

MAXFAX

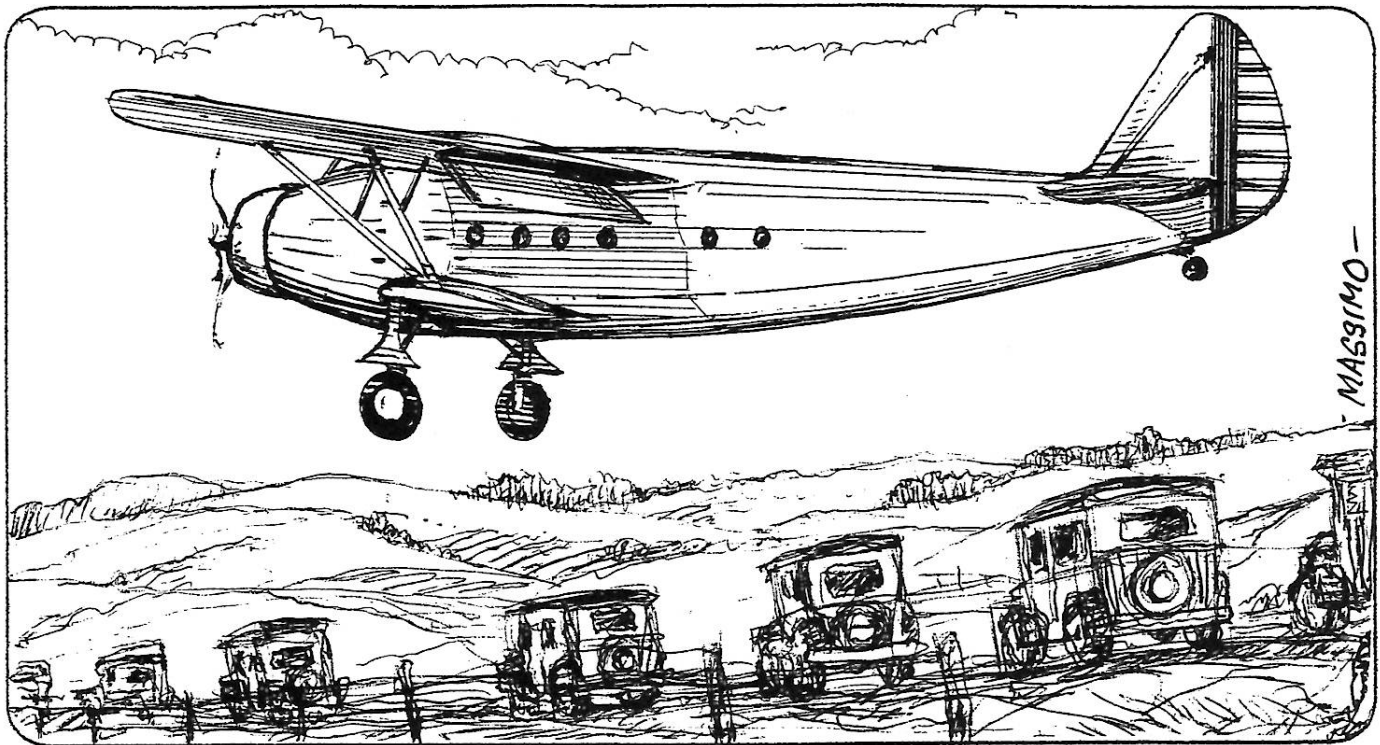


Journal of the D. C. Maxecuters

... home of the dreaded POTOMAC PURSUIT SQUADRON of the Flying Aces Club

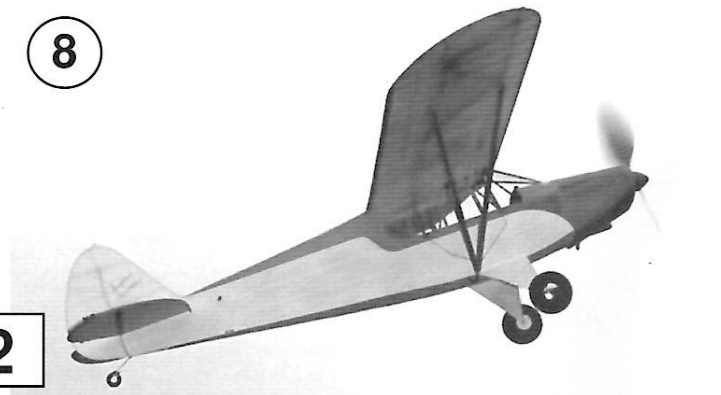
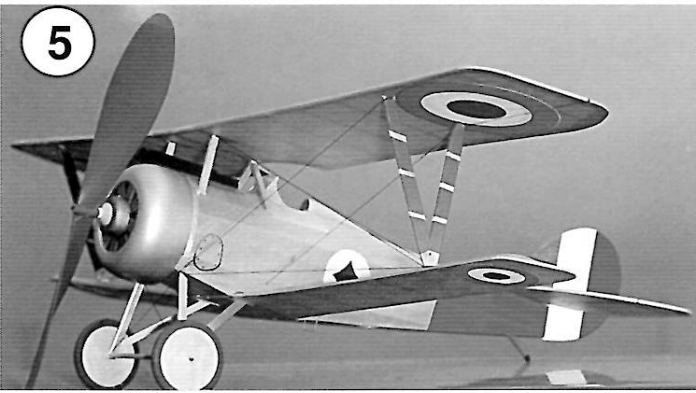
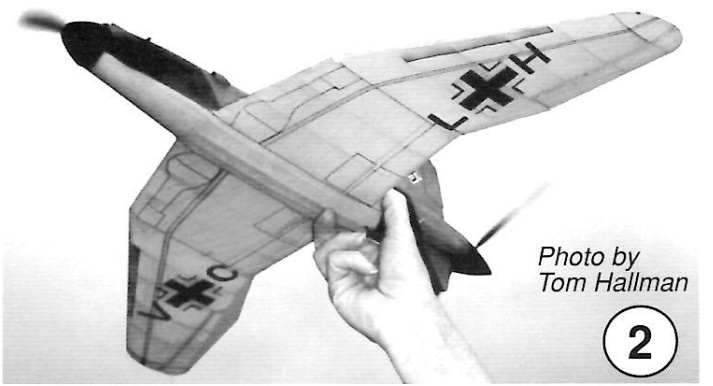
Editor: Allan Schanzle

January/February 2003



COMING ATTRACTIONS

- JAN. 11, 2003 THE NATIONAL BUILDING MUSEUM (Saturday)
10:00 AM - 1:00 PM, Girl Scout Delta Dart program
2:15 PM - 5:00 PM, Cub Scout Delta dart program
- JAN. 12, 2003 MECA COLLECTO REGION 11, Falls Church, Virginia (Sunday)
NOON - 5:00 PM. See announcement in NOV/DEC MAXFAX
- JAN. 19, 2003 NATIONAL BUILDING MUSEUM FLYING (Sunday)
10:00 AM - 4:30 PM
- FEB. 22, 2003 NATIONAL BUILDING MUSEUM (Saturday)
10:00 AM - 1:00 PM Family Delta Dart program
2:15 PM - 5:00 PM Cub Scout Delta Dart program
- MAR. 8, 2003 NATIONAL BUILDING MUSEUM Saturday
2:15 PM - 5:00 PM, Cub Scout Delta Dart program
- MAR. 30, 2003 MECA COLLECTO REGION 11, Falls Church, Virginia (Sunday)
NOON - 5:00 PM. See announcement in NOV/DEC MAXFAX
- APR. 6, 2003 NATIONAL BUILDING MUSEUM FLYING (Sunday)
10:00 AM - 4:30 PM
- (NOTE: This date replaces the March 23 date in the Nov/Dec MaxFax)



AN ISSUE DEVOTED TO THE FAIRCHILD MODEL 95 (aka XC-31)

Allan Schanzle

As noted in the last issue, I was recently given a book authored by Kent Michell titled "FAIRCHILD AIRCRAFT 1926-1987". It includes 3-views and photos of just about every aircraft built by the Fairchild Corporation. Two looked interesting, and to the best of my knowledge, they both fell into my favorite category of seldom, or never, having been modeled for free flight scale. The Fairchild 21, a little known trainer designed in 1928, appeared in the previous MAX-FAX. This issue presents the second plane of interest, the Fairchild Model 95 (also known as the XC-941 and XC-31). Only one of these was built. It was the Army Air Corps first aircraft specifically designed as a cargo plane.

Since this is probably an unknown aircraft to many readers, I've included some of the material I found at the Smithsonian Air and Space Museum library. As with the Model 21 in the previous issue, I'm convinced some of the photos I obtained at the Smithsonian used orthochromatic film (where yellow and red appear darker, sometimes approaching black) while the others used panchromatic film, where colors are more realistic shades of gray. But all photos showed the two colored stripes (red and white) on the rudder, so you gotta figure that pretty much solves the colors for this plane. Yeah, I thought so too. Read the text for the model and join me in my frustrations.

THE COVER DRAWING

How 'bout the cover drawing of the Fairchild Model 95 taking off with those 1920 and '30 automobiles in the foreground? We have Bill Ceresa to thank for this classic sketch.

THE LAST OF AVIATION HISTORY

THANK GOODNESS, I hear you cry. The previous two issues presented Parts 1 and 2 of a 3-part series dealing with the development of American private aviation. It was based on the book "WINGS OF YESTERYEAR, The Golden Age of Private Aircraft", by Geza Szurovy. This issue of the newsletter concludes the series with:

Part 3: Sport Aircraft from 1930 to World War II

Szurovy's book was written in chronological order, skipping from one company, or individual, to the next. I restructured his text into a company-by-company concept. I also previously noted that Szurovy's book is certainly not all-inclusive. Many companies we've heard about are not mentioned, or at best, only in passing, such as Great Lakes, Inland Sport, and Bellanca. Consequently, separate sections for these companies are not included.

DETERMINATION OF COLORS FROM BLACK AND WHITE PHOTOS

Having trouble with determining colors from old black and white photos? Check Dan Driscoll's article on page 6. Then go get the Kleenex.

PHOTOS ON THE PREVIOUS PAGE

Tom Schmitt

1. The featured plan of this issue is Allan's Fairchild Model 95, also known as the XC-31.
KUDZU PHOTOS
2. Frank Rowsome's Lippish P-13 came in second in FAC Rubber Scale.
3. John Houck resurrected a MAXFAX plan of Allan's Darmstadt and flew it in FAC Rubber Scale.
4. David Franks flew into third place of FAC Jumbo Scale with his Judy; seen here with John Houck and Pat Daily.
5. A great Nieuport 27 by Dan Driscoll for the Guilow WWI flyoff.
6. A happy Don Snull with his Voisin, which placed second in FAC Power Scale.
7. Dave Rees winding his Piper PA-12 with an assist from Marie, our genial host and hostess at the KUDZU meets in Goldsboro and Raeford.
8. Dave's Piper off to a great flight for a second place in FAC Jumbo Scale.

A REQUEST FROM ONE OF OUR READERS

Duane Brehmer is one of our long-time subscribers. Duane has requested that we include the following:

Buy, Sell, or Trade: Scale aircraft plans, all types, R/P, U/C, F/F, R/C, CO₂, or electric, in all sizes. Lots of magazines, model aircraft, diesel and glow engines, and other items. Duane Brehmer, 14720 South 234th Street, Gretna, Nebraska 68028-6416, (402) 332-4303.

THE FAIRCHILD MODEL 95 (AKA XC-941 & XC-31)

Allan Schanzle

A LITTLE BACKGROUND

No, it's not a Pilgrim, but it does have some similarities. That's not too surprising because the Pilgrim and the Model 95 were both made by Fairchild. You've probably guessed that I just *have* to give a little history leading up to the Model 95, so here goes.

Did you know there were two Fairchild Pilgrims? The first was built in 1930 and designated as the Fairchild Model 100 (also called the American Pilgrim 100, which we'll explain shortly). It was designed by Virginius Clark, originator of the Clark Y airfoil. In 1932, Fairchild introduced the Model 150 (also called the American Pilgrim 150 as well as the General Aircraft GA-43). Confused? Me too, but hang in there. The Models 100 and 150 were two distinctly different aircraft, the former being a high-wing monoplane and the latter a low wing product.

So why were these Fairchild models called "American" Pilgrims? According to Kent Mitchell's book, *Fairchild Aircraft 1926 - 1987*, it was a result of the economic times, i.e., the depression. Sherman Fairchild gave up control of his many companies to a financial conglomerate called the Aviation Corporation, which was comprised of about sixty companies, including most existing aircraft manufacturers, airlines, flying schools, and major aircraft operations. The conglomerate had acquired controlling interest in Fairchild, which it held from late 1929 to 1931. During these years, Fairchild's name was changed to the American Airplane and Engine Corporation. Consequently, the Fairchild Models 100 and 150 were also called the "American" Pilgrim 100 and 150. But the 150 was never put into production, and design rights were sold to General Aviation Manufacturing Corporation (owned by General Motors). Some changes converted the 150 into the eleven-seat GA-43

Let's move on to the specific aircraft presented here, the Model 95. In 1933, the U.S. Army Air Corps at Wright Field in Dayton, Ohio sent Fairchild an outline of specifications for a proposed new cargo transport. The company responded with the Model 95, and the Army was sufficiently impressed that it gave authority to produce a prototype with the designation XC-941. It was to be

built at the Kreider-Reisner subsidiary of Fairchild in Hagerstown, Maryland. Prior to the completion of the prototype, the Army redesignated the aircraft as the XC-31.

In the 1933 era, all-metal cantilever low-wing monoplanes were the rage (such as the DC-2 and Boeing 247). But the designer of the Model 95/XC-31, Alfred Gassner, felt that a low cantilever wing design would require a continuous spar through the fuselage, and this would reduce the cargo volume. Consequently, he incorporated the old-fashioned high-wing design with struts. The retractable landing gear into very small winglets was heavy and produced minimal increase in speed. But it probably makes this Golden Age military aircraft a better flying model.

The aircraft also used fabric covering, which was cheaper than all metal designs. Perhaps more important than the lower cost was that the use of tube and fabric construction permitted a rectangular cross section for the cargo compartment and large side-loading doors, whereas a metal monocoque structure required a round or oval cross section.

The first flight of the XC-31 occurred on September 22, 1934. After several months of testing, the plane was delivered to Wright Field for evaluation. The fact that there were no orders for production aircraft probably says volumes.

FUSELAGE

The fuselage is built in two sections. Start with the box structure extending from just behind F12 to the rear post. Include the wing saddle and note that the forward most vertical support is 1/16x1/8, which allows for the notch along the thrust line. Also note that the bottom longeron extends 1/16 inch beyond the vertical support. These two features will help align the forward portion of the fuselage at a later time. Add the formers F13B, F14B, and top and bottom formers F15 through F18. Add all the top stringers from F15T rearward, but only the one on the centerline of the bottom of the box section. The other ones on the bottom extend up to F10.

Now build a half-shell structure from F10 to F12. Use the keels shown in the side and top views, noting that the side keels extend beyond

F12 so they can be inserted into the notches of the box fuselage. Glue the front keel/former structure to the box structure using the bottom longeron and side keels to render proper alignment. Then add the remaining stringers.

I added 1/32 sheet between the top center keel and first outboard stringer from F10 to F12 to support the cockpit. I also used 1/16 balsa to fill in between the stringers where the winglets will be attached to the fuselage.

Now cut out formers F1 through F9 using the wood thickness noted on each former. Use 1/16 balsa unless otherwise noted. Formers F1 through F7 are circular, but F8 begins the transformation to the box shape. Formers F8 and F9 are two circles whose centers are slightly separated in the vertical direction. To make the nose plug fit snugly into F4, first make the nose plug and then glue the four pieces of F4 to each other around the plug, *but not to the plug*, which gets glued to the rear of F3. Glue the formers F7, F8, and F9 together and sand to give the proper contour. Glue the remaining formers together with the exception of F3 (with nose plug attached) to F4.

Fortunately, the cockpit is mostly flat surfaces. Cut out the pattern and score lightly along the dotted lines so folds can be made at these locations. You will probably have to make some small adjustments to the edges that make contact with the fuselage, but the pattern should give you a good first approximation.

WINGLET

Build the frame over the plan, remove, and glue formers Q1T through Q3B. Note that the spars on Q3T and Q3B butt joint against these formers. Make cylindrical shaped "bullet" tip (see 3-view) by sanding a square strip of 3/8 balsa into a cylinder and then sand to give the proper contour. Glue to the winglet tip and fill the gap with lightweight spackling.

WING

Tape the two halves of the wing plans together and make the laminated trailing edge and tips.

Begin with the center section. Note the leading edge for this portion of the wing is 1/8 x 3/8 high and fits *between* the two W1 ribs. The extra height in this portion of the L.E. is necessary so that it can be sanded to conform to the top of

the F12 former. The remaining leading edge is 1/8 x 1/4. The W1 rib, shown on the side view, is a "full" rib, that is, it includes the leading edge curvature and the trailing edge. Use this as a guide to help sand the remaining leading edge to a consistent shape. Glue W4, W5, and W6 (the latter one on top of the trailing edge) in place. The remainder of the wing is standard structure.

STAB AND RUDDER

The scale line for the break between the stabilizer and elevators (as well as the fin and rudder) are curved. I like to make these surfaces movable to facilitate flight trimming, so rather than tackle a curved hinge line, I chose to enlarge the trim tabs shown on the 3-view and make them adjustable.

The framework is 1/16 balsa with soft 1/32 strips glued on top and below the ribs and spar and then sanded to a symmetrical shape.

COLORS AND MARKINGS

I thought this was going to be about as easy as it gets. When old black and white photos show two contrasting colored stripes on the rudder (red and white), the immediate reaction is that the wings, vertical fin, elevators, and stabilizer are yellow with a dark blue stripe running vertically just forward of the stripes on the rudder. The fuselage would be blue... well, maybe. There was a short period of time in the early 1930s where the Army used olive drab for the fuselage instead of blue. The book *Flying Colors* by Green and Swanborough shows P-26s from 1934 that had either color on the fuselage, and one of the captions states "Olive drab fuselage preceded standardization on blue". In addition, the *Rand McNally World Aircraft, 1918-1935*, by Angelelli and Matricardi shows *paintings* of a 1934 Curtiss A-12 Shrike and a 1935 Martin B-10B with green fuselages. The XC-31 was conceived in 1933 and first flown in September 1934, so this little bugger was sitting on the fence post. I had occasion to e-mail Bill Hannan, and mentioned the dilemma over the color of the fuselage. Bill contacted Merle Olmsted, an aviation historian, and Merle dug up the specifications for Army Air Corps colors (*The Official Monogram US Army Air Service and Air Corps Aircraft Color Guide, 1908-1941*, by Robert D. Archer), which states that the conversion to blue was May 1934, but it

also says that Olive Drab paint was to be used until the supply was exhausted. Merle's conclusion was that the XC-31 was probably green when it left the factory but may have been painted blue after arrival at Wright Field. So, since I've built three yellow and blue models in the past few years, and I have a lot of green tissue just waiting for a project, guess which I chose?

There are quite a few markings shown on the 3-view, such as the door on the right side, louvers on the top of the cowl, and an exhaust stack with stall horns above and below. There are a few discrepancies between the 3-view and photos I copied at the Smithsonian library. First, the 3-view does not show "periods" after the "U" and "S" on the bottom of the wing, but they can be seen on one of the photos. Second, the numbers "303" appear on the 3-view fin, but not on any of the photos in either Mitchell's book nor the vast majority of the copies I made at the Smithsonian. I can see something on the fin of one photo, so I conjecture that the numerals were added and this one photo taken after the aircraft was delivered to the Army Air Corps at Wright Field, at which time the plane *might* have been repainted with a blue fuselage. Finally, the front and top perspectives of the 3-view show typical struts connecting the vertical fin and stab, but in addition, the drawing appears to indicate that there are vertical struts connecting the diagonal strut to the stab. I cannot see this feature in any photo from the Smithsonian or in Mitchell's book.

FLYING

I didn't get this model completed until late November, so the weather prohibited extensive trimming time. However, preliminary tests with up to 800 turns in the rubber (about 35 to 40 seconds of flight time) showed a stable aircraft using an eight-inch Peck prop and two loops of 5/32 "new" Tan-II.

DETERMINING COLORS FROM BLACK AND WHITE PHOTOS

Dan Driscoll

Recently, Allan Schanzle and I were discussing determining colors of aircraft from black and white photographs taken in the 1920's and 1930's. Black and white (b&w) film translates the colors of a scene into shades of gray in varying degrees of

brightness. To render the scene accurately, the brightness levels must correspond as closely as possible to the brightness of the actual colors themselves.

Up to 1926, the general b&w film in common use was orthochromatic film. This film was sensitive to blue and green, and as a result, reds and yellows appeared dark, sometimes black, in photographs taken with this film. Panchromatic or continuous tone film was introduced in 1926. This film rendered colors in b&w photographs much closer to their relative brightness. Panchromatic film quickly replaced orthochromatic film in general photographic use, but orthochromatic film continued in limited use. (Orthochromatic film was easier to process.)

What does this mean with regards to aircraft photos taken in the 1920's and 1930's? If orthochromatic film was used, it is difficult to differentiate between the reds and blacks on race planes such as the Hall Bulldog or Wedell-Williams racers. In many photos, these aircraft appear to be all black. If panchromatic film was used, the reds appear much lighter than the blacks. On U.S. Army aircraft, if orthochromatic film was used, the yellow wings often appear darker than the blue fuselages. In some instances the yellow wing appears so dark it is impossible to see the dark blue surrounding the white star in the national insignia. This is also true for the dark blue vertical stripe on the yellow tail.

Other factors affect the usefulness of b&w photos for determining colors or markings. Filters sometimes used with b&w films can alter the relative brightness of the various colors. The quality of the photographic print is also important. The high quality printing on glossy paper in current magazines is far superior to the photos published in the 1930's. The photos printed on pulp in our beloved Flying Aces are practically useless

Color photographs are obviously better for these purposes, but also have problems. Varying lighting conditions, processing, and reproduction quality can affect the color – is that airplane cream or white or pale yellow? Is that stripe dark blue or black? Is that leading edge red or maroon? Is that tail number silver or light gray?

Aside from actually inspecting the real aircraft, a reliable written description or profile coupled with supporting photographs is obviously the best way to go. But realistically, how often do we have all that for our planned 1927 Wizzinpoop 24 model? We go with what we've got and make educated assumptions and guesses. I hope this helps.

KUDZU CONTEST SEPTEMBER 13 AND 14 AT GOLDSBORO AND RAEFORD NORTH CAROLINA--
ON THE LAND AT RAEFORD --

FAC RUBBER SCALE									
CONTESTANT	MODEL	FLIGHT TIMES			FLIGHT POINTS	BONUS POINTS	SCALE POINTS	TOTAL POINTS	PLACE
		1	2	3					
TOM HALLMAN	BLERIOT 25	91	116	-	81.5	15	56	152.5	1
FRANK ROWSOME	LIPPISCH P-13	54	70	-	65	35	51	151	2
DON SRULL	CANT 21012	62	-	-	61	35	54	150	3
PAT DAILY	FOKKER D-VII	61	38	54	60.5	15	51	126.5	4
WALLY FARRELL	ME 109	80	-	-	70	10	41	121	5
JERRY PAISLEY	BUFFALO F23	49	55	-	55	10	55	120	6
DAN DRISCOLL	NIEUPORT 27	29	31	47	47	15	51	113	7
JOHN HOUCK	DARMSTADT	41	46	47	47	15	47	109	8
BOB MCLELLON	HENSCHEL 126	40	59	-	59	10	41	103	9
BRUCE FOSTER	HAMILTON METAL	47	41	35	47	0	28	75	10

FAC POWER SCALE									
CONTESTANT	MODEL	FLIGHT TIMES			FLIGHT POINTS	BONUS POINTS	SCALE POINTS	TOTAL POINTS	PLACE
		1	2	3					
TERRY PITTMAN	BESSON SEAPLANE	41	58	118	82.5	15	60	142.5	1
DON SRULL	VOISIN	91	133	-	82.5	25	53	135.5	2
TOM HALLMAN	DH-2	42	61	28	70.5	20	60	130.5	3
WALT FARRELL	MIG 15	-	-	-	0	5	39	0	4

FAC JUMBO SCALE									
CONTESTANT	MODEL	FLIGHT TIMES			FLIGHT POINTS	BONUS POINTS	SCALE POINTS	TOTAL POINTS	PLACE
		1	2	3					
TOM HALLMAN	G&H GADFLY	84	-	-	72	10	61	143	1
DAVE REES	PIPER PA-12	65	86	94	76	0	53	129	2
DAVE FRANKS	D4Y2 JUDY	76	87	-	73.5	10	40	123.5	3

WORLD WAR I MASS LAUNCH		
CONTESTANT	MODEL	PLACE
DON SRULL	FOKKER D-VII	1
PAT DAILY	FOKKER D-VII	2
TOM HALLMAN	MARTINSYDE BUZZARD	3
10 FLYERS FLEW IN EVENT		

GOLDEN AGE MASS LAUNCH		
CONTESTANT	MODEL	PLACE
DON SRULL	INTERSTATE CADET	1
TOM HALLMAN	G&H GADFLY	2
DAN DRISCOLL	PORTERFIELD	3
12 FLYERS FLEW IN EVENT		

ALL RACERS COMBINED MASS LAUNCH		
CONTESTANT	MODEL	PLACE
TOM HALLMAN	LOOSE RACER	1
CLAUDE POWELL	BROWN RACER	2
WALT FARELL	CHAMBERMAID	3
7 FLYERS FLEW IN EVENT		

WORLD WAR II MASS LAUNCH		
CONTESTANT	MODEL	PLACE
WALT FARRELL	B.P. DEFIANT	1
DAVE FRANKS	TONY	2
CLAUDE POWELL	HURRICANE	3
12 FLYERS FLEW IN EVENT		

HIGH WING PEANUT MASS LAUNCH		
CONTESTANT	MODEL	PLACE
FRANK ROWSOME	REARWIN	1
TOM HALLMAN	CLIPPED WING CUB	2
BOB MCLELLON	COUGAR	3
9 FLYERS FLEW IN EVENT		

MODERN MILITARY MASS LAUNCH		
CONTESTANT	MODEL	PLACE
DON SRULL	MIG 15	1
DAVE FRANKS	FIAT G-59	2
JOHN HOUCK	BELL XF-59	3

DIME SCALE						
		1	2	3	TIME	
TOM HALLMAN	FOKKER D-VII	59	74	78	78	1
CLAUDE POWELL	COMPER SWIFT	60	50	55	69	2
DON LINTON	DING BAT	18	62	-	62	3
6 FLYERS FLEW IN EVENT						

SPECIAL EVENT WWI GULLOWS MASS LAUNCH FOR BILL SAUNDER'S TOOLBOX PRIZE		
CONTESTANT	MODEL	PLACE
DAVE MITCHELL	BRISTOL SCOUT	WINNER
CLAUDE POWELL	SE-5	2
MARK HOUCK	FOKKER D-VII	3
8 FLYERS FLEW IN EVENT		

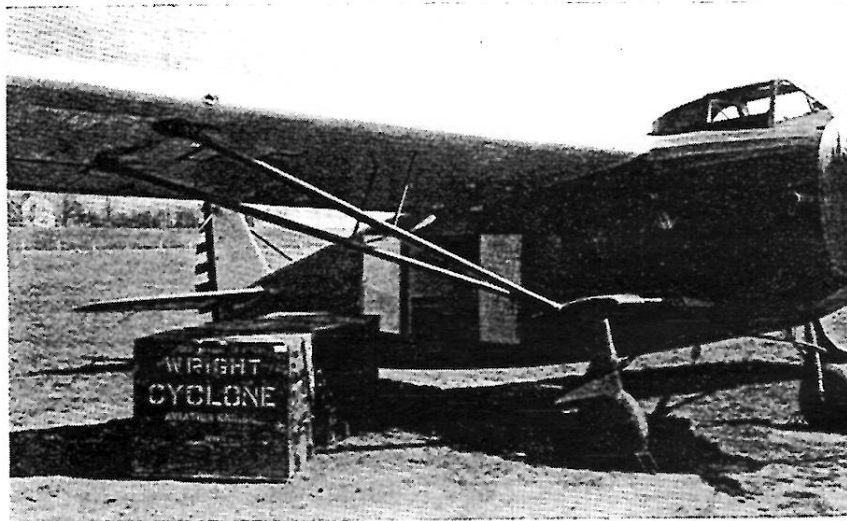
HIGH POINT WINNER ON THE LAND AT RAEFORD ----- TOM HALLMAN

-- ON THE LAKE AT GOLDSBORO FRIDAY EVENING 13 SEPTEMBER --

Friday evening was beautiful and there was much flying including some nifty R/C. Don Srull and Pat Daily kept things lively while beating up the sky over the lake with many R/C flights. A daring Capt. Pat even flew some land planes over the lake taking off and landing on the shore. He had a Tiger Moth and Cub up many times while Don put up some great flights with his Libelle R/C. Meanwhile there were some good rubber powered scale and non-scale free flights. Walt Farrell won the Scale event with his Found. Terry Pittman came in third with his Farman. Unfortunately we do not have a record of Stew Meyer's second place scale seaplane. Walt Farrell also won the non-scale rubber powered event with Dan Driscoll coming in second. And thanks to Frank Rowsome for being one of the canoe retrieval pilots - see page 24. We have Tom Hallman to thank for documenting the seaplane flying with his camera and some of his pics are on page 24.



New Cyclone-powered Fairchild Army Cargo Has Capacity of 15 Men or 3000 "Horses"



The 3000 "Horses" in their stalls ready to be loaded aboard. Three 1,000 H. P. Wright Cyclones can be stowed in the spacious cabin of the new Fairchild Troop or Cargo Transport and pulled through the air by another Wright 1000 H. P. team

“QUARANTE hommes—huit chevaux.”

“Forty men or eight horses.” Box cars thus inscribed were a familiar sight to members of the American Expeditionary Forces in France during the hectic days of the World War. In these rickety, rumbling vehicles of rail transportation many an American doughboy moved up and down the “front” to arrive at his destination, aching in every joint from being bounced over the hard floor by flat wheels on a rough railbed and bitten by vermin. To perpetuate the comradeship built up among the members of the U. S. Army who underwent the minor miseries of World War means of transportation, the American Legion has organized an inner circle which takes the box car inscription for its name. But like most everything else, means of troop transport have improved since the “great conflict.” Aircraft, which first came into prominence in the four years between 1914 and 1918 as a weapon of war, has made rapid strides ahead. Today, aviation stands at the forefront of military activity.

Flying “Box Cars”

Box cars on rails are still used for transportation of troops for short distances but these slow roll-

ing vehicles which must move over a well defined route will never play so important a role as they did in the World War. The maximum in mobility and flexibility is essential to the success of any army. Today, box cars on rails are on the verge of being supplanted by box cars on wings—troop transports of the air which are capable of traveling further in several hours than a rail transport could negotiate in a 24 hour day.

15 Men or 3000 “Horses”

In this country, it is not customary for aircraft operators or manufacturers to designate the capacity of aircraft in terms of animate objects. If it were, the Fairchild Aircraft Corporation, of Hagerstown, Md., would undoubtedly paraphrase the French box car inscription with “15 men or 3000 ‘horses’” painted boldly on the sides of the new troop transport which this well known manufacturer of military and commercial aircraft recently developed for the Army Air Corps.

Powered by 1000 H. P. Cyclone

Powered with a 1000 h. p. Wright Cyclone engine, the Fairchild transport is capable of carrying a cargo of 4000 pounds at a top speed at sea level of 162 m. p. h. At 1900 feet altitude, maximum speed is four

miles per hour faster and cruising speed, using 75 percent power, is 150 m. p. h. with load for a range of 940 miles.

Can Carry 3 Cyclones

While primarily designed as a cargo transport, the new Fairchild may be used as a troop transport or an ambulance plane with equal success. As a troop transport it is provided with seats for 15 men. As an ambulance plane, it may be equipped with 8 standard Army litters while as a cargo ship it will carry the 3000 “horses” referred to above. “Horses” in this case, however, does not refer to the faithful beasts of burden used to pull artillery through the mud of France, but to the power output of three 1000 h. p. Wright Cyclones which the plane is capable of, storing in its spacious cabin. All three of the 1000 “horse” teams may be carried in their “stalls”—standard shipping boxes. This feature eliminates the necessity for special “tethering” on stands.

Features Pointed Out

The Fairchild Aviation Corporation, manufacturers of the New Army transport have pointed out its military importance and the various features of its construction as follows:

Both in peace and war there is a definite need for the transportation of personnel and supplies by air. Recognizing this need, the Army Air Corps is preparing itself to meet all possible contingencies by the acquisition of transport airplanes for these two purposes. On first thought it might appear that the transportation of personnel and the transportation of cargo can be accomplished by an airplane of the same design and characteristics, but deeper study proves this to be impractical and inadvisable.

Tactical Importance

The presence of the necessary mechanic and other personnel at permanent, auxiliary, or temporary airdromes is a tactical necessity, as ground personnel must be on hand to keep the airplanes ready for action. In warfare, and in peace time manoeuvres, the decision to change from one airdrome to another is usually made rapidly and secretly, and the transportation of



ground personnel must be made with speed and security. Often the decision to change airdromes will be made while the planes of a squadron or group are in the air on a mission, with the landing at the end of the mission being made on the new airdrome. Personnel must be there when they land. To meet these demands, the Air Corps is keeping itself supplied with special personnel transport airplanes with the capacity and efficiency necessary to accomplish the desired results.

Cargo transportation presents another problem, and the airplane needed to meet this specific problem must of necessity have different characteristics of design and performance. It must be designed to fulfill its primary mission of carrying cargo of all types and descriptions. It must truly be a "flying box car" of rugged construction and economical operation, combining with its utility the characteristics of good speed and the ability to get in and out of small unprepared fields.

Mobility Stressed

The advent of the airplane in warfare has complicated supply problems of armies and air forces. Fear of bombardment forces the establishment of supply bases and dumps much further to the rear than heretofore. Modern implements of war require more varied and numerous types of supply. One must look forward to even greater congestion of ground transportation systems than obtained in the World War in Europe. Air forces being mobile, their systems of supply must be mobile. This can be accomplished only by a fleet of cargo airplanes designed and constructed for heavy duty cargo transportation.

SPECIFICATIONS

High Speed at S. L.	162 m. p. h.
High Speed at 1900 ft.	166 m. p. h.
Cruising Speed at 1900 ft., 75% power	150 m. p. h.
Service Range	940 miles
Landing Speed with Flaps	55 m. p. h.
Service Ceiling	19,000 ft.
Wing Span	75 ft.
Overall Length	55 ft. 5 in.
Cargo load	4,000 lbs.

Although the United States is fortunate in having a splendid network of roads, railroads and commercial air transport, these facilities will be taxed to their utmost in war time emergency and the disruption of their normal functions by the military would have a most serious effect upon the entire country. In order to prevent a complete breakdown of our already complicated national transportation system, the Army and its Air Force must have, as an integral part of its supply system, its own fleet of trucks and cargo airplanes. These must be procured and used in peace time so that the transition to wartime, with its attendant complications and confusions, can be met without undue loss of time and efficiency.

Loaded Direct From Truck

The Fairchild Aircraft Corporation has long considered this problem and has worked in close cooperation with the Army Air Corps toward the construction of a true cargo airplane. The problem has not been simple. Special considera-

tion was necessarily given to provisions for loading, unloading, and stowage of both bulky and concentrated cargo loads, with the result that in the Fairchild cargo plane, the floor at the loading door, when the airplane is at rest, is parallel with the ground, and of such a height from the ground to be level with the floor of a standard Army truck. Thus all cargo may be loaded direct from truck to plane, and vice versa. A clear unobstructed approach is provided to the loading door for trucks, as the high monoplane wing provides an excess of clearance for ground vehicles. Within the plane the stowage of cargo is expedited by the use of a winch.

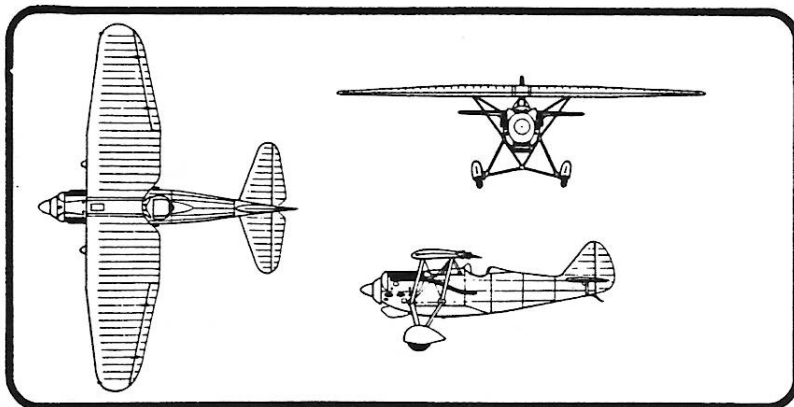
No Obstructions in Cabin

Ample floor trusses and cargo tie-down ratings are provided to accommodate both bulky and concentrated loads. Approximately 4,000 lbs. of cargo can be carried with a 6 hour range, and such a cargo can include in one load three (3) engines of the Cyclone type. Handling of loads within the cargo cabin of the Fairchild plane is greatly simplified, due to the fact that the cargo cabin is rectangular in shape, and all obstructions are eliminated. For this and other reasons steel tube construction was employed. The cargo door is 5 feet high and 6 feet wide.

Ease of Inspection

In addition, attention was given in the design of the airplane to the ease with which component parts may be inspected, maintained, and repaired. The main fuselage structure being steel tube, fabric covered, permits ease of inspection, and repairs to this type structure readily can be made in the field or at a depot. This type of structure can also be repaired more quickly when damaged, thus the equipment can be kept in service a maximum amount of time. In war time it is a type of structure that can be manufactured quickly in parts of the structure are readily which is built in two (2) sections.

Beyond the problem of cargo transportation cognizance had to be taken of the fact that in emergency the airplane might have to be used for the transportation of personnel and the evacuation of sick and wounded. Fuselage design had to incorporate facilities for these purposes in the event the true role of a cargo carrier has to be diverted to emergency personnel use.



This drawing represents the production version of the Dewoitine 27 used by the Swiss Air Force.

THE DEVELOPMENT OF AMERICAN PRIVATE AVIATION

Part 3: SPORT AIRCRAFT FROM 1930 TO WORLD WAR II

Allan Schanzle

NOT ALL THE LITTLE GUYS FOLDED

The large cabin class aircraft were, without a doubt, the elite of the 1930s. But many small companies survived the depression. These included Fairchild, Monocoupe, Cessna, Luscombe, Rearwin, and others. These companies produced smaller aircraft for the "sportsman" pilots, as they were called. Part 3 of this series covers the history of some of the better-known manufacturers that fall into this latter category.

CESSNA AIRCRAFT CORPORATION

(Continued from Part 1)

The depression took its toll on Cessna. Due to a large debt, accumulated by the company in anticipation of expansion, it closed its doors until the economy began to improve.

Cessna reopened their doors in early 1934 due to efforts of Clyde Cessna's nephews, Dwane Wallace (an aeronautical engineer) and Dwight Wallace, (an attorney). Clyde Cessna returned as president while the Wallace brothers essentially ran the business. Clyde simply guided his two nephews until they got the feel of running the corporation.

Dwane had a design on the drawing board that was based on the earlier Cessna Model "A". It was aimed at the market above Fairchilds and Monocoupes, but below the large cabin class Beechcrafts. This new design was called the C-34, and flew for the first time on August 10, 1934. A 145 hp Warner Super Scarab engine enclosed in an NACA cowl gave a top speed of 143 mph. The plane received its ATC in June 1935. Orders began to come in, albeit slowly, but soon production was three planes per month at just under \$5,000.00 each.

Given its good performance, Dwane Wallace decided to take it on the racing circuit and entered it in the Detroit News Trophy in 1935. This particular competition combined speed, efficiency, performance, and comfort. It easily won and repeated again the following year.

By 1936, Clyde was convinced his nephews had a good handle on running the company, and he chose to retire.

In 1937, minor modifications to the C-34 produced the C-37, and additional updates produced the C-38.

MONOCOUCPE

(Continued from Part 1)

Monocoupe became the new name for the Mono Aircraft Corporation when it went into receivership, but was saved by the financial backing of Phil De Cameron Ball.

In 1930, Monocoupe introduced the Model 90, a cleaned-up version of the Model 70 with a 90 hp Lambert and ring cowl. Shortly thereafter, the company introduced a version with a 110 hp Warner Scarab, and this aircraft won many racing events.

With some success at hand, the company engineers decided to upgrade even further. The Model "D" was roomier and aerodynamically cleaner (by using a single strut gear, wheel pants, and an NACA cowl). After installing a 145 hp Super Scarab, and modifying the vertical stabilizer, the aircraft was designated the D-145. With a top speed of 145 mph (one mph for each hp), it was at the head of its class until the Cessna C-34 came along in 1935. Twenty eight of these D-145s were produced, but they were not certified until March 1934, at which time, changes began to occur at the company.

Fred Knoll, the chief engineer, left for personal reasons. Then came the death of Phil De Cameron Ball, the deep-pocketed benefactor. Monocoupe's future looked bleak. Don Luscombe decided it was time to strike out on his own. He had a plane in mind and took a young Ivan Driggs (who had considerable racing experience) with him when he left at the end of 1933.

But Monocoupe survived. It got the D-145 certified, but only limited sales were obtained. The rest of the Monocoupe market was another story. In 1935 the company upgraded the Model 90 to the 90A. This latter version included a full NACA engine cowl with blisters for the rocker covers. It would go 112 mph on its 90 hp and had a range of 550 miles. It sold for just under \$3,500.00, and was the company's most popular aircraft. After

more changes at the top level of management, Al Mooney became chief engineer.

LUSCOMBE AIRCRAFT COMPANY

Within a few days of leaving Monocoupe, Don Luscombe moved to Kansas City and established the Luscombe Aircraft Company. The plane he had in mind while still employed at Monocoupe was an all-metal (innovative for 1933) two-place high wing monoplane with a monocoque fuselage. The goal was to design a plane that could use a variety of engines to satisfy a broad spectrum of customers. He called it the Phantom, and it would be one of the first aircraft to take the light plane into the all-metal era. Success was based on the assumption of mass production, which would allow it to be sold for around \$3,000.00. To mass produce all the odd-shaped forms necessary for the fuselage, Luscombe planned on using a metal press designed by A. K. Longren.

The prototype of the Phantom was built relatively quickly under the direction of Driggs and with the help of a few former associates at Monocoupe who had recently joined Luscombe. The first flight was in May 1934 and certified in August of the same year. Luscombe demonstrated the plane at the 1934 National Air Races as a non-competing entry. It drew considerable attention due to a cruising speed of 145 mph, but of equal interest was the all-metal skin riveted to bulkheads that made a light but exceptionally strong hollow fuselage. The Phantom flew well, but landing the plane required exceptional skills due to the independent oleo gear strut design. Don Luscombe once said that it was easier to master the violin than the footwork to avoid groundlooping the Phantom. He flipped one of his own planes while giving a demonstration flight to a woman from Switzerland. She was so impressed by the minimal damage that she gave a deposit on the spot.

Unfortunately, the Phantom wasn't a financial success. The Longren metal press, which was going to allow mass production of the many different metal panels, turned out to be a dud. It ruined 90 percent of the pieces of metal fed to it. The alternative was to hammer out each piece individually, and this increased the price to \$6,000.00. Only 22 Phantoms were sold between 1934 and 1941.

The lack of funds from the sale of Phantoms was made up, in part, by running a mechanics school, the Luscombe School of Aviation. In 1936, Don Luscombe began a design designated the Luscombe 90. This craft was based on the

Phantom, but used a 90 hp Scrab and a much more friendly landing gear. It turned out to be a complete flop, even though further development produced a successful first flight. Luscombe engineers decided they needed to completely start from scratch and build a much lighter fuselage with no compound curves.

Luscombe also began to think about using the new Continental 40 hp "flat-four" engine or the 50 hp version under development, but he was concerned about the lack of reliability of the new engines while they were being tested.

Don Luscombe solved all his problems in his typical innovative manner. He assigned the new design to his School of Aviation as a student project. They came up with a design and built a fuselage mockup for the side-by-side two-seater. The wings had a relatively high aspect ratio and were fabric covered. Primary corporate attention was given to this new design, designated the "50", once the decision was made to go ahead with the new version of the Continental engine. The final design of the "50" used metal covering for the wing leading edge and fabric for the rest of the wing. The "50's" first flight was in December 1937. Only minor changes were made during tests and was certified in August 1938 as the Model "8". It was priced at \$1,900.00.

The "8" sold well, and demand was about 30 per month. Using the same engine, it outperformed the J-3 Cub in speed, distance, and load carrying capacity.

When the "8's" 50 hp was replaced within a year by a 60 hp engine, it was designated the "8A". Luscombe "8s" appeared with a variety of engines in the following years, and by 1942, when the line was shut down due to the war, about 1,200 Luscombe "8s" had been produced.

Perhaps the most important contribution of the "8" was its construction. Their monocoque fuselage required much less labor than the traditional wood, fabric, and steel tubing construction, and was therefore cheaper to build. It laid the groundwork for the postwar metal sport aircraft.

But not all was well at Luscombe. They had their "winner", but as usual, Luscombe was short of money. A young German financier, Leopold Klotz, became an investor in Luscombe and mounted a hostile takeover of the company. Don Luscombe was ushered out the door, and the man who gave aviation the Monocoupe, Phantom, and Luscombe 8 never again played an important role in aviation.

FAIRCHILD AIRCRAFT COMPANY

(Continued from Part 1)

In 1931, Fairchild introduced the Model 24 C-8, a side-by-side two-seater with a 90 hp engine. Through a series of sixteen relatively small changes, this craft evolved into a 175 hp four-seater, but the basic designation "24", was never changed.

The Model 24 was traditional for the times - wood, fabric, and steel tube with considerable similarity to the Stinson SM Junior. It evolved from the F-22 manufactured by Fairchild's subsidiary, Kreider Reisner. The F-22 was an open cockpit tandem seat parasol winged monoplane. In this respect, the evolution of the F-24 followed the same approach as WACO, whose cabin models evolved from their Model "F" open cockpit biplane.

The original F-24 used the Cirrus inverted inline four-cylinder power plant and had full span ailerons. But this proved to be insufficient power due to the relatively large size of the F-24.

In 1933, the power problem was overcome by using a 125 hp engine in two versions. The C-8A used a Warner Scrab radial, and the C-8B incorporated the inline Mescano C4. Only two of the latter were built, but many other engines, both radial and inline, were tied to the front end of the F-24.

In 1934, significant changes were made to the F-24. The fuselage was enlarged, wing area increased, wing struts changed from parallel to "V" form, and the ailerons reduced in length. These modifications, along with an additional seat in the back and a 145 hp Super Scrab, justified a whole new designation, but Fairchild simply called it the C-8C. It sold for around \$4,000.00. More than 100 were produced in 1934/35. It outsold the Cessna Airmaster, partially because it was \$1,000.00 cheaper, but it was also a very forgiving and pleasant airplane to fly.

For the year 1935, the "24" was also offered with a 145 hp inline six-cylinder Ranger, an engine developed by Fairchild. It wasn't until 1938 that Fairchild converted the plane into a four-seater. The good old Scrab was designated the C8-J and a 165 hp Ranger was the C8-K.

When World War II erupted, the U.S. government purchased 984 of the "24s", most with a 200 hp Ranger. The British Royal Air Force bought 161 of them and obtained 364 under the Lend/Lease program. The British called these the Argus 1 and 3.

RYAN AERONAUTICAL COMPANY

(Continued from Part 1)

After Lindbergh's flight, Claude Ryan sold his interest in the company that made the Spirit of St. Louis. By the early 1930s, he operated a flying school in San Diego, but was convinced that he could develop a better trainer than the biplane made by Great Lakes. He also liked the P-26 fighter, small racers, and the concept of all metal construction. As a result, in 1933 he formed the Ryan Aeronautical Company and developed the Ryan "ST" (Sport Trainer). It was all-metal except the wood wing spars. There were no compound curves, which facilitated fast, low-cost production. It was certified in 1934, but within a year, it was refitted with a 125 hp Mescano. This model was designated the ST-A. While designed as a trainer, it also appealed to the sportsman pilot due to its sleek design. It was also used for aerobatics.

The ST-A became a candidate for the U.S. Army Air Corps' primary trainer program in 1939. After preliminary tests, the military requested a few changes, the major one being the removal of the Mescano engine (the aircraft was then given the military designation PT-16) and replaced it with the 132 hp Kinner radial, which was designated the PT-16A.

After additional minor modifications, 40 of these aircraft entered military service and were given new designations of PT-20 and PT-20A, depending on the engine. An additional order was placed for 200 more (100 for each the Army and Navy, and designated as the PT-21 and NR-1 respectively). The engine was then upgraded to the 160 hp Kinner, and this became the PT-22. More than 1000 of these were purchased by the military.

The ST-A was not the only Ryan design, as in 1937 they produced the side-by-side Sport Cabin (SC), powered by a 145 hp Warner Scrab. Only ten of these were built.

REARWIN AIRCRAFT

Raymond (Rae) Rearwin was another successful businessman in Kansas, albeit his success was from coal, lumber, and petroleum products. But like many in the 1920s, he was bit by the aviation bug.

The first Rearwin airplane was the Ken-Royce two-seater biplane (named after his two sons) and first flown in 1929. Then came the two seat tandem monoplane called the "Junior", which was test flown in 1931. The "Speedster" was built

in 1934, but failed spin-recovery tests and wasn't certified until 1937.

Rearwin's next product was an alternative to the Monocoupe 70 in the small cabin class category and was called the "Sportster". It initially used a 70 hp LeBlond radial, but later had other engine options.

The next Rearwin was the "Cloudster", which was certified in 1939, but due to its similarities to other aircraft of the era that had already been on the market for several years, sales were less than expected.

The "Skyranger" was an extension of the Cloudster, but used one of the improved 60 to 90 hp flat four engines. It was certified in August 1940, and was available with several choices of Continental and Franklin engines. Eighty-two aircraft were built before the start of the war.

After the war, Rae was convinced it was time to sell the business. Commonwealth bought the business and built an additional 276 Skyrangers before they too ceased production.

WACO

(Continued from Parts 1 and 2)

By the early 1930s, the open cockpit biplane had seen its better days. But WACO continued to build two basic models of the open cockpit design well into the decade. One was the sporty "F" series, the other the "A" series. The "F" model was mostly a scaled-down version of previous three seat designs to accommodate smaller and more economical engines. The "F" series was in production until 1942 because the UPF-7, introduced in 1938, was ordered for primary training purposes by the U.S. government.

The "A" series was an unusual side-by-side two-seater with a removable canopy for the true sportsman pilot.

TAYLORCRAFT

(Continued from Part 1)

After C. Gilbert Taylor formed the Taylorcraft company in late 1935, (see Part 1, Taylor Aircraft Corporation) his first attempt at an aircraft was, not surprisingly, a cleaned-up version of the E2 with side-by-side seating and powered with a 40 hp Continental A-40. It was designated as the Model "A". For a short time, the home of Taylorcraft was in Butler, Pennsylvania, but they then moved to Alliance, Ohio. The Model "A" was certified in 1937. By August of that year, 200 Model "A" aircraft had been delivered.

The Model "B" was produced when the 50 hp flat four became available.

(Continued in the following section entitled
THE WAR -
A GREAT BONANZA FOR A FEW)

PIPER AIRCRAFT COMPANY

(Continued from Part 1 entitled Taylor Aircraft Company)

The successful development of the 50 hp flat four engine brought forth the J-3, but this was still a tandem seating arrangement that seemed obsolete when compared to the side-by-side cockpit models of Aeronca and Taylorcraft. This seems to be the rationale for the development of the side-by-side J-4 Cub Coupe.

(Continued in the following section entitled
THE WAR -
A GREAT BONANZA FOR A FEW)

AERONCA AIRCRAFT CORPORATION

(Continued from Part 1)

By 1937, the Aeronautical Corporation of America (Aeronca) had produced the Model "K". In many respects it resembled the Taylorcraft Model "A" and the Piper J-2. About 350 Model "K" craft were built within two years. Many were powered with an in-house built 40 hp engine, but with the emergence of the 50 hp flat four from Lycoming and Continental, Aeronca upgraded the Model "K" to the "Chief".

(Continued in the following section entitled
THE WAR -
A GREAT BONANZA FOR A FEW)

STINSON AIRCRAFT CORPORATION

(Continued from Parts 1 and 2)

The Stinson company was the first large cabin class company to join in the use of the flat four when it produced the 105 Voyager. Lewis Reisner, who formerly ran the Kreider Reisner division of Fairchild, oversaw the development of the 105. This aircraft was first flown in 1939 and certified shortly thereafter.

Safety was becoming a big factor in aviation in the late 1930s, so Stinson incorporated slats on the leading edge of the wings to reduce the onset of stall. Spin tests, required by the CAA (Civil Aeronautics Association) were very stringent.

So Stinson tried to make the Voyager "spin proof" by initially restricting the elevator movement, but this hampered a flare upon landing. Stinson then linked the flaps and the elevator to increase elevator travel when the flaps were fully extended.

All this was done on the Voyager using a 50 hp Lycoming, which was inadequate. When the 75 hp version was installed, it cruised at 105 mph, which may be the origin of the designation "105". About 2,200 were built before the war.

CULVER

Al Mooney had designed the "Bullet" when he worked for the Alexander Airplane Company. The Bullet had trouble recovering from spins, and two test pilots were killed in them. Needless to say, the Bullet didn't go into production. But perseverance on the part of Mooney produced the Monosport while he was working for Monocoupe. This design was not put into production either, so Mooney left and joined K. K. Culvert to build the "Dart". About 50 Darts were built before the company switched to the flat four, at which time the aircraft became the Cadet and the company changed its name to Culver.

The Culver Cadet went into production in 1940. It was a side-by-side low-winger made of wood and fabric and incorporated a retractable landing gear. With a 75 hp Continental it would zip along at 120 mph in cruise. During the war, the Cadet was mass-produced and used as a pilotless target drone.

GLOBE

The Globe Swift was similar to the Culver Cadet and received its ATC in 1942. But due to the war, this was too late to go into production. It was unique, however, because its wings and tail were made from bake-lite bonded plywood. After the war, the Swift was again produced using metal and fabric with a 125 hp engine.

ERCO

(Engineering and Research Corporation)

The Erco Ercoupe was designed by Fred Weick, who also developed the NACA cowling for radial engines. It was an all-metal aircraft (except for some fabric on the wings) with side-by-side seating in an enclosed cabin.

This plane was truly unique in many ways. It used a tricycle gear to help visibility while taxiing. It was spin-proof and the rudder and differential

ailerons were coupled through the yoke to prevent cross controlling. There were no rudder pedals.

Although all these measures were great for the beginning pilot, they took the thrill out of flying for the more experienced, and this was its downfall.

As a personal side note, the Ercoupe was built in Riverdale, Maryland, about one quarter mile from one of my office buildings. Quite often I would take a lunchtime walk or jog down their runway, which was also used as a flying site for a radio control club.

THE WAR - A GREAT BONANZA FOR A FEW

As war loomed on the European horizon, several American companies were still busy building personal aircraft. Luscombe was deeply involved with getting the Model "8" into production, and Stinson was pushing the Voyager. But their competitors, Piper, Aeronca, and Taylorcraft, were about to be handed a series of huge gifts from the U.S. government.

The first was from the Civilian Pilot Training Program (CPTP) in 1939. The feeling was that if for some reason we were to get involved in a second World War, it would be useful to have a large supply of people with basic flying skills. The main beneficiaries, other than the tens of thousands who learned to fly compliments of the government, were the flying schools and the manufacturers of trainers equipped with the flat four engine.

As a result of the CPTP, Piper sold 1,800 Cubs in 1939, and 6,000 more in the next two years. Contrary to Piper, Aeronca and Taylorcraft had trouble keeping up with demand, and had output of 500 to 1,000 aircraft per year. Even upstart companies like Interstate sold 200 Cadets.

Other opportunities arose when the military held maneuvers in Tennessee and the Air Corps was told to provide observation aircraft. The trials were a bonanza for Piper, Taylorcraft, and Aeronca, as their planes proved very beneficial as eyes for the ground troops. A story goes that some old general called one of the aircraft a grasshopper, and the name stuck.

The military wanted tandem seat versions, so Taylorcraft and Aeronca modified their planes to meet the requirement. Luscombe lost out due to the extensive reengineering required converting all-metal side-by-side aircraft to a tandem arrangement. Stinson modified the Voyager to meet the military request. All in all, the major beneficiaries for observation aircraft were

Piper	5,700 L-4s
Taylorcraft	2,200 L-3s
Aeronca	2,000 L-2s
Stinson	?? L-5s

EPILOG

This three-part series has fulfilled a thirty-year ambition to learn how some of the well-known aircraft companies of the golden age of aviation evolved and then disappeared. As noted in the second paragraph of Part 1, I claim no originality for this effort, as I simply took the book *WINGS OF YESTERYEAR, The Golden Age of Private Aircraft*, by Geza Szurovy, and transformed his chronological text into an abbreviated form for each company. Needless to say, some companies have not been included, such as Bellanca and Great Lakes to mention but two, but this is because they were not included in Szurovy's book. Yes, I could have done some additional research and included others, but there comes a point where it is impossible to include everything, and I felt it was time to get on with the building of models, and cease the craving for past history.

I strongly recommend this book not only for its text, but for the multitude of color photographs of restored aircraft from the golden age of aviation. We modelers now have one more source for proof-of-color for many of these old classics.

National Building Museum November 10, 2002

Russ Sandusky

A good turn out for an early session (9:00A.M) of flying in the Great Hall. As usual, the spectators applauded for the many Mass Launch winners in the Hall. They can understand the competitive nature of these events although they do enjoy watching the flight of the other timed events. But for neck and neck completion you can't beat FAC Mass Launch events. The Guillows 500 series kit contest had only four entrants, but Al Flesher's 28 grams Avenger really showed itself as a capable flyer.

Dan Driscoll was recognized as the Doug Buchannan Grand Champion for the event. Way to go Dan, those old models keep flying longer all the time.

Racers (4 entrants)

1. Ed Zapolski	Chambermaid
2. Bill Bell	Heath Midwing
3. Dave Mitchell	Howard Pete

Peanut (no Giants, 7 entrants)

1. Dan Driscoll	Ord-Hume
2. Rich Gillis	RV-6
3. Ed Zapolski	Davis A2

Golden Age/Modern Civilian (4 entrants)

1. Dan Driscoll	Corbin Ace
2. Ed Zapolski	Fairchild
3. Rich Gillis	Howard

Bogus Bostonian (6 entrants)

1. Dan Driscoll	Somewhat Robin
2. Rich Gillis	Almost Found
3. Ed Zapolski	Boston Monocoupe

WW II Combat No Cal (7 entrants)

1. Steve Zaploski	Hellcat
2. Ed Zapolski	BP Defiant
3. Barry Harrison	Buffalo

Delta Dart open (3 entrants)

1. Steve Zapolski
2. Ed Zapolski
3. Barry Harrison

ROG Classic (4 entrants)

1. Paul Spreiregen
2. Steve Zapolski
3. Steve Fujikawa.

Guillows Kit Contest (4 entrants)

1 st Bill Bell appearance, Stuka
1 st John Murphy spot landing, Hellcat
1 st Al Flesher combat, Avenger

1st Overall Al Flesher

Buttery Fly Timed Event: (5 entrants, 3 total flights)

1. Terry Slattery	7:27
2. John Apling	6:47
3. Al Durenzis	6:24

THE KREIDER-REISNER XC-31

Biography of a Bird

Ronald D. Neal

Editor's note: The following text was found in the files of the Smithsonian. Since Neal's name also appears on the 3-view, I assume this text appeared in the same unknown source.

When the First Transport Squadron was organized in March 1935 the Army Air Corps had only one transport airplane that had been designed solely for its needs. More than thirty years ago, back in 1934, the Kreider-Reisner Aircraft Company, Inc. of Hagerstown, Maryland, a subsidiary of Fairchild Aviation, produced one XC-31 to meet an Army requirement for a general purpose transport-cargo type airplane.

Thought obsolete by today's standards, the XC-31 did possess many of the features found in modern transports. The airplane featured "truck-bed height loading" through the large cargo doors on the starboard side. Another specialty was its ability to handle "palletized" cargo such as aircraft engines mounted on standard shipping cradles. A further feature was its "air drop" capability through a cargo chute in the aft fuselage section.

In order to respond quickly to flexible cargo requirements, the airplane was designed so that it could easily be converted from cargo to troops. Standard configuration consisted of fifteen army-type seats with an alternate arrangement consisting of folding benches mounted on the sides of the fuselage wall to accommodate fourteen men. The airplane could also be converted into a flying ambulance by the addition of six stretchers, three on a side, with room still remaining for attendants.

Construction was straightforward with the basic box shaped fuselage being built up from welded chrome molybdenum steel tubing. The externally braced, fabric covered wing consisted of a mixture of aluminum and steel construction with an all-metal leading edge forward of the main spar. The horizontal and vertical stabilizers were of all metal construction, with the elevator, rudder, and ailerons being fabric covered aluminum structures. The differential ailerons were mounted onto the rear wing spar with both right and left ailerons being fitted with trim tabs. Trim tabs were also fitted on the rubber and elevators. All of the control surfaces, with the exception of the electric powered flaps, were directly actuated through cables or push-pull tubes.

The XC-31 was powered by one 750 horsepower Wright Cyclone Model R1820-25 engine (Ed.

Note: The text on page 8 says it was powered by a 1000 hp cyclone) swinging a Hamilton Standard variable pitch 3-bladed propeller, the package being enclosed in an NACA type cowling. Top speed was about 167 mph with a cruise speed of 140 mph. With full flaps, the landing speed was 52 mph at the maximum gross weight condition. Two hundred and twenty five gallons of fuel, carried in three tanks mounted in the wings, provided the airplane with a cruising range of about 750 miles. Wing span and exposed wing area was 84 feet and 930 square feet, respectively. Overall fuselage length was 55 feet.

PHOTOS ON THE NEXT PAGE

Tom Schmitt

KUDZU PHOTOS CONTINUED

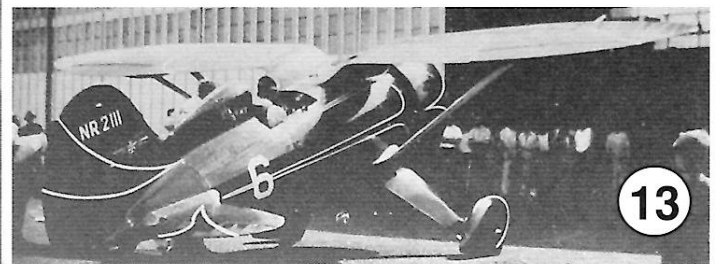
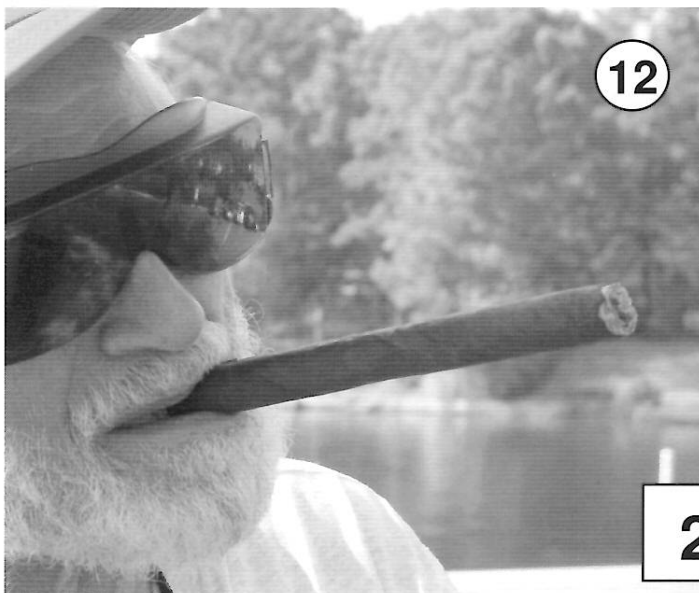
9. The Guillow WWI flyoff gang -- it was a hard fought battle down to the wire to win one of Bill Sheppard's magnificent tool chests.
10. And the winner was Dave Mitchell, seen here with his high-flying Bristol barely edging out Claude for first place and the prize.
11. Bob McLellon flew this Henschel 126 in the FAC Rubber Scale event.
12. A KUDZU meet would not be complete without our friend and former 'SOT' Bob Wedell lighting up a stogie.

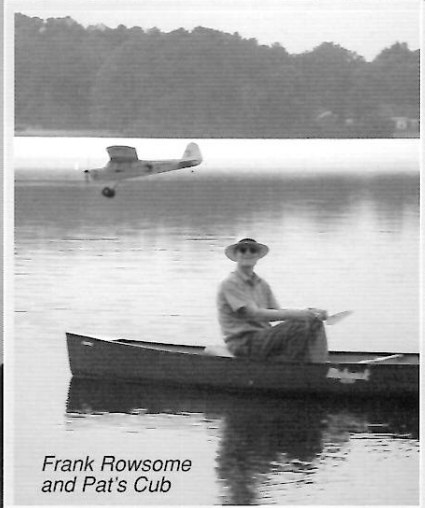
INTERPRETATION OF COLORS FROM B&W PHOTOS

13. & 14. Here are two photographs of the Hall Bulldog that support Dan Driscoll's text on determination of colors from old film. The upper photo (13) was taken with orthochromatic film, and the red and black colors are virtually indistinguishable. The lower photo (14), taken with panchromatic film, renders the colors closer to their relative brightness. (The lower photo has the final version of the vertical tail.)

SAD NEWS

It is with regret that we report the passing of Ernie Green on November 29. Ernie was a long-time local member of the Maxcuters and a Navy veteran. Unfortunately this news came just after the newsletter was put together, and there was insufficient room for Hurst Bowers' summary of Ernie's involvement with aviation. It will appear in the next issue of MAX-FAX.





Frank Rowsome
and Pat's Cub



Wally Farrell's
Found



Terry Pittman's
Farman

Photos on the lake by Tom Hallman

CLUB OFFICERS -President: Hurst Bowers, 1649 Birch Rd.. Mclean, VA 22101
Secretary: Bert Phillips, 1709 Crofton Pky, Crofton, MD 2111-2305
Treasurer: Norm Davison, 14008 Castaway Dr., Rockville, MD 20853
Editor: Stew Meyers, 8304 Whitman Dr., Bethesda, MD 20817

MEETINGS - The D.C. MAXECUTERS hold meetings at 8:00 pm on the first Tuesday of every month at the College Park Airport, the oldest continuously operating airport in the world.

MEMBERSHIP - Dues for membership in the D.C. MAXECUTERS are \$15 per year for residents of the USA, Canada, and Mexico, and \$25 for all other countries.

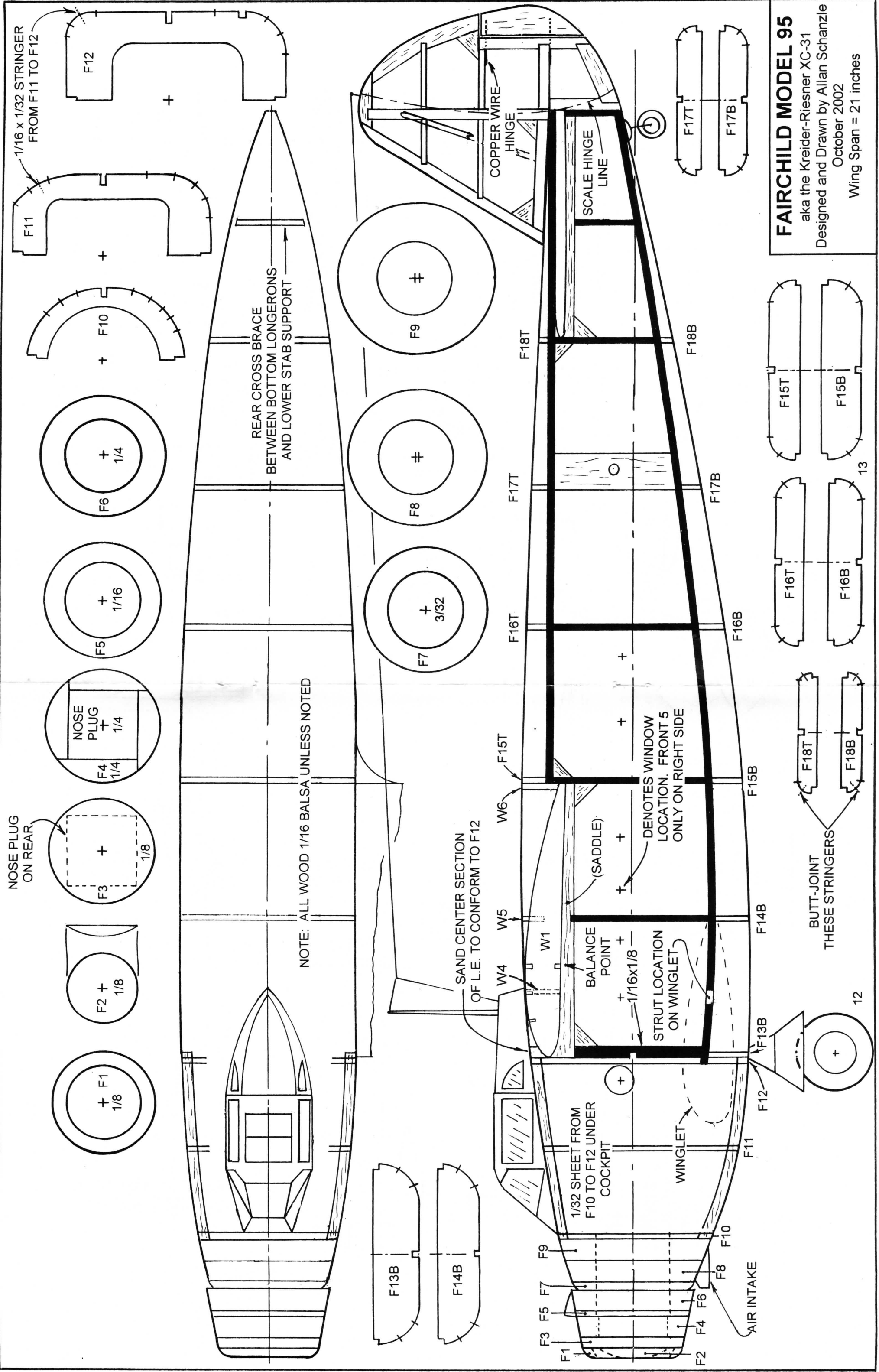
Your mailing label indicates the year and month of the last issue of your current membership. A red "X" in the box below is a reminder that your dues are due. Send a check, payable to the "D.C. MAXECUTERS", to the treasurer, Norm Davison.

PUBLISHING DATES - Six issues of MaxFax are sent each year as close to the nominal dates as possible, but since this is a volunteer publication nothing is guaranteed except that six issues will be sent to all members.

CONTACTS - Material for the newsletter and membership questions should be addressed to Stew Meyers phone 301-385-1749. Email gets immediate attention. stew.meyers@erols.com

Maxecuter web site: www.maxecuter.com

Your DUES are due



NOSE PLUG ON REAR

1/16 x 1/32 STRINGER FROM F11 TO F12

REAR CROSS BRACE BETWEEN BOTTOM LONGERONS AND LOWER STAB SUPPORT

NOTE: ALL WOOD 1/16 Balsa UNLESS NOTED

SAND CENTER SECTION OF L.E. TO CONFORM TO F12

BALANCE POINT
STRUT LOCATION ON WINGLET

DENOTES WINDOW LOCATION. FRONT 5 ONLY ON RIGHT SIDE

SCALE HINGE LINE

COPPER WIRE HINGE

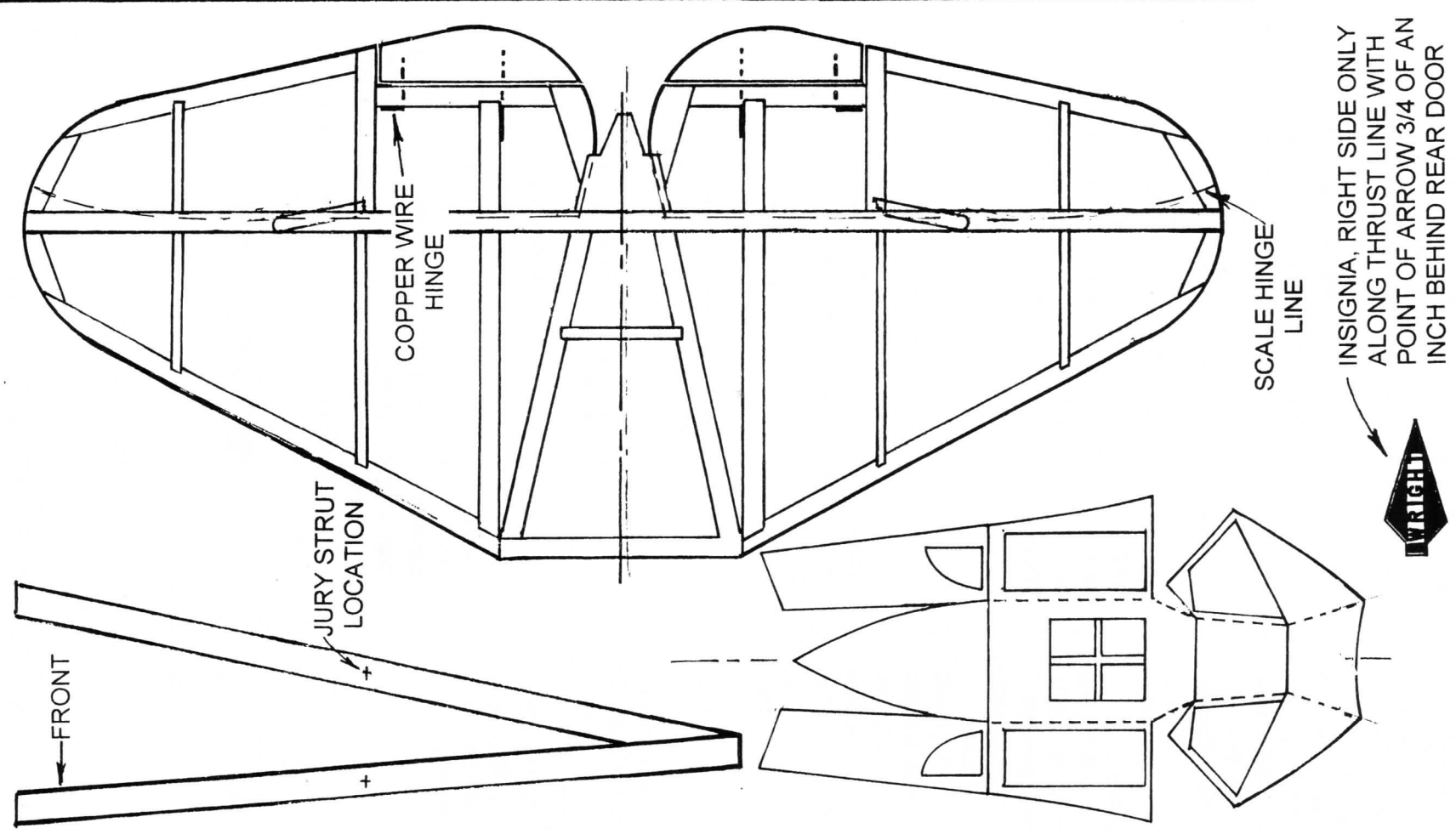
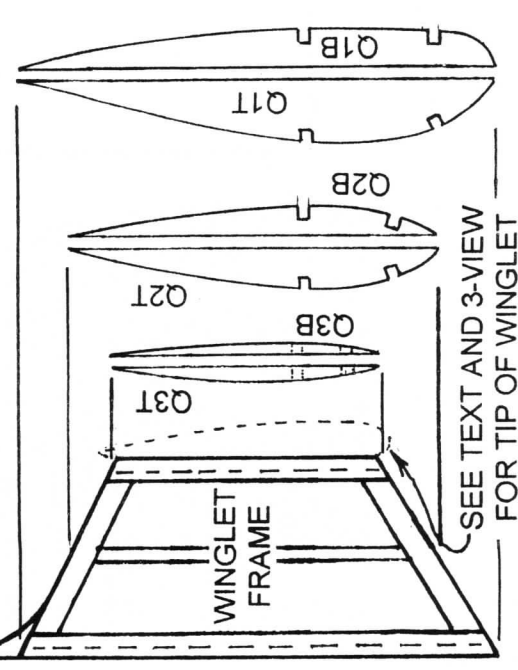
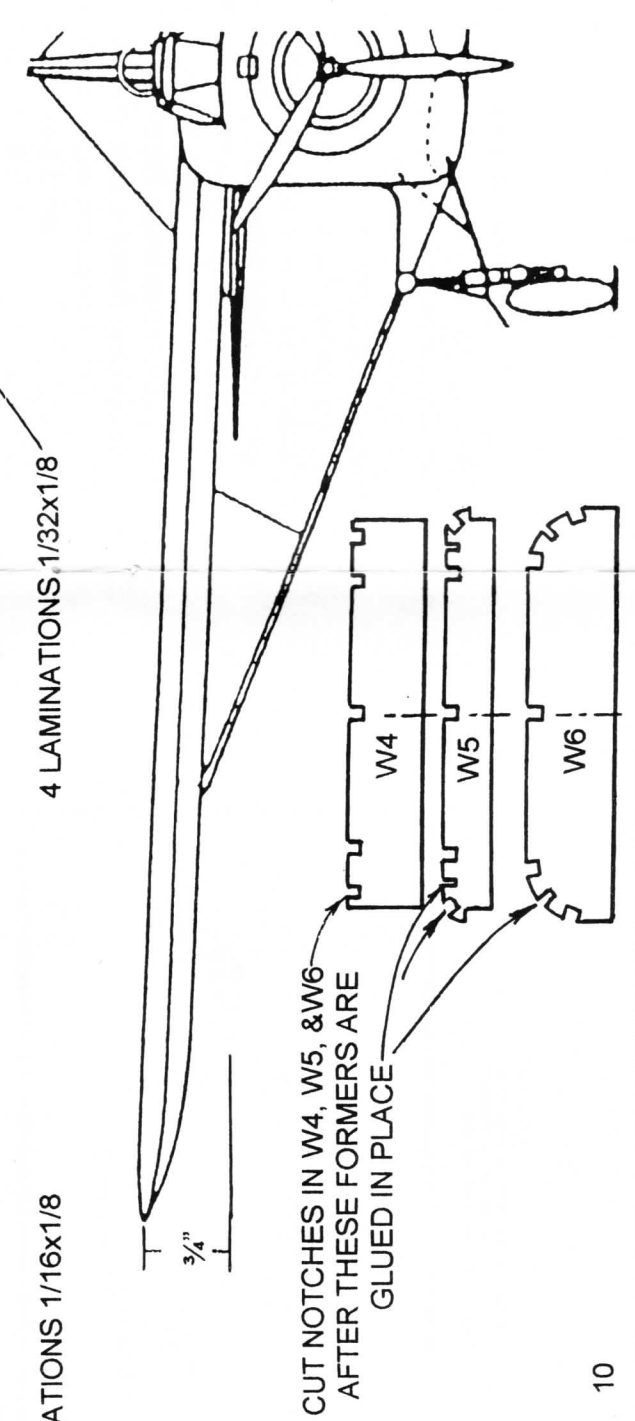
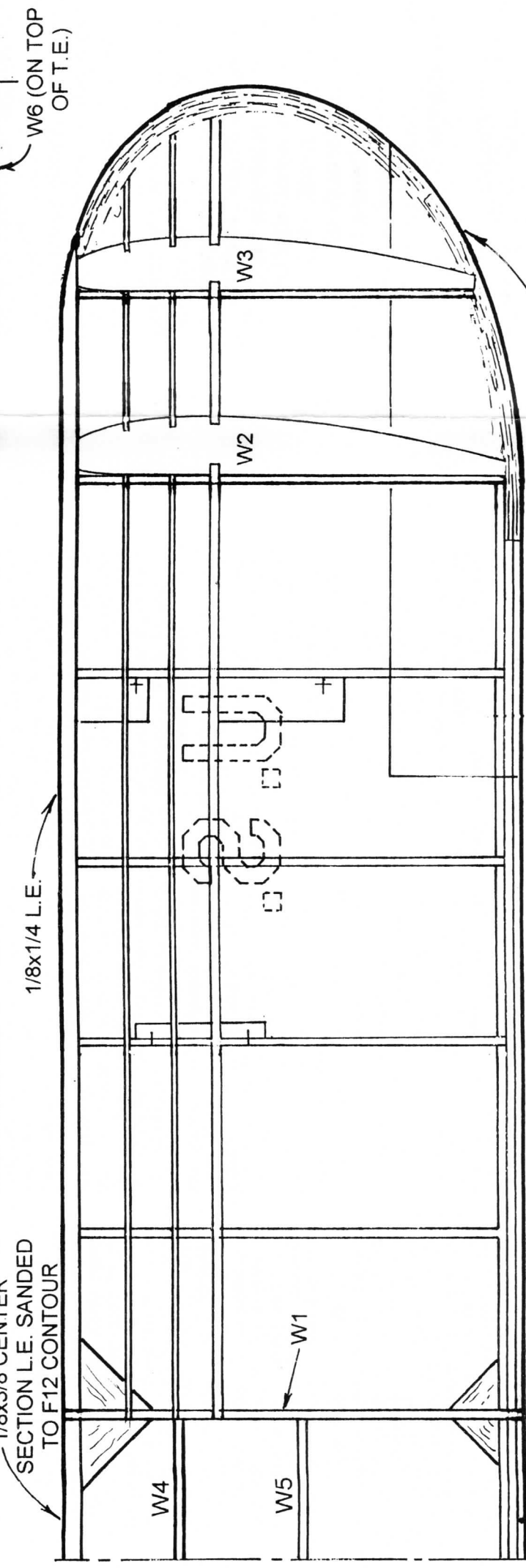
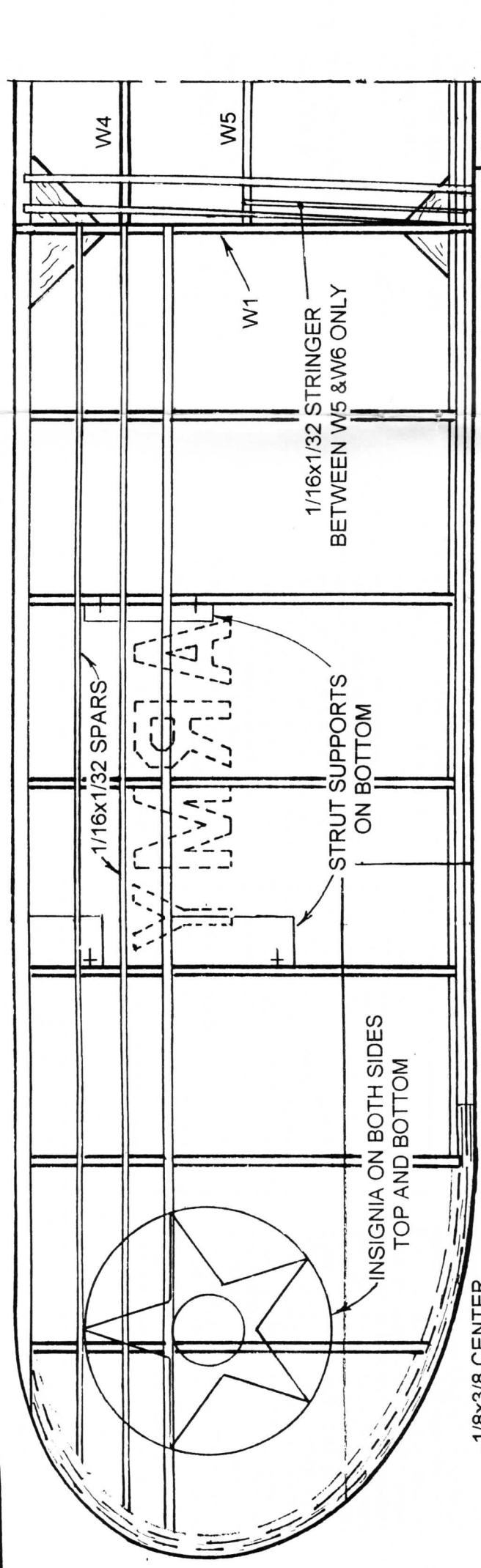
BUTT-JOINT THESE STRINGERS

FAIRCHILD MODEL 95

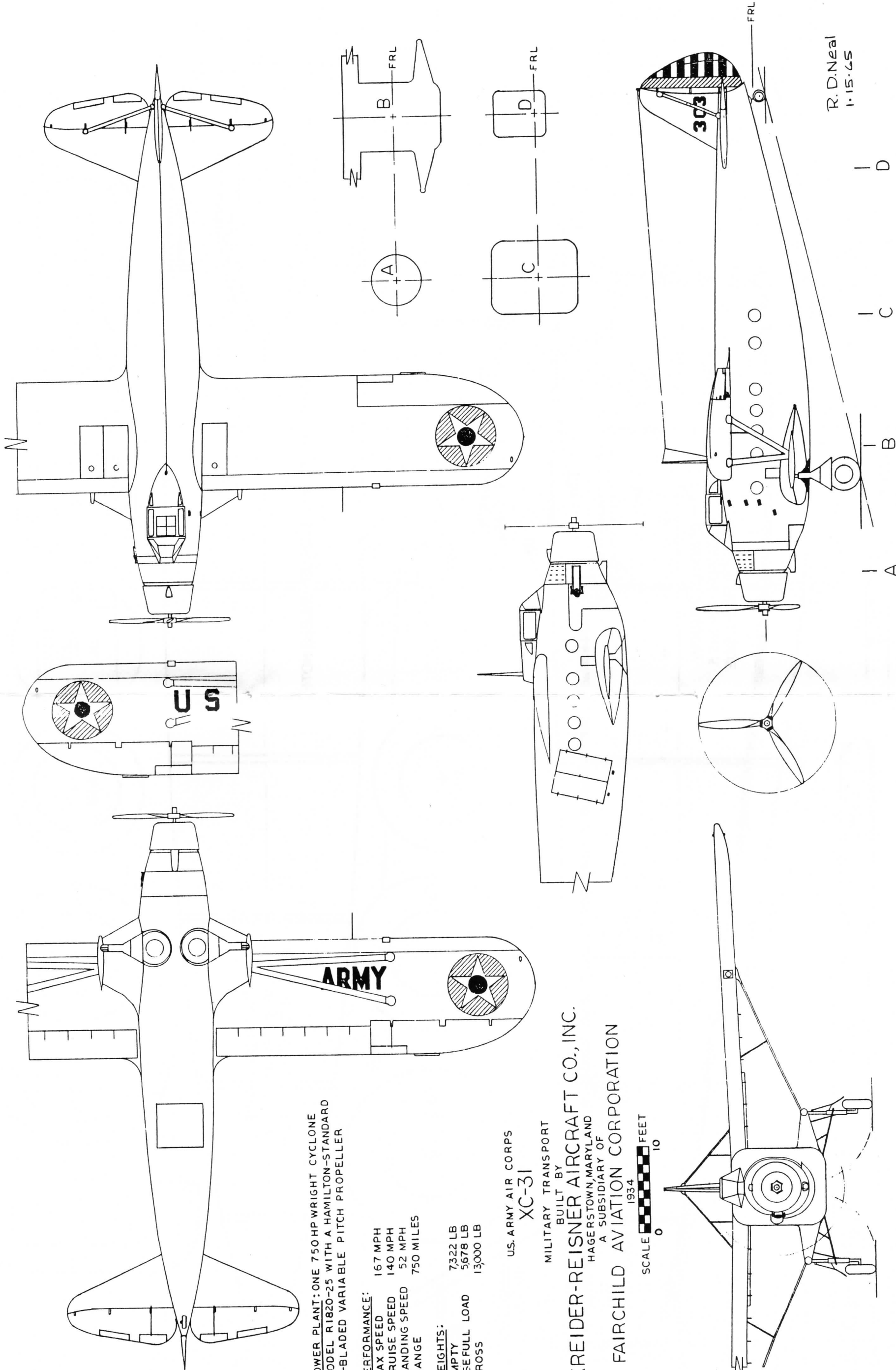
aka the Kreider-Riesner XC-31
Designed and Drawn by Allan Schanzle
October 2002
Wing Span = 21 inches

12

13



FAIRCHILD MODEL 95
 aka the Kreider-Riesner XC-31
 Designed and Drawn by Allan Schanzle
 October 2002
 Wing Span = 21 inches



POWER PLANT: ONE 750 HP WRIGHT CYCLONE
 MODEL R1820-25 WITH A HAMILTON-STANDARD
 3-BLADED VARIABLE PITCH PROPELLER

PERFORMANCE:
 MAX SPEED 167 MPH
 CRUISE SPEED 140 MPH
 LANDING SPEED 52 MPH
 RANGE 750 MILES

WEIGHTS:
 EMPTY 7,322 LB
 USEFUL LOAD 5,678 LB
 GROSS 13,000 LB

U.S. ARMY AIR CORPS
XC-31
 MILITARY TRANSPORT
 BUILT BY
KREIDER-REISNER AIRCRAFT CO., INC.
 HAGERSTOWN, MARYLAND
 A SUBSIDIARY OF
FAIRCHILD AVIATION CORPORATION
 1934

SCALE 0 10 FEET