EXPERIMENTAL AIRCRAFT ASSOCIATION 245 OTTAWA

Carb Heat

Hot Air and Flying Rumours

NEWSLETTER

Published by EAA Chapter 245 (Ottawa) P.O. Box 8412 Main Terminal, Ottawa, Ontario, Canada, K1G 3H8

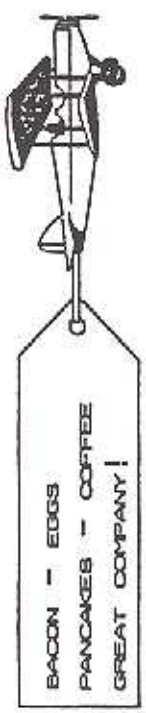
8:00 AM to Noon in the Chapter Hangar

RAIN OR SHINE - FLY IN OR DRIVE IN

FLY-IN BREAKFAST

CARP, ONTARIO

SUNDAY, AUGUST 22



JULY-AUGUST 1993

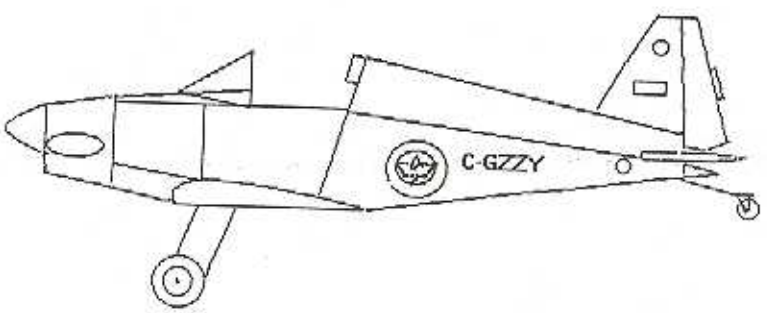
NEXT MEETINGS: SATURDAY 17th JULY 1000 HRS
SATURDAY 21ST AUGUST 1000 HRS

CHAPTER HANGAR, CARP AIRPORT

PROGRAM:
- BUSINESS
- ANNOUNCEMENTS

FEATURE TOPICS:
JULY; -OSHKOSH and How to get there. Video
AUGUST; -Preparation for the Fly-In Breakfast

FEATURE ARTICLE:
Teenie II (Emerson I)
By Rod Emmerson EAA 245 OTTAWA



EAA 245 FLY-IN BREAKFAST
SUNDAY AUGUST 22nd CARP AIRPORT

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 writing this month's column just after the July 1st Canada Day display at the National Aviation Museum. The weather gods really smiled on us yesterday with absolutely clear blue skies, and mid 20s temperatures sans humidity.

The chapter was well represented with four aircraft flying and one on static display. Dan Barraclough flew his beautiful vintage Stampe biplane in for static display, while Andy Douma in his Davis DA-2, Rod Emmerson in his Teenie Two, and Luc DeSadeleer in his RV-6 joined me in the Lancair 235 in a fly by demonstration.

The crowds at the museum seemed better than last year, however the attendance at the RockCliffe fly-in breakfast seemed to be down somewhat from last year. Nigel Field in his Vari-Eze, and J.C. Audet in his Long-Eze gave the crowd their usual formation arrivals and departures. A large number of chapter members turned out to swell the ranks and enjoy the RockCliffe food and hospitality.

I noted at least two chapter members, Jim Robinson, and Ted Givens working industriously on the RockCliffe side to make their breakfast its usual smooth running success. Ted also had his Dragon Fly at the airport and hopefully we will see it on display at the museum next year.

Our fly by pattern worked much better this year as we were ready to roll as soon as the Snow Birds completed their fly past; thus avoiding the congestion of departing traffic experienced last year. Luc Martin did his usual excellent job of commentating in both official languages.

After the fly bys the crowd rapidly thinned, so an hour or so later we fired up to head back to Carp airport. As we taxied in we saw George Elliot hard at work painting his newly completed floats for his Zenith CH-300. Just possibly, he may have them wet by the time many of us return from Oshkosh. Which brings up the topic for the next meeting Saturday July 17th, at 10:00 A.M. We will review the Oshkosh arrival procedures and show the FAA video tape for those planning the annual pilgrimage. This is a chance to discuss the ins and outs of flying and/or driving to Oshkosh with some veterans, and organize any joint ventures. I hope to see many of you there.

Just a reminder that our breakfast fly-in is scheduled for August 22nd. Barney De Schneider is the overall coordinator, and Lars Eif is coordinating parking activities. Both are 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. If you haven't called either Barney or Lars to do your bit yet, please do. Help us ensure a fine tradition continues!

Summer schedule means that we will not be publishing a newsletter in August, nor holding an executive meeting. The Saturday August 21st meeting will be devoted to a work party to get everything prepared for the breakfast on Sunday.

Its time to start thinking of meeting topics for the fall and winter season, so if you have some ideas or would like to volunteer, please give me or any member of the executive a call. So far we plan to have a talk on the Seawind in September, Survival kits in October, and possibly Subaru SVX auto engine conversion for a Cozy in November. I look forward to your input.

See you at the next meeting, and fly safely this summer!

Gary

General Meeting notes June 17 93

The meeting took place at the NRC structures lab.
Some special guests were in attendence,
Karl Hebert who is flying a single seat buccaneer ultralight across the eastern half of Canada attended along with his ground crew Tom and Mary Mills we hope that they enjoy the adventure . (the first half of the trip Vancouver to Ontario took place in 1986.
The Canada day display at the NAM was well attended, people enjoyed our flypast and the Rockcliffe club hosted their flying breakfast, which turned out really well.
Our chapters air adventure day at the museum was a great success, 30 children,learned the art of ribmaking, assembled some gliders and went up in the members aircrafts.
The event was covered that same night by the CBC (We are getting to be a regular feature should we get an agent?)
John Richards Zenith 300 is completed and flying , I think congratulations are in order.

The NRC structures Lab visit was well attended.
Our host Mr. Dave Simpson gave us a tour of the facility.
The lab test aircrafts and components to destruction and shares the data or prepares reports which are commissioned by government or private enterprise.
Some of the areas we visited include the structures lab where a tudor jet is being tested to destruction. This is done via a special jig which loads the surfaces of the aircraft. We could see the skins buckling and twisting.
These tests are carried out to determine the real life span of an airframe.
The results are used to effect preventative maintenance, insure a better lifespan for the airframe.
We also visited the materials lab where composites, glues, and carbon fiber samples are tested to destruction or submitted to artificial aging to determine the effects of time and weather on the materials.
The visit was much appreciated by all those in attendance.
See you all at the next meeting

Luc

Teenie Two Puzzle

By Rod Emmerson

A few years ago I was talking with an RV 4 builder, who doubled as a sales representative. I was interested in building an RV because they are, after all, an outstanding aircraft, no matter what one's tastes. He mentioned to me that it really needed some metal bashing experience, and asked if I had any. I said I had a little, part of which was building a Teenie Two. His level of interest in the conversation went to flight level zero, and a look of disdain took over before he wandered away to talk to some real airplane people. Besides not buying an RV 4 kit, I began to think about why this individual, and others, had responded to the little Teenie Two in this manner.

Over a period of time I came up with several probable reasons for this reaction from 'real airplane people'. Cal Parker, the designer of the Teenie Two, had an earlier design called Jeanie's Teenie. It was an odd little plane that did not seem to catch on, more for the shape and minimal performance rather than the diminutive size and simplicity. Most people seem to conjure up a picture of the Jeanie's Teenie when I mention the Teenie Two, but there is no comparison. The second point was that the Teenie Two was advertised as extremely basic and easy to build. Relatively speaking this is true. What this did however, was give hope and substance to the dreams of some people who were fundamentaly dangerous changing lightbulbs: and now here they were building an airplane! The examples, built by this group caused serious builder/pilots to make the sign of the cross and quickly back away. I was once offered parts from one of these, and it was difficult to diplomatically decline the offer. Don't get me wrong; my plane is not going to win prizes, but there is a point beyond which a plane might reasonably be considered an ill-fitting bunch of parts looking for a time and place to come apart. Unless a person has also seen one of the well made versions they seem to picture one of the less appealing examples. The last thing I came up with is a little more subtle. The concept and basic design of the Teenie Two is quite sound and I still believe in it after some years of building and flying one. However, for some inexplicable reason there are a few specific design details that do not measure up to the rest. Examples are the horizontal stabilizer attachment to the fuselage, and the way the control torque tube is mounted. I will mention more about these later. With some relatively minor changes to these few points it is still a good little plane, and fills the needs of a certain group of people, which includes myself. I needed something that was all metal, small, easily stored or transported, and inexpensive (trading money I didn't have for fabricating maximum number of parts). When I started it was the only available design that came close. Before anyone says what about the Windwagon or Hummelbird; they weren't around then, and if one looks closely one can see a shared ancestry, (further suggesting the basic design had something going for it). Hopefully I have clarified a few points, so please, please, please, don't look uncomfortable when I say I built a Teenie Two.

After I received the plans in 1975, I had a year or so before I would be able to start building, so I spent this time gathering raw materials and studying the plans. I was determined to make it for as little hard cash as possible, so I was looking for odd pieces of various metals to machine bushings, pins, and many other parts. Having my own lathe sure made a big difference. It easily paid for itself and reduced frustration levels. If I needed a special part right away then I just made it right away. No homebuilder should leave home without one. I also scrounged from trucks, tanks, and old aircraft for push/pull tubes, pulleys, bearings etc:. Did you know that the waterproof light from the instrument panel of an armoured fighting vehicle is much better quality, and lighter than a TSO'd unit for a plane? I also remember literally tripping over a particular chunk of metal half buried in a scrapyard, which I dug up. I paid two dollars for it, and now have a stainless steel prop hub.

The seven plans sheets themselves were very clearly drawn and all the critical parts were full size. It looked so simple, something had to be missing. In fact there were only a few details which I couldn't readily figure out, such as some bolt sizes. For a person with previous building experience this was minor, but disconcerting for a novice. The instruction book, though professionally printed, was less complete. For instance, it states in one place that as homebuilding is a learning experience the details had purposely been left vague. This didn't really make sense to me, and I still think it was an easy way out of developing a comprehensive manual. It was necessary to read it many times over, then re-arrange the notes, and fill in missing pieces, such as 'don't forget part A before you close part B or you're in real trouble'. As I became more familiar with the aircraft I began to pick out parts which might be made just as simply another way, with an increase in strength, efficiency, or just looks. As an example, the tailplane main forward attach point is a single bolt passing through the fuselage from one side to the other. If one tightened it to hold the tailplane firmly it would start to collapse the sides of the fuselage. If one didn't tighten it then the vibration and movement would cause the holes to quickly enlarge themselves. The simplest and safest answer would have been to use separate bolts on each side. Another thing that seemed strange was the way the main torque tube for the ailerons was held in place. To prevent longitudinal movement two collars were bolted on the torque tube, either side of the rear bearing block. The problem was that this bearing block was set in the bulkhead at an angle, relative to the torque tube, and the collars would only bear against it for about 10% of their surface area. It would undoubtedly wear rapidly creating sloppy elevator control. I ommitted the collars, and the front socket-type torque tube support, and in their place had the front of the torque tube bolted through a self-aligning bearing. It decreased the weight and made the action very smooth. I made many changes to the fuselage too, but these were mainly for aesthetics and

drag reduction. I think it now looks a bit more 'purposeful', or 'fighter-like'. The biggest and most obvious change I made was putting the third wheel at the back instead of at the front. This was not because I was a traditionalist, but because I had this grandoise idea of designing a retractable gear. It would be easier to pull up two wheels instead of three. I had heard experienced people say that I shouldn't bother; it took as long to design and make the folding gear as it did to build the rest of the plane. They were right. Halfway through the project I put it aside and got on with a fixed gear, so I could go flying! A wheel at the back meant beefing up the rear fuselage, which I now believe I did too well. I could have saved some weight by using lighter extruded aluminum for the longerons. My biggest problem was beefing up the wing centre section against the added torque of the main wheels. When they were behind the main spar it was by a distance of six inches. When I moved the wheels ahead of the spar it was eleven to eleven and a half inches, which virtually doubled the torque on the spar. In retrospect I am still very pleased with my design for the gear itself. The only thing I would do differently is add an extra rib over the gear legs, and go to 'doublers'on the rib flanges.(like the Globe Swift). With the change in gear configuration I had to move the engine forward a few inches to keep the C of G correct, and just to be safe I added to the area of the rudder to make sure I had a good overlap between rudder command and tailwheel steering. Of course, with a tailwheel it was also necessary to change the rudder control from push/pull tube to cables, so the tailwheel could be hooked into it. You know how they say one modification generates a dozen others? Well, they're right, and it is no exaggeration! I think by the time I had finished with my few little changes the only basic part which had not changed significantly was the wing. Many will argue that it is unsafe to do such things, and one should stick to the designer's plans. Well, yes.....and no. I learnt a great deal from all the modifications. Some didn't work, and were dropped, others made little difference, while a few were a great sense of satisfaction. Two points to remember are that I had chosen a very basic design with few refinements, and secondly, nothing was changed without a great deal of checking and testing, then more testing.

By the end of 1977 I had only made up the bulkheads and wing spars before I was posted out west. I had taken advantage of the large bending brake at the military school in Borden where I was stationed,to do the spars. Incidentally, the instruction manual says one doesn't need a bending brake. One can clamp the aluminum between pieces of 2"X 4"and hammer over with a rawhide hammer. I believe the results would look unacceptable even if it is safe. This applies to the bending of anything except small brackets. The new job in Winnipeg had mixed blessings as I was away a lot, but it brought me into close contact with aircraft workshops from coast to coast. Between these trips the airframe started to take shape in the basement. Fortunately, the

basement stairs were in a direct line with the back door, so as long as the fuselage wasn't too wide there would be no problem getting it out. But of course, the plane was too wide! The answer was to build the fuselage so that it came apart at the main bulkhead behind the seat, and take the wing centre section out sideways. It was initially put together using tiny nuts and bolts, then disassembled for the trip up the stairs. Once in the garage the two halves were permanently riveted together. It will come as no surprise to experienced builders that the most tedious task I encountered was the wing ribs. Here I made one of the few changes to the wing itself. The original ribs were made as one piece, with the spar slipping through a slot. The flanges along the top of the ribs were also notched. I decided to make the 'D'section and main section as separate parts for ease of manufacture, and to flute the top flanges instead of notching them. I found that the tabs created by notching were inclined to move away from the drill bit, and I wanted to be able to drill through from the outside so the rivets were in a perfect line. Between the fluting and adding lightening holes I ended up with a stronger, stiffer rib of slightly less weight.

In 1981 I was posted to Cold Lake,Alberta. By this time the airframe was complete except for a few small bits and pieces. However, there was nothing forward of the firewall. As a result, getting the plane to Cold Lake turned out to be fairly easy and quite novel. The two wing outer panels slipped snugly into mattress boxes and were taken by the movers, with the furniture. The fuselage was put on top of the car, facing backwards, and the tailwheel tied to the front roofrack. The main gear was in line with the rear bumper, so I dropped the lower gear legs out and replaced them with long tubes, bolted directly to the bumper. So, even before it had an engine it logged a couple of thousand miles flying backwards. Everytime we stopped along the road we were asked how many channels of radio control it used. The stock answer was one.....me. I couldn't afford multi-channel radio.

Inside the large workshop in Cold Lake, where the base vehicles were repaired, there was a cage in the corner with a plywood roof. I put the plane up on the plywood roof, which was relatively easy because it couldn't have weighed more than 150 lbs or so. That spot became my aerial workshop for the next year or two. I was at a bit of a standstill now though, because my new job was keeping me quite busy, and northern Alberta is not the best place in the world to get VW engine parts etc:. However, between my annual trips to Oshkosh, and the discarded engine from a Zamboni icemachine, I finally got the plane just about finished. Time to get it down from the cage roof. I used a block and tackle attached to a large overhead steampipe; lifted it up, then slid it along the pipe until it cleared the cage, and lowered it to the ground. More airtime and the engine hadn't even turned over yet.

Time slipped by and it wasn't until the

Incidentally, I was really
ecused with the response from DOT, both in
Winnipeg and Edmonton. My first inspection,
(precover) in Winnipeg took place about half an
hour after I phoned to book an appointment!
The one in Cold Lake took a couple of weeks or
so, but only because the inspectors can't get
up to Cold Lake just any day of the week.
They were genuinely sorry it would take so
long. In the meantime a couple of things
happened which some may find mildly amusing.
The first time I tried to start the engine,
(armstrong starter only) I did not have an
ignition retard mechanism fitted. The result
was an energetic kickback with the prop
catching my fingers: breaking one. I wanted
to express my feelings verbally in the worst
possible way, but as two of my mechanics, (of
the female persuasion) were close by, I had to
suffer in silence. Instead, I carefully
covered up the fact that anything untoward had
happened at all, for fear I became the object
of endless jokes. With the plane no longer
able to go back on top of the cage I had to
find a new home for it. Somewhat fortuitously
for me the brand new rations truck was rolled
over, and it's large insulated box with the big
doors was to be scrapped. It was set up on
the ground behind the workshop, where it was
also possible to hook into some electricity and
heat. With the wings off, the plane fit in
very snugly, and it was even possible to work
in there when it was 40 below zero.

I never got a chance to test it before
being posted back to Borden, where it had all

started. I had come full cir
years, and it seemed appropriat
flight should take place there.
deal with the Toronto office of
my file transferred from Edmonton
people I dealt with were very frie
empathetic, but much busier than th
west. It took a little longer to
everything squared away. My first f
preceeded by endless taxiing: startin
snail's pace, and working my way up.
remember how many times it started heac
the grass at the side of the runway, lik
hungry horse! However, because it is s
slung, with a C of G which must be only i
off the ground, it never did groundloop.
moment did come when the plane and I both
seemed to be working together, and it was
possible to stay on the centre line. That
the sign we had been waiting for, and I pulle
back on the stick, and away we went. I had a
52" X 36" prop which noticeably pushed me into
the back of my seat when I applied power, so I
new the climbout shouldn't pose any problems.
The only thing I did notice was that as soon as
I levelled out I had to carry a little up
elevator. I elected to put her down on the
second circuit to change the tailplane angle of
incidence. The plans had not been too precise
in this regard, but in all fairness, I had
probably not spent enough time double-checking
this point. Anyway, it did not take long to
make the correction, and I was back in the air.
The other thing I remember from that first
flight was my wife standing at the side of the
runway, rooted to the spot, as if she had seen
a ghost. She said later that as she watched

her mind flashed back to Winnipeg, and the assembly bench with all the ribs and spars set out. Now she was watching this collection of parts carry me into the air, which somehow didn't seem real.

Flying off the 25 trouble-free hours was uneventful.(after I fixed the angle of incidence). My landings however,were another thing altogether. There was no one around with experience in such a small, close-coupled, and relatively fast plane. The stall speed was 60 MPH indicated, so my approach over the numbers was 78/80 MPH. It was quite awhile before I had analysed all the finer points, and was able to 'grease it'. The first thing I had to learn to do was bring it a lot closer to the ground on rounding out, without puckering up. The seat is only a few inches off the runway! Contrary to Cessna 150 training, I had to approach at a shallow angle, (no flaps) to keep the speed down, and let it settle with only the slightest of flair. A little light had eventually switched on in my brain, and I realised that to keep pulling back on the stick as the speed bled off was causing the tailwheel to touch down long before the mains. The result had been that it would make the mains come down hard when I still had flying speed, with obvious results. The answer was to ensure I never lifted the nose higher than it would be when sitting on the gear. Another thing that helped was to let a little air out of the tires. I had them pumped up so hard it was like landing on a mousetrap, which would snap me back into the air. I still wouldn't put money on every landing being a greaser, but at least I've got the mechanics of it ri and most aren't too bad.

I did have one very unfortunate accident in April 1986. It would seem I windshear just after turning short final i Borden one evening. I heard from other mo experienced pilots later that it was not unusual to be dropped 100 feet in a Cessna, that particular area and at that particular time of day. The problem was that I wasn't a Cessna, and my altitude was 100 FT minus, not 100 FT plus! Besides the fact that I walked away without a scratch the only positiv thing is that the airframe proved stronger tha I would have imagined.

I now had to do some major work and I didn't have a basement or garage. I installed an old shed at the bottom of the garden where it could be stored. Rebuilding had to be done in the kitchen, after laying down a sheet of plywood on the kitchen table. My wife and I ate our meals from trays on our laps, in the living room, until the necessary new parts were finished. If you don't think that doesn't take team effort and a lot of understanding from one's spouse, just try it some time! The following spring when it was warm enough to work in the shed I fitted the new landing gear and a few other parts. I had also incorporated a few further modifications I had dreamed up while I was flying it. As the repairs were considered to be major I had to have another inspection before I was free to soar with the eagles again. This was carried out by one of the RAAC Designees under the old DABI programme. One of the changes I made to

the plane was to fit a prop with a couple of inches more pitch. I went from the 52"X 36", to a 52"X 38". As the old prop was only matchsticks now anyway, I decided to swap a little climb performance for a bit better cruise. I believe the change has worked out well. Maximum climb is about 1200 FPM, but my top speed is better and cruise is more efficient. The first time I measured an economy cruise burn of two and one quarter GPH I felt sure it was a mistake, but it wasn't. In fact I have never burnt more than three GPH.

I was starting to enjoy the fly-in breakfasts and small airshows in the Borden and Collingwood area when I was posted again. This time I was off to Ottawa. I bought a home in Aylmer, Quebec, but all my flying is done from the airfield at Carp, in Ontario because it just happens to be the home of our local EAA chapter. Once again my original decision making process, that said it had to be easily transportable, paid off. I don't worry about hanger or tiedown expenses. I can work on it at home in the garage, with all my tools at hand, and never worry about having left some critical tool or part at home. The one real disadvantage is that as soon as the snow starts to fall I have to button it up for the winter. The reason is the salt on the roads. An enclosed trailer would cure the problem, and then I could enjoy some good winter flying, on the warmer days at least, (open cockpits can be chilly). Keeping it at home gives me one other rather unique source of enjoyment that few others can share. When I want to go flying I hook the plane and trailer up behind my little Tracker 4X4, and head for th pumps. Filling the aircraft gas t pumps never fails to draw attention, questions. Travelling along the hi brings its share of waves, thumbs up, incredulous stares.

"Look Mom, that guy's towing a airplane"!

"No dear, it can't be, its too

SOME VITAL STATISTICS

Wing span	18 FT
Length	14 FT
Empty weight	391 LBS
Engine	VW 1600
Fuel	10 IMP GALS (auto)
Stall	60 MPH indicated
Cruise	110 - 130 MPH
Top speed	150 MPH
Range	400 MILES
Climb	1200 FPM
Takeoff	600 FT (average)
Landing	600 FT (average)

For those who are still interested, a second article will concentrate on the mechanics of building the Teenie Two, and tool requirements.

CLASSIFIEDS

12 July 1993

AIRCRAFT FOR SALE:

>>>NEW!!!!<<<

Davis DA2A, 370hrs total time. C85 Continental 390SMOH, new starter, generator, battery. Loran-C.
Cruises at 110 mph. $13,900.00.

Jim Bradley (613) 839-5542

Beautifull **Baby Great Lakes**, sliding canopy, skiis, Ceconite, 85HP. $11,000.00

Mike Sacoutis (613)749-3774

Zenith CH250TD taildragger, aerobatic waiver from DOT, 8G+-. 30 hours TT Lycoming O-320, 160hp. Quality built with solid rivets.

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. **sold** 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, master cylinder. $250.00

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, gound 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 Amatuer 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

ACTIVITIES CALENDAR

JULY

18	Iroquois	27th annual Fly-in Breakfast, 7:30-11:30.
29-7Aug	OSHKOSH	Annual EAA convention Oshkosh, Wisconsin

AUGUST

22	Carp	Annual EAA 245 Fly-in breakfast.