EAA 245 OTTAWA , ONTARIO

NEWSLETTER

REPLY TO: EAA CHAPER 245 , TERMINAL BOX 8412
OTTAWA , ONTARIO
K1G 3H8

CARB HEAT - Hot Air and Flying Rumours

Meetings - 3rd Friday at the National Research Council Building Auditorium
100 Sussex Drive, Ottawa, 8 pm

Oct.'85

Minutes of Meeting

September 20, 1985

The meeting got underway at 8:03 with a welcome to some new and potentially new members, namely Mike Eiwczor, Lars Eie, Bob Algie, Ernest Rex and Colin Phipps.

Mike is formerly of Sudbury and is building a King Fisher in a pusher configuration. He needs some help with stress analysis to turn the engine around. Any volunteers?

Lars is formerly of Chap. 41 and is building a Skybolt. I'll bet he gets to know Gary Fancy real well.

Bob and Ernest are very interested in the Kit Fox.

Colin, if you will remember, is not new to Chapter 245 but we haven't seen him for a while. Stick around Colin, we're pleased to have you.

In all, 22 people were present, not to bad considering its the first meeting of the new season and many people didn't get their newsletters. Maybe a week isn't enought to get a letter across town?

A brief review of the technical symposium and corn roast was given and it was resolved to continue these annually.

Two members have purchased Starlites, namely Alec Fulton and Dave Murry.

Henry Beaudoin is now in charge of the tool crib which now contains a coil, tube bender, bungy stretches, soldering iron, bending pliers, rivet cutter, fluter and a nicopress.

Gord Standing gave a brief review of our finances, that now stands at $3,168.94.

It was decided at the executive meeting and announced at the general meeting that the hangar door would be postponed.

A vote of 15 to 0 passed a resolution to hold dues and fees at the 1985 level.

Eric reports that the Pietenpol is piling up the hours and seems to be operating well.

A STS 720 channel receiver has been installed, at $299.00 U.S., the STS comes to about $460.00 CDN by the time you pay everything. The radio seems to have a very good range but a 32 ohm headset is a must.

For anyone operating in uncontrolled air space it is still handy to have a Radio Shack Digital Scanner. This will assist you in locating other traffic and finding yourself a nitch in the circuit traffic. At #350.00 Eric says this devise could prove very useful.

The rest of the evening we watched two videos on the 1985 Paris Air Show.

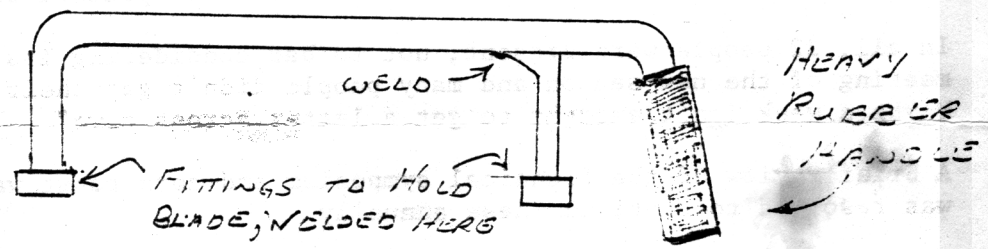
Technical Tips

by Garry Fency

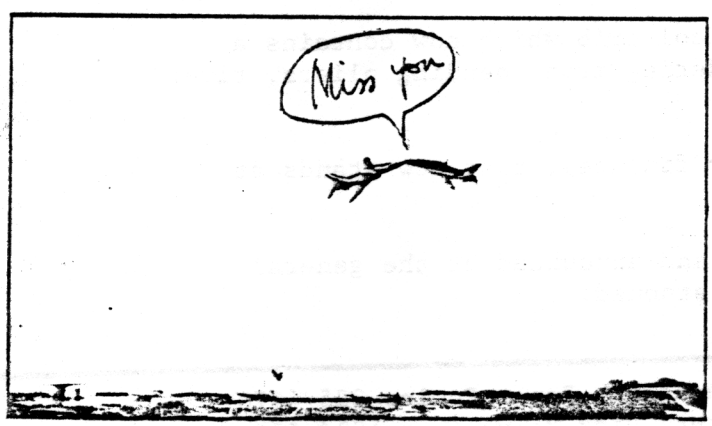
1. One of the more necessary tools for aircraft construction (particularly one with a significant amount of steel cutting such as a welded steel tube fuselage) is a hacksaw - and a good one at that.

One of the prime requirements of a good hacksaw is weight - it must have a good heft to it if it is to cut easily and quickly. I fulfilled this requirement by making the frame from solid steel half-inch or even three quater inch solid stock square or round cross-section, bent at the appropriate places. The "handle" is a piece of heavy rubber tubing slipped over the end. From here it is as a simple matter to weld on the blade holders. These can be removed from an existing cheap hacksaw.

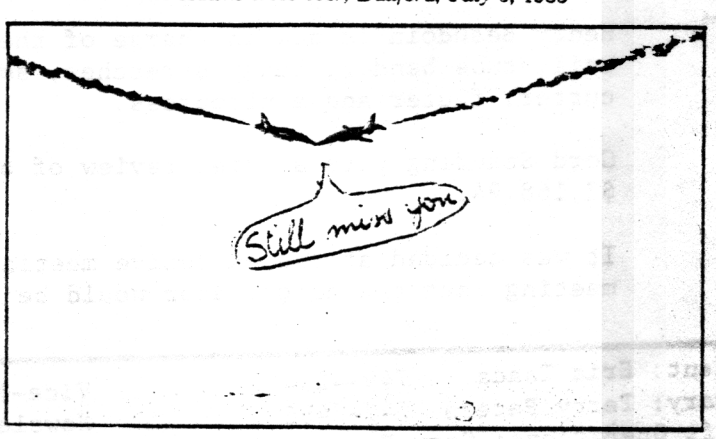
Insofar as a blade for cutting steel, to be of any use it should be high-speed steel and 32 teeth per inch.



RAF Red Arrows Hawks cross over, Prestwick, June 4, 1983



RAF Red Arrows Hawks cross over, Duxford, July 6, 1985



Dear Friends:

It is with pleasure that I pen these lines of some of my memories and experience of my early days in aviation. If time and health permits, it would be a privilege to share these with you on a regular basis.

I first became interested in aviation shortly after the turn of the century and I remember my father looking longingly at the sky and hearing of reports of man's attempt to become airborne through various methods - by hot air balloons (most popular), by building large kites and hoping they would lift man into the sky and by constructing various forms of gliders. My father was rather well-to-do and managed to dabble in all of these endeavours with limited success.

So I suppose I become a chip off the old block and began by building my own non-lifting kite, after a design I produced after having the opportunity of talking with none other than Mr. S.F. Cody. From there things just seemed to progress and I remember seeing the Wrights flying in France through the Pathe films. Then after one or two other small jobs I had the opportunity to go to Farnborough and worked on engines, airships and eventually aircraft building. At that time, Farnborough was the home of the RAF (Royal Aeronautical Factory). This was subsequently changed to the Royal Aeronautical Establishment (RAE) in order to avoid confusion with the "other" RAF formed in Apr '17.

Eric Raft, Esq

Pierre Young

Pierre Young, corporate engineering executive of Rolls-Royce, has died at 59. As chief engineer Olympus, he played the leading part in developing the world's first and still only successful supersonic passenger transport engine, the Rolls-Royce/Snecma Olympus 593. Born in France of a French mother, he was sent by his English father to schools in both countries. He was the ideal Anglo-French engineer, his technical brilliance and fine sense of humour and deep knowledge of history making light of the many difficult technical and other problems which arose in the Concorde programme.

Oliver Simmonds

Co-designer with R. J. Mitchell of the Supermarine seaplanes which led to the Spitfire, aerodynamicist Sir Oliver Edwin Simmonds has died at 88. He founded Simmonds Aerocessories, parent of Simmonds Precision USA, and is joint holder of the original patent on capacitance fuel gauging. An RFC flying officer in the First World War, he joined the Royal Aircraft Establishment, where he co-authored the first technical paper on supersonic aerofoils. He designed and built the Spartan biplane, which established a light aircraft distance record.

FLIGHT International. 17 August 1985

L 2407 6-27A

10 hrs @ 50 = 500

FOR SALE

8/87

Zenith Parts

- Aerobatic Center Spar
- Wobble Pumps
- 50 psi Maifod Gaage
- Scott Master Brake Cylinders
- Parking Brake Valve
- 3-Way Fuel Selector
- Vaccuum Regulator
- 8-Day Clock
- Altimeter 20,000
- Rodac Pneumatic Riveter
- Jig Table for Zenith Wings
- 1 Wing ready for precover
- Lightening Hole Jig
- Fiberglass Wind Root Fillets
- Fuselage Bulkheads
- Elevators, Rudders, Trim Tabs
- Fuel Tank
- Canopy
- Nose Gear Mount
- 2 Pair Hushacom Headset with 1 com
- Cylinder head temp indicator with thermocouple
- Prop spinner
- 2 fuel gauge senders
- Turn and bank - vacuum
- Star light x ponder
- Set of 3 wheel pants
- Set of 3 wheels
- 2 Cleveland brakes
- Prop 74 x 64

Avionics

- Escort 110
- Genave Alpha 100
- Genave Beta 5000 x ponder
- King KR86ADF
- 2 KP80 Loop Antenna
- KA42 Loop Antenna
- ELT Sharc 7

and many other items.

This is an urgent estate sale.

Items may be seen at 72 Cymbeline, Saturday, October 19 or call Brenda Pfaus at 232-5581

You may also call Eric Taada at 749-4234 for coordination & future information.

triple gauge AN 5773-1 12/24V DC

0-200 mph

alt. Kollsman

tach

VSI

comp.

carb temp

clock

CHT

t&b

Prop model 64 M74DM-0-64

1" NOT certified

Sensenich S/N K13295

off Hooden behind McDonald Westcliffe

10,000

Bello Westcliff

11 O-320-E2A

72 Westcliff

NEXT MEETING: October 18, 1985

Neil McGrath
Department of Communications
in Equipment Approval.

Topic: Licencing Radios in Aircraft.
(Neil is the owner of a Hyper Bipe)

2nd Speaker

Graham Smith
of Gralen Communications

Film for October 18

Aircraft rivetting (22 min)

Doping Technique (11 min)

Maintenance of plexiglass and
Lucite (36 min)

Plexiglass (19 min)

November Meeting
(Tentative)

Colin Phipps

Topic: Ultralight Legislation

MAINTENANCE AND PROJECTS

LES SEBALD

This month's guest columnist, Stan Hall, is well known to many of us as a real expert in designing and building sailplanes. In the two-part piece beginning here he has done an outstanding job of presenting practical tips on the use of Dacron fabric for coverings and repairs. In the second part next month Stan reviews the Stits and Ceconite procedures and how to handle them. —L.S.

TIPS ON THE USE OF DACRON COVERING

If you own a fabric-covered sailplane, particularly an older one, the chances are good that eventually you will need to recover it. The chances are even better that whether you re-cover or not, you will ultimately put a hole or ding in the fabric which will need to be patched.

The covering and patching of type certificated aircraft must be done by, or under the supervison of, a licensed A and P mechanic. No such restrictions apply to homebuilts and/or experimentals. Covering and patching are simple procedures provided you follow a few simple rules and are not all thumbs.

Although the general procedure for re-covering and patching is treated in the FAA's Advisory Circular number AC 43.13-1A, "Acceptable Methods, Techniques, and Practices, Aircraft Inspection and Repair," the publication doesn't say much about the peculiarities and procedures involved in the use of Dacron; it deals mostly with Grade "A" cotton, a standard in the industry until the early 1960's.

Grade "A" and nitrate dope, although still used in increasingly rare cases, suffer from a number of disadvantages. One, being organic in nature, the cotton tends to rot with age, even under the dope and paint. The sun and environmental pollutants get to it. Two, nitrate dope tends toward brittleness with age, and cracks and "ringworms" develop in the finish after a few years' service—although this depends considerably on workmanship and the kind of exposure the covering has experienced.

A third disadvantage, particularly when used over lightweight structures, is that tautness of the fabric is controlled primarily by the amount of dope applied. It is very easy to apply too much dope and ultimately find that it has warped, distorted or even broken light structures. Butyrate dope is particularly guilty of this; it keeps on shrinking long after one would consider it "dry". Some mechanics swear that it *never* stops shrinking.

In combatting the tendency toward rotting in cotton, common practice is to apply two or more coats of clear dope in which is mixed aluminum powder or paste (about 4–6 ounces per gallon). This is applied over the first two coats of clear dope. The aluminum serves as a barrier to the ultraviolet rays of the sun and thus extends the life of the fabric. In tropical and other hot, high-humidity areas a special fungicide is often added to the mixture.

The tendency toward cracking in nitrate dope can be combatted by the use of butyrate dope, which is more flexible although, as described above, it has shrinking properties which have to be accounted for by controlling the amount used.

All of these disadvantages essentially disappeared in the early 1960's with the introduction of a specialized form of polyester Dacron. Nowadays, essentially all fabric-covered aircraft use it.

Although Dacron is very widely used in the manufacture of clothing and other apparel, the particular material used is preshrunk at the mill before use. What makes aircraft Dacron "special" is that it is *not* preshrunk.

After the material is applied to the aircraft it is shrunk with the application of heat via a household iron or high temperature blower (one hotter than a hair dryer). Large, unsightly wrinkles simply vanish like magic with the application of heat. One simply applies the heat gently until the wrinkles are gone and the fabric reaches the desired degree of tautness.

Although Dacron, being a synthetic, is not supposed to be vulnerable to rotting, experience indicates that this is not necessarily the case. For added fabric life common practice calls for the same procedure used with cotton: applying two or more coats of aluminized dope. In fact, it is preferable to apply as many coats as are required to make the inside of the surface nearly opaque to the eye, even in strong sunlight. A surface thus coated and reasonably protected (as in a hangar or trailer) can be expected to remain airworthy for upwards of 20 years.

Aircraft Dacron is sold under a number of trade names. Stits Polyfiber and Ceconite are two. It is also sold (for example, by Aircraft Spruce and Specialty Co. of Fullerton, California) simply as "Dacron" or Dacron "greige," at a cost well below that of the two trade names indicated.

There is, apparently, little or no difference between "Dacron" as sold by Aircraft Spruce and Specialty and Stits Polyfiber or Ceconite. The material comes in the same weights (1.8, 2.7 and 3.7 ounces per sq. yd.) and has the same advertised strength.

However, type certificated aircraft must use an FAA approved material, and Stits Polyfiber, Ceconite and some others are so approved. The cost is higher than the "plain" Dacron because the distributors own the Supplemental Type Certificate (STC) for their material and the cost of obtaining an STC, which can be high, is recovered in the higher cost of the material.

Such FAA approved material is stamped with an FAA PMA (for Product Manufacturer Approval) number or other identification along one or both edges of the fabric. If you are recovering a type certificated aircraft the FAA will require that you show evidence of using the approved material. If you're recovering a homebuilt, you can use the plain Dacron. All you have to do is demonstrate the adequacy of your workmanship to the FAA. If you possess an Aircraft Repairman's Certificate you don't even have to do that.

It is recommended that the intermediate weight material (i.e., the 2.7 ounces per sq. yd. material) be used in lieu of other weights. Experience shows that the 1.7 ounce material, although having adequate strength for most sailplane applications, has so few threads per inch ("denier") that it is difficult to keep the dope from running through and down the inside of the surface (when doped in the vertical position) or dripping through to the opposite surface (when doping in the horizontal position). In either case an unsightly bump is created by the dried dope, and it never disappears. It will even show through the final coats of finish paint.

At the other end of the weight spectrum, the 3.7 ounce material should probably be avoided because, under heat, it has a very strong potential to over-tautening. However, it does yield a superior finish, better than that of the lighter weight fabrics.—STAN HALL