Carb Heat

NEWSLETTER

Hot Air and Flying Rumours

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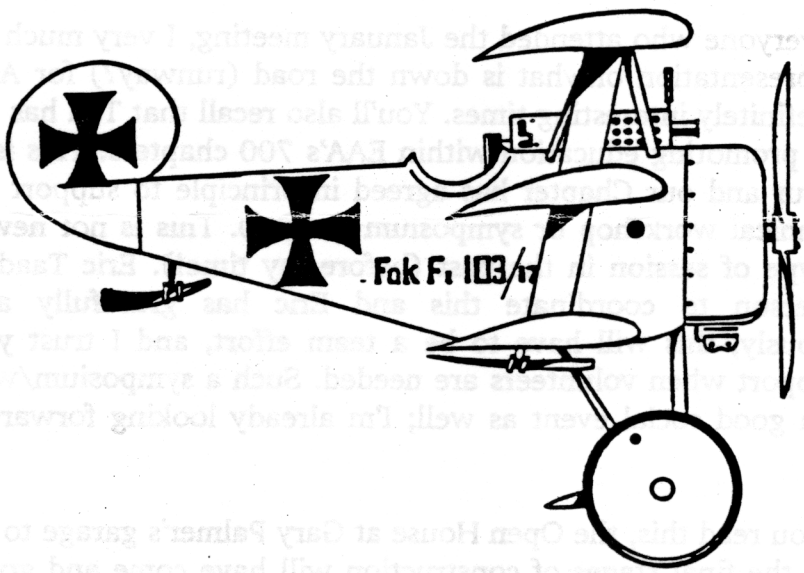
FEBRUARY 1990

NEXT MEETING- Friday FEBRUARY 16

at NRC 100 Sussex Dr. 1930HRS

VIDEO NIGHT

OSHKOSH '89
AND OSHKOSH: BEST OF THE 80'S



President's Corner:

February...a month to make substantial progress on the homebuilt project, or to catch up on the little repairs that you wanted to do last summer or simply to take some time off to bask on some beach a bit further south than Ottawa.

Much to Rodney Stead's relief (and to the Treasurer's), the January meeting produced a wheelbarrow-full of membership renewals. With the bulk of our members paid up for 1990 and with several new members signed up, the Chapter is in good shape. There are still a few members who have no trace of an EAA number or expiry date. If your membership in EAA is not current, then technically, you cannot be a Chapter member, so please rectify this situation if it applies to you. Rodney has EAA application forms if you need them.

By now, everybody will probably have read EAA's glowing praise of Transport Canada on page 7 of the January Sport Aviation. As recreational aviation enthusiasts, we are indeed fortunate (and proud) to have such willing support from our friends in the Airworthiness Branch. We are also lucky to live in a country where the laws of the land allow our government officials to react to changing technology and the needs of the population without undo hinderance. It is small wonder that our American friends are envious. This is not, however, a time to sit back and relax. The enthusiasm for "little airplanes" is not shared by all branches of Transport Canada, nor by all provincial and municipal governments, nor by the airlines, nor by any means large segments of the general public. We must still strive to protect our right to fly from farm strips and to keep our airports open to General Aviation at a reasonable cost. The 1990's will undoubtedly be the decade for the protection of the environment. This in itself is good, but could spell trouble for our sport if we are not careful.

Along with everyone who attended the January meeting, I very much enjoyed Ted Slack's informative presentation on what is down the road (runway?) for Amateur-Built aircraft. These are definitely interesting times. You'll also recall that Ted has taken on the monumental task of promoting education within EAA's 700 chapters. This is definitely a worthwhile endeavour and our Chapter has agreed in principle to support Ted's efforts by putting on a technical workshop or symposium in 1990. This is not new as Chapter 245 has held this type of session in the past (before my time!). Eric Taada is without doubt the ideal person to coordinate this and Eric has gracefully accepted the responsibility. Obviously, this will have to be a team effort, and I trust you will give him your utmost support when volunteers are needed. Such a symposium/workshop has all the makings of a good social event as well; I'm already looking forward to being a part of it.

By the time you read this, the Open House at Gary Palmer's garage to see his sleek little Lancair 235 in the final stages of construction will have come and gone. To those who attended, I know you will have been as impressed with Gary's quality workmanship and with the design itself as I was when I saw it a few weeks ago. Thanks Gary!

With that, I'll close for this month. 'See you at the February meeting.

Lars Eif

MINUTES OF JAN. 19 MEETING HELD AT 100 SUSSEX DRIVE

The meeting began at 8:04 p.m. with President Lars' cordial welcome and reminder that we were ushering in both a new year and a new decade. A warm reception was accorded to our guests: Carl Anderson, Manfred Ficker, Ron Johnstone, Rob Ungrin, and Dick Crabbe.

Report on the Display at the National Aeronautical Museum

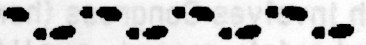
In response to the museum's invitation to display a project, Lars Eif volunteered his beautifully welded Steen Skybolt fuselage and cabinet-quality wooden wing panel. Appropriately, these enjoyed centre stage in a presentation which included handouts, a rib jig, and pictures of other chapter planes and projects. The museum's competent staff carefully transported Lars' "baby" by swaddling it in blankets and soft restraining straps. Their professional handling of the plane illustrates just how much they valued our participation and shows their seriousness in promoting all aspects of general aviation. We can now look forward with confidence to "strutting our stuff" again this Christmas. **Chapter 245** should **begin now**, however, to collect good pictures (of building and restoring aircraft) , samples of construction techniques, cut-aways, examples of different kinds of rivets, fasteners, cable attachments, etc., so that next time we will be even more impressive.

Ottawa National Capital Air Show Association

This year the air show will be held at Ottawa International--not to be confused with Carp International--and spread over the July 1st weekend. The Air Show Association wants a display of completely or partially completed planes. Interested parties can contact James Oliff, our editor, who is a member of the association. Lars will shortly be looking for a co-ordinator for the Chapter's display and it would be gratifying (not to mention shocking!) if someone would volunteer for this prestigious but unstressful task. (No prior television or radio experience necessary!)

Revised Chapter Fees Become Effective Feb. 1

In case you missed renewing your membership, just follow the

 to Rodney's desk at the next meeting.

By way of clarification, Lars pointed out that **flyers who are part of a syndicate** and who **operate out of our Carp facility** MUST **all be EAA members** AND **full chapter members**, but **only one** need **pay** the **initiation fee**.

The Newsletter

In a word, we need contributions from our members. Share building tips, cost-cutting ideas, local and distant distributors, etc. You supply the material and we'll look after the punctuation, spelling, grammar, etc. Lars promised to set a good example by filtering material from EAA headquarters.

Gary Palmer's "Lancair 235" Open House--Feb 2

On "Morningside," Wiarton Willie ducked (groundhogged?) Gzowski's questions about the precise date of spring. In the evening, Gary showed similarly uncertainty about the flight date of his beautifully built Lancair. Unlike hibernating Willie, however, Gary has been a busy beaver. As a result, his project will likely be flying later this year. About 10 people turned up to admire plumbing, engine installation, retract mechanism, trim systems, to ask dozens of questions, and even to try out the seats. Such was the interest that even coffee/tea and donuts were enjoyed in the heated workshop/garage so as to continue the discussion. The project is an excellent example of a composite meticulously built and finished. This bird cruises over 200 m.p.h., however, so you'll have to admire it on the ground! Stay tuned for the date of **Lars Eif's "Steen Skybolt" Open House.**

Correspondence

Jack Greenlaw (RAA Pres.) wrote to solicit our opinion on certain matters. These will be considered at a later meeting.

Feature Event

Ted Slack, who certainly needs no introduction, gave us an excellent and comprehensive **review of current issues in EAA, DOT, and FAA.**

Ultralights.

In 1983, 1200 U/Ls on the newly formed registry were involved in 60 accidents. By contrast, the current total of 3200 have had only 26 mishaps, a drop in accident rate from 47 per 1,000 to 8 per 1,000. Currently, the American U/L industry is stagnating due to lower weights, passenger restrictions, and a cumbersome method of changing regulations which involves Congress (hence delays of 2-4 years). Thanks to our vastly improved safety record, our U/L manufacturers have approached the government for even less restrictive regs (ours are already among the most liberal in the world). DOT has agreed to these new proposals, **IF** certain standards are applied. The **PROPOSED** new U/L regs will permit passenger carrying, a gross weight of 1,050 lbs (2 place) providing the stall is 45 m.p.h. or less and the cruise does not exceed 116 m.p.h. An U/L licence will be required to fly these aircraft and maintenance will be according to the manufacturer's manual for both factory-built or amateur constructed versions. As

well, DOT will require a certificate from the manufacturer attesting compliance with the new regulations. A completely homebuilt U/L will have to conform to the same standards and rules as a normal homebuilt. Maintenance will be similar to that required for a homebuilt airplane. A manufacturer can supply a kit, but this must be built and maintained to his standards and any unauthorized modification(s) would invalidate the U/L's compliance with the manufacturer's standards. Flight into Controlled Air Space will still require prior permission. At a historic meeting in Toronto on Sept 7, 1989, representatives from DOT, industry, RAA, COPA, etc., met and signed the agreement. **Remember: these are just proposals. Hopefully, they will become law in a couple of months.**

Amateur-built Aircraft

The current gross is 4,000 lbs. for a 4-place with a max. wing loading of 20.5 lbs. per sq. ft. and a max. stall of 61 kts. The plane must be at least 51% amateur-built and can fly day or night VFR. Helicopters and aerobatic planes are allowed in specified types. DOT only evaluates kits whose 51% compliance seems questionable. The Canadian basis for the 51% rule is man hours. In the U.S., it is the ratio of the parts made by the builder to those fabricated by the manufacturer. Since homebuilts are registered as experimental in the U.S., they can't fly over built-up areas except for landing and take-off. Also, U.S airworthy directives apply to homebuilts, so that a Lycoming motor AD, for example, would require compliance through a licensed a/c mechanic. Canadian homebuilts, by contrast, are "serviceable," not "airworthy" and so escape such AD's, trusting the owner to maintain the craft. This trust seems well placed because **in more than 25 years, no successive owner has crashed a homebuilt due to poor maintenance.**

Importing/Exporting of Homebuilts

Americans can import completed Canadian homebuilts (of which there are only about1700). **We**, however, **cannot import completed American homebuilts** (of which there are about 12,000). The relative numbers show how easy it would be for us to sidestep the original educational purpose in building a plane if the American market were open to us. Partially completed American homebuilts can be imported, but since there are no set rules about the degree of completeness, it might be best to check in advance rather than end up with a very expensive, over-sized weather vane!

Border Crossings

Initially, Canadian homebuilts could only cross the border to attend a fly-in. Three years ago, a 90-day trial open period enjoyed experimental status for one year, which was subsequently extended for another year. Currently, by reciprocal agreement, amateurbuilts can be granted a permit for 90 days which can be further extended for an additional 90 days.

Changes in Homebuilts

Two major changes needed include IFR and high performance. The former is under consideration by the operational, not the airworthiness, branch of DOT. Ted's hunch is that the IFR instrumentation will need to be that laid down in ANO's and require approved instrumentation installed and maintained by a licensed mechanic. A homebuilt might also have to demonstrate sufficient stability for IFR. As well, the pitot/static system would have to be accurate. For the high performance category, a stall speed not exceeding 80 kts has been proposed, and Ted thinks that it will come to pass in amateurbuilts but require a special endorsement on the pilot's licence.

Primary Category

Now that the **average certified a/c** is old enough to drink and vote (actually, **over 22 years old**), the FAA sees an impending problem with this aging fleet. With the **cost of certifying a new a/c estimated at $10,000,000 U.S.** and the difficulties of changing regs that include all planes under 12,500 lbs., it is clear that a new category is needed. While there was plenty of enthusiasm for this proposal earlier in the U.S., by 1986 support seemed to wane. An NPRM (notice of proposed rule making) in 1989 ended in a split. Since the FAA can only respond to public opinion and since half for and half against shows no clear opinion, the proposal is currently in limbo. In the land of the frozen Maple Leaf, however, things look brighter. In 1986, Ted Slack and Bill Roderick filed a report on the justification for a Primary Category. DOT responded favourably, asking the proponents to establish standards. These have yet to be worked out in detail, but in the main, the new category would involve certified planes up to 4 place, with a maximum gross of 3,500 lbs., which would be maintained by licensed personnel. Rental, training, but **NOT CHARTERED WORK** would be permissible. Given the urgent need for such an a/c and its simpler and cheaper certification process, Ted speculates that by A.D. 2000, there could be as many as 12,000 Primary a/c in operation. He estimates that by the same date there will only be about 2,300 homebuilts (2,299 at the rate mine is progressing!).

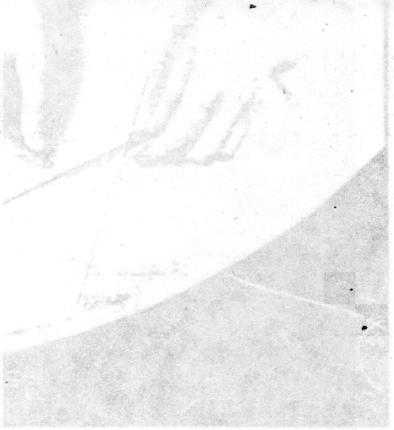
EAA Chapter Educational Activities

Ted will soon be retiring but he will continue working for EAA in an educational capacity. Most chapters lack a tight focal point and educational programmes would serve this purpose admirably. Better education translates to better safety. If all chapters put on a workshop programme, the potential for educating flyers would be enormous. Such programmes would attract audiences from large geographical areas for 1-3 days (depending on resources) and ought to be self-financing. Topics would vary with the available talent, but possibilities include compass swinging, cable swaging, maintenance, weight and balance, establishing the aft C of G, calibrating air speed instruments, pilot flight tests, computer programming, amateurbuilt regs, meteorology. Ted's personal favourite

would be a flight test school. The Ottawa area offers a number of available trained test pilots and standard planes (such as 150's) so that the pilot could be briefed, tested, and debriefed by a qualified test pilot in a series of planned flights. The FAA has recently published a Flight Test Manual for Homebuilts and its author has indicated his readiness to help in such a venture. The question now is whether we are prepared to invest the energy necessary to pull off a "first" with such a programme. Ted will be looking for our answer in the forthcoming months.

Your burned-out recording secretary,

Roger "Writer's Cramp" Fowler



How to Tie the Seine Knot!

Don't let that pesky little knot drive you insane

by Bob Whittier
(EAA 1235)
P. O. Drawer T
Duxbury, MA 12331

You may have heard an exasperated military man exclaim, "There are three ways to do a thing — the right way, the wrong way and the Army way!"

And there must be truth in it, if the seine knot is any example.

For as long as there have been civil aviation regulations, the seine knot has been specified by the government for securing the loops of cord which lace wing fabric to the ribs and keep it from fluttering and lifting from the ribs. The FAA specified it, and before them the CAA specified, and long before them, the early Bureau of Air Commerce specified it. It goes way back.

Refer now to Figure 1, which is taken from a government manual. Looks pretty simple does it not? That's what everyone thinks. Well, make up a small dummy wing or take a control surface. Give this along with a ribstitching needle and cord to some chap who has never done ribstitching and ask him to teach himself to tie the seine knot. After trying and trying to do the seine knot from this illustration, the fellow may no longer be sane!

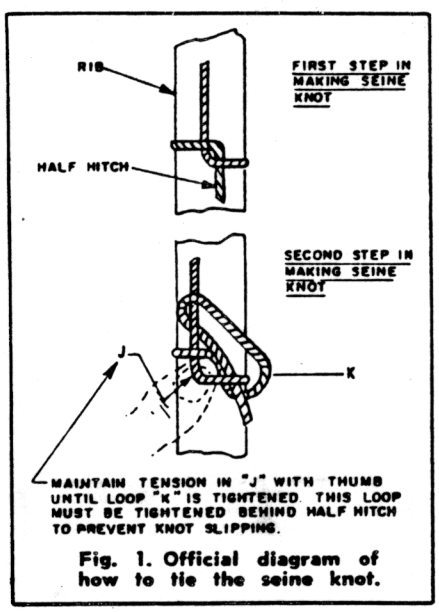


Fig. 1. Official diagram of how to tie the seine knot.

I tried this myself. I put these items into the hands of pilots who can remember the valve tappet clearance of the OX-5; they had forgotten just how the seine knot goes and this diagram got them all confused. I even tried it on an FAA man and he could not follow it!

So, for the sake of EAA members working on their projects in places from Medford, Massachusetts to Medford, Oregon, I wished to secure for publication a set of step-by-step pictures showing exactly how to do this knot. A letter to the Maintenance Branch of FAA in Washington brought the reply that no, they had nothing like this available; they had never had anyone complain that the standard seine knot drawing was hard to follow. Of course any grassroots mechanic could have told them that the reason was most mechanics learned to tie the knot from other mechanics and anyway, a lot of them have their own pet knots.

So, I went to the library and looked into every book I could find on knots, seamanship and fishing. Not one of them mentioned the seine knot. I wrote to leading cordage manufacturers and would you believe it, their knot experts had never heard of it either!

The only thing left to do was to go to the wonderful aeronautical library at Massachusetts Institute of Technology and look through aviation mechanical books going back through the years. It quickly became apparent that each and every such book back to World War I reprinted essentially the same diagram as in Figure 1! Obviously, each author had merely taken it for granted that the knot was easy to tie as sketched and reprinted the old drawing perfunctorily. I suspect now that this evasive seine knot might have originated among the fishermen of the French coast, then some early aviation pioneer found it was ideal for lacing fabric to the ribs of Bleriots and Voisins, and it came to the United States prior to World War I along with the linen then used for aircraft covering. The Army then may have adopted it as standard and started it on its way. This is only conjecture of course, but it's a logical theory.

At any rate, the time-honored drawing in Figure 1 contains two things that are most confusing and omits one thing that is vital, which is why persons who have never been shown how to tie the seine knot can find it frustrating. First, this diagram shows the knot being tied from the top down, i.e., working from the top. But a right-handed person doing ribstitching in the normal way would find it more natural to work "up." Second there is a vital pulling motion about two-thirds of the way through which is not shown at all. Third, the sketch shows how the cord goes, which really isn't so easy to interpret when you are trying to figure out how the needle goes to make the cord go that way!

Therefore, I made up a dummy wing and for the sake of photographic clarity, made an oversize needle from a dowel and threaded heavy black cord into its drilled eye. Beginning with Figure 2, captions explain how to do it. Good Luck!

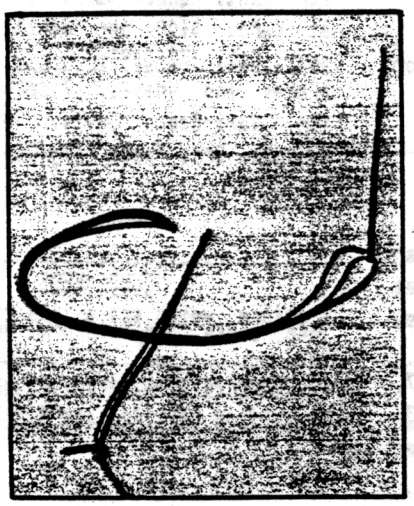


Fig. 2. After being pushed down through the covering on one side of the rib and pulled up on the other side, the needle is passed under the section of cord lying along the rib.

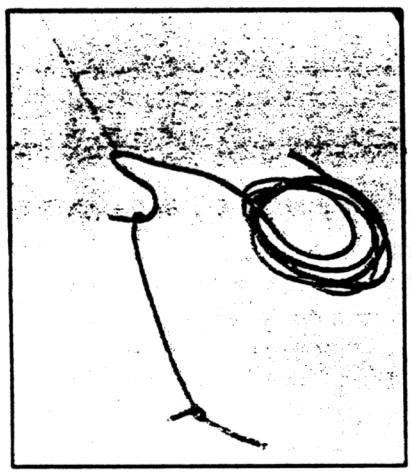


Fig. 3. All the lacing cord on the free end is pulled through (coiled here for photographic clarity) and the cord at the needle is pulled taut, snugging the loop that has been made around the rib.

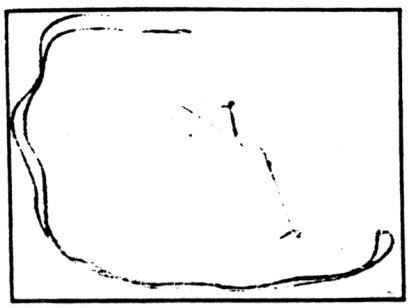


Fig. 4. The needle is run under the cord that lies along the rib between the two knots, then over and under again.

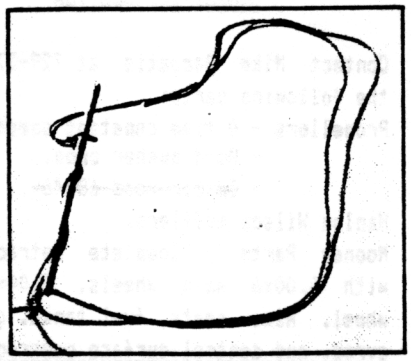


Fig. 5. One picture's worth 1000 words. The needle now goes under the loop around the rib. Note carefully, near the point of the needle, how the needle goes over the cord lying on the surface.

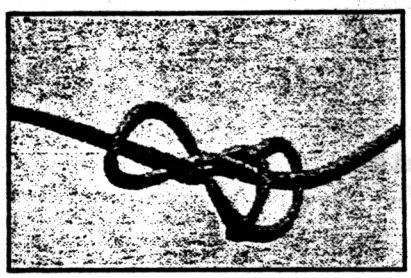


Fig. 6. Begin to tighten the knot. It closes down into a layout resembling a figure-of-eight.

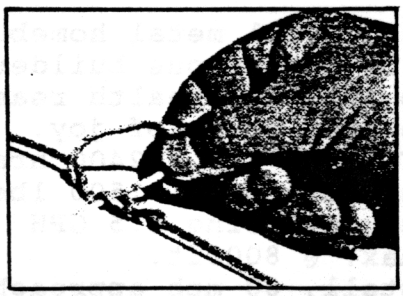


Fig. 7. Again, one picture's worth 1000 words. The part of the loop that goes around the rib as shown here is pulled tight, quite firmly and smartly. Put thumb on snugged knot as shown by dotted lines in Fig. 1 to hold loop tight.

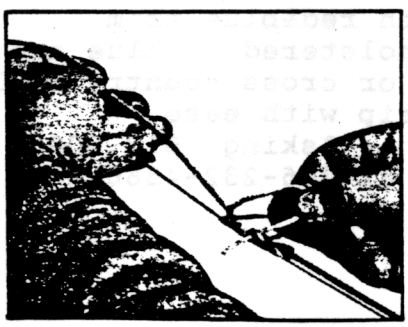


Fig. 8. With free hand, pull free end of cord forward smartly to close up and lock the knot. For sake of photographic clarity, model's hands are posed as shown — in practice the left thumb would be holding down loop and right hand would be pulling to tighten.

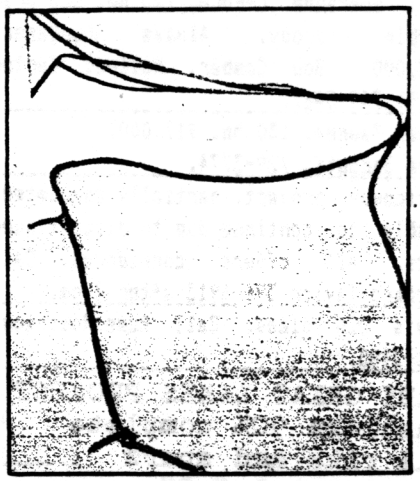


Fig. 9. Seine knot is snugged tight and needle is going down to begin next knot. Reason for using seine knot is that it holds tension (Fig. 7) around rib while free hand is used to lock knot tight. Also, each knot is locked and if vibration breaks one loop around the rib, the other loops will not loosen up.

Piel Emeraude C-FUCW, 125 hp, 260 hrs. Bubble canopy. Always hangared. $12,000. Bob Comber. Holland Center (519) 749-3467.

Piper Pawnee. 150 hp. $17,000. Mike Sacoutis 729-3774.

Minicoupe project, partially completed. Unable to continue due to discontinued kits. All offers considered. Call Richard Taylor 596-6913 after 7 pm.

Davis D2A plans. Call Russ Robinson. 831-2485.

BABY GREAT LAKES PROJECT
fuselage 90% complete
all ribs and spars
Continental C-85
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all instruments
6500.00 JAMES OLIFF

1980 JURCA SIROCCO
200 TT no engine, retractable
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CLASSIFIED SECTION

Contact Mike Sacoutis at 729-3774 for the following parts:
Propellers - 0 time constant speed
- Wood pusher prop.
- ~~Zenair wood 68x46~~
Hanlon Wilson mufflers.
Mooney Parts - Complete retract gear with 6.00x6 main wheels. 5.00x5 nose wheel. Also seats, fuel tanks, gauges, gyros, and control surface pushrods.
Airpath magnetic compass. 0 SOH 1987, base mount. $100. Alex Fulton. 234-6753
Child's seat for C150, aircraft type, $150 or offer. Jim Robinson 830-4317.

For Rent: Hangar space for one aircraft at Carp. $100 per month. EAA members only. Call 832-2691.
Brakes and wheels. Rosenman. Suitable for Vari-Eze, Davis, etc. Offers welcome. Eric Taaca 749-4264.

CLUB NEEDS

Platform weigh scale like type to weigh feed sacks. We have one, need a second one.
Gas-powered snowblower needed.
Classified Editor: Lars Elf 837-6680.

FOR SALE

ZENITH CH200
-2 place, side by side, all metal homebuilt completed in 1979 by meticulous builder who now has decided to sell for health reasons.
-TTAF - 400 trouble free hours of joy.
-Engine - 150 HP LYCOMING E30 - 2400 hrs.
-Empty wt. 1000 lbs. Gross wt. 1500 lbs.
-Speed: 135 mph cruise using 6.5 GPH
165 mph max. @ 8000ft.
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-Exterior white with red&blue trim
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- handles grass strip with ease.
Asking $12,900
-Contact Gil Smith at 306-232-4366-4891