MERRY CHRISTMAS FROM

Paul Poberezny
Gene Chase
Brad Thomas
Jack Winthrop
Kelly Viets
Buck Hilbert
Ron Fritz
Claude Gray
Dale Gustafson

Al Kelch
Bob Keszler
Morton Lester
Art Morgan
John Turgyan
Steve Wittman
George York
Ed Burns

John Copeland
Stan Gomoll
Espie Joyce
Gene Morris
Wes Schmid
Norm Petersen
George Hardie
Pat Etter

(Photos by David Gustafson)
DECEMBER 1981

OFFICERS

President
W. Brad Thomas, Jr.
301 Dodson Mill Road
Pilot Mountain, NC 27041
919/368-2875 Home
919/368-2291 Office

Vice-President
Jack C. Winthrop
Route 1, Box 111
Allen, TX 75002
214/727-5649

Secretary
M. C. "Kelly" Viets
7745 W. 183rd St.
Stilwell, KS 66085
913/681-2303 Home
913/782-6720 Office

Treasurer
E. E. "Buck" Hilbert
P.O. Box 145
Union, IL 60180
815/923-4591

DIRECTORS

Ronald Fritz
15401 Sparta Avenue
Kent City, MI 49330
616/678-5012

Morton W. Lester
P.O. Box 3747
Martinsville, VA 24112
703/632-4839

Claude L. Gray, Jr.
9635 Sylvia Avenue
Northridge, CA 91324
213/349-1338

Arthur R. Morgan
3744 North 51st Blvd.
Milwaukee, WI 53216
414/442-3631

Al Kelch
66 W. 622 N. Madison Avenue
Cedarburg, WI 53012
414/377-5886

Robert E. Kesel
455 Oakridge Drive
Rochester, NY 14617
716/342-3170

ADVISORS

Ed Burns
1500 Mt. Prospect Road
Des Plaines, IL 60018
312/298-7811

John S. Copeland
9 Joanne Drive
Westborough, MA 01581
617/366-2745

Stan Gomoll
1042 90th Lane, NE
Minneapolis, MN 55434
612/784-1172

Espi E. Joyce, Jr.
Box 468
Madison, NC 27025
919/427-0218

Gene Morris
27 Chandelie Drive
Hampshire, IL 60140
312/683-3199

Robert E. Kesel
455 Oakridge Drive
Rochester, NY 14617
716/342-3170

Page 6

VINTAGE AIRPLANE 3
PERMANENT HOME FOR OX-5'ERS AT SUN 'N FUN

Many Antique/Classic Division members are also members of the OX-5 Aviation Pioneers. As all of you who attend the Annual EAA Fly-In at Lakeland, FL are aware, the tent which has been used in the past as a "Hospitality Center" leaves a great deal to be desired. In order to provide more comfortable quarters for all aviation pioneers at future gatherings, a building fund has been established to erect a permanent OX-5 "Fun Center" to replace the tent.

Sun 'N Fun Inc. hosts the fly-in each year and they are arranging for ground space for the Center and will assist with utility connections. Dean Tilton, "Honorary" Wing Member is a building contractor and has kindly offered his services at no charge! A number of OX-5'ers as well as many EAA members have volunteered their labor to put up the structure. Thus, funds donated will go directly toward materials, fixtures, and whatever outside journeyman services that may be required.

A modest 40' x 24' structure with rest rooms and basic kitchen facilities that will offer visiting OX-5'ers, their guests, and other "pioneers" attending a pleasant, weather-tight haven in which to enjoy the hospitality provided by Jessie Woods and her helpers. It will also provide a protected location in which to display the memorabilia collected through the years by members.

This project is an undertaking of a group of loyal, dedicated OX-5'ers from various Wings throughout the country, who participate each year in the Fly-In. It is a valiant effort put forth by individuals for the benefit of all. A Century Club comprised of benevolent "Pioneers" willing to contribute $100 (or more) toward this project has been started. Individual membership cards will be issued and names will be engraved on a plaque to be hung in the new Center. One membership covers both husband and wife.

Full consideration is being given to make all donations tax deductible — currently the mechanics are being worked out to legalize the procedure. All contributions will be acknowledged and gratefully received. Make checks payable to "OX-5 Sun 'N Fun Building Fund" and send to Truman W. Miller, Custodian, 121 Lake Hollingsworth Drive, Lakeland, FL 33801.

NON TRANSPONDER EQUIPPED AIRCRAFT

The FAA has issued a Notice of Proposed Rule Making which would permit pilots of non transponder equipped aircraft to notify the FAA one hour in advance before penetrating controlled airspace such as TCA's and operations over 12,500 ft. instead of the four hours previously required. The deadline for comments is December 21, 1981.

PLANE SENSE

The FAA has updated its excellent publication "Plane Sense" that was last published in 1976. It deals with subjects such as Buying An Aircraft and describes the paperwork involved such as titles. Other subjects are Aircraft Owner Responsibilities, Aircraft Registration, Airworthiness Certificates, Aircraft Maintenance, Aircraft Maintenance Records, Special Flight Permits, Airworthiness Directives, The Service Difficulty Program, Airworthiness Alerts, Obtaining FAA Publications and Records and FAA District Office.

This publication is described as AC 20-SE Revised 1981 and may be obtained from an FAA office.

NAA MEMBERSHIP BENEFIT

The National Aeronautic Association (of which EAA is a Division) and the National Aviation Club of Washington, DC have recently concluded an agreement under which NAA members, NAA Division, Affiliate and Chapter members from outside the Washington, DC area can use the lunchenfacilities of the Club, when visiting Washington. The National Aviation Club's facilities are located at 1745 Jefferson Davis Highway in Crystal City, close to Washington National Airport. The Club is one subway stop from the Pentagon and ten minutes from Farragut Square in downtown Washington, DC. Lunch is served from 11:30 A.M. to 3:00 P.M. weekdays. Members (as above) wishing to use these facilities are urged to call the Club for reservations at 202/521-1991.

CESSNA AW TO MUSEUM

The EAA Aviation Foundation was honored on October 16 when Gar Williams placed his 1928 Cessna AW on long-term loan to the Paul H. Poberezny Air Museum. On that day, Gar flew the Cessna from his home in Naperville, IL to Rainbow Airport, Franklin, WI from where it was towed by pickup truck a distance of four miles to the Museum.

This immaculately restored plane is the ninth production Cessna aircraft and among the many honors it received this year are the Grand Champion Antique awards at EAA's Oshkosh Fly-In and the AAA National Fly-In at Blakesburg, IA.

Gar's current project is the restoration of a Monocoupe Model 90AL.

BLANCHE NOYES

Blanche Noyes, one of the great names in aviation, died on October 6, 1981. Prominent as a pioneer woman pilot in the 1930's, she went to a lifelong aviation career with the government. Perhaps her most publicized accomplishment was winning — as co-pilot to Louise Thaden — the 1936 Bendix Trophy in a stock Stagger-wing.

A participant in our Aviation Greats programs at Oshkosh in recent years, Blanche Noyes is remembered by EAAers who met here there as a gracious and very knowledgeable lady.
SPRUCE GOOSE GOING UNDER DOME

The Wrather Corporation has announced the start-up of construction of what is described as the world’s largest clear span aluminum dome — to be used as the permanent home of Howard Hughes’ Spruce Goose. Being assembled near the stern of the Queen Mary at Long Beach, CA, the dome has a base diameter of 415 feet and is 130 feet tall. The big flying boat will have to be moved inside during construction so that, in effect, the remainder of the dome will be built around it. The Temcor dome is scheduled for completion early in 1982 and will be opened to the public late in the year.

MUSEUM ACQUISITIONS

The following items have been recently donated to the EAA Air Museum:

**Aircraft** — Donor: Jerry W. Cosley, New York, NY (Stolp Starlet); Tom Wathen, Van Nuys, CA (Piper PT NX4300 - prototype).

**Aircraft Drawings and Plans** — Donors: Hugh Barber, Anchorage, AK; Bob Lumley, Germantown, WI.

**Aircraft Parts** — Donors: E. V. Micari, Palatine, IL; Richard K. Martin, Green Bay, WI.

**Display Materials** — Donors: Ron Pagano, Granby, CT; Jake Gruel, New Berlin, WI; Ron Bolick, Ft. Lauderdale, FL.

**Engine** — Donor: Thomas R. Hegy, Hartford, WI.

**Library Materials** — Donors: R. Cooper, Groton, CT; Gerhard H. Buettner, New Berlin, WI; Dorr Carpenter, Forest, VA; Mel R. Jones, Dousman, WI.

**Miscellaneous** — Donor: Dick Hill, Harvard, IL.

**Propellers** — Donor: Dorr Carpenter, Forest, VA; Clifford Seidler, Glenview, IL.

**Radio Equipment** — Donors: Gabriel Speigel, Baldwinville, NY; Astronautics Corp. of America, Milwaukee, WI; Terra Corporation, Albuquerque, NM.

**Shop Tools and Equipment** — Donors: Jim Shannon/Charles Allen, La Crosse, WI; Dorr Carpenter, Forest, VA.

**Items on Loan** — Gar Williams, Naperville, IL - Cessna AW, NC4725; Thomas R. Hegy, Hartford, WI - 1913 Indian Motorcycle.

EAA crew Bob Smith, Bauken Noack and John Kitscha prepare to dismount the Cessna from the tow truck before moving the plane into the Museum.

(MUSEUM NEEDS)

The following items are needed to carry on the programs of the EAA Aviation Foundation. If you can help, please contact EAA Headquarters, telephone 414/425-4860. Donations to the Museum are tax deductible.

- Any 16 mm films on aviation (for film library)
- Film cleaning machine (good, workable condition)
- T-28A canopy glass or complete canopy, front and rear
- Merlin V-1650 engine parts
- Wing fittings for Curtiss JN4D
- 3 prop hubs (30 spline), Part #5406-AL and 6 Hamilton Standard Ground Adjustable prop blades, Part #3792X 8’ 9” for P&W R-985 Ford Trimotor engines
- N3N wheels and brakes
- P&W R-1830-75, R-1830-94 and R-2000 engines
- Towing tractor for medium to large aircraft
- Small ice-cube maker

MUSEUM DIRECTOR NAMED

Ralph Bufano has been appointed executive director of the EAA Aviation Foundation, as announced by Tom Poberezny, EAA Foundation president.

The appointment is effective December 1. Bufano was director of the Paine Art Center in Oshkosh, WI, a post he held for 12 years. Prior to that he was program director of the Corning Museum of Glass in Corning, New York.

"We are extremely pleased to have a respected and recognized authority in the museum field such as Ralph join our staff. He comes to us at a time when the Foundation is undergoing the most extensive building program in EAA's 30-year history," said Poberezny.

BILLY PARKER

W. D. "Billy" Parker, 80, died in Denver, Colorado after a short illness. Holding pilot license No. 44, Parker was one of the true pioneers in U.S. aviation. He built and flew his first airplane in 1914 and later was a participant in World War I. Parker joined Phillips Petroleum in 1926 and organized its aviation department . . . staying with them until retirement in 1964. Active in many phases of aviation over the years, he is best remembered for his air show appearances in a 1912 Curtiss-type Pusher — which now is on display in the terminal at Tulsa International Airport.
In the summer of 1978 a visitor arrived at the EAA Air Museum and inquired if he could view the Wright 1903 Flyer replica under construction in the Museum shop. Bruce Winder of Christchurch, New Zealand, was on an extended visit to the U.S. to attend an archery convention and to do research on the first Wright airplanes. He stayed at the EAA Air Museum for a few days and worked with Daryl Lenz to gain first-hand knowledge of Wright construction methods. Later he visited Dayton, Ohio and Washington, DC to view the Wright airplanes on display there and to investigate sources for further research.

As a result of this visit Bruce decided to build a Wright replica of his own. He made two additional visits to the U.S. for further research and then constructed a replica of the Wright 1902 glider, completing it in early 1980. Bruce writes, “The enclosed photographs show the 1902 Wright glider I built as a lead-in part of the project. We have made five attempts at flying it, lack of wind being our major problem. Experience so far indicates that the control in pitch is strong and easy to handle. The wing warp control has not really been used in anger, but static forces required to operate this from one extremity to the other is 10 to 12 lbs. Another attempt will be made to fly soon when the weather is more suitable.”

Meanwhile, Bruce decided to go ahead with his plan to build and fly a replica of one of the Wrights' first airplanes. In determining his selection of a particular model, he reasoned as follows:

"The Wright Flyer III of 1905 is the Wrights' first truly practical powered aircraft, but it is a single seater with prone piloting. This decided me against this model. The Model A flown by Wilbur in France in 1908 was the first of the Model A Flyers, and Orville made significant improvements in the batch that followed. The im-
provements in part were introduced gradually and others were fitted retrospectively. These included:
1. Ball race transmission yoke (crankshaft end)
2. Improved skid joint hinge
3. Double surfaced front rudders
4. Socket fittings for some struts
5. Improved propeller shaft supports
6. Frictioned front rudders
7. Different wing section

Subsequent aircraft dispensed with the steamed forward skid member and resorted to an angular joint. This detracts from the appearance of the aircraft. A lot of 'to-ing and fro-ing' went on in dimensions of the later Model A's as well. The interim models are neither here nor there and the Model B represents the start of the decline of the Wright Flyer in my eyes. So this narrowed the choice to Wilbur's 1908 machine or the subsequent batch which was used in Italy, etc. The latter enjoys the fruits of Wilbur's experience in some cases, and is probably the most practical of the Model A's (although this could be disputed). The over-large rudders on the 1908 machine had been corrected, and they had the French Barquand and Marre engines fitted at some stage, the Fort Myer machine excepted. Mine will have a Wilbur control system. Engine choice was dictated by the amount of information available. The engine usually associated with the Model A was not in fact made until after March 1910, and should really be equated with the Model B. The Model A engine has a prominent bulge in the crankcase side cover over the camshaft. One is fitted in the Military Flyer presently on display at the National Air and Space Museum in Washington. Information is very sparse. I have a good set of dimensions on the Barquand and Marre engine since I spent three days measuring the one in Australia.

Bruce's next step was to make formal application for approval of his project.

December 17, 1980 was selected as the official starting date for the project. Bruce writes:

"It will in all probability take us about two years to the flying stage, depending upon the state of my finances. (If things get a bit tight, I can always open a bicycle shop!) It will probably take about a year to test and get things pretty well squared away, and then who knows? The ultimate would be to fly it in Washington, DC and at Le Mans, France. And not forgetting Oshkosh! All this would probably entail some degree of sponsorship."

"I have gone to a lot of trouble to get original data. This means data derived from the people actively involved at the time in this particular story. Books and newspapers are not particularly noted for their accuracy, then or now. The amount of grossly inaccurate data I have found written about the Wright brothers aircraft, engines, etc. is staggering. You could equate it to modern day television.

"On the subject of glue. Yes, I will use epoxy. Orville and Wilbur would think me somewhat of a fool if I resorted to fish glue! However, this is probably the only departure from original material we will use. Who sells cotton racing yacht sailcloth!

"Finally, I must say that the assistance I have received from institutions, particularly in the U.S., has been extremely helpful. This assistance has been given very freely by all and is much appreciated. I would say 'a big thank you, United States of America'. The Ministry of Transport, Civil Aviation Division, here in New Zealand has given me every encouragement and assistance. Once the project is explained and people are convinced that I am serious, interest and assistance is a natural result. Especially I want to acknowledge the help I received from Daryl Lenz, Jim Enking of Beloit, Wisconsin, Rick Young of somewhere in North Carolina, Dr. Robert Meyer of the National Air and Space Museum, and M. Roper, Regional Aircraft Surveyor, New Zealand Ministry of Transport, and many others."

We will be awaiting news of the first flight of this new Wright project, possibly on December 17, 1981. Anyone wishing to write to Bruce can do so at 266 Russley Road, Christchurch 4, New Zealand.

The following correspondence is between Bruce Winder and the office of the Director for Civil Aviation in New Zealand. Of interest is evidence of a vast amount of research on the part of Mr. Winder to accomplish his goal. Of further interest is the list of restrictions pertaining to flight of the Wright Model A. Mr. Winder emphasizes the fine support afforded him by the government officials in his country and the letter from Mr. W. R. Heald bears this out.

27 March 1980

The Director
Civil Aviation Division, M.O.T.
Private Bag, Wellington
New Zealand
Attention A.D.C.A. (Air)

Dear Mr. Heald,

With reference to our recent discussion concerning the construction and operation of a reconstructed Wright Model A Flyer, I respectfully submit the following:

Intention:
The intention is to make and fly a very accurate reconstruction of a circa 1909 Wright Model A Flyer, including the engine and propellers.

Purpose:
This is being done for two reasons. The first is that of continuing research into the Wrights development of aircraft. It is felt that a lot of the information available in the Wrights' writings, diaries, old photographs, etc., is nearly impossible to understand without recourse to the aircraft themselves. Consequently erroneous information is in some cases being accepted as accurate, particularly information printed in the 1930s and 40s. As an example, two recent extensive articles in the "Scientific American" written by people with impressive academic qualifications, on the subject of the Wrights' early aircraft and control systems, have been inaccurate, one of them extensively so.

The only satisfactory way to answer a lot of the questions is to make and fly one of the aircraft.

The second reason is that of an educational nature. The period is now getting firmly into the realms of 'history'. It can do no harm to enable people to obtain some idea of the problems and experiences of this early part of aviation.

Research:
Every endeavour has been made to obtain original material, rather than rely on more accessible data. Over the last two years the following institutions have assisted with this with some enthusiasm:

- National Aerospace Museum, Smithsonian Institution
- Smithsonian Institution
- Silver Hill restoration facility
- Library of Congress
- Franklin Institute
- Wright State University

Library plans, photographs, period magazines
Construction techniques and restoration methods
Diaries, letters, microfilm
Original engine and propeller drawings, including 1909 German factory drawings on the airframe
Photographs, letters, period magazines, English plans, 1901 propeller

VINTAGE AIRPLANE 7
This list is only that of major institutions and does not include individuals and smaller organizations who have been, and continue to be of great assistance.

I include samples of information I have on hand on airframe and engine. Flying qualities and maintenance problems can be gauged from these.

2. Method of making the cloth covering corrected, and including reasons for differences. (wing covering)
4. Confirmation of the method of control re the Wright diaries, rather than hypothetical methods suggested by some sources.
5. The working out of the various modifications to the control systems as per the diaries. These were not understood previously.
6. Reasons for the changing methods of construction of the aircraft through 1903.

Inevitably further questions have been raised which are under study. The structural integrity of this machine is impressive.

The aircraft has been on display at Christchurch International Airport where it was popular with school parties, and the Air Force Museum, Christchurch. It will be on permanent display at the latter when the flying investigations are completed.

The Aircraft
Is of the type first demonstrated in public with considerable effect by Wilbur Wright at Le Mans, France, and by Orville Wright at Fort Myer, Virginia, in 1908. It was subsequently built in large numbers (approx. 60-70) in four countries. It was used in 1909 and 1910 to train pilots at flying schools in France, Italy, Germany, England, and the USA. They were exported to many countries, including Russia and Australia.

Dimensions and Performance
The aircraft is a two seater biplane with a span of 41 feet, and a length of 28 feet. It is powered by a four cylinder water cooled engine of 30 hp driving contra rotating propellers by chains. Usual max rpm was 1480, giving 508 propeller rpm. Take-off is assisted by a catapult and rail, landing is on skids. Maximum speed is in the region of 42 mph and stalling speed approx. 30 mph. Max all up weight of the aircraft is around 1100 lbs.

Flying Qualities
I include a letter written by one of the first pilots to be trained by the Wrights under the military contract, to the Wrights, and their answer.
Also an early account of flying experiences in the
"Flight" magazine. Flying qualities can be gauged from these. This particular aircraft type accomplished notable records at the time, including the first non-stop double crossing of the English Channel (C.S. Rolls).

Construction Materials

It is proposed to follow closely the Wrights' choice of material and to only substitute where it is impossible to obtain the original type. It is felt that substitution would only obscure problems and strengths of the original design. Airframe is of Spruce and Ash, propellers of Spruce reinforced with canvas, engine of appropriate grades of aluminum alloy and cast iron.

Supervision and Qualifications of Persons Involved

Project Leader - B. P. Winder
Licensed Aircraft Maintenance Engineer. Employed by Air New Zealand for last 22 years, substantial portion of which in a supervisory capacity in the defect rectification and overhaul of a wide variety of aircraft.

A beautiful grassy slope was located for flying the glider, but insufficient wind velocity hampered the flight.

Bruce sewing fabric for the glider wings.

Building Facilities

Main site of construction will be at a home workshop at 266 Russley Rd., Christchurch. Final assembly and initial flying location has still to be decided but will involve a large clear flat area and adequate buildings. Wigram Aerodrome springs to mind if permission can be obtained. 266 Russley Rd. is in close proximity to Air New Zealand's Christchurch base.

Flying

It is proposed that this shall be approached on an entirely responsible manner, but avoiding an excess of experience on normal aircraft types, in an effort to duplicate the experiences and problems of the time. Accordingly I shall be undergoing flying training to PPL standard with the Air New Zealand Flying Club, and further, to modify the 1902 Glider to the rather unconventional 1909 control systems to gain experience on the type as was done by C. S. Rolls in 1909. When adequate experience has been gained, flying will commence with the Model A Flyer. This will be done in a conservative manner with short straight flights initially, gradually extending the flight envelope, until the fullest use can be made of the aircraft. This type of approach is the same as the Wrights used and is as important as the use of the original type material. It is also similar to the method used to learn to fly powered hang gliders in Australia, and interestingly, as was used by early flying schools run by Glen Curtiss for the Army and Navy.

Use of Aircraft

The type of flying envisaged is as follows:
1. Test flying. Straight flights progressing to circles and figure 8s within the boundaries of the flying field.
2. Simple pre-arranged cross country flights over easy terrain. An example would be a flight from Christchurch to Ashburton. This is 50 miles of flat farmland affording emergency landing areas at any point.
3. Exhibition flights at suitable venues.

(Continued on Page 12)
A very unique airplane indeed . . . Aeronca 7BC . . . N1390E . . . 85 horsepower . . . no self-starter . . . $10,000 IFR panel! The master craftsman of this gem is William "Bill" Pancake (EAA 118244), Keyser, West Virginia. This is Bill's first award at Oshkosh, however, he has been a part of three other award winners. In 1977, he completely restored a 1949 Aeronca Super Chief for Dave Long of Keyser, West Virginia who won "best of type" at Oshkosh '79. Last year, Bill overhauled the engine in Jim Thompson's Aeronca Sedan that promptly won Grand Champion Classic at Oshkosh '80! This year, Bill was the LA. that overlooked the restoration of Harold Armstrong's beautiful Waco 10 that won Reserve Grand Champion Antique at Oshkosh '81!

This is the fourth award won by Bill's Aeronca during 1981 including the Custom Classic Award at the 1981 Burlington, North Carolina fly-in of Antique/Classic Chapter 3.

Beginning his flight training at age 16, Bill earned his Private license at 17 and now has a commercial license, instrument rating, CFI and A&P with I.A. His "regular" job is an instrument technician at Westvaco Corporation's Paper Mill in Luke, Maryland. The family assistants at Pancake Aviation are his wife, Sandra and daughter, Stacey. The top quality work conducted by this group without a great deal of fanfare is pretty well personified by the quiet, soft-spoken aura of Bill himself.

He carefully explains that the IFR panel kind of grew over the years as he sought to improve the Champ from its basic around-the-patch performance. Originally purchased for $500 in 1967, the aircraft was restored using Irish linen and butyrate dope. The IFR panel was completed in 1980, the fourth consecutive installation in ten years that would satisfy the demands of owner, Bill Pancake. To make room for the installation, the Champion nose tank was removed and two 13-gallon wing tanks were installed. To provide adequate power to operate the system, Bill designed an engine-driven 35 amp alternator for the 85 hp Continental (ala Lycoming) and was granted a Supplemental Type Certificate after the usual amount of paperwork, etc. The electrical system works very well and to date has given no trouble. (Still seems strange to watch the man "prop" his airplane with all those goodies on board!)

The instrument panel consists of an EDO-AIRE Radio, 720 Comm. and 200 Nav, NARCO NAV 122 with glide slope and marker lights, NARCO ADF-141, transponder and altitude encoder, KEA-127, DAVTRON M-655-1, density altitude, pressure altitude, outside air temperature, volt meter and NARCO DME 195. The aircraft is IFR certified for both day and night operation.

While doing the beautiful paint job on the Champ, Bill kept thinking of a way to properly trim the basic white and blue. Why not put his "Ham" radio call letters on the side of the wheel pants? Presto! The results are most pleasing and this writer admits to never having seen anything like it. "WA8SPK" is neatly painted across the side of the wheel pants for everyone to see. Neat!

Besides converting the engine installation to a C85-8F, other modifications include the following:
1. Engine intake and exhaust ports and cylinder heads polished to mirror finish
2. Engine driven vacuum pump - EDO-AIRE
3. Oil separator on breather to keep under side of fuselage clean
Small battery is firewall mounted on Bill's plane. Note acid trap on battery manifold system. Also mounted on firewall is oil separator for crankcase breather.

Photo of custom panel shows radio stack on right side, IFR flight instruments in center, engine gauges on left side. Note selector switch on extreme left for individual cylinder CHT and EGT test. Top of center panel contains DAVTRON and DME digital readouts.

Unique display of "Ham Radio" call sign on Bill Pancake's Champ wheel pants.

Meet "Mr. Custom Builder". Bill Pancake stands in front of his beautiful IFR Aeronca Champion at Oshkosh '81. The plane represents 14 years of continual upgrading.

4. Small lightweight manifold vented battery
5. Hanlon & Wilson Mufflers with extended pipes from cowl
6. Fresh cabin air vent which converts to cabin heater in winter
7. MA3SPA Carburetor with mixture control
8. Bendix Mags S4LN-21 and shielded ignition system
9. Hobbs Hour Meter
10. Low oil pressure light on instrument panel
11. Map light upper right corner of windshield
12. Fuel gauge light upper right over door
13. Landing light outer left wing
14. NAV Lights
15. Strobe light on Belly
16. Instrument post lights
17. Master and light switches lower left side of panel
18. Circuit breakers under right side of instrument panel
19. Audio Panel airmarc isolation amplifier - Model 108 with 6" overhead speaker
20. Telex Dynamic Microphone - Model 66T and David Clark Headset H10-30
21. Sound proofing in headliner, side panels, door and floor (measured sound level - 92 db at take-off and 88 db at cruising)
22. Shock mounted tail wheel springs with 8" Maule tail wheel
23. Modified long stroke oleo
24. Extra long brass oleo bushing with teflon and "O" ring seal at bottom

(Continued on Next Page)
25. All landing gear fittings are fitted with bushing and grease fitting for longer wear.
26. Fiber glass wheel pants.
27. Grease and dust seal around wheel pant mounting spindle.
29. Extra fairlead on axle strut for extended cable life.

Bill uses the Champ to practice instrument approaches and admits to having flown actual instruments on numerous occasions. The controllers have the biggest problem...accepting a 7BC Champion for an instrument landing or departure! (Somehow it doesn’t seem "copasetic").

Yes, a very unique airplane indeed, built up and flown by a very unique person...Bill Pancake.

A WRIGHT FLYER IN NEW ZEALAND...

Conclusion

Would you please advise what restrictions you may wish to apply in relation to the flying of the aircraft. While a perfectly viable machine, it is felt you may wish to restrict the areas in which the aircraft should be flown. May I suggest a regime similar to that used by powered hang gliders overseas.

Yours faithfully,
B. P. Winder

Mr. B. P. Winder
266 Russley Road
Christchurch 4
New Zealand

Dear Sir:

WRIGHT MODEL A FLYER REPLICA

The proposal to build and fly a replica of the Wright Model A Flyer as presented in your letter of 27 March 1980 is viewed sympathetically provided it is responsibly controlled and requires minimal CAD involvement.

The project is obviously not eligible for issue of a Certificate of Airworthiness, and it does not fall within the normal ambit of amateur aircraft construction and operation under the Permit to Fly provisions of C.A. Regulation 161A.

Instead it is proposed that the aircraft should be presented for issue of a special flight permit under the provisions of C.A. Regulation 19(2) to enable the aircraft to be flown for the purposes of experiment and evaluation.

Your proposal is thus agreed in principle. Since the team named as responsible for the construction supervision is comprised of experienced knowledgeable aircraft engineers, Airworthiness Branch involvement will be minimal and we propose to accept your own certification that the completed replica complies with the Wright design or good aeronautical practice.

Regarding operational restrictions on the flight of the aircraft, having regard to the lack of adequate performance and control by today’s standards, it is intended to include the following conditions in the proposed special flight permit:

1. The pilot shall hold at least a Private Pilot License.
2. The aircraft shall not be flown over any concourse of people or over any populous area.
3. The aircraft shall be flown only by day and in accordance with the visual flight rules.
4. All flights shall be conducted clear of controlled airspace.
5. All flights shall be restricted to areas approved for the purpose by the local Regional General Aviation Inspector and selected as free of obstructions.
6. Flight will not be permitted in windspeeds exceeding 8 knots.

Dispensation from C.A. Regulation 38(2)(b) will be required to permit flight below 500 ft. AGL. This will necessitate approval under the provisions of Regulation 38(3)(b).

Dispensation will also be required from C.A. Regulation 91(8) to permit turns below 500 ft. AGL after take-off.

I trust the foregoing adequately answers your immediate queries and wish you luck with the project.

Yours faithfully,
W. R. Heald
for Director of Civil Aviation
MYSTERY PLANE

This large, eight passenger, all metal airplane was built in 1929 in San Francisco, CA and was to have been mass-produced that year. Its identity will appear in the February issue of The VINTAGE AIRPLANE.

The Mystery Plane in the October 1981 issue was an ANDIZ Model 2-60. Bob Taylor was the first to correctly identify the plane. His letter appears below.

Three others correctly identified the ANDIZ: Charles Hayes, Park Forest, IL, Doug Rounds of Zebulon, GA and Randy Barnes, Peoria, IL.

Dear Gene:

The Mystery airplane on page 14 of the October issue of The VINTAGE AIRPLANE is an ANDIZ Model 2-60 powered with an Anzani 60 hp engine. It was built by the Andiz Aircraft Corporation of Los Angeles, California around 1928. It was designed by W. H. Anderson. Details on this were published in "Aircraft of the Roaring 20s" which we published some years ago. This is now being reprinted by Arno Press of New York in a bound form along with another AAA Specialty publication "Classic Airplanes of the 30s" and features data from the great old "Aero Digest".

In my opinion a lot of fine airplanes have been built over the years that never had a square shake from the aviation press and it's good to see that they surface now and then in various publications.

It was great to see Gar Williams and his Cessna AW and Jim Jenkins and his Vagabond featured in your October cover as they are both fine antiquers and their airplanes are "cream of the crop".

Yours truly,
Bob Taylor (EAA 839, A/C 330)
President, Antique Airplane Assn.
Rt. 2, Box 172
Antique Airfield
Ottumwa, IA 52501

BOOK REVIEW — AVIATRIX


The mid-1920's was an exciting time for those in aviation. To capture the big $25,000 prize offered by Raymond Orteig for the first to complete a flight from New York to Paris was the dream of every pilot. Roosevelt Field on Long Island became the center for the aviation world as those few pilots who could obtain backing prepared their aircraft for the attempt. With Lindbergh's successful flight in May, 1927, and those that followed, the American public's awareness of flying was aroused and every new record flight became front page news.

So when a 17-year-old girl pilot flew under New York's four East River bridges on a single solo flight on October 22, 1928, she attained instant fame. Elinor Smith had soloed in a Waco at the age of 15 and became the youngest licensed pilot in the United States when Orville Wright signed her F.A.I. certificate on August 14, 1928. But Elinor had worked diligently to pile up flying time and honed her flying skills toward her personal goal of becoming a professional pilot — an "aviatrix" (woman pilot).

The "bridge" flight had been made to redeem a wager made by one of Elinor's reporter friends. It was soon apparent that this flight was more than a lucky stunt, for this young lady was soon setting flight records in quick succession. In August, 1928 she had set a new world's altitude record for light planes in a Waco. In January, 1929 she set a solo endurance record for women in a Bird biplane — 13 hours 16 minutes. In April of the same year she raised that figure to 26½ hours to set another record in a Bellanca Pacemaker. And there were air shows and demonstration flights which added to her experience. In May, 1930 she passed the tests for the coveted Transport license. Eventually she had flown 158 different models of aircraft. She became Aviation Editor for the popular Liberty magazine and NBC Radio's aviation commentator.

Elinor knew all of the famous aviation personalities of the time — Lindbergh, Bert Acosta, Casey Jones, Al Williams, Clarence Chamberlin, Eddie Stinson. She was friends with Amelia Earhart (she has harsh words for G. P. Putnam, Amelia's husband — not surprising) and other woman pilots of the time — Bobbie Trout, Pancho Barnes, Viola Gentry, Louise Thaden, Gladys O'Donnell. Lady Mary Heath was a good friend, much admired. The crowning achievement for Elinor came in October, 1930 when she was named "Best Woman Pilot" of the year by the American Society for the Promotion of Aviation, a prestigious group made up of top names in the aviation industry. To add to her elation, her idol and friend Jimmy Doolittle was named "Best Aviator" at the same time.

Elinor Smith has brought an honest, straightforward account of the hazards and glories of this period in aviation history in this book. Her free-flowing, natural style of writing makes this a book you will want to read at one sitting. It is highly recommended for its clear insight into the personalities and events of those exciting times.

— George Hardie, Jr., EAA Historian
The Ramsey “Flying Bathtub” is a lightly powered ship which has been designed with the sensible intention of creating a moderately fast trainer which can also be used for cross-country work where the owner’s pleasure rather than speed is the primary consideration. Inexpensive to build, simple in its general design and structural details, it has certain definite characteristics which will appeal to one who appreciates real performance.

Perhaps the outstanding single characteristic of the “Bathtub” is the way it handles in the air. Test flown by one of the best known Northwest pilots, it proved to be easy to take off, simple to handle in the air, and a positive joy to land. Veteran pilots who have since flown this job agree that in spite of its moderate horsepower and general light weight, the bathtub behaves and flies exactly like a large and powerful ship. This is of the utmost significance to amateurs, who are apt to find in the average lightplane a tricky behavior which calls for more experience than they are likely to have. The pilot who test flew this job agrees that it is safe and easy to fly; that it will land itself, and that it has no apparent vices.

Even a beginner can pull the “Bathtub” off the ground with a run of 100 feet or less. (By beginner I mean a student pilot and NOT any person with no training at all). Once in the air, its extreme ease of handling, remarkable stability and responsiveness to controls make it an ideal ship for sport purposes. With the unusually low landing speed of 20 mph, many of the difficulties presented by this operation are automatically eliminated. The nature of the design permits exceptional vision, and while this feature is important at any time, it becomes paramount in landing.

The “Flying Bathtub” is definitely not in the “Flying Post Card” class, but with the Aeronca motor may be said to have the performance and other qualities usually found in larger ships. Although its performance is best when used as a single-seater, it carries a passenger with little loss in efficiency. Its low weight makes it possible for one person to move it into and out of the hangar with ease, and the simple little motor is not only extremely accessible, but also sufficiently rugged to stand lots of work without constant attention.

**Fuselage and Outrigger**

The fuselage, tail surfaces and landing gear are built of chromemolybdenum seamless steel tubing of conventional braced type. The wing is of wood and fabric construction. All plate type fittings are made from .049 chromemolybdenum steel, and only aircraft steel bolts are advisable.

In starting to build the fuselage it is necessary to procure a flat surface, preferably a table, large enough to lay out all the measurements. All measurements, unless otherwise specified, are from center to center of the tubing. Care should be taken to have these absolutely accurate.

After laying out the outline from the centers, make allowance for one-half the tube’s diameter, and drive, straight in, 10 penny nails between which the tubing will be placed and held true until spotted together with a welding torch.

Care must be taken in welding chromemolybdenum tubing, as insufficient heat will make a very nice looking weld, but upon destroying the weld, it will be found that the filler is only pasted on. Too much heat will destroy the metal and weaken the joint.

Having the jig ready for laying in the tubing, curve the members to be used for longerons as nearly to shape as possible to form the top and bottom lines of the fuselage. By curving the tubing, which can easily be done cold (do not heat), there will be no sharp bends at the joints and the work will be symmetrical. Place the longerons in the jig, then cut and lay in all brace members. Then spot weld and remove the assembly. Cutting off the nail heads will assist in removing the work.

As both sides of the fuselage are identical, both may be built...
**SPECIFICATIONS OF THE RAMSEY "FLYING BATHTUB"**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Speed</td>
<td>65 to 70 mph</td>
</tr>
<tr>
<td>Cruising Speed</td>
<td>60 to 65 mph</td>
</tr>
<tr>
<td>Landing Speed</td>
<td>20 to 25 mph</td>
</tr>
<tr>
<td>Initial Climb (1 person)</td>
<td>400 fps</td>
</tr>
<tr>
<td>Initial Climb (2 persons)</td>
<td>300 fps</td>
</tr>
<tr>
<td>Gasoline Capacity</td>
<td>5 gals.</td>
</tr>
<tr>
<td>Gasoline Consumption</td>
<td>2 gals. an hour at Cruising Speed</td>
</tr>
<tr>
<td>Motor, Aeronca, 2-cyl. horizontal opposed air cooled</td>
<td>30 hp at 2500 rpm</td>
</tr>
<tr>
<td>Span</td>
<td>32 ft.</td>
</tr>
<tr>
<td>Chord</td>
<td>5 ft. 3 in.</td>
</tr>
<tr>
<td>Wing Area</td>
<td>168 sq. ft.</td>
</tr>
<tr>
<td>Weight (with gas and oil)</td>
<td>400 lbs.</td>
</tr>
<tr>
<td>Useful Load</td>
<td>300 lbs.</td>
</tr>
</tbody>
</table>

**THE RAMSEY TWO-SEATER LIGHTPLANE LOSES NOTHING IN THIS STRIKING CONTRAST WITH A LARGE PLANE OF SIMILAR GENERAL LINES. SOUND DESIGN AND SAFETY ARE CHARACTERISTIC FEATURES OF THE TWO SHIPS.**
in the same jig. Now connect the two sides with the main cross members, both top and bottom, being sure to have them at the proper joints and both sides the same distances. Square the assembly by measuring opposite diagonal corners and getting both distances the same. Then put in diagonal braces. If proper care is taken the fuselage will be square.

Now fasten the fuselage solidly to the floor and proceed with the outrigger. This should be kept as nearly true as possible, but being wire braced, minor variations are readily corrected. Brace the outrigger with No. 10 hard aircraft wire.

The landing gear is built entirely of 3/8 in. by 1 in. square .049 tubing with the exception of the axles, which are 1 in. with 1/8 in. walls round tubing. This gear is of very simple construction, and the plans are so clear that no one will have any trouble with this detail.

The tail skid, which is shown in minute detail in the drawings, contains a 1 in. by 8 in. coil spring having a pressure capacity of 80 lbs. In constructing, first build up both ends, put the spring in the upper end, compress the strut, put in the bottom bushing, and weld as shown in the plans. The strut should be left compressed until cool so as not to draw the temper from the spring.

In the next installment we will take up the construction of the wings. These are of the conventional spruce and fabric construc-

A bird's-eye view of the "Flying Bathtub", with the bird looking it over from the hangar roof.
ition, so if you are able to go ahead with the fuselage, the rest will be easy. If the welding is too much for your workshop, it will pay you to call in an experienced welder. A good man should be able to do the whole job for you in two days; and you will be more confident when you take the air if you know that a workmanlike job of welding has been done.

Just a word of warning before you start building. If you haven’t the price of an Aeronca motor, or one of the other motors especially designed for lightplanes, such as the Continental A-40 or the Bristol Cherub, build some other plane. Converted auto or motorcycle engines cannot be used.

Building the Wings

The wings are of the conventional spruce and fabric construction, so if you have been able to complete the welded steel fuselage, the rest should be easy.

Only select spruce, free from knots and pitch pockets, should be used for the wings. It should have 11 to 12 annular rings to the inch and should be straight grained. There is absolutely no substitute for aircraft spruce in this work, and one is foolish to attempt to cut the cost a few dollars by using cheaper wood. When in the air the weight of yourself, your plane, and your passenger are carried by the wing, and the best material is none too good.

If the wood for spars is procured at your local lumber yard it is advisable to have it cut too wide and then let it season in a moderately warm and shady place, so that in the event of slight warpage it can be cut and made true. Wood secured from an aircraft lumber company is usually thoroughly seasoned before being cut and sold.

The wing is double wire braced with No. 11 half hard wire (market wire). The top and bottom wires pass through the edge of the spars and cross behind the compression struts.

This three-quarter view shows the unique fuselage design from which the "Flying Bathtub" derived its name. The large wing area evident here reveals why this ship can come in and land at 20 mph.
SIMPLE CONSTRUCTION AND DETAILED PLANS MAKE "BATHTUB" EASY TO BUILD
Dear Gene:

As a steady and enthusiastic reader of The VINTAGE AIRPLANE, and as one of the editors of WORLD WAR I AEROPLANES about to send our twentieth anniversary issue to press, I wanted to take a few minutes to put down on paper a couple of thoughts that you and I have shared from time to time over the telephone.

We began twenty years ago this month with a series of dittoed sheets listing all the projects we knew of that involved building or restoring WWI aeroplanes, and alongside, listing all the wants and disposals that the builders wanted printed. For several years we included a return postcard with each mailing for the convenience of the builders to register their W&D.

Over a period of time (during which I had begun my own WWI reproduction project, a Bristol Scout with a real 80 hp LeRhone engine) we began to include notes about the projects, bits and pieces about museums and their collections, aviation books and aviation films. These sections became regular departments, and most of them now out of control (we regularly print some six or more pages of book reviews in each issue of the journal). A recent addition is a section on drawings currently available for builders and restorers . . . and scale model builders, for whom we have a good deal of special information as well. Many factory drawings have been preserved either in full or in part, and builders have drawn and redrawn from these and other sources of information to produce plans for their own projects; currently we have about seven double-column pages of such drawings.

Members and members-to-be write and telephone every day from all over the world, literally, to find information about some particular aircraft, engine, color scheme, carburetor, tire, rudder hinge, or to get pieces found in the attic appraised and put on the market. A good many of these people have interests (and material) in later periods as well. Although we have expanded backwards to include information about pre-WWI aeroplanes, we have held the line at Post-WWI: if we began to list projects, plans, and W&D for aircraft of the Twenties and the Classic Era, we'd be swamped. There is at present no organized source for these people. The EAA provides a great deal of technical information for the builder and a great deal on current homebuilt projects of all kinds, with some brief coverage of restoration projects of aircraft of all periods, but no way of providing the kinds of assistance listed above; in fact, many of our inquiries come through EAA referrals, which is just as it should be.

What is badly needed: a single coordinated source of information on aircraft, engines, parts, suppliers, drawings, etc., of the post-WWI periods. Maybe a couple: the Classic Period, the WWII period, the post-WWII period, etc. There should be an effort to build up lists of owners of types, of engines, of drawings, of parts; of such aircraft in museums; of restoration or repair techniques and materials especially applicable to one aircraft or another; of possible substituted items where originals are no longer available; of information on part-scale reproduction where appropriate (like the Replica Fighter Association). Such lists and notices and articles and photographs could be printed from time to time in a journal, or made available in catalog-with-supplement form. It could be collected by an Editor or two or three together; or it could be farmed out to Type Clubs, if the Type Club had some structure and responsibility for service, and some suggested format for collection of data and its publication.

Sincerely yours,
Leo Opdyke
WORLD WAR I AEROPLANES
15 Crescent Road
Poughkeepsie, NY 12601

Editor's Note: We welcome readers' comments regarding Leo's suggestions. The following photos appear through the courtesy of WORLD WAR I AEROPLANE.


Reproduction by Ken Ciancette of a 1917 Fokker Triplane at the Owls Head Transportation Museum, Owls Head, Maine 04854.

Deperdussin (Monocoque) reproduction. Jean Salis collection, La Ferte Alais, Paris, France. Engine is a modern flat four.

20 DECEMBER 1981
MEMBERS’ PROJECTS

This immaculate 1943 Fairchild PT-26, N63568, S/N T43-4499 is owned by Dwaine E. Duis (EAA 15857, A/C 3591) of Pleasant Hill, CA. It is painted in authentic USAAF colors and has a super chrome-like finish. Dwaine refers to the plane as “Lazarus” (resurrected from the dead) as it was totally apart when he purchased it.

The Fairchild was restored by Vincent F. Bohn (EAA 73507) of Concord, CA. The center section was completely rebuilt and the remainder of the plane is original except for two small cowling pieces.

First flight since restoration was on 9/24/81 and the passenger was Hank Silvera, the AI who licensed the plane.

Dear Gene:

Am enclosing a photo of my 1952 135 hp Piper Pacer, N2222A, S/N 20-914. It is factory original, never been cut, butchered, modified or rained on. The grade A still tests good and it "shines".

I’m the second owner and the real credit for the excellent condition has to go to Max Walton of Wichita, KS. He did the maintenance as needed and I think, kept many wax manufacturers in business.

Max is a real craftsman in his own right. He rebuilt the Travel Air 2000 that is in the Shannon Museum and is currently rebuilding another 2000.

Enough rambling for now. I enjoy "our" magazine.

Sincerely,

Roy Oberg
(EAA 5000, A/C 591)
8040 Shadybrook S.E.
Ada, MI 49301

P.S. Bob Sodman and I just finished our Thorp T-18 and have 15 hours on it.

This beautiful 1941 Waco UPF-7, N32060, S/N 5692 is owned by Jack and Pauline Winthrop (EAA 19942, A/C 221) of Allen, Texas. This photo was taken in 1977 shortly after Joe Johnson had finished the Stits polyurethane paint job.

The engine has 1100 hours SMOH and Jack plans to major the Continental this winter.

Jack is a retired Braniff captain and is currently Vice President of the Antique/Classic Division. Pauline is also a pilot and flies the Waco, as does daughter Elizabeth who is flying the red and cream biplane in this photo.

CALENDAR OF EVENTS

MARCH 14-20 — LAKELAND, FLORIDA — 1982 Sun ‘N Fun EAA Fly-In.
JULY 31 - AUGUST 7 — OSHKOSH, WISCONSIN — 30th Annual EAA Fly-In Convention. It’s never too early to start making plans for the world’s GREATEST AVIATION EVENT.
WORLD WAR I AEROPLANES, INC. is a tax-exempt non-profit organization founded in 1961 to bring together builders, restorers, scale-modellers, and historians of pre-1919 aeroplanes; and to make available to them information about parts, drawings, whole aircraft, and all the books and techniques which would be of use to them.

We work closely with museums, libraries, collectors, designers, historians, supply-houses, builders, pilots, and other aviation organizations and journals. We are the only organization to deal solely with the design and construction of these machines, WWI and pre-WWI as well.

To these ends we publish our journal, WORLD WAR I AEROPLANES, five times a year for some 800 members throughout the world, and conduct a substantial information service by mail and telephone; we maintain an up-to-date file of both original and reproduction aircraft all over the world (there are some 700 of the former and some 900 of the latter!).

The organization has operated from the beginning on voluntary contributions for printing, postage, telephoning, photography, fees; and we sell back issues, xerox copies of early aircraft and engine manuals and working drawings, and appropriate advertising. Sample issue $3.

15 Crescent Rd., Poughkeepsie, N.Y. 12601

FLYING AND GLIDER MANUALS
1929, 1930, 1931
1932, 1933
2.50 ea.
SEND CHECK OR MONEY ORDER TO:
EAA Air Museum Foundation, Inc.
Box 469 Hales Corners, WI 53130
Allow 4-6 Weeks For Delivery
Wisconsin Residents Include 4% Sales Tax

THE VINTAGE AIRPLANE ADVERTISING RATES

<table>
<thead>
<tr>
<th>DISPLAY RATES:</th>
<th>1 Issue</th>
<th>3 Issues</th>
<th>12 Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Page</td>
<td>$150.00</td>
<td>$145.00</td>
<td>$125.00</td>
</tr>
<tr>
<td>1/2 Page</td>
<td>90.00</td>
<td>85.00</td>
<td>80.00</td>
</tr>
<tr>
<td>1/3 Page</td>
<td>80.00</td>
<td>75.00</td>
<td>70.00</td>
</tr>
<tr>
<td>1/4 Page</td>
<td>60.00</td>
<td>55.00</td>
<td>50.00</td>
</tr>
<tr>
<td>1/6 Page</td>
<td>50.00</td>
<td>45.00</td>
<td>40.00</td>
</tr>
<tr>
<td>1/8 Page</td>
<td>40.00</td>
<td>35.00</td>
<td>30.00</td>
</tr>
</tbody>
</table>

Rates are for black and white camera-ready ads. Layout Work: $22.00 per hour.
CLASSIFIED DISPLAY RATE: Regular type per word 40c. Bold Face Type: per word 45c. ALL CAPS: per word $0.60. (Rate covers one insertion one issue.)
COMMISSIONS: Non-Commissionable.

Jacket: Unlined Poplin jacket, features knit waist and cuffs. The gold and white braid trim on a Tan body emphasizes the colors proudly displayed in the Antique/Classic logo.
Sizes: X-small thru X-large
$28.95 ppd

Cap: Complete the look in this gold mesh hat with contrasting blue bill, trimmed with a gold braid. Your logo visibly displayed, makes this adjustable cap a must.
Sizes: M & L (adjustable rear band)
$6.25 ppd

WEAR the IMAGE in an Antique/Classic jacket and cap

Send Check To:
EAA ANTIQUE/CLASSIC DIVISION, INC.
P.O. Box 229 Hales Corners, WI 53130
Allow 4-6 Weeks For Delivery
Wisconsin Residents Include 4% Sales Tax

22 DECEMBER 1981
CLASSIFIED ADS

ACRO SPORT — Single place biplane capable of unlimited aerobatics. 23 sheets of clear, easy to follow plans, includes nearly 100 isometrical drawings, photos and exploded views. Complete parts and materials list. Full size wing drawings. Plans plus 88 page Builder’s Manual — $60.00. Info Pack — $4.00. Super Acro Sport Wing Drawing — $15.00. Send check or money order to: ACRO SPORT, INC., Box 462, Hales Corners, WI 53130. 414/425-4860.

ACRO II — The new 2-place aerobatic trainer and sport biplane. 20 pages of easy to follow, detailed plans. Complete with isometric drawings, photos, exploded views. Plans — $85.00. Info Pack — $4.00. Send check or money order to: ACRO SPORT, INC., P.O. Box 462, Hales Corners, WI 53130. 414/425-4860.

POBER PIXIE — VW powered parasol — unlimited in low cost pleasure flying. Big, roomy cockpit for the over six foot pilot. VW power insures hard to beat 3½ gph at cruise setting. 15 large instruction sheets. Plans — $45.00. Info Pack — $4.00. Send check or money order to: ACRO SPORT, INC., Box 462, Hales Corners, WI 53130. 414/425-4860.


WANTED: For my Curtiss Wright Junior restoration, parts or pieces, any condition. Contact Gene Chase at EAA Headquarters, P.O. Box 229, Hales Corners, WI 53130. 414/425-4860 or 414/425-8851.

DRESS IT UP WITH A NEW INTERIOR!

All Items READY-MADE for Easy DO-IT-YOURSELF INSTALLATION

Seat Upholstery — Wall Panels Headliners — Carpets — etc.

Cetese Envelopes and Dopes

—Send for FREE Catalog—

Fabric Selection Guide ~$3.00

Airtex Products, Inc.
259 Lower Morrisville Rd.
Fallsington, Pa. 19072
(215) 295-4115

AVAILABLE BACK ISSUES

1973 — March through December
1974 — All Are Available
1975 — July/August, September/October, November/December
1976 — February through May, August through December
1977 — January through September, November through December
1978 — January, March, May, August, October, November
1979 — February through December
1980 — January, March through July, September through December
1981 — January, March through November

Back issues are available from Headquarters for $1.25 each, postpaid, except the July 1977 (Lindbergh Commemorative) issue, which is $1.50 postpaid.

MEMBERSHIP INFORMATION

EAA
— Membership in the Experimental Aircraft Association, Inc. is $25.00 for one year, $48.00 for 2 years and $69.00 for 3 years. All include 12 issues of Sport Aviation per year. Junior Membership (under 19 years of age) is available at $15.00 annually. Family Membership is available for an additional $10.00 annually.

EAA Member — $14.00. Includes one year membership in EAA Antique-Classic Division, 12 monthly issues of The Vintage Airplane and membership card. Applicant must be a current EAA member and must give EAA membership number.

Non-EAA Member — $24.00. Includes one year membership in the EAA Antique-Classic Division, 12 monthly issues of The Vintage Airplane, one year membership in the EAA and separate membership cards. Sport Aviation not included.

IAC
— Membership in the International Aerobatic Club, Inc. is $16.00 annually which includes 12 issues of Sport Aerobatics. All IAC members are required to be members of EAA.

WARBIRDS
— Membership in the Warbirds of America, Inc. is $20.00 per year, which includes a subscription to Warbirds Newsletter. Warbird members are required to be members of EAA.

ULTRALIGHT
— Membership in the EAA Ultralight Assn. is $25.00 per year which includes the Ultralight publication ($15.00 additional for Sport Aviation magazine). For current EAA members only, $15.00, which includes Ultralight publication.

MAKE CHECKS PAYABLE TO EAA OR THE DIVISION IN WHICH MEMBERSHIP IS DESIRED.
ADDRESS ALL LETTERS TO EAA OR THE PARTICULAR DIVISION AT THE FOLLOWING ADDRESS:
P.O. BOX 229 — HALES CORNERS, WI 53130 — PHONE (414) 425-4860
OFFICE HOURS: 8:30 — 5:00 MONDAY-FRIDAY