognized for being usually the furthest out and recently went almost to Rainier.

Tow Pilot of the Year Award - Mike Moore managed to log 272 tows this year!! Mike's effort so outpaced the usual amazing feat of 100 tows per year that it deserved extra special mention. Other pilots well worthy of comment were Skip Gregoire - 129, Pierre Parent - 116, Jim Simmons - 107, Linda Chism - 99.

Region 8 Speed Trophy - Chris Dabolt takes the trophy in a tight contest by flying 63.37 mph (81.66 actual). Also noted: Northcraft, Newgard and Gladics all had flights around 62-63 mph handicap.

SGC Certificates of Appreciation

Ron Ferguson - Contest Manager, SGC Soaring Foundation and Past SGC Chairman

Marion Barrit - Contest Director

Skip Gregoire - Starting the Ephrata Club

Jan and Nelson Funston - Yearly Brunch Hosts

Pierre Parent - For making 116 tows

Linda Chism - For making 99 tows

Jim Simmons - SGC Treasurer, Chief Towpilot at the Contest, SGC Soaring Foundation, 107 tows

Phil Grate - Ground School

Vince Miller - Towline, SGC websites, New contest turnpoint books, and contest work

Norm Ellison - State Governor and Secretary of the SGC

Pat Dunston - Bookkeeping

Unsung Heroes Award - Jim Simmons - (see short list above)

SGC Honor Award - Pat Dunston - For many years of service to the SGC in Ephrata.

New SGC Board elected for 2001

Just in!...The elections are over and the results are in, (short of any legal motions or recounts). The following members will make up our new Seattle Glider Council Board for the year 2001.

Chairman
Directors

John Daly
Doug Kylo
Mike Newgard
Steve Northcraft
Pierre Parent
Jim Simmons
Tom Udd

The membership thanks the nominees willing to run in the election. Thanks also go to outgoing Board member Max Karst.

The election committee consisting of Jim Simmons, Norm Ellison and Mike Newgard should also be acknowledged for their work involved in these elections.

Cross Country Seminar Planned

Bob Wander, sponsored by the Seattle Glider Council, will present a two day (16 hr) seminar on Glider Cross Country Flight at the Puyallup Fairgrounds on February 24 & 25.

Bob Wander is recognized as one of the top instructors in the Glider Community and will be assisted by a panel of our local experts.

Cross Country Flight is the universal goal of all glider pilots. From the first solo, thru Badge Flights, to Cross Country, and on to record flights. Yes, we all have wanted to leave the home field and go cross country. But how do we learn when we can do it safely?

Bob Wander and team will enlighten us on how to prepare for the day, when to make the decision, and most all, what

do we do after we are out of safe gliding distance to the local airport.

The Cross Country Seminar is aimed at all Glider Pilots - Student to expert instructor. Instructor - when was the last time that you stressed "Judgement Training" with your student?

The Seminar will be held at the Puyallup Fairgrounds February 24th and 25th from 9:00 am to 5:00 pm both days.

A fee of \$100 for the 16 hours of instruction will apply. Please send your check to Bob Chase @ 12422 68th Avenue NE, Kirkland, Washington 98034.

CFIG's whose license will expire in March & April of next year should contact Bob Chase @ 425-823-6500.

* * SGC Video Library Reviews * *

Greetings from Olympia

Don't mean to shock you too much but I finally go around to doing what I said I would do. Regret the delay, but when your retired time goes by very quickly, For the listings I'll use "G" for general audience, non-technical entertainment. "F" will be used for flyers. + or - for recommendations.

RUNNING ON EMPTY 60 min. +++ "G"

An analysis of a pilot's view of the "Masters of Soaring Invitational" contest. Narrated by Actor Cliff Robertson.

MOSQUITO'S AIRBORNE 55 min. + "G"

Fifty years of history of the Mosquito airplane. From A to Z.

WOODEN WONDER 30 min. ++ "F"

Building the DeHavilland Mosquito. Explanation of the structure, design and building of the aircraft. The struggle and eventual success of one of the more remarkable aircraft of World War II.

FIGHT FOR THE SKY 60 min. + "F"

A first hand view of the air over Germany during WWII. Narrated by the Captain Ronald Reagen, US Army air Force.

MODEL AIRPLANE BUILDING 1 hr "F"

Superb model building by experts. Building of the CZ 304 Sailplane. From start to test flight test. (NOTE: No narration!!). Tends to become boring if no direct interest in the CZ 304 or model building)

CYGNET 40 min. - Only recommended for K/C glider flyers. No narration. Shows excellent slope soaring. Complete acrobatics which ends with an outlanding crash due to landing in sagebrush. Totaled plane.

SPACE RACE 4hrs - Shows the space race up to 1986. Much "old hat" some 14 years later. Much of the "audio" is poor.

That's about enough for now. Still have some tapes to edit. Best regards
Len Trautman

2459 kilometer flight claimed in Argentina

Well, records are here to be broken, but one might want to ask...what is the limit!

Klaus Ohlmann of Germany has claimed a new Open Class world record for Free Three Turn Points Distance at 2,459.60 kilometers! On November 26th, Klaus flew his Stemme VT S10 out of San Martin de los Andes (Argentina). The elapsed time was approximately 15 hours, or an average speed over 160 km/hour.

The current record is 2,049.44 km flown on November 5, 1994 in New Zealand.

SparrowHawk

A New, Lightweight Sailplane

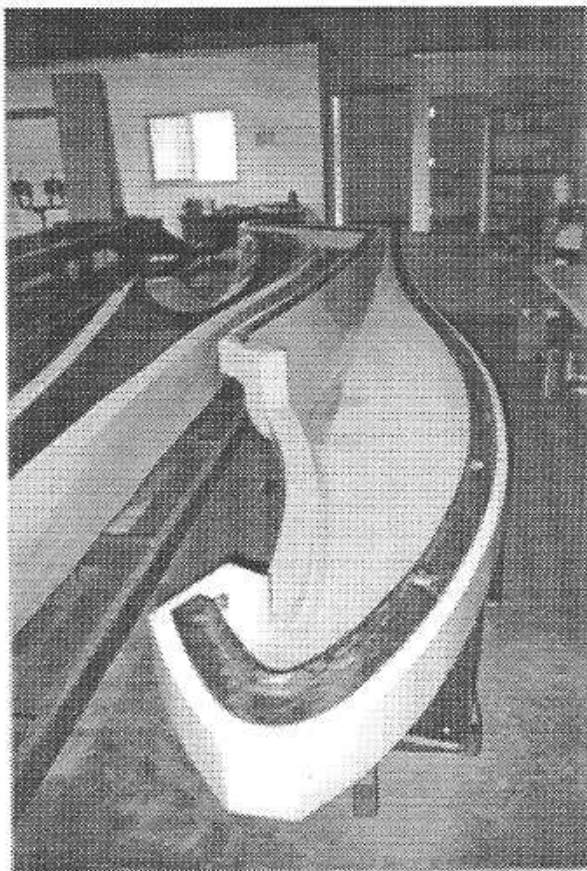
By Eric Greenwell 11/00

(This is a preliminary version of an article being written for Soaring Magazine, which will include more detail and more pictures)

The SparrowHawk is a 32:1, lightweight sailplane under construction in Bend, Oregon. It will have good cross-country performance because it's optimized for mid-range speed rather than maximum L/D. Construction is almost entirely of carbon fiber pre-impregnated cloth formed in molds, cured at high temperatures, and then assembled in multiple jigs. The first flight is planned for Spring 2001, with production beginning by mid-summer, at an estimated price of \$24,000.

The Inspiration

Greg Cole, the designer and driving force behind the SparrowHawk, was interested in sailplanes for a long time, but his interest in lightweight sailplanes began in 1989 with



the World Class design contest design. Two of the goals for the World Class were "one design" to provide fair competition, and low cost by restricting the performance to a moderate level that still allowed good cross-country. After examining the cost of new and used sailplanes, and even kits, Greg was inspired to adopt the World Class concept of low cost achieved by accepting a moderate performance instead of attempting to reach the ultimate.

Design Goals

As he evaluated different designs with various aerodynamic, structural, production possibilities, his goals for the glider evolved. The primary goal became "value" rather than lowest cost. The components of value for the SparrowHawk are:

- Docile flight characteristics, including a slow landing speed
- Pleasant, responsive flight with slow thermalling speeds to use even weak lift
- Better than 20:1 at 70 knots for good cross-country performance, even in wind
- Strong, durable, high quality construction
- Lightweight for
 - Classification as an ultralight glider (FAR part 103)
 - Very easy rigging and ground handling
 - Launching with a low-powered tow plane, small car, small winch, or even bungee
 - Transporting in a lightweight trailer behind a small car

These goals will result in a unique sailplane, if they are achieved: there is no other ultralight with the performance of the SparrowHawk, and no sailplane of similar performance that approaches its low weight.

Design Details

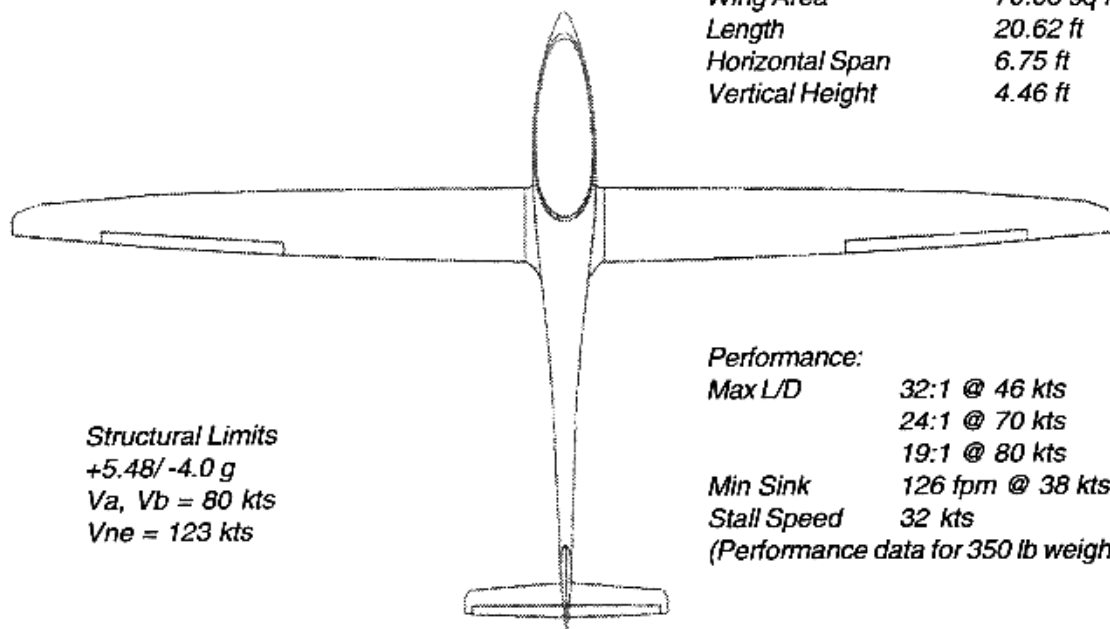
Modern airfoils allow the moderate performance goal to be met by a relatively small span glider; for the SparrowHawk, this is 11.1 meters (36.4 feet). To take the full advantage of the airfoil design, the wing must be smooth and accurate, requiring the use of molds. Molding also allows production with the least labor cost.

Wing structure is similar to the typical high performance glider, with a spar, outer skins, a thin foam core, and inner skins. While the wing is built in a mold, it doesn't use the German style of wet lay-up technique, where liquid epoxy

SparrowHawk

Windward Performance LLC

Empty Weight	155 lbs
Maximum Weight	415 lbs
Wing Span	36.46 ft
Wing Area	70.66 sq ft
Length	20.62 ft
Horizontal Span	6.75 ft
Vertical Height	4.46 ft



Structural Limits
+5.48/-4.0 g
Va, Vb = 80 kts
Vne = 123 kts

Performance:	
Max L/D	32:1 @ 46 kts 24:1 @ 70 kts 19:1 @ 80 kts
Min Sink	126 fpm @ 38 kts
Stall Speed	32 kts
(Performance data for 350 lb weight)	

resin is applied over the cloth and allowed to cure at room temperature; instead, it uses carbon fiber cloth pre-impregnated ("pre-preg") with high-temperature curing epoxy. At room temperature, the pre-preg cloth is laid into position, then a plastic bag is placed over the mold, and the air pumped out. While atmospheric pressure holds the cloth pieces in place in the mold, the part is cured at 270 °F. This same technique is used for all the major composite parts, including the fuselage, tail surfaces, bulkheads, and most of the smaller parts.

Despite the higher cost of pre-preg cloth compared to the resin and cloth used in wet lay-up, it has substantial advantages for the SparrowHawk. The primary benefit is lower weight: for the same strength, pre-preg is half the weight of a wet lay-up. This is made possible by using:

- High temperature curing epoxy resin (allows a higher strength epoxy to be used)
- Resin that is machine applied by the fabric manufacturer (without the handworking constraints of low viscosity, a stronger resin can be used)
- Much better cloth (because the epoxy will be machine applied, the fabric can be denser, yielding a higher ratio of fiber to resin)

A secondary benefit is easier handling, which is important for lower-cost production:

- The cloth is slightly stiff at room temperature, making it easy to measure and cut
- It is pliable and tacky, making it easy to position and form in the molds
- Curing takes weeks at room temperature, so lay-up can proceed unhurried, and mistakes can be corrected easily. This is important when you know a fuselage half has over 50 pieces of cloth in it, of varying sizes, positions, and orientations.

Tooling Construction

Tooling, meaning the molds and jigs used in the production of the composite parts and their assembly into a completed glider, is the major construction effort of the project. Once the tooling is complete, a glider can be completed far more quickly than the tooling itself! Building the "prototype" glider (Greg considers it the first production glider, not a prototype) from the same tooling that will be used for production is a very slow and expensive method to make the first glider, but it has two main advantages:

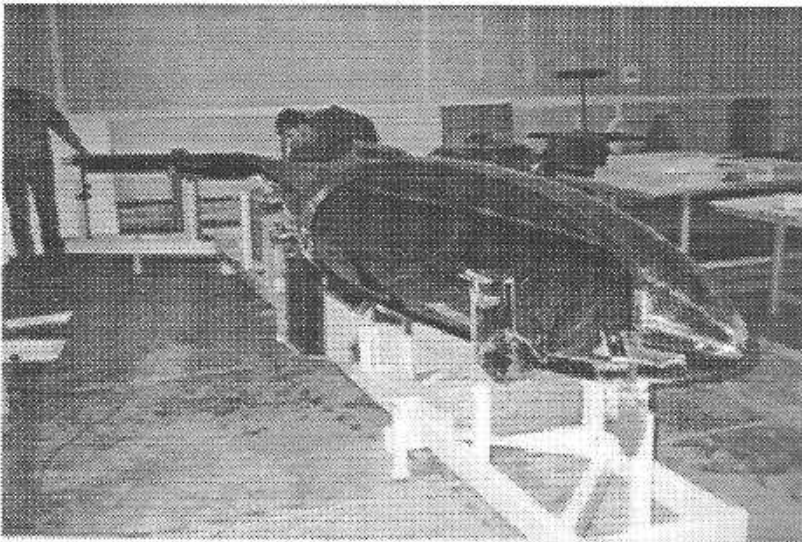
- The first glider will be almost exactly like the production units, making structural and flight tests more accurate
- Production can begin immediately after completion of the tests

The major tooling items are the fuselage and wing molds. The molds are made by conventional wet lay-up techniques on accurately made "plugs" (forms that are shaped exactly like the piece desired). For the fuselage, a left and right mold is used, and each wing has a top and bottom mold. These molds have eight layers of carbon fiber cloth with two middle layers of fiberglass. These layers, along with the flange incorporated into it, produce a very rigid mold with low thermal mass that won't warp at the 270 °F curing temperature. The mold must be made mostly of carbon fiber, despite its higher expense compared to glass fiber, because the high temperature curing used means it must have the same temperature coefficient of expansion as the material used to construct the glider. Carbon fiber and glass fiber coefficients differ by about 4:1.

These major molds are mounted on steel trusses, but are not connected directly to the steel; instead, a carbon fiber panel is used between the mold flanges and the truss. The panel is stiff enough to support the mold, but flexible enough to absorb the different expansions between the mold and the steel during curing. Wheels on the trusses allow them to be moved easily.

Molds for the stabilizer, bulkheads, seat, and other smaller components don't require the support the large molds do, so they are generally freestanding. A mold is also used for canopy plastic.

At this time (November 2000) the fuselage, stabilizer, and related molds are complete. The wing plugs are finished, but



the molds will not be started until later. The priority now is to complete a fuselage in time to take it to the SSA convention in 2001.

Structural Testing

Structural testing will include wing and fuselage loading to 150% of design limits. Testing will be critical to ensure sufficient safety margins and to meet the 155 pound weight limit of the Ultralight category. Each part of the glider must have the correct strength: areas that are too weak will be strengthened, and areas that are too strong will be lightened.

Besides the formal load testing, ground handling needs will be considered, so that the glider can be easily and safely assembled, moved around, tied down, and trailered without excessive care.

The composite construction makes these strength and stiffness adjustments straight-forward, as they can usually be achieved by changing the type of cloth used, the fiber direction, and number of layers, all without changes to the molds.

Flight Testing

The formal testing will include the usual elements needed to ensure safety in flight:

- General handling
- Stall and spin behavior
- Flutter modes
- Glide-path and landing control
- Launch behavior, including aero tow and car tow

Of course, what we all look forward to is the "soaring" flight-testing. How well does it climb in thermals? How much wind can it handle? Can it truly exploit the microlift reported by proponents of ultralight soaring? The answers will not be available until several SparrowHawks are flying, but I think we will know by the end of the next soaring season.

Production

Production can begin soon after the testing is complete, since all the molds and jigs are completed before the first glider is constructed. Production rate will depend on the number of orders and employee availability. Because the curing time is much shorter than a wet lay-up production, having only one set of molds is not expected to restrict production rate.

A lightweight trailer designed specifically for the SparrowHawk is planned, but it may not be available right away with the first few aircraft.

Some Features of the Ultralight Category

An aircraft meeting the FAR Part 103 rules is not subject to

Towline, December 2000

most of the rules that affect other aircraft; for example:

- It can be sold fully assembled without certification
- Registration is not required
- A pilot's license is not required

Greg emphasizes this is a real aircraft, and he strongly urges any pilot that flies it have a glider rating. Note that the wing loading is comparable to a PW5, L33 Solo, or Russia AC-4. It is not a "floater" like the foot-launched Carbon Dragon or even the Schweizer 1-26.

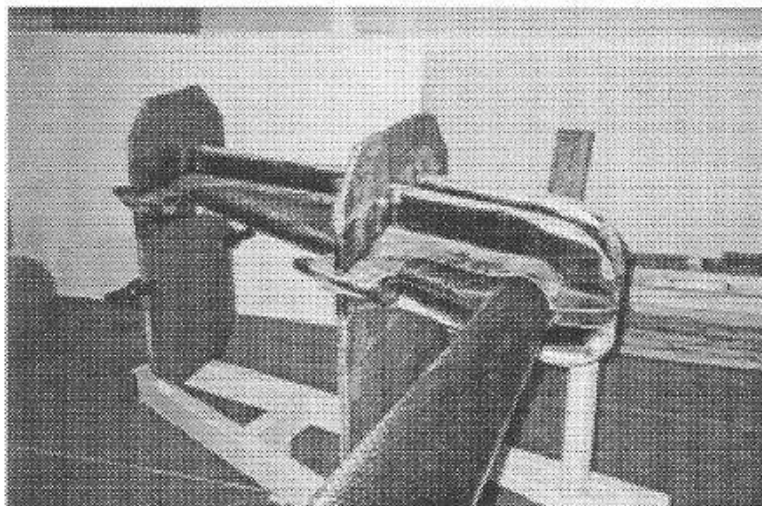
What if it is too heavy to be an Ultralight?

If the 155 pound maximum empty weight required for the ultralight category can not be met, Greg says there are two ways to proceed: supply it as an Experimental category glider (like the Russia AC-4), or get it certified. Certification will delay production, but he is familiar with the process from his work at Lancair on their certified aircraft, the Columbia.

Can this project succeed?

I spent eight hours talking to Greg in October. He was knowledgeable, enthusiastic, focused, and energetic. Greg recently quit his job as chief engineer of research and development at Lancair to work on the SparrowHawk full-time. His father, retired, works with him, while his mother handles the "office work" and often assists with tasks in the shop. He is looking for a full time employee.

The aerodynamic and structural design was frozen quite a while ago, allowing construction of the molds to begin. Most of this work is done, and is represented by the complete set of plugs (wings, fuselage, stabilizer, and bulkheads, and the

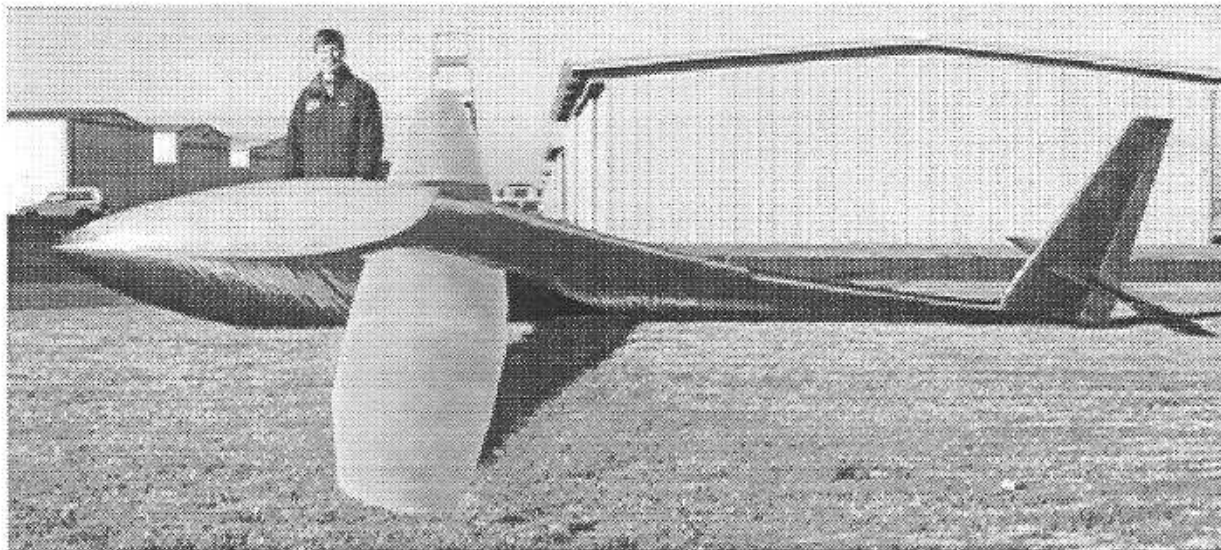


many the smaller parts), and almost all the molds except those for the wings. Many of the time-consuming details are complete or in progress (control assemblies, landing gear, canopy frame, and so on). Once the molds are complete, the first glider can be produced in a few weeks; subsequent units will take much less time.

I believe we will see the SparrowHawk fly this spring.

Contacting Greg

Greg Cole
Bend, OR
Phone: 541-383-5179
E-mail: cole@transport.com
Web site: www.windward-performance.com (under construction as of 11/13/00 – the glider is far ahead of it!)



Glider Pilots Voting Guide

Is the election over yet?? Let's once again review the candidates positions - (from the Internet)

- Candidate's policy on launching:

Gore: Tow planes cause both noise and atmospheric pollution. I propose we mandate the use of electric winches by 2004, for the good of all the people.

Bush: While tow planes do burn fossil fuel, the pollution per hour of flight from the tow plane/glider combination is negligible.

Nader: The preferred method is to push gliders off a cliff, and therefore eliminate all fuel consuming means of energy.

Browne: It is none of the Government's business.

- Positions on tow fees:

Gore: Launch fees will go into a lockbox. No older glider pilot will be without money for a tow, assuming we don't give the rich an unfair tax break.

Bush: Launch fees will be determined by free enterprise, and tax breaks will provide the money for every taxpayer to cover tow bills.

Nader: A 50% tax should be imposed on all tow fees, to subsidize research on the southern migration of tow pilots during the winter.

Browne: It is none of the Government's business.

- Position on the use of computers & dataloggers:

Gore: I specifically invented the Internet so glider pilots could take advantage of the digital revolution. We will provide dataloggers for every classroom.

Bush: I want to give every glider pilot a tax break so they can invest in the appropriate electronic equipment.

Nader: This stuff uses electricity doesn't it?

Browne: It is none of the Government's business.

- Candidate's position on contest starts:

Gore: I support the glider pilots right to choose when

they start. I will appoint contest officials who will protect the right to start as many times as a pilot chooses.

Bush: Glider pilots should take responsibility for their contest starts. Starts should only be aborted in limited circumstances. Pilot education is the key to reducing the tragedy of multiple starts.

Nader: We should eliminate the concept of a start, pilots should just fly wherever they want as long as they don't hurt anybody.

Browne: It is none of the Government's business.

- Candidates opinions on low passes:

Gore: We definitely need government supervision of low passes. I propose we create an agency to monitor and regulate low passes.

Bush: Operation control belongs to the airfields. Each airfield should legislate as they see fit.

Nader: Low passes can disrupt the mating cycle of ground hogs, leading to a loss of biomass and hence another ice age. Low passes should be banned altogether.

Browne: It is none of the Government's business.

Chris Dabolt sets new Multi-Place Records

Chris Dabolt, and his wife/co-pilot Pamela, have added a couple of open multi-place records to the books in their Nimbus 4D. On August 5th they set a mark for Distance Around a Triangular Course at 196.94 miles. The flight was clocked at 81.66 mph. From Ephrata, the turnpoints were Anderson, and Harrington.

Then on August 20th they increased the Distance Record to 313.397 miles and at the same time added Speed Over a Triangular Course of 500km at 65.596 mph. From Ephrata the turnpoints were Deer Park, and Pullman VOR.

Calendar of Events

December 4 - 7pm	SGC General Membership Meeting	"Great Basin Soaring Safari"	Museum of Flight
December 11 - 6:45	SGC Board Meeting	Factoria Mall Meeting Room	
January 8 - 7pm	SGC General Membership Meeting	Museum of Flight	
February 7-10, 2001	SSA Convention and Air Expo	Indianapolis, Indiana	
February 24-25	Washington State Airfair	Puyallup Fairgrounds	
February 24-25	Cross Country Soaring Seminar with Bob Wander	Puyallup Fairgrounds	
March 10-11	Soaring Display	Museum of Flight	
June 17-28	18 Meter & Sports Class Nationals	Minden, Nevada	
July 3-12	Open Class Nationals	Montague, California	

General Membership Meeting are held in the Red Barn Classroom - Basement level of the Museum of Flight, Boeing Field.

SGC Board of Directors Meeting Minutes - November 13, 2000

Minutes of the Board Meeting held on Monday 13th November, at the Community Meeting Room, Factoria Square, Bellevue. The meeting commenced at 6-48pm.

Present were :- Tom Udd, Chairman; Jim Simmons, Treasurer; Directors Mike Newgard and John Daly. Also Norman Ellison, Secretary. A quorum was present.

The minutes of the previous meeting, held on 9th October, 2000, were approved by e-mail, for publishing in the next edition of TOWLINE.

Towplanes:- Both are at Ephrata, in work to comply with the latest AD's. Jim Yates is coordinating the work and inspections. The latest costs for a TOST release system are to be updated.

Accounts:- Contest receipts are now in hand. Total Current Assets are \$61,000. Financial study information for next year's Rates are now available, and amounts to transfer to Towplane Account can now be determined. Towplane recovering is a likely future large expense.

Banquet:- Expenses all covered this year, including breakfast. Suggestions for the 2001 Banquet include Tibbetts Manor Issaquah, Providence Point Retirement Center, or a return to Salty's.

2001 Election:- Ballots for next year's Board now ready for distribution.

2000 Contest:- Contest Film now ready for sale. Contact Mike Newgard with offers. The placing of an Analysis of Contest flights onto the Web site to be investigated.

TOWLINE:- We still require a new long-term Editor.

2001 Contest:- Steve Northcraft to place dates into the Contest calendar. A volunteer Contest Manager is required. (Subsequent to meeting, Norman Ellison volunteered.)

SGCSF Items:- Forms for the IRS have still to be completed. Clubhouse plans to be reviewed. A report from meeting with Dillon Jackson awaited. Mike Newgard volunteered to fill the remaining two years of Ron Ferguson's term as a Director. Proposed by Jim Simmons, seconded by John Daly and approved unanimously.

A new SGCSF Chairman will be elected at the next SGCSF Board Meeting.

Museum of Flight Display:- March 10 & 11. Arrangements are in hand with the Museum to display 6 or 7 gliders, also Club tables, TV video etc.

2001 Cross Country Seminar:- Tom Udd to determine arrangements.

New Business:- Jim Simmons gave notice that he will step down as Treasurer at the end of 2001. A New treasurer will be required during mid 2001, to train up on procedures and programmes.

Next General Meeting:- Museum of Flight, Monday 4th Dec. Talk by Tom Kreyche.

Next SGC Board meeting:- Monday 11th December, at Factoria Meeting Room.

Next SGCSF Board meeting:- TBD.

The meeting adjourned at 8.23 pm.

Respectfully submitted by Norman Ellison, Secretary

SGCSF Board Meeting Minutes - December 2, 2000

SGCSF Board Members - Jim Simmons, Dale Hacker and Mike Newgard met on 2nd December. Also present was SGC member Doug Kylo, SGC board member Steve Northcraft and Norm Ellison, SGC Secretary.

The following decisions were agreed upon :-

1. The existing clubhouse would remain in position for at least two years during the transition stage & building of the new Clubhouse/Training Center.

2. Existing club storage sheds are to be moved to the South Boundary of the Ramp.

3. The First stage new building will have the following features:-

A Cabana type, size 25ft x 40 ft. with main floor and lower basement. Hardiplank external finish, concrete walls to 6" above grade, with ponywall above. Basement slab floor, with shear walls to be included.

Main floor to include space for ADA bathroom 9' x 8', a half bathroom 6' x 3'. Kitchen 160 sq.ft, plus 4ft wide staircase to lower floor. Plumbing & electrical connections only. Heat pump. Space provisions for later expansion sideways to bedrooms/classrooms/bathrooms for second stage extentions.

The meeting agreed upon a provisional floor layout, and Steve will develop an accurate computerized drawing.

Quotes will be solicited for several methods of building. Skip Gregoire will be asked to help obtain construction quotations from the Ephrata area.

Norman Ellison. Secretary, 3rd December, 2000

- Kwik Internet Poll -

Top 5 Beautiful & Ugliest Gliders

Beautiful	Ugliest
1. Libelle 201	1. Gobe
2. Libelle H301	2. 2-33
3. Ventus	3. PW-5
4. ASW-22	4. Lamson
5. Cobra 15	5. Russia

Most Politically Correct answer: Beautiful - the one I'm flying, Ugliest - the one in the hangar.

Towline

Seattle Glider Council
P.O. Box 7184
Bellevue, WA 98008

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Classified Advertising

WANTED

NW FAA Pilot Examiner Designee needed. Desire to see growth in the soaring community a must. Apply within.

FOR SALE

LP-49 US factory built 15 meter ATC fiberglass fuselage metal wings, retractable gear, oxygen, closed metal trailer, Terra radio, L/D 33-1. Easy assemble - automatic hookup aileron & Dive breaks. Approved for spins, loops and wingovers. Has been tested 12g. 22 in US. Very nice flying & good for low time single place pilots. Lot of performance for the \$ 9500.00 509-466-0206 or dcwalker@icehouse.net

HINT HINT HINT

I would like a sterling silver sailplane lapel pin!, Santa
The Spokane Soaring Society has pins for sale. I keep one on my sport jacket all the time and it always gets me into a conversation with someone about soaring. \$35.00 for silver and \$75.00 for 14kt. yellow gold including postage and handling. Dale Walker dcwalker@icehouse.net

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FOR SALE

LS-4a, one owner, Dittel, O2, Full ILEC SB8, nose hook, pneumatic tail wheel, water, Komet trailer..more, always garaged, excellent. \$37,000. 509.762.8735

For Sale: ASW19

Good condition, Ball electric audio and Sage mechanical varios, GPS90 in panel, new softie parachute, two battery packs, oxygen and water, Schreder trailer and ICOM 720 channel ground station. \$20,500 Contact Chris Hansen 206-533-1232, Email gliding@gte.net or Keith Turner 425-821-6634 Email krtturner@nwlinc.com

FOR SALE

PA 25 - 235 "D" model pawnee for sale TTAF 1900 TSMOH 30 Hrs. Currently undergoing extensive refurbishment and rebuilding, all directives complied with, will complete to your specifications for the 2000 season. This plane is too nice to go spraying, call for more info. 1.877.465.5450. B.C. Canada, or Email dadam@istar.ca. Ask for Richard Eastley or Darren Adam.

FOR SALE

1996, L-33 Solo with Aerospool trailer. Glider 150 hrs TT, Trailer abt 2,000 mi., NDH on either. Glider, Trailer & accessories \$26,000 with out radio. 206.780.3432 or jodaly@msn.com.

NEWLY RE-RELEASED

Certain Lands Southeast of Ephrata by Pat Dunston. A history of the Ephrata Airport and Army Airbase from 1933 to 1999. Includes official historical material and recollections from veterans and townspeople. Third printing contains updated material and many more photographs. Send check for \$15.25 (which includes shipping) to Pat Dunston, 95 Ridge Drive, Ephrata WA 98823.

INSPECTION/REPAIRS

Inspection, maintenance and repair services specializing in sailplanes and motorgliders. Located at Arlington Airport. Contact Chris Klix for more information 360.474.9394 or Chris@PacificAeroSport.com. Check with us for winter storage too!

Towline, Oct/Nov 2000