



NEWSLETTER

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Carb Heat

Hot Air and Flying Rumours

JUNE 1993

NEXT MEETING: THURSDAY 17th JUNE 1930 HRS

NATIONAL RESEARCH COUNCIL STRUCTURES LAB BUILDING M-14

PROGRAM:

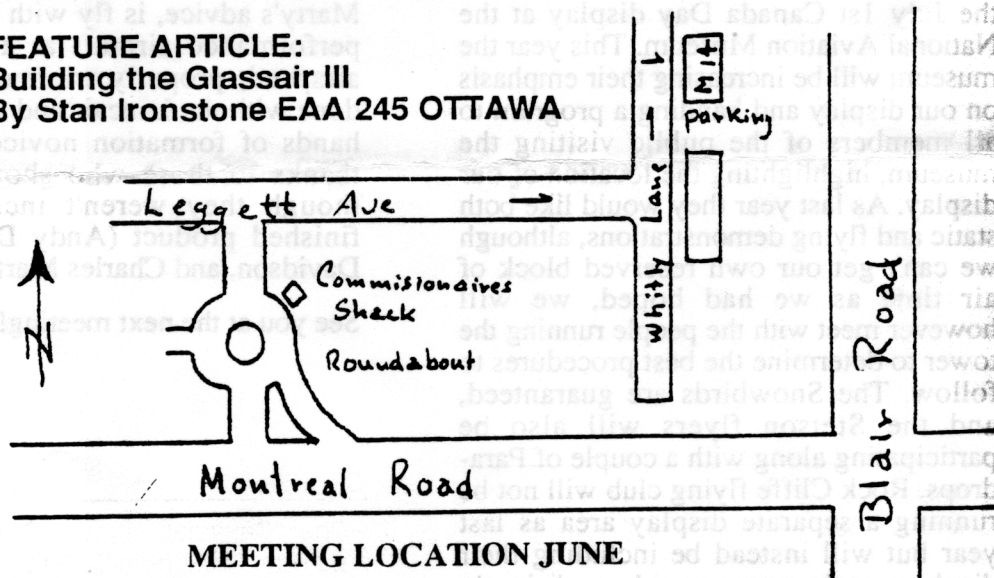
- BUSINESS
- ANNOUNCEMENTS

FEATURE TOPIC:

- Awards night
- Tour of the facilities

FEATURE ARTICLE:

**Building the Glassair III
By Stan Ironstone EAA 245 OTTAWA**



MEETING LOCATION JUNE

President:	Gary Palmer	596-2172	Aircraft Ops:	Dick Moore	836-5554
Vice Pres:	R. Emmerson	682-2058	Membership:	Manfred Ficker	839-2292
Secretary:	Luc Martin	744-5347	Tool Crib:	Tim Robinson	824-5044
Treasurer:	George Elliot	592-8327	Classifieds:	Andy Douma	591-7622
Editor:	Andy Douma	591-7622	Publishing:	Dick Moore	836-5554

President's Corner

I am pleased to report that two volunteers have answered the call to run the Fly-in breakfast August 22nd. Barney De Schneider has offered to fill Gord Standing's shoes as the overall coordinator, and Lars Eif has agreed to coordinate parking activities. Both will be looking for willing workers to help staff the many positions that must be filled to ensure a successful breakfast, and I know they would appreciate an early call from you to sign on. Barney can be reached at home at 225-6003, and Lars can be reached at 837-6680. Thanks to both Barney and Lars for stepping forward to ensure a fine tradition continues!

Following our next meeting at the NRC labs on Montreal road, we will be returning to our summer schedule. Meetings will be held on the third Saturday (July 17th and August 21st) at the CARP clubhouse at 10:00 AM. This will allow us to get in a little flying as well as socializing, if the weather gods smile on us.

Summer schedule also means that we will not be publishing a newsletter in August, nor holding an executive meeting.

Two major chapter events in addition to the breakfast loom on the horizon. First is the July 1st Canada Day display at the National Aviation Museum. This year the museum will be increasing their emphasis on our display and handing a program to all members of the public visiting the museum, highlighting the location of our display. As last year they would like both static and flying demonstrations, although we can't get our own reserved block of air time as we had hoped, we will however meet with the people running the tower to determine the best procedures to follow. The Snowbirds are guaranteed, and the Stetson flyers will also be participating along with a couple of Paradrrops. Rock Cliffe flying club will not be running a separate display area as last year but will instead be including their displays on the museum side, and simply running the breakfast on their side. Anyone wishing to show off their home

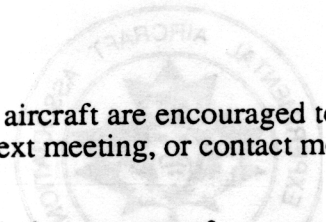
built or vintage aircraft are encouraged to sign up at our next meeting, or contact me at 596-2172.

Lars Eif still has room for more volunteers to participate in the July 10th Air Adventure day at the museum. If you would like to offer rides or help in the educational part of the program, and haven't already signed up, contact Lars at 837-6680.

As some of you know, we had another TV exposure recently, this time with the CBC which was first aired on Friday May 21st on channel 8. The star of this production was Lars Eif and his Skybolt project, with a small flying sequence featuring Rod Emmerson in his Teenie Two, and Lars and myself in the Lancair 235. George Elliot did the honours this time as camera ship pilot. After Marty Tate's excellent primer on basic formation flying, Rod took his advice at face value, and planted himself six feet off George's wing tip. I am not sure how comfortable George was, but Rod seemed to enjoy himself immensely. Lars and I were not quite so brave, mainly because the Lancair was definitely in the slow flight regime at gross weight as we tried to keep up (down?) with the C-172. From my perspective, the most important part of Marty's advice, is fly with a comparable performance aircraft at a comfortable airspeed, properly trimmed; not easily done with the Lancair and a C-172 in the hands of formation novices. A special thanks to those who showed up even though they weren't included in the finished product (Andy Douma, Keith Davidson, and Charles Martel).

See you at the next meeting!

Gary



Andy Douma	837-6680
George Elliot	837-6680
Luc Martel	837-6680
R. Emmerson	837-6680
Gary Palmer	837-6680

The Glasair III Project

Stan Ironstone, EAA 245 Ottawa

WHY THE GLASSAIR III?

I should point out that from the outset I decided (based upon "time to build" considerations) I would build a kit plane. After two years of looking, reading and talking to various builders I decided on a relatively high performance two place aircraft such as the Lancair, Venture, White Lightening etc. However after watching Bob Herendon "wring out" the Glasair factory prototype with his aerobatic maneuvers at Oshkosh including an outside loop I felt confidence in the structural integrity of the aircraft. That together with it's sexy appearance - I was hooked!

Never the less as is always the case, one must temper the initial "flush of ardour" with reason. I can honestly say that I was initially attracted to the Glasair's superb performance. At that time there were about 200 Glassairs of various models flying with glowing reports coming in from the builders concerning performance. There are currently some 1500 complete kits sold and ten Glassairs with airframe times ranging from 1000 to over 2000 hours.

Equally important was the reliability and track record of Stoddard-Hamilton Aircraft Co. As you are probably aware Stoddard-Hamilton pioneered premolded fiberglass composite aircraft construction techniques in 1980 (now generally accepted as the industry standard). Up to that time Burt Rutan, considered the father of composite homebuilt construction, built his airplanes around foam cores, laying the glass up on the outside. In Stoddard-Hamilton's case the opposite is the case. The skin and most structural parts are a glass foam sandwich hand laid-up in female molds. Over that period Stoddard-Hamilton exhibited a high degree of financial stability as well as an excellent builder support service for it's customers.

Another consideration was that the Stoddard-Hamilton system utilized a high temperature vinylester resin developed by Dow Chemical for use in wet, hot, corrosive environments. This resin had similar strengths to epoxies but none of the disadvantages, in particular the problems of allergy and sensitivity associated with epoxy use. I had read about that and I'd talked to builders who had sadly had to abandon their projects because they could not tolerate further exposure to epoxy: apparently once sensitization occurs, even a further exposure no matter how limited, can not be tolerated. Finally last but not least was the cost

factor. Relative to what was available at the time, the complete Glassair III kit price was most reasonable, (Engine and propeller costs notwithstanding). The final nail in the crate was the substantial discount offered at Oshkosh '89. My complete kit was shipped in 1990 and by June of that year I started to build. A decision I have so far not regretted.

SPECIFICATIONS:

Wing span	23.3 ft
Length	21.3 ft
Cabin Width	42 in.
Cabin height	41 in.
Fuel capacity (my mods)	90 US gal.
Empty weight	1650 lbs
Gross weight	2500 lbs.
Wing loading	30 lbs/sq.ft.
Engine	6 cylinder Lycoming 260-350 hp.

Turbo kit is available

PERFORMANCE:

Top speed	308 mph
turbo	327 mph
Cruise	295 mph
turbo	320 mph
Rate of climb solo	4000 ft./min.
gross	3000 ft./min.
Service ceiling	non turbo 24,000 ft.
Stall	clean (Vs) 82 mph
	dirty (Vso) 76 mph
VNE	335 mph
	max structural 280 mph
	max flaps 140 mph
	max gear 140 mph
Roll rate	degrees/second 140
Take off	400 ft.
Landing roll out	850 ft.

LICENCE REQUIREMENTS:

A special high performance licence endorsement is required to fly the Glassair III in Canada.

When I ordered my kit in 1989 I was aware of the wing loading restrictions set out in the "Amateur Built" regulations. The Glassair III has a very high wing loading of 30 lbs./sq.ft. compared to the Bonanza at 19; the Mooney and Lancair-320 at 17; and the RV-4 and C-172 at 14 lbs./sq.ft. I was also aware of a move about to allow single engine homebuilts with higher wing loading to be built in Canada. After much discussion with Ted Slack of CASTC and Bill Pepler of COPA and officials at D.O.T. I felt confident that changes to Chapter 549

would be made before I was ready to fly. As it turned out the high wing loading restriction in Chapter 549 has been ammended to allow D.O.T. the discretion to make individual determinations. This together with the new ammendments to the Personal Licencing requirements allow D.O.T. sufficient control over high -performance aircraft and who can fly them.

Unfortunately the Personal Licencing requirements created more problems. The person seeking a High-Performance Endorsement must be checked out by a qualified instructor with 50 hour PIC. These will be hard to come by for some time so Stoddard-Hamilton together with Avemco Insurance and P.I.C. Flight Training put together a ten hour flying and nine hour ground instruction program in the U.S. to ensure that a substantive flight training regime was available for Glassair III builders. Obviously good P.R. on their parts ensuring pilot competence in this very energetic aircraft. Th eflyong portion consists of the usual airwork including stalls, spins, chandelles, lazy eights, pylon eights, spirals, steep turns about a point, 360 degree rolls and of course lots of "touch and goes".

WHAT'S IT LIKE TO FLY?:

In a word - AWSOME !! It is the closest thing I'll ever get to flying a fighter plane. However I must confess to a healthy respect for it's flying capabilities and to my own lack of experience flying such an aircraft. One can appreciate DOT's concern with ensuring the compentance of homebuilders with little or no experience or current flying time in this category of aircraft.

It was somewhat disconcerting for a private pilot like myself with something less than 2000 flying hours to sit in front of an airspeed indicator with a green arc to 280 mph and a red line at 335 mph.

Startup of the big Lyc was standard however sitting semi reclined looking out at that long nose with that big fat 80 inch prophanging out there was certainly a different experience. I pushed the throttle forward and found myself rocketing down the runway, wildly trying to keep the airplane on the centre line.

Steering is accomplished by differential braking until the speed builds up enough to allow the rudder to take over - the nose wheel is full castoring.

Acceleration is rather intimidating - only a few seconds seem to occur between rotation for climb and the disappearance of the end of the runway.

The airplane rotates at about 90 mph with 20 degrees of flap, power was reduced to 25inches and 2500 rpm to give a climb rate of 2000 ft /min. and 140 mph - anything more severely restricts the view over that long cowling. We were cleared from MESA to 3500 ft. and before I could contact Phoenix we

were there ! This machine was really moving. At 3500 ft. I lowered the nose and quickly built up speed to 200 kts - problem was, the the area traffic speed limit was 185 kts. I quickly learned that the transition from climb to level flight was done by controlling throttle input.

We were cleared up to 4500 ft. where I levelled off, reduced power to 23/23 and were quickly indicating 240 mph. Once clear of the Zone I climbed to 6500 ft. at full power with the VSI showing close to 4000 feet per minute. Leveling off at 6500 ft. with power setting at 23.5 inches and 2700 rpm we were soon moving along at 295 mph. What a feeling !

I found the controls smooth, powerfull and very effective. Stick forces were light. The roll rate is quite impressive. The big engine generates a tremendous amount of torque so that you have to use quite a bit of rudder with power and pitch changes. The aircrafts high wing loading did have an upside in that it provided for a comfortable ride through the day turbulance encountered near the desert mesas and arroyos.

Slowing down such a slick aircraft could prove to be a problem but in this airplane all it takes is a reduction of power, that big fat 80 inch prop becomes a very effective speed brake.

Final approach requires the maintenance of 115 mph - with the high sink rate it is necessary to maintain power control for a stabilized descent right down to the point of flare. Under no circumstances can the throttle be brought to idle until the mains touch the runway. I would have some serious concerns about an engine outage on final approach. For example, at 3000 ft ASL in an approach mode, it required a minimum of 115 mph to maintain altitude. In a clean mode at 6000 ft. with engine at idle we lost 300ft. of altitude in a shallow 360 degrees turn.

THE CONSTRUCTION TO DATE:

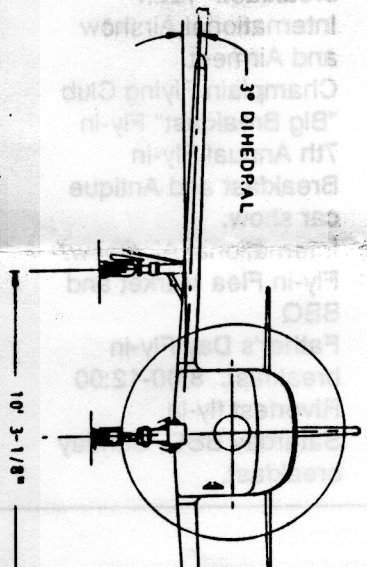
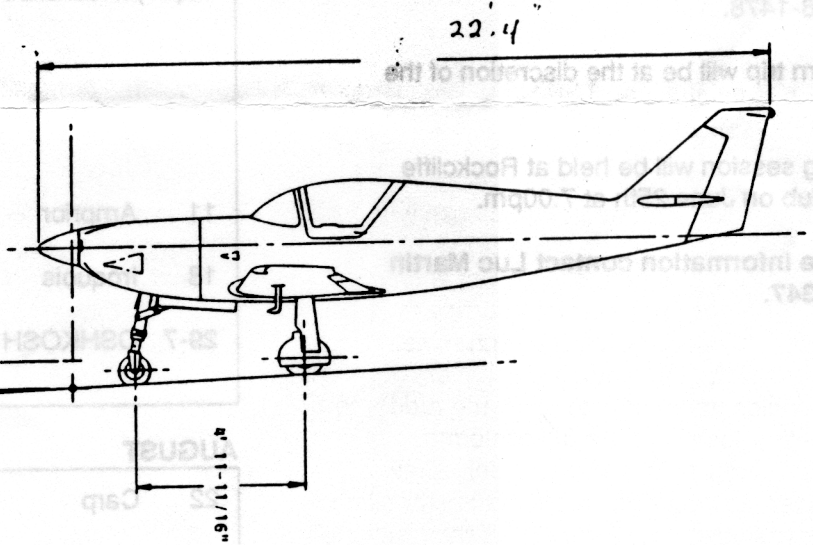
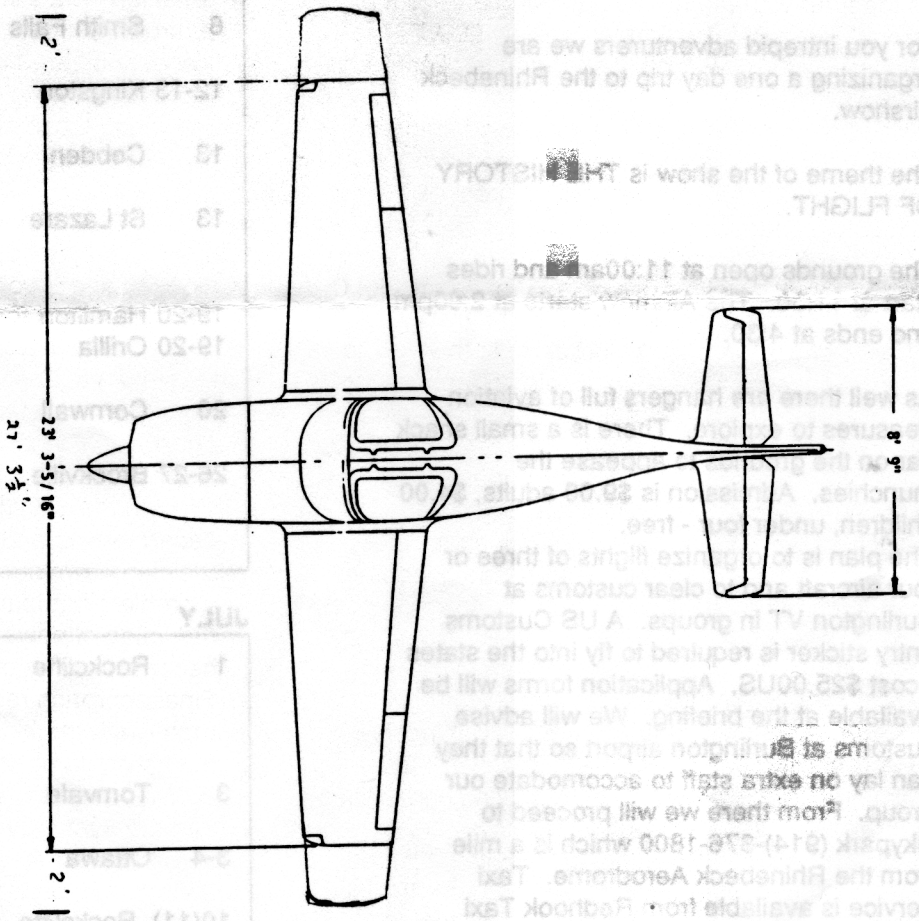
I have expended a little over 2000 hours over a two year period and so far have not run into any major problems thanks to the quality of the components supplied and the excellent builder support from Stoddard-Hamilton. But more on this topic later.

THE RHINEBECK RAID

June 28, 1993

ACTIVITIES CALENDAR

Month	Date	Activity
JUNE	8	Smith Falls
	12-13	Waukegan
	13	Cobden
	13	St. Lazare
	19-20	Chillico
	24	Common
JULY	1	Rockville
	3	Tombs
	10(11)	Rockville
	11	Amador
	11	Amador
	11-12	Amador



For you intrepid adventurers we are organizing a one day trip to the Rhinebeck Airshow.

The theme of the show is THE HISTORY OF FLIGHT.

The grounds open at 11:00am and has

ends at 4:00pm.

As well there will be a small

trucks. Admission is \$2.00 adults, \$1.00 children, and free for

The plan is to give prizes of three or

to clear customs at

Burlington VT in groups. A US Customs

entry sticker is required to fly into the state

- cost \$25.00US. Application forms will be

available at the drafting. We will advise

customers at Burlington airport so that they

can pay an extra staff to accommodate our

group. From there we will proceed to

Skypark (914-378-1800 which is a mile

from the Rhinebeck Airshow. Text

service is available from Redhook Taxi

(914-788-1478.

The return trip will be at the discretion of the

A drafting service will be held at Rockville

Flying Club of the State of New York.

For more information contact Luc Martin

at 744-8347.

THE RHINEBECK RAID

June 26, 1993

For you intrepid adventurers we are organizing a one day trip to the Rhinebeck Airshow.

The theme of the show is THE HISTORY OF FLIGHT.

The grounds open at 11:00am and rides start at 11:30. The Airshow starts at 2:00pm and ends at 4:30.

As well there are hangers full of aviation treasures to explore. There is a small snack bar on the grounds to appease the munchies. Admission is \$9.00 adults, \$4.00 children, under four - free.

The plan is to organize flights of three or four aircraft and to clear customs at Burlington VT in groups. A US Customs entry sticker is required to fly into the states - cost \$25.00US. Application forms will be available at the briefing. We will advise customs at Burlington airport so that they can lay on extra staff to accomodate our group. From there we will proceed to Skypark (914)-876-1800 which is a mile from the Rhinebeck Aerodrome. Taxi service is available from Redhook Taxi (914)-758-1478.

The return trip will be at the discretion of the pilots.

A briefing session will be held at Rockcliffe Flying Club on June 25th at 7:00pm.

For more information contact Luc Martin at 744-5347.

ACTIVITIES CALENDAR

JUNE

6	Smith Falls	Flying Club Annual Fly-in breakfast. 122.7
12-13	Kingston	International Airshow and Airmeet
13	Cobden	Champlain Flying Club "Big Breakfast" Fly-in
13	St Lazare	7th Annual Fly-in Breakfast and Antique car show.
19-20	Hamilton	International Air Show.
19-20	Orillia	Fly-in Flea Market and BBQ
20	Cornwall	Father's Day Fly-in breakfast. 8:00-12:00
26-27	Brockville	Riverfest fly-in. Saturday BBQ, Sunday breakfast.

JULY

1	Rockcliffe	Flying Club and National Aviation Museum Fly-in breakfast and all day activities.
3	Tomvale	(Ompah Plevna area) Fly-in brunch and activities.
3-4	Ottawa	National Capital Airshow Uplands Airport.
10(11)..	Rockcliffe	Annual 99's Poker run. Carp, Arnprior, Ottawa, Gatineau and Rockcliffe. 9:00-15:30hrs For poker hands call Sue 224-0568 or pick up at the airports.
11	Arnprior	Fly-in Breakfast 8:30-11:30
18	Iroquois	27th annual Fly-in Breakfast, 7:30-11:30.
29-7	OSHKOSH	Annual EAA convention Oshkosh, Wisconsin

AUGUST

22	Carp	Annual EAA 245 Fly-in breakfast.
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CLASSIFIEDS

05 June 1993

AIRCRAFT FOR SALE:

>>>NEW!!!!<<<

Davis DA2A, 370hrs total time. C85 Continental 390SMOH, new starter, generator, battery. Loran-C. Cruises at 110 mph. \$14,900.00.

Jim Bradley (613) 839-5542

Beautiful **Baby Great Lakes**, sliding canopy, skis, Ceconite, 85HP. \$11,000.00

Mike Sacoutis (613)749-3774

Zenith CH250TD taildragger, all aerobatic options, waiver applied for. 25 hours TT Lycoming O-320, 160hp. Quality built with solid rivets. \$30,000.

Jim Robinson (613) 830-4317
Tim Robinson (613) 824-5044.

Aeronca Champion 7AC, fuselage newly recovered, 65 hp Continental, \$13,000.00

Mike Sacoutis (613) 729-3774

Homebuilt Super CUBy. Completed 1988. 100 TTAF. Lycoming O-320, 100 hrs SMOH; set up for auto fuel. Full gyro panel; 2-20 gallon wing tanks. Excellent condition.

Henri Beaudoin (613) 749-9720.

PROJECTS FOR SALE:

!!! NEWCOMERS !!! Looking to start or finish a project? These partial to nearly completed projects **will save you years of building time and barrels of money.**

Champion Challenger project, right wing damaged, no engine.

Bob Bullen 738-9152

Cessna 140, 2500 TT, 85Hp Continental 1100SMOH, New paint Blue on white. Fabric wings need recovering.

Mike Sacoutis (613) 729-3774

PLANS:

PLANS for Davis DA2A.
Russ Robinson 831-4317.

PARTS FOR SALE:

Magneto, Bendix, S4RN21, Impulse coupled, zero time. \$250.00

Rosenhan wheels and brakes 4.10X3.50X5, madder cylinder. \$100.00

Prop Spinner 5 inch skull cap. \$10.00

Eric Taada 749-4264

Vari Eze landing gear legs. New.
Peter Plaunt (613) 839-2283.

PROPELLERS:

Harzell constant speed - HC82VL-1D1 to fit O-320 plus governor and vernier control, zero timed. OFFERS.

Mike Sacoutis (613) 729-3774.

Propeller, three bladed, ground adjustable, wooden blades, metal hub with spinner. Fits VW hub \$250.00.

Tim Robinson (613) 824-5044 evenings.

RADIOS:

Genave 100, \$250.00
Phone **Andy Douma 591-7622**

INSTRUMENTS:

Guages, Westach 2 1/2 " square manifold pressure/ turbo boost. Brand new in the box \$50.00.

Autopilot, Federal, new, 2-axis, STC included for installation in C-172 A.B.C., \$250.00.

Tim Robinson (613)824-5044 evenings.

Fuel selector valves.

Parking brake valve.

Accelerometer (G-meter) 2 1/4 inch.

Randolph butyrate dope in unopened gallon containers; 1 gallons clear; 1 gallon Juneau white; 1 gallon Piper Lockhaven yellow (Maule yellow); 1 gallon insignia blue.

- 2 large oil coolers (~8x9")
- 1 hydraulic pump
- 1 vacuum pump
- 1 Lycoming dual accessory case adapter for above pumps.
- Spinner, pointed, 11" base.
- piston rings for Continental E-185-3.

Cylinders, four, Lycoming IO/HIO-360, wide deck, fresh chrome.

Propeller, Hartzell HC82XL-2C constant speed plus governor for 320 - 360 Lycoming engines.

Garry Fancy (613) 836-2829

Flight controls from Piper Tomahawk: hanging rudder pedals with brake cylinders, control wheel yoke assembly.

Garry Fancy (613) 836-2829

WANTED:

Back issues of Sport Aviation for the National Aviation Museum's collection.

1965 April V14/4 1983 March V32/3

1987 Nov. V36/11 1989 Jan. V38/1

1992 Feb. - Oct. V41/2-10

George Skinner 749-9582

OTHER:

The "Canadian Amateur Built Aircraft Registry" is now available from CASTC.

A registered version of shareware will soon be available for \$30.00

Ted Slack at 226-8373.

CHAPTER CRESTS:

Sew-on, \$6.50 each. Luc 744-5347

**PLEASE NOTE:
ADS DEADLINE IS THE 5TH OF THE MONTH**

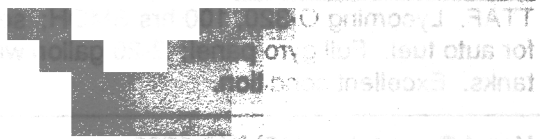
**PLACE YOUR ADS BY PHONING ANDY AT 591-7622
Classifieds Editor**

Ernie Finateri

John Boyd



Full Automotive Repair & Machine Shop Facilities
(Entrance on Breezehill)
1050 Somerset St. K1Y 3C5 Tel. (613) 729-3124 729-3125



!!! NEWCOMERS !!! I'm looking for start of things & projects. These are a healthy competition project. Will save you years of building time and money of money.

Champion Children's project, right wing damaged, no engine.