

# MAXFAX



Journal of the D. C. Maxcuters

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

Editor: Stew Meyers

MAR/APR 2005



## COMMING ATTRACTIONS

### **30 April, 1 May , 2005 Ingleside Contest**

Scheduled are 39 Free Flight events from  
Catapult glider to FAI Power  
Also there will be a FAC Grand Champion Trophy.  
Russ Sandusky is the FAC CD

For more info check in the Jan/Feb issue of MAXFAX  
or email Russ at : [russellsandusky@yahoo.com](mailto:russellsandusky@yahoo.com)

### **May 13 & 14, 2005 Kudzu Spring Contest**

For more info check in the Jan/Feb issue of MAXFAX

### **July 16 and 17, 2005 FAC Non-Nats at Geneseo, NY**

Judging at Days Inn on the 15th.

### **Aug 26 & 27, 2005 Kudzu Fall Contest**

### **Oct 22 and 23, 2005 FAC Contest at Wawayanda, NY**



1

Photo by Dan Driscoll



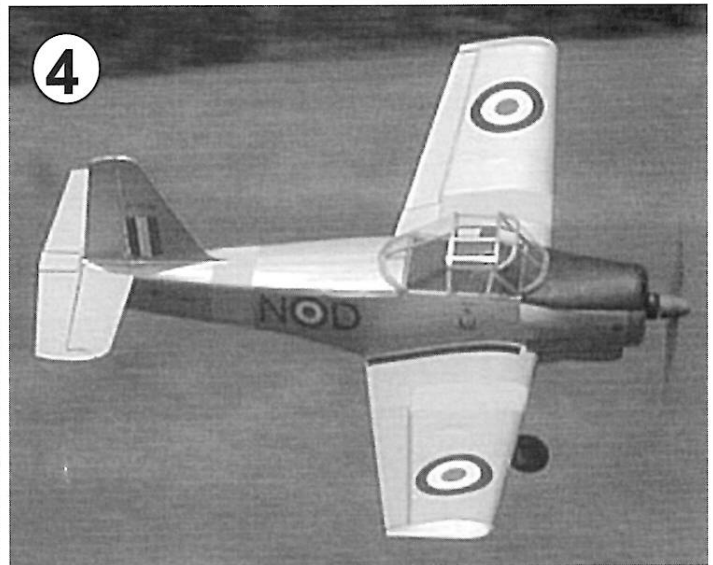
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Photo by Claude Powell



3

Photo by Bob McLellon



4



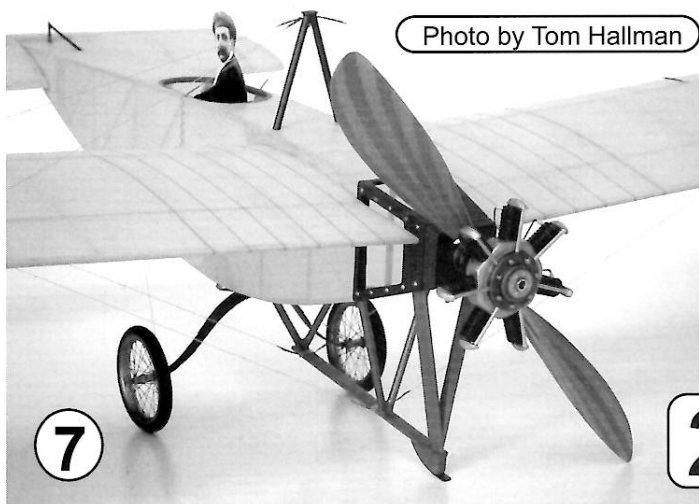
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Photo by Dave Rees



6

Photo by Dan Driscoll



7

Photo by Tom Hallman



8

Photo by Lindsey Smith

2

## Low Wing Trainer Issue

*Stew Meyers: Editor*

This issue features the Percival *Provost*, a British trainer from the 50's. Claude Powell has designed and built one and sent in the plans as well as plans for the Fiat G46. Dan Driscoll had the KielKraft kit of the P56 Provost prototype. To put the icing on the cake, Mike Dale, one of our new members, has a full scale Provost T Mk 1 based at Culpepper VA to provide scale documentation.

Since we are featuring a KielKraft kit, here is a little history on KielKraft from *Lindsay Smith*, a companion piece to the VERON article in our July-August 2004 issue.

### KEIL KRAFT

This is possibly the better known of these two companies in the USA. It was formed by Eddie Keil and his brother Ron in the mid 1930s to import and process balsa wood from Ecuador. They first marketed kits in 1939 with a range of, it must be said, rather bad scale kits designed by Louis A. Heath but their two duration designs Ajax and Achilles named after the two British cruisers involved in the defeat of the German heavy cruiser Graf Spee were very successful and widely built, they still are, particularly the Achilles the smaller of the two which was slightly redesigned after the war by Albert Hatfull who with Bill Dean became the main designers for Keil Kraft when it became one of the main suppliers of aero modeling materials and kits in the United Kingdom.

On offer towards the end of the war was a glider kit called 'The Victory Glider'. This was almost as popular as the Ajax and Achilles, but I found out a few years ago that it was a direct rib for rib copy of the Earl Stahl Schweizer T&2 design published in the 44 Zaic Yearbook.

### PHOTOS

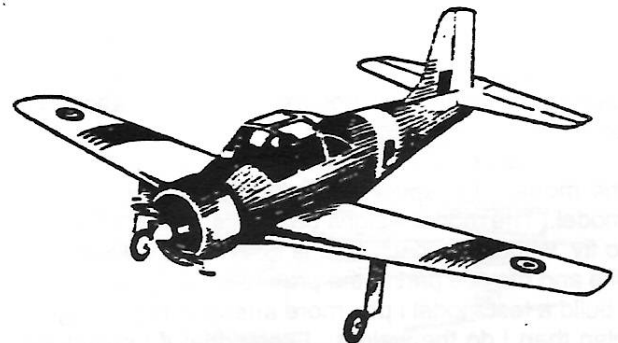
1. A couple of Keilkraft Kit's from Dan (Ebay) Driscoll's collection.
2. Claude's Provost ready for the 'Low-Wing Trainer' event --- plan in this issue.
3. The 'Low-Wing' Trainer that got the event started; Bob McLellon's Temco. Lobby him for the plans for the next issue!
4. John Hunton's electric R/C Provost flying by. This is powered by a PJS 300 outrunner.
5. One of Dave Rees's flock of Tri-Motors a Pander.
6. Another low wing trainer this one a UT-2 by Claude Powell. Plans in this issue.
7. Tom Hallman's latest Bleriot Canard with 'Louie' ready to go.
8. Lindsey Smith's latest KeilKraft "Kreation" the Thunderbolt waiting for the colors.

In 1946 a series of large Free Flight rubber powered scale kits was announced and heavily advertised. These were designed by Albert Hatfull, but were not a commercial success as by then small diesel engines were available and very popular with scale modelers, so the series died out and despite frantic appeals by Doug McHard, and myself only five plans Tempest, Typhoon, FW190, Zero, and Spitfire LFXV1 have survived. Sadly Albert who is still around, has no recollection of this range though there is a photograph of the framework of a Mustang in his photo album. I have built and flown the Tempest which some of you may have seen at Geneseo and Doug built the other four all of which flew well, but on my Tempest plan which was found abandoned in an attic, one can see the pencilled modification for diesel powered control line use.

In 1949 Kiel Kraft announced a new range of scale kits aimed at the younger market of around 18" wingspan and costing three shillings and sixpence plus two pence sales tax these came to be called Three and Eights and became very popular. The range finally included jets powered by the Jetex 50 rocket motor and some of the range are still available today. Sadly Eddie died in a car crash and his demise initiated a series of takeovers ending with the firm of Amerang owning both Keil Kraft and Veron.

### KK JUNIOR SCALE

Sopwith Camel	Ercoupe
Fokker D-VII	Piper Super Cruiser
RAF 5E5	Piper Family Cruiser
Spitfire	Auster Arrow
Hurricane	Fairy Junior
ME109	Globe Swift
FW190	Stinson 105
Lysander	Cessna 140
Stuka	Luscombe Silvoir
Mustang	JETS
Percival Provost	Fiat GBO
Fairy Gannet	Javelin



KK Percival Provost P56  
Cheetah powered Prototype

# PERCIVAL PROVOST

*Claude Powell*

I drew up the Provost in June 2003 for the low wing military trainer event that Bob McLellon had started. I thought the event would catch on. It has! It's a post war aircraft so it can also compete in the modern military event. This won't be a blow-by-blow construction article. I'll only cover some specific techniques that I used that might be of interest to you. Obviously, the best techniques are the ones that work for you.

The model color is silver so your choice is silver tissue or paint. I wanted to wet cover so the silver tissue was out. I covered with black jap tissue (old Walt Mooney tip). I used 3M brand low-tac (60 day) blue painters tape to mask off the wing walks and anti-glare panel. After spraying the model with silver paint I peeled off the tape exposing the wing walks and anti-glare panel in the correct black color.

I plunge molded the canopy over an electric stove burner. This was tedious because it's a large canopy even at the 16" wingspan. During this past year the June 2004 issue of Flying Models magazine had an article for molding canopies and cowls using two liter soda bottles. I tried it and it works great. This is the way to go especially if you enlarge the plan. To get the canopy framework I used the painters tape again and stuck it to wax paper. I sprayed it silver at the same time I was spraying the model. I then stripped it to the widths I needed, peeled it off the wax paper, and applied it to the canopy. It works great. Try it. Vance Gilbert had an article in the latest FAC nlr describing how he uses the painters tape to detail panel lines. I tried it and it works very well.

I used to have problems locating stringers on an oval fuselage and keeping them straight. Not any more! I don't pre-notch formers because the notches are never exactly in the right place. I roughly frame the fuselage with the formers, top, bottom and side keels. The first stringer, above and below, the side keel is about 1/2" away. To locate these stringers, on both sides of the fuselage, I cut a balsa spacer about 1/2" wide and long enough to pass through the fuselage. Rest the spacer on the side keels and against each fuselage former and mark the former at the top of the spacer. Now the stringers, on both sides of the fuselage, are located exactly opposite each other and the stringer will be as straight as the side keel. Notch the stringer location with a jewelers file to fit the stringer. Work your way to the top and bottom of the fuselage with this technique. Make new spacers, as required, and rest them on the preceding stringer.

To date I've only had marginal success at trimming the model. I suspect the problem is more me than the model. The model weighs 33 grams, balanced and ready to fly, without rubber. This is heavier wing loading than I like and may be part of the problem. I'm finding that when I build a test model I pay more attention to proving out the plan than I do the weight. I know that if I built it again it would be lighter. This makes a nice looking model that is

seldom seen (or never) at a contest.

# FIAT G-46

*Claude Powell*

The G-46 is a Italian military trainer built in 1947. I drew this plan in June 2003 expecting the low wing military trainer event that Bob McLellon had been flying would eventually become a FAC event. This is a very austere plan but Len Wieczorek's excellent 3-view (provided) gives all the details you need. Since this aircraft is post WW-II it can also be flown in the modern military event.

I haven't yet built this model but I'll offer a few suggestions that I will follow when I do. If I built the model with the wheels in the "DOWN" position I would use 1" dihedral in the wing. If I built it with the wheels in the "UP" position I would use 1 1/4" dihedral. I would mold a one-piece canopy rather than build it up with individual pieces of clear plastic. It's simpler and also much easier to apply the canopy framing using low-tac 3M blue painters tape painted the color of the model. Trim the formers to the thinnest width that you are comfortable with. Place the stringers at your discretion. Use gussets liberally. This model has a relatively long nose and appears to have the necessary ingredients to be competitive in the hands of the right pilot. This is going to be a popular event so get your models ready.

## Some remarks on Claude's Model

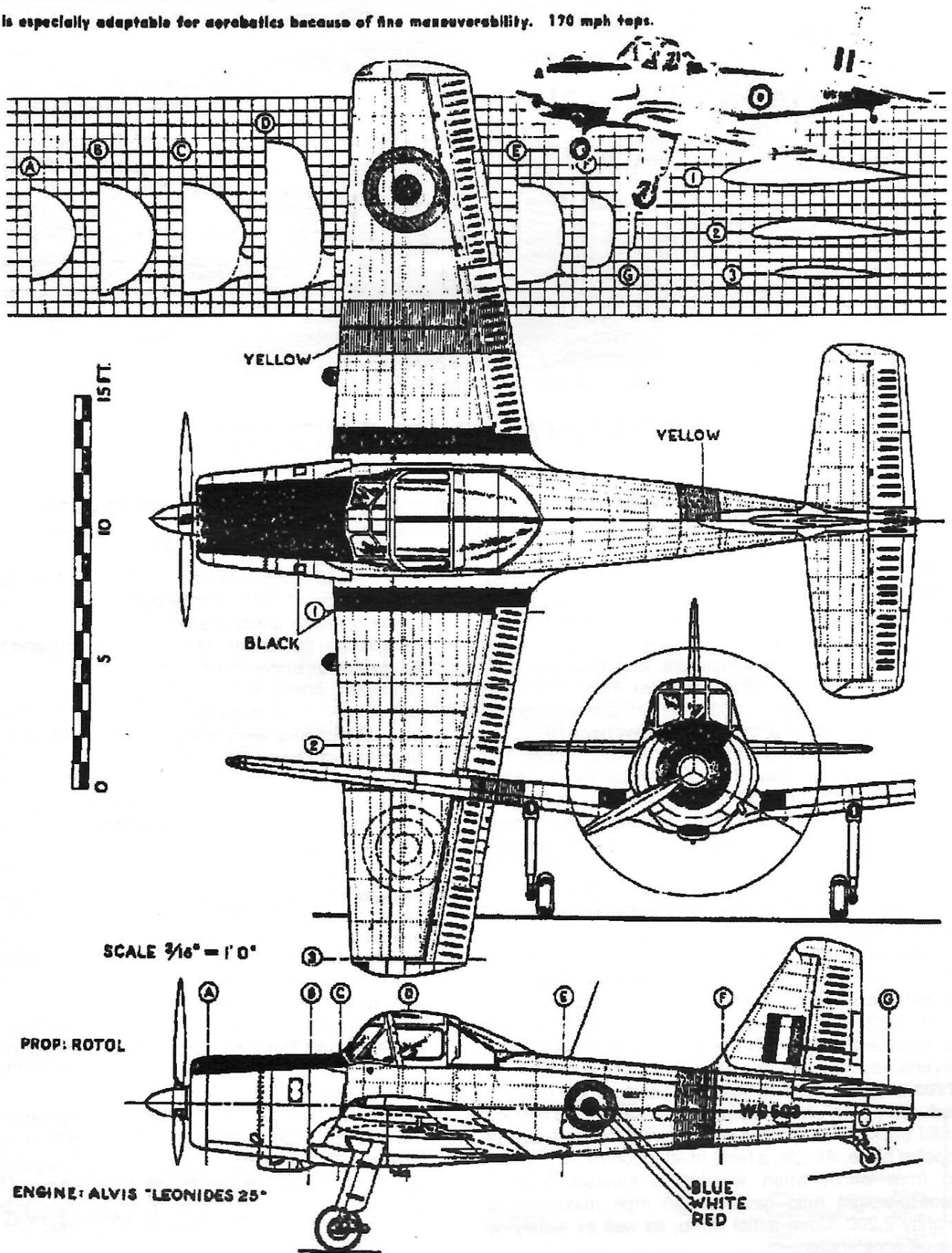
Claude used the three view on the opposite page, this three view seems to be based on the G-32-1 prototype which lead to a few discrepancies. The exhaust is only on the left side and yellow stripes are on both wings. The access panel ? shown on both sides of the cowl in the three view is missing in all photo's of the full scale aircraft I have seen. The characteristic "elephant ear" aft cowl extensions are also missing from the plan and model, but do show on the three view. These were required to solve a cooling problem upon going from the Cheetah to the Leonides engine. The airscoop / oilcooler is also too small. If you build the T1 production version be sure to include these. You can make your model more scale by referring to the Granger three view and the photos of the full scale airplane.

## The Name Game

Hunting bought out Percivals at the end of the war. By 1954 the firm changed its name to Hunting Percival and finally in 1957 dropped the Percival altogether.

*Stew Meyers*

Perceval Provost, British trainer now in production for the RAF, has a side-by-side cockpit and is especially adaptable for aerobatics because of fine maneuverability. 170 mph tops.





It seems a pity that such a modern looking aircraft as the Provost T1 should have fixed undercarriage.

## PERCIVAL P.56 PROVOST

**Built as a trainer, the Provost was not just a mundane machine for teaching pupils to fly. The aircraft was a thoroughbred which earned the respect of those who flew it.**

The Provost was a friendly aircraft, friendly-looking, friendly-sounding, with good control response and an ergonomic cockpit. A real doll with immaculate handling, according to the late Hugh Scanlan who worked for its manufacturers and flew the type. Designed by Percival's Chief Designer Arthur Bage and first flown on 23 February 1950, the Provost was chosen for production instead of the rival Handley page HPR.2, to meet Specification T.16/48 for an RAF basic trainer. The prototype Provost flew with an Armstrong Siddeley Cheetah seven-cylinder radial, but the aircraft entered production with the 550 hp Alvis Leonides as the Provost Ti. It was an all-metal, low wing, fully-aerobatic machine with a rapid rate of roll, and its four-hour endurance allowed decent cross-country training sessions.

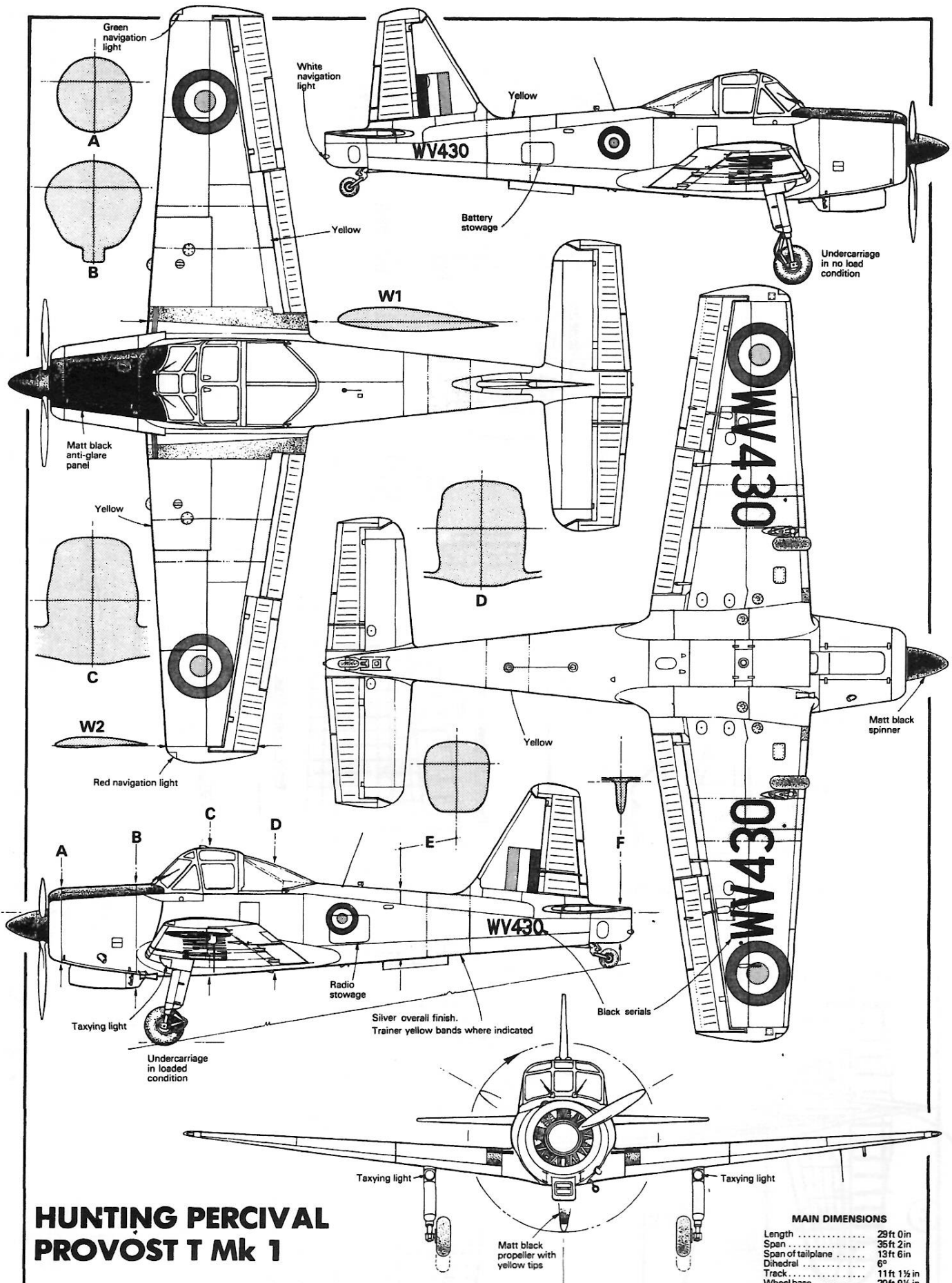
At 11.79 litres, the Provost's supercharged Leonides nine-cylinder radial was smaller than might be expected for 550 hp, but this was achieved by revving at a fairly high 3,000 rpm. Full power was given at +8 lb/sq in boost; maximum continuous power at 7,000 ft was 430 hp at 2,900 rpm and 3-1/2 lb/sq in boost, and the maximum weak mixture cruise of 330 hp at 11,000 ft was delivered at 2,600 rpm and zero boost. The engine drove a three-blade constant-speed propeller through a 0.625 to 1 reduction gear, and emitted a smooth wavering hum on a mild background of staccato exhaust, with a touch of propeller noise. All told, a fairly quiet machine for outside, and from within when wearing a headset. A good power-to-weight ratio gave a 200 mph maximum, a sprightly 2,200 ft/mm initial climb, as well as satisfying take-off acceleration.

There was a 31-gallon crash-proof bag tank in the landing edge of each wing, and a 2.9-gallon collector tank in the fuselage under the floor. A six-gallon oil tank was mounted on the forward face of the firewall, and there was an oil cooler under the cowling in the same, and rather prominent, fairing enclosing the carburettor air intake. Not surprisingly, on such an agile machine as the Provost, fuel and oil systems were designed for inverted flight. The Leonides was beautifully cowled, in the British manner, with cooling air exhausting through elegant cheeks either side of the engine. Also, a slim, streamlined entry was completed by a pointed spinner and an afterbody over the reduction gear.

Pupil and instructor sat side-by-side under a sliding canopy, with inversion protection. Wing root and tip aerofoil sections were NACA 23015 and NACA 4412, respectively, modified to improve spinning behaviour, with linear variation from root to tip. The Provost entered service in 1953 at the Central Flying School for instructor conversion, and the first regular course began later that year at No 6 FTS, Ternhill, with other schools and the RAF College following suit. The T.51 version was exported to Eire, the armed T.52 to Rhodesia, and the armed T.53 to Eire, Burma, Iraq and Sudan.

Hunting Aircraft, as Percival had become when Provost production ended in 1960, enjoyed a very good innings with the aircraft, with over 450 being built. A fine testimony to a fine British trainer.

From the May 1994 *WINGSPAN*



# HUNTING PERCIVAL PROVOST T Mk 1

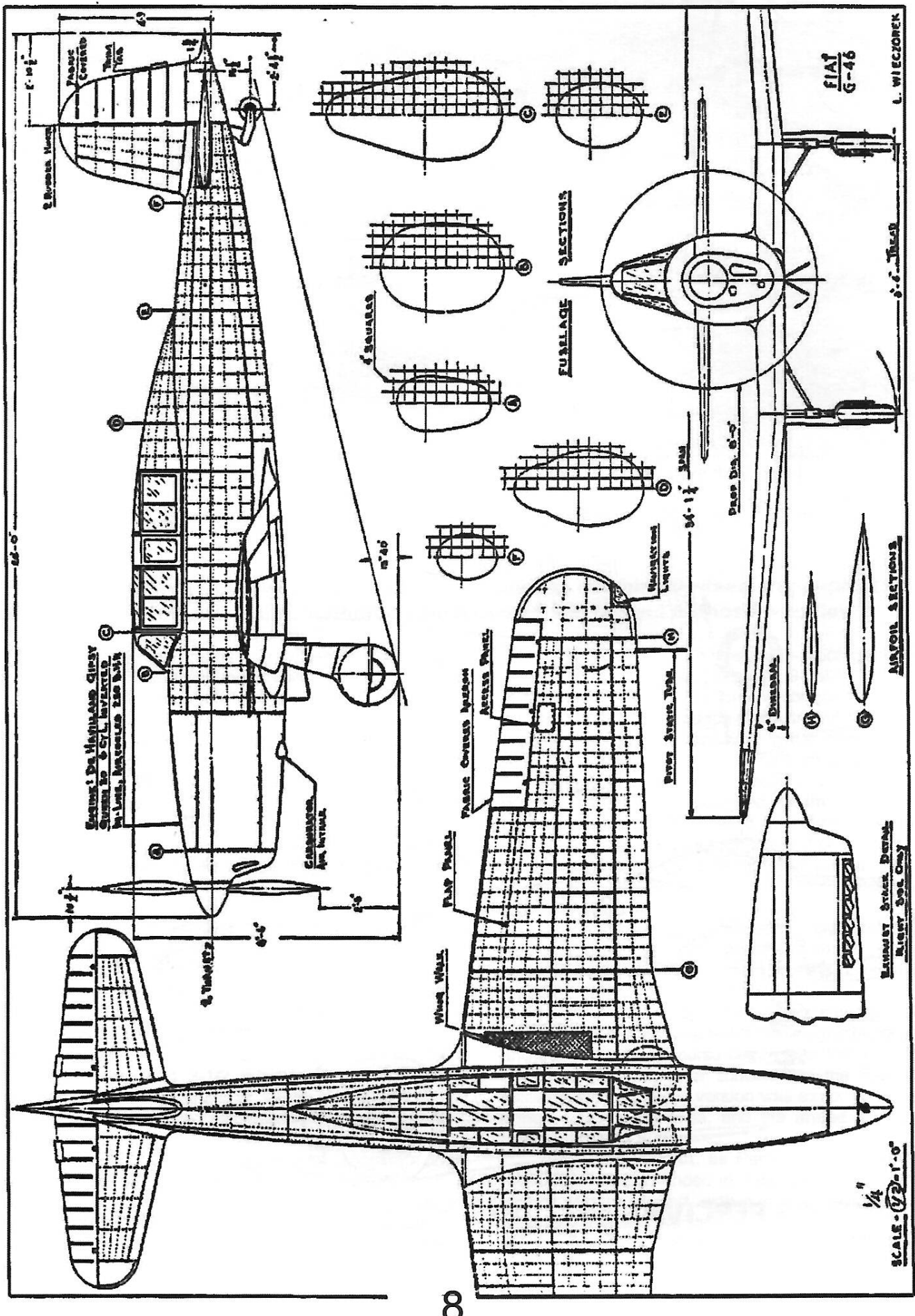
Scale 1/72



**MAIN DIMENSIONS**

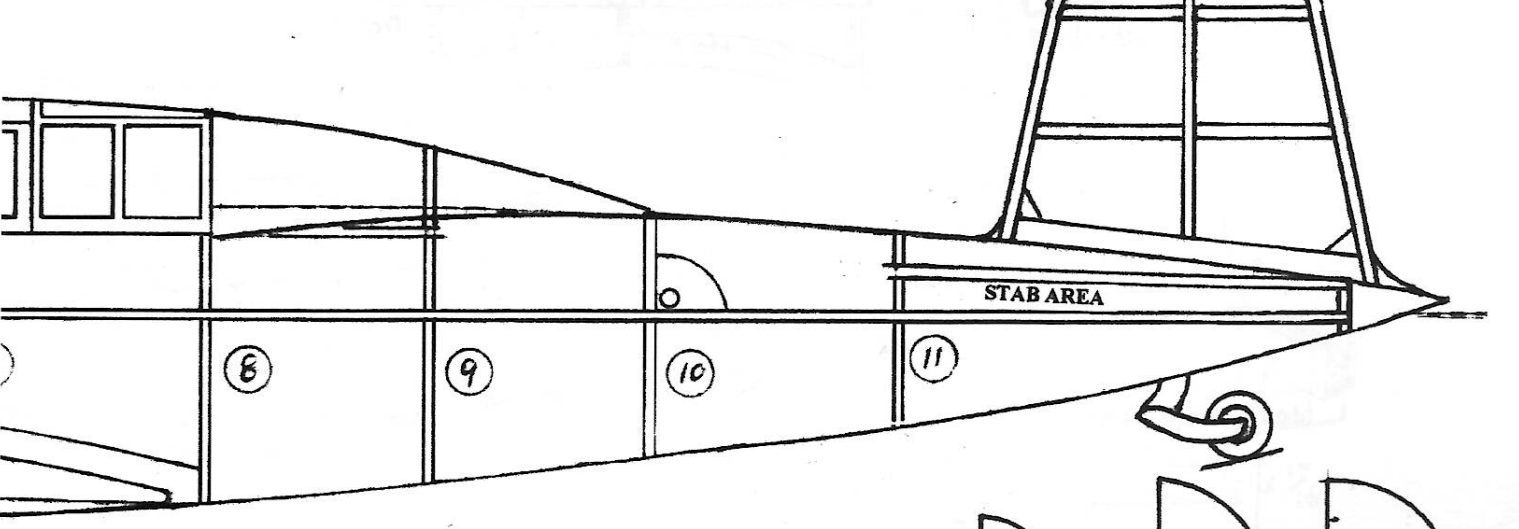
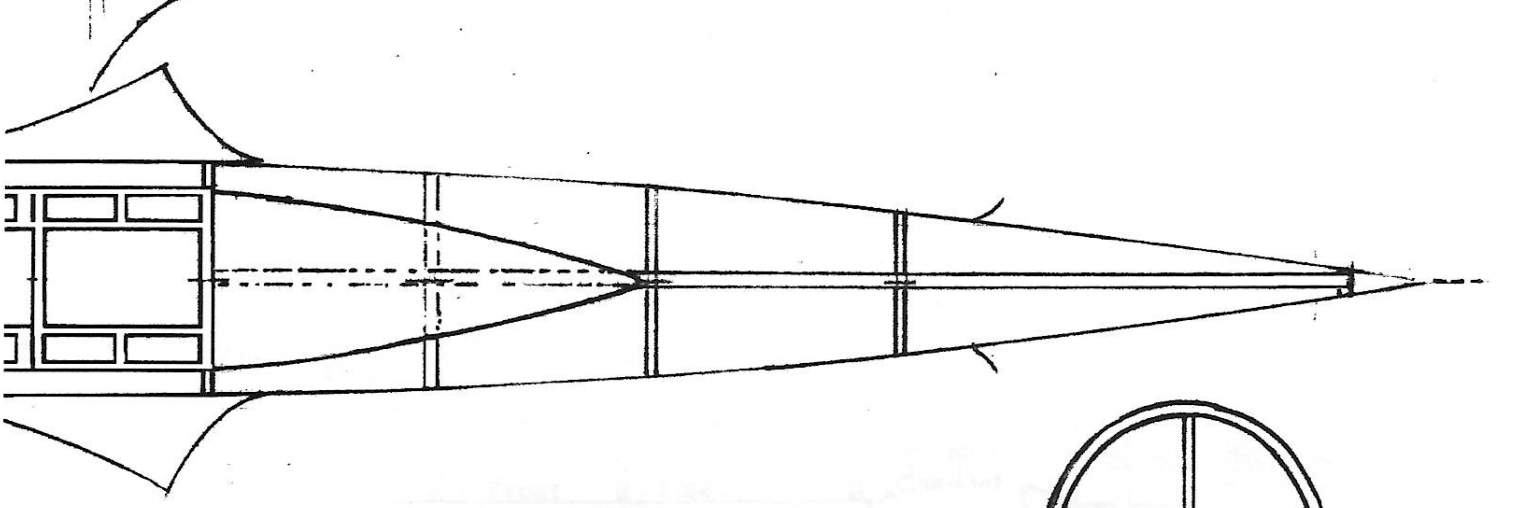
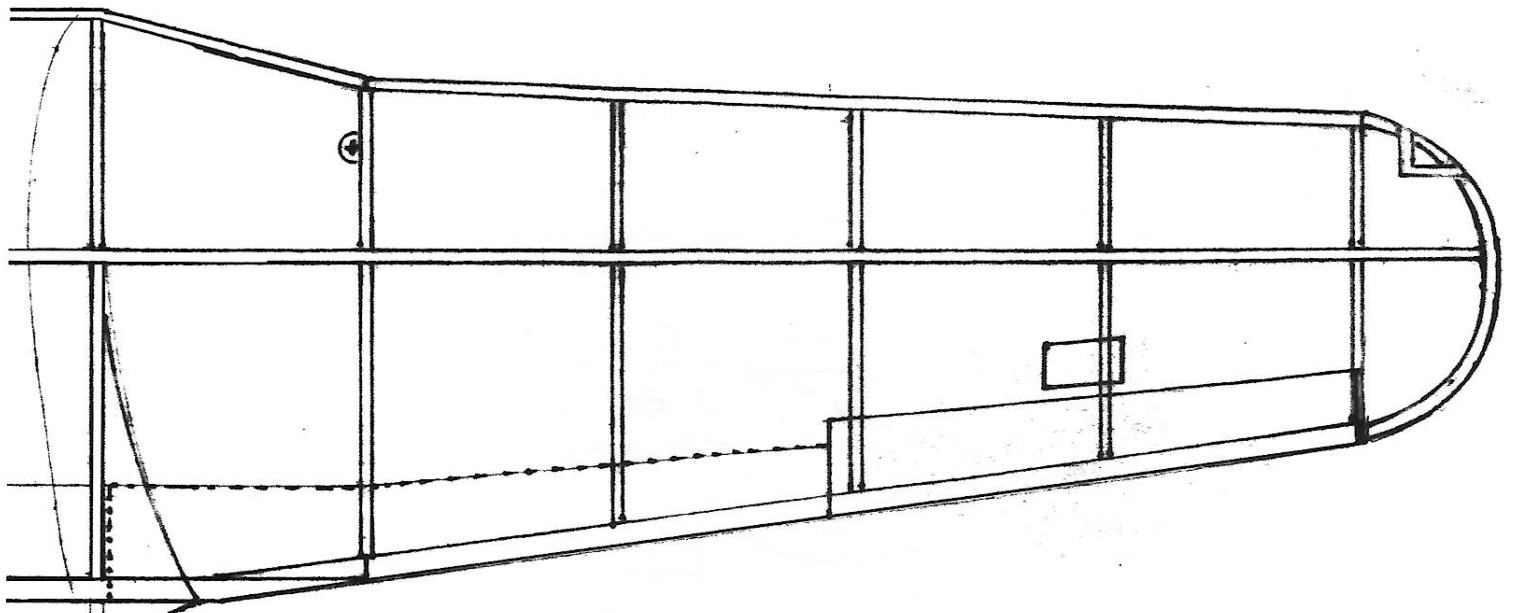
Length	29ft 0in
Span	35ft 2in
Span of tailplane	13ft 6in
Dihedral	6°
Track	11ft 1½ in
Wheel base	20ft 9½ in

© A. Granger. MISTC  
1983

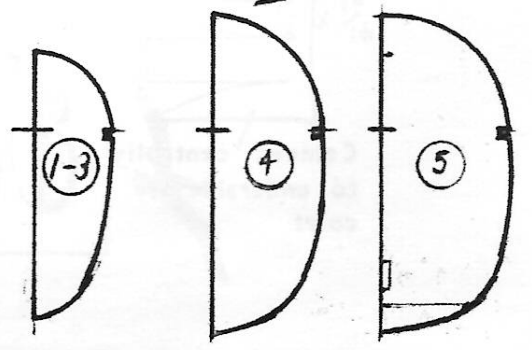


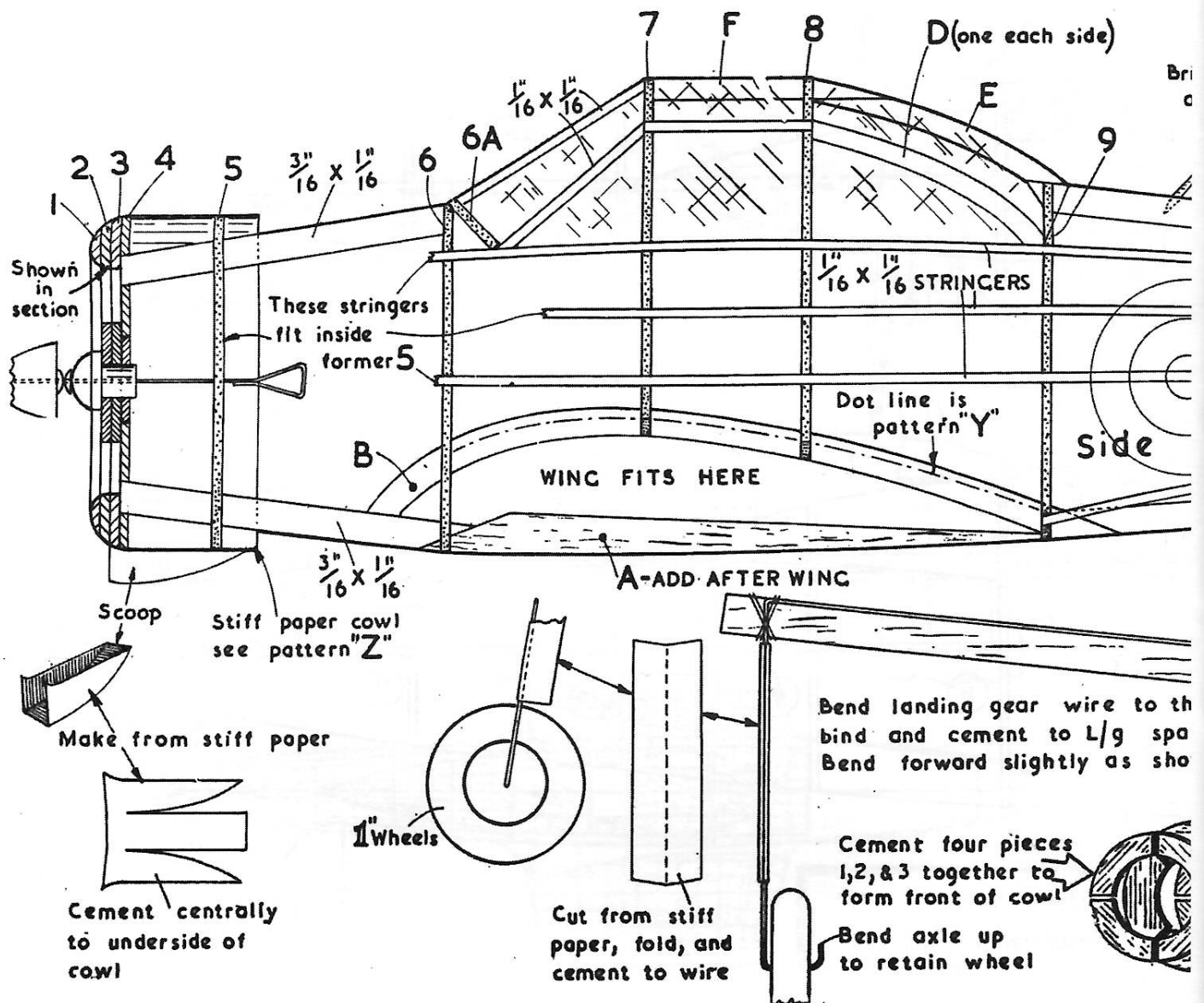
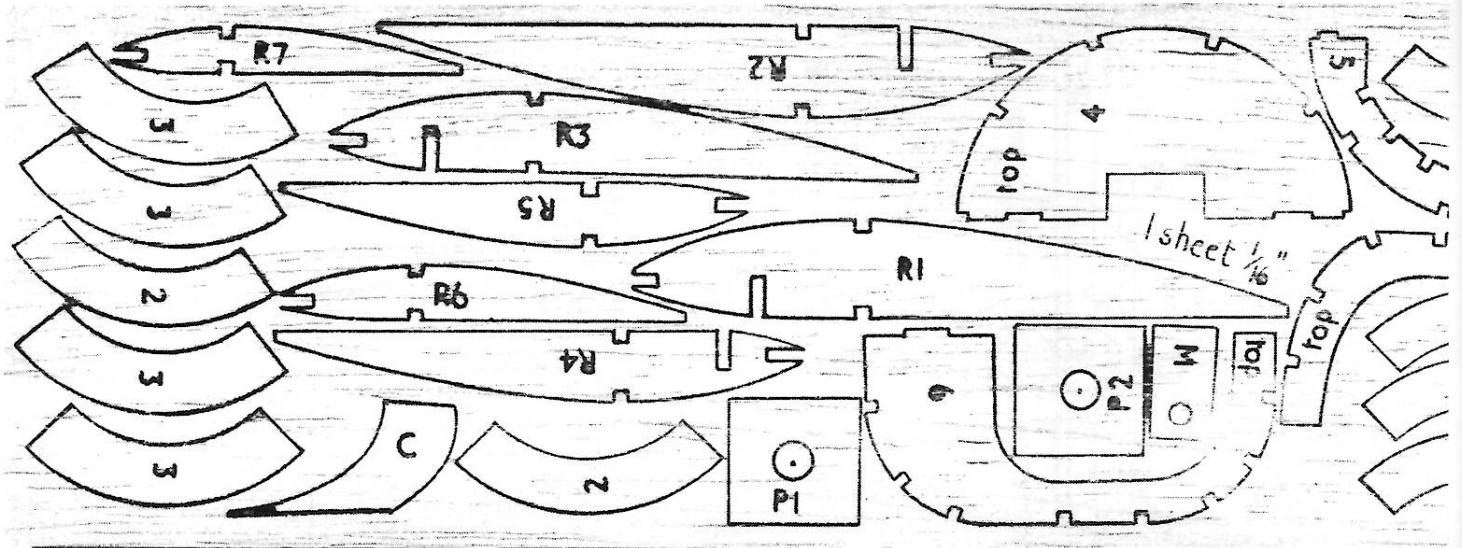
This drawing, obviously reduced for publication, is courtesy of Gordon Coddling. The designer, Leonard Wiczorek, published quite a few excellent such drawings and deserves a KAPA issue. Can any of our members tell us anything about Mr. Wiczorek?

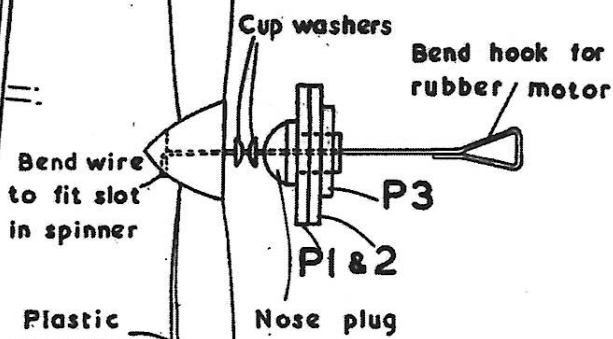
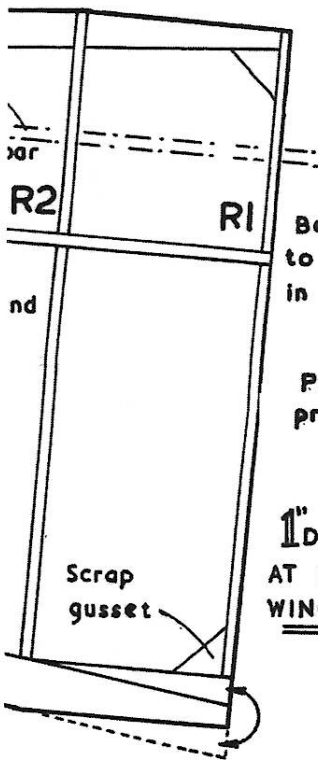




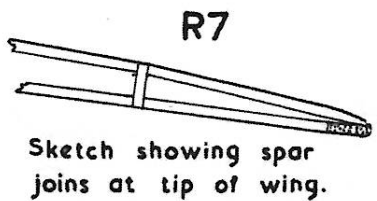
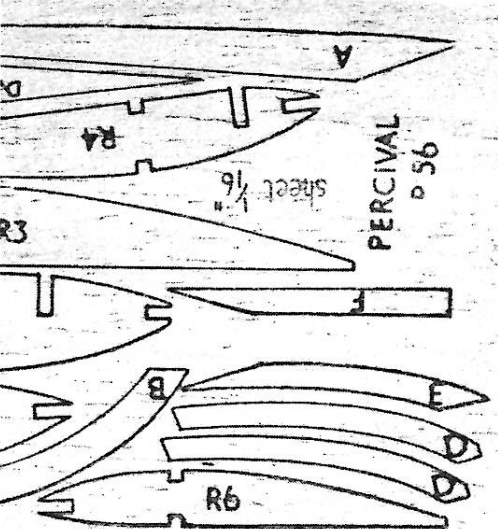
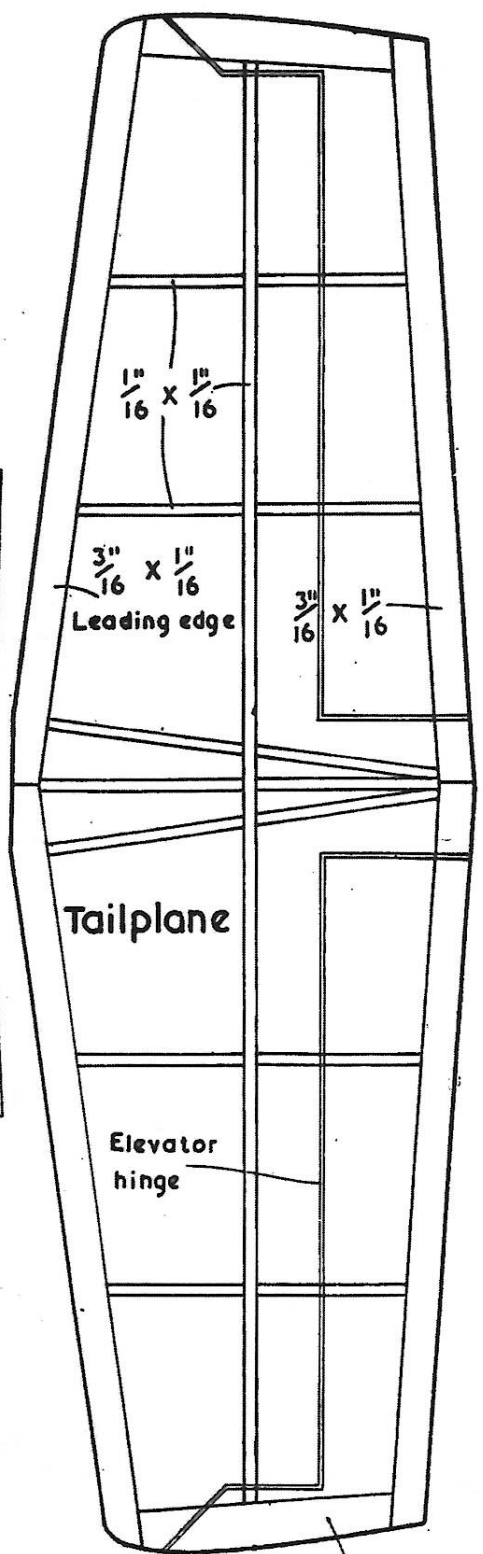
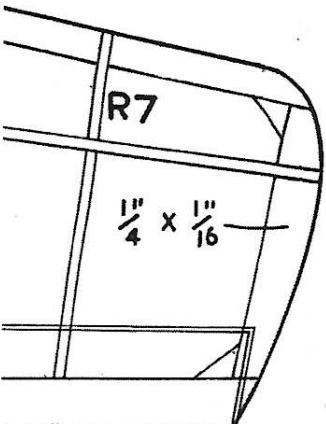
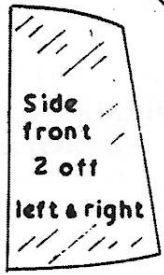
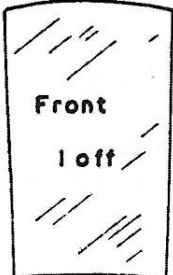
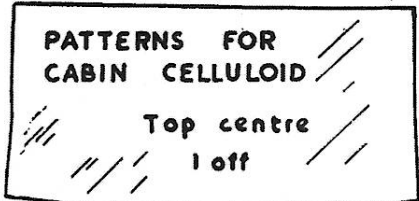
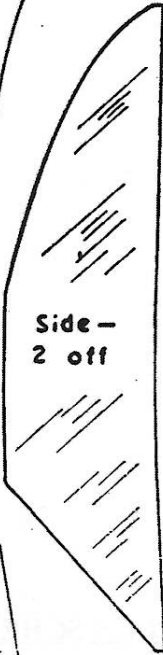
**FIAT G-46**  
**Introduction=1947**  
**Wing Span=16"**  
**Designed:**  
**Claude Powell-June 2003**







**1" DIHEDRAL AT EACH WING TIP**

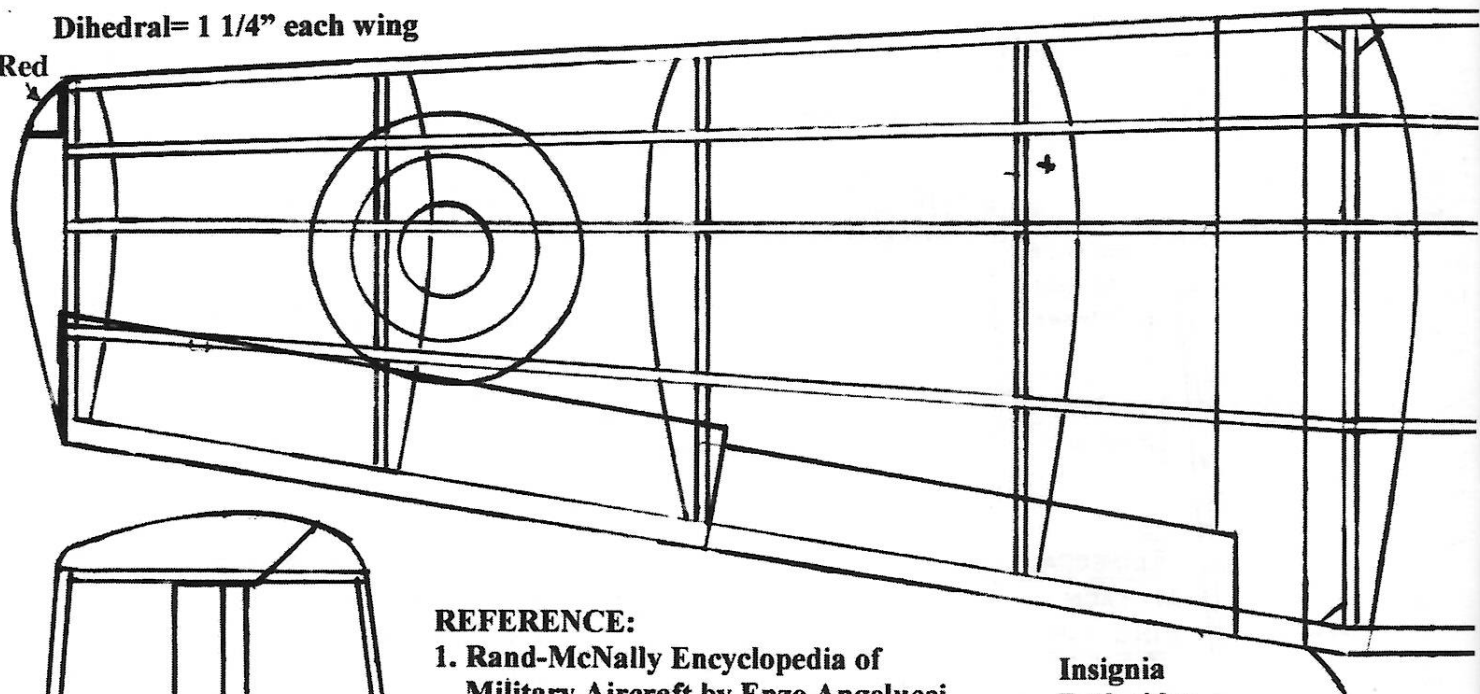


The Percival **P.56**



Dihedral= 1 1/4" each wing

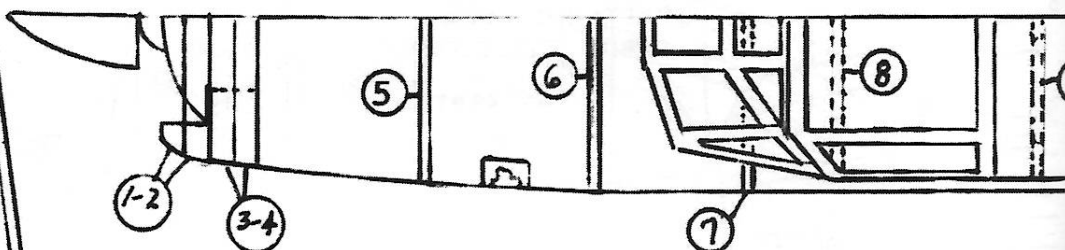
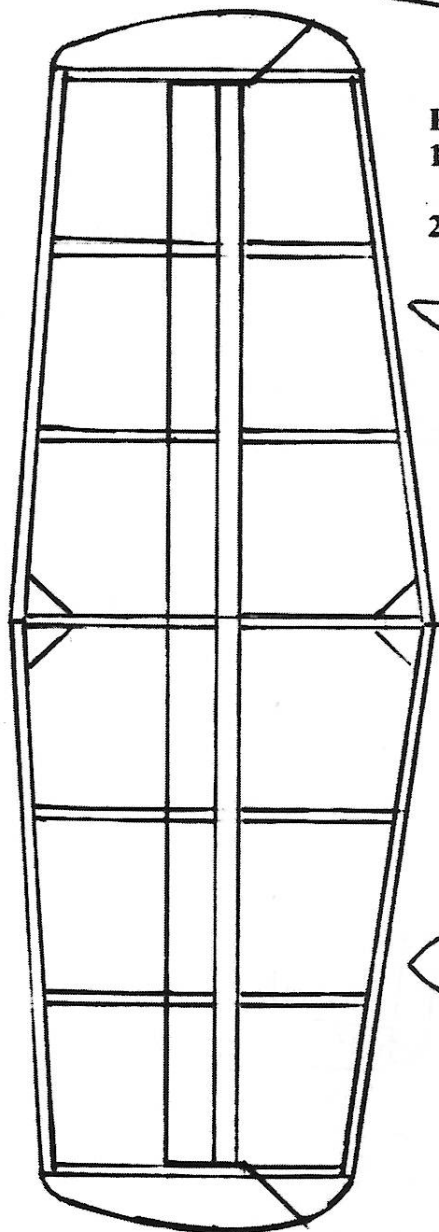
Red



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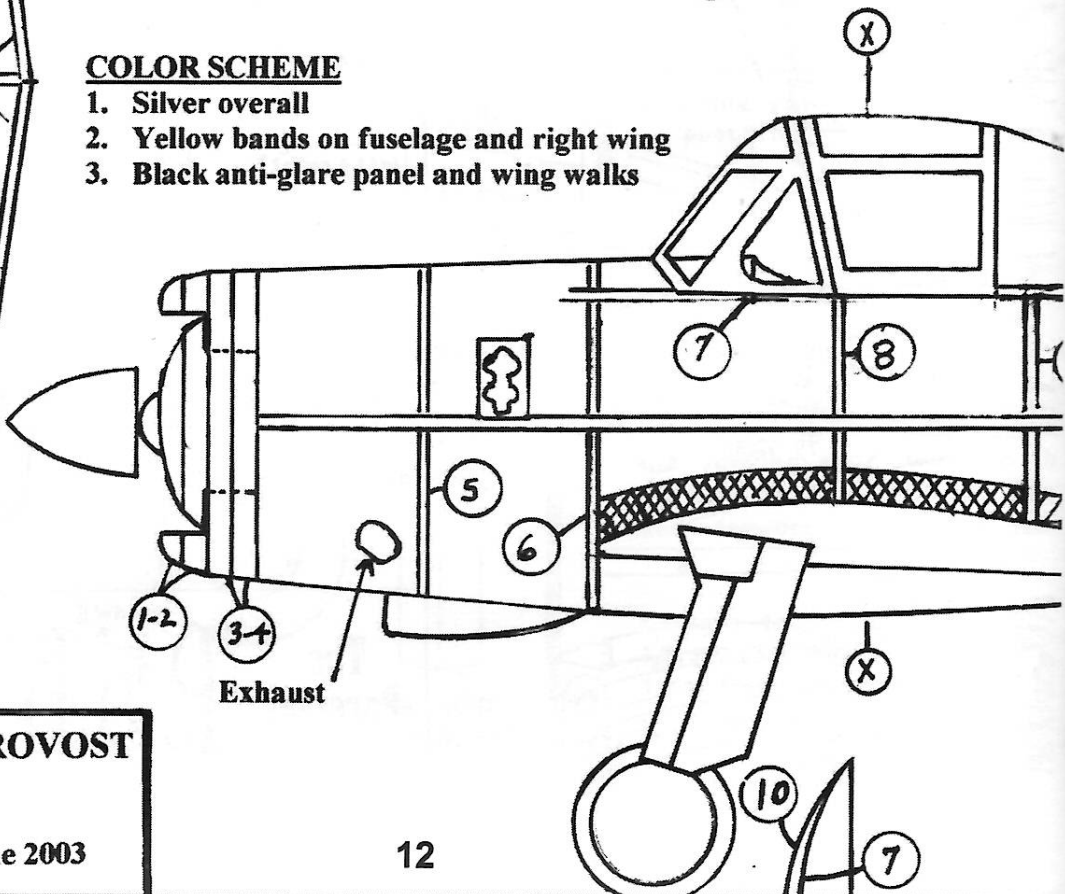
- 1. Rand-McNally Encyclopedia of Military Aircraft by Enzo Angelucci
- 2. 3-view -author unknown

Insignia  
Both sides  
Both wings



**COLOR SCHEME**

- 1. Silver overall
- 2. Yellow bands on fuselage and right wing
- 3. Black anti-glare panel and wing walks

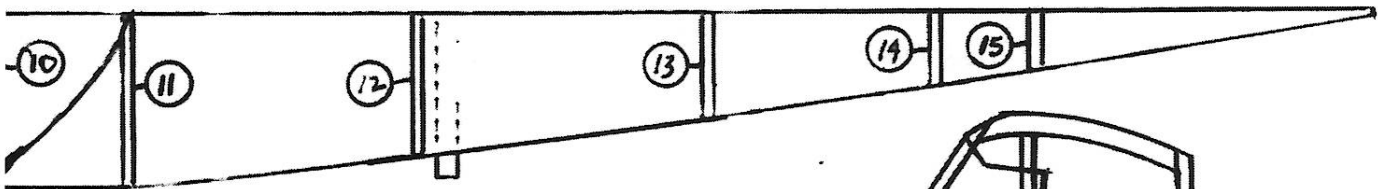
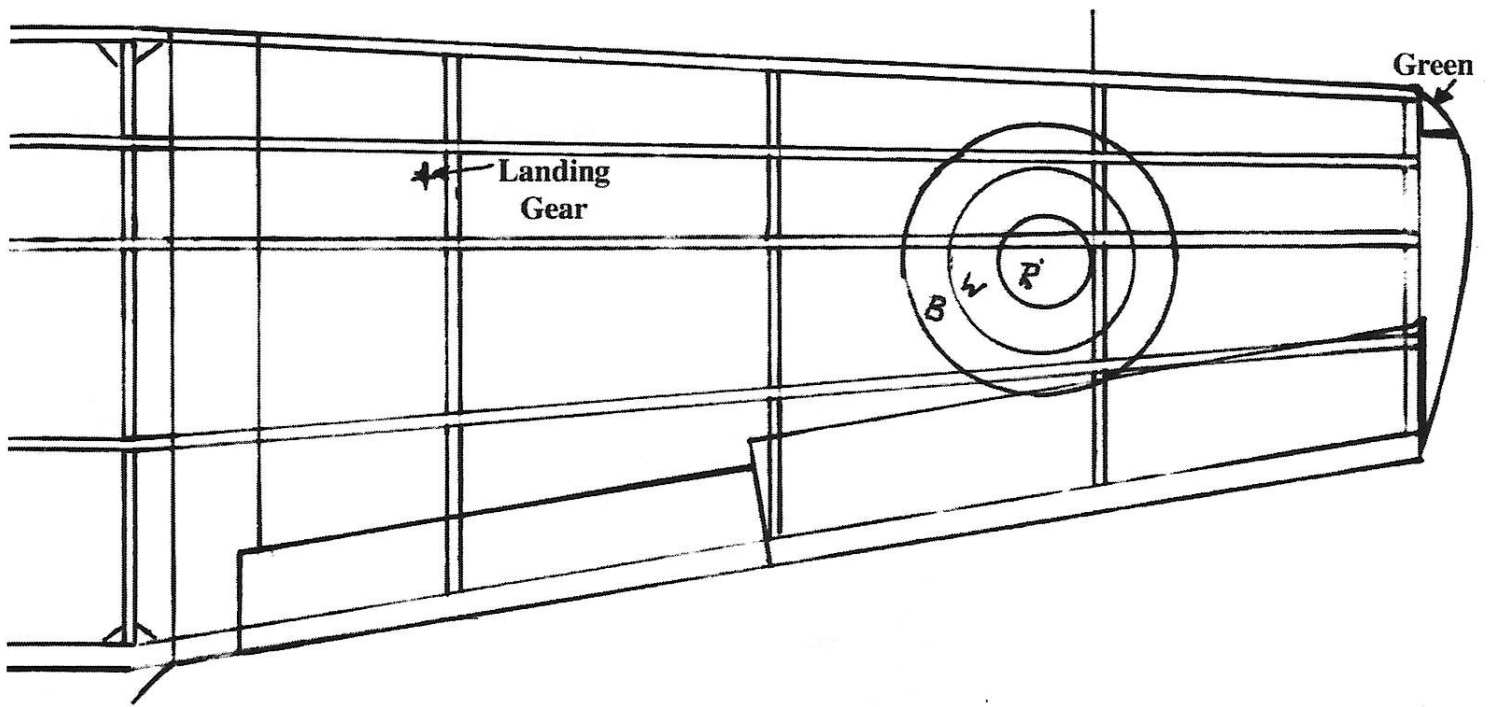


**HUNTING PERCIVAL PROVOST**

Service life = 1951-1960

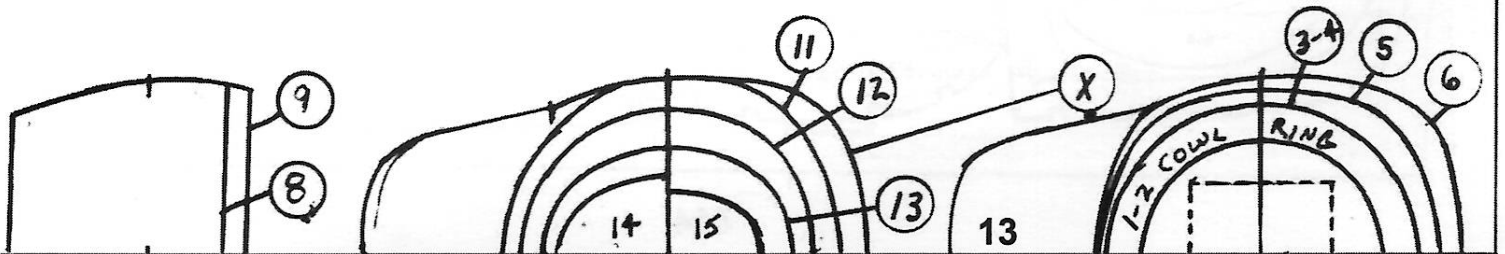
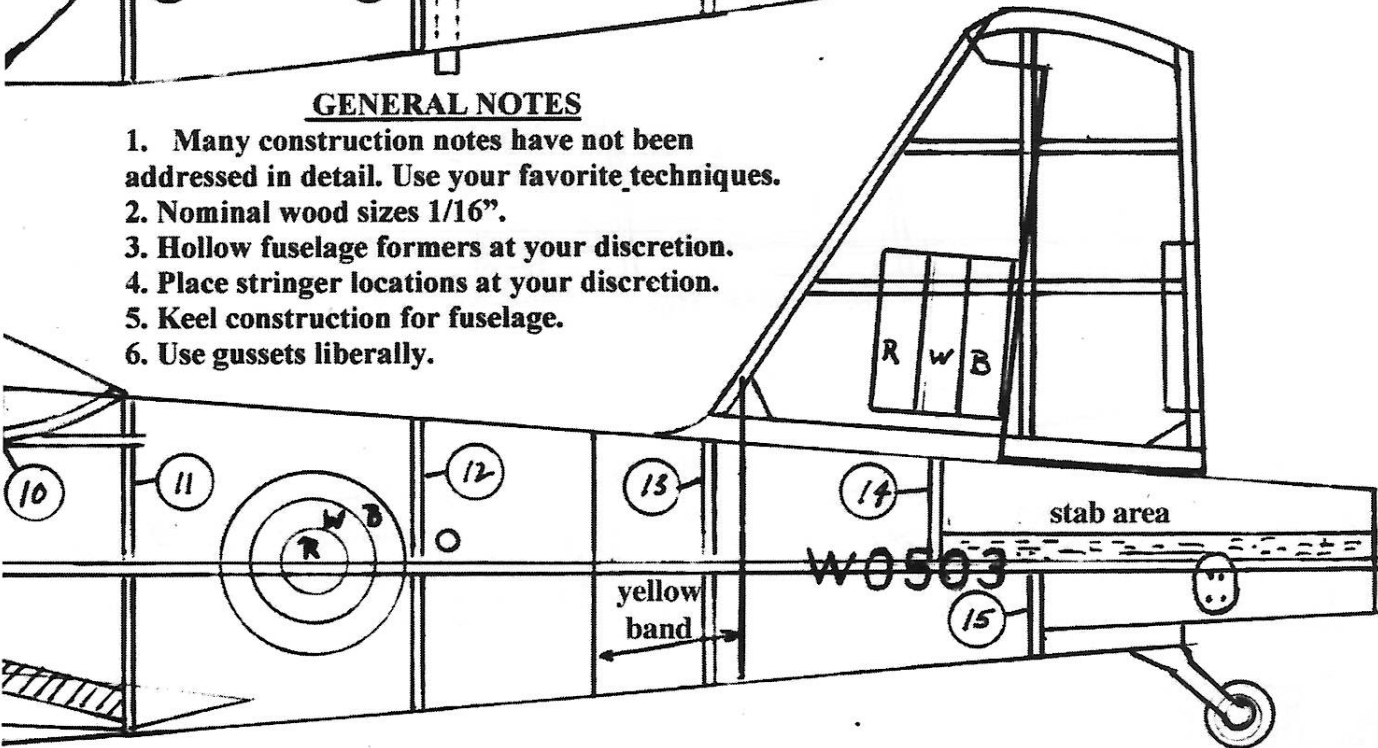
Wing Span = 16"

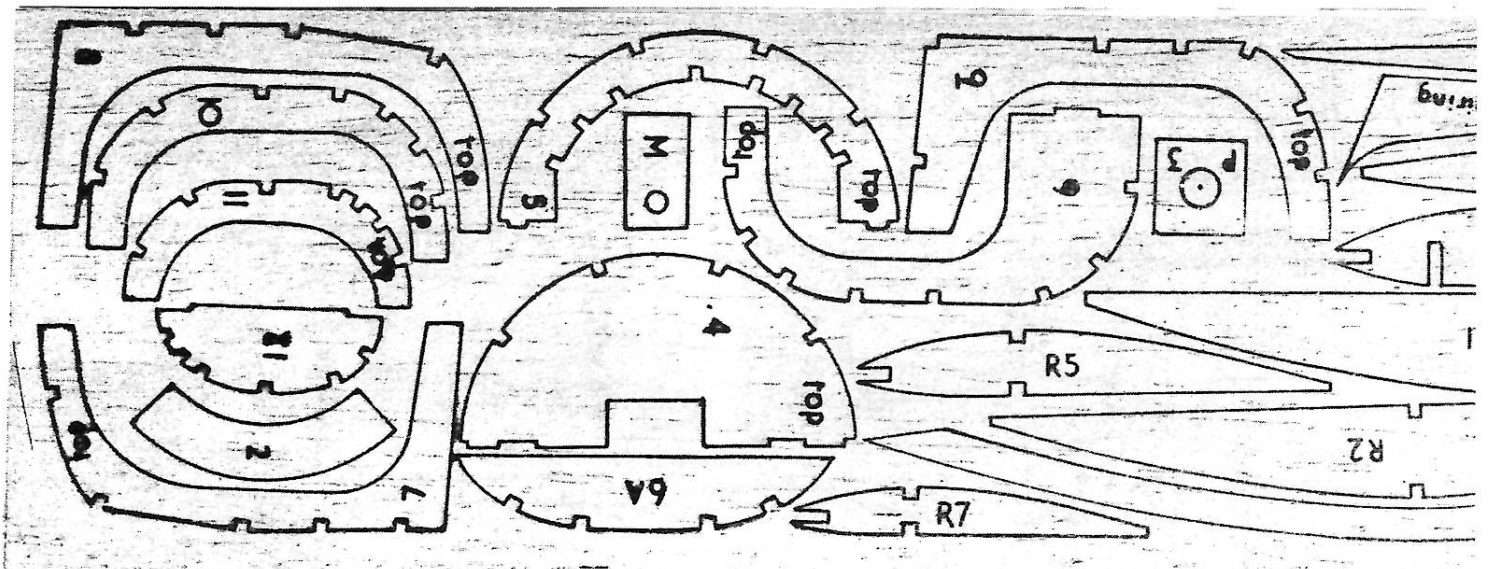
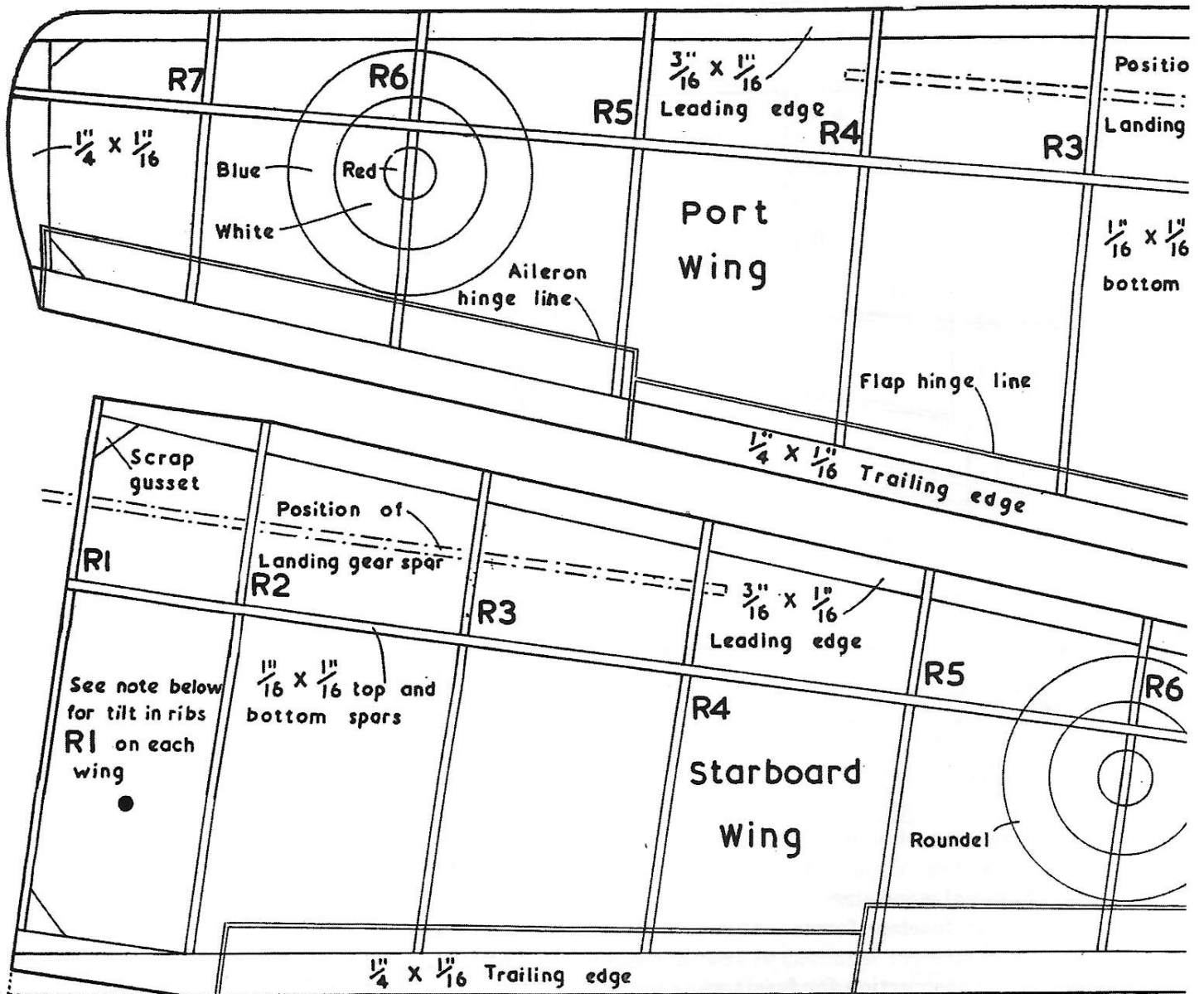
Designed: Claude Powell - June 2003

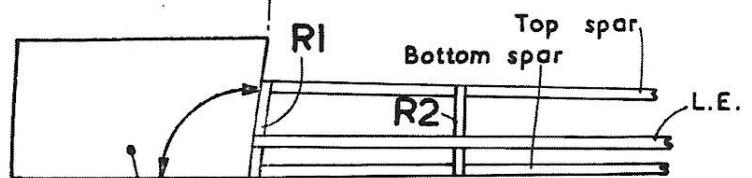
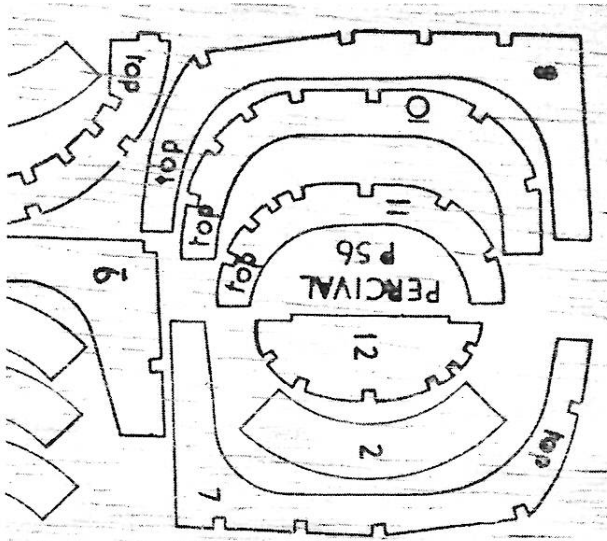


**GENERAL NOTES**

1. Many construction notes have not been addressed in detail. Use your favorite techniques.
2. Nominal wood sizes 1/16".
3. Hollow fuselage formers at your discretion.
4. Place stringer locations at your discretion.
5. Keel construction for fuselage.
6. Use gussets liberally.



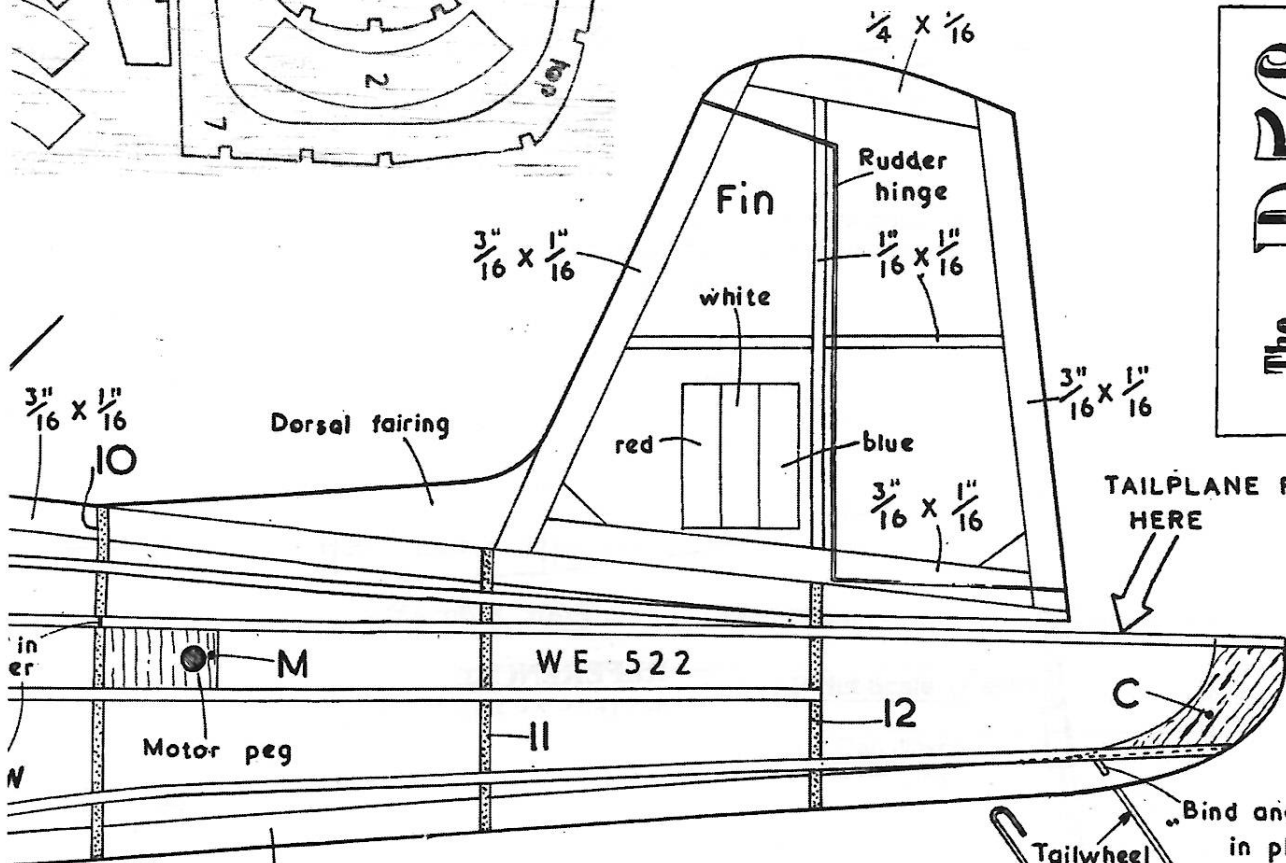




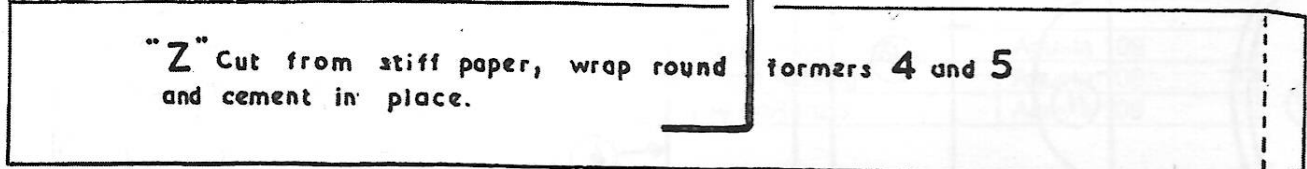
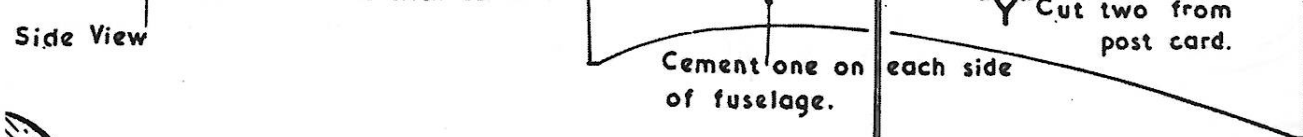
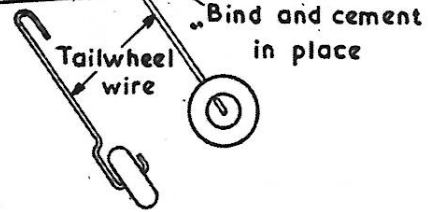
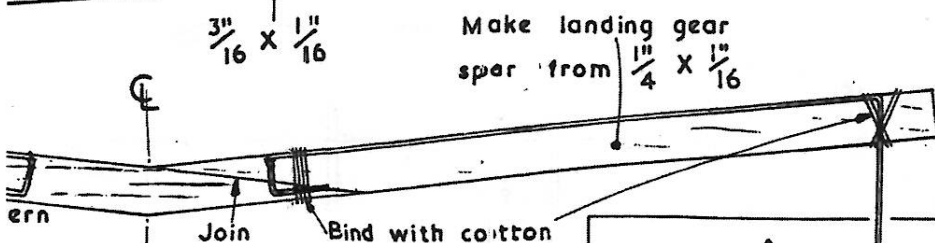
Cut this template from card and use it to tilt ribs R1 of each wing, this gives 1" dihedral at each wing tip when the wing halves are joined.



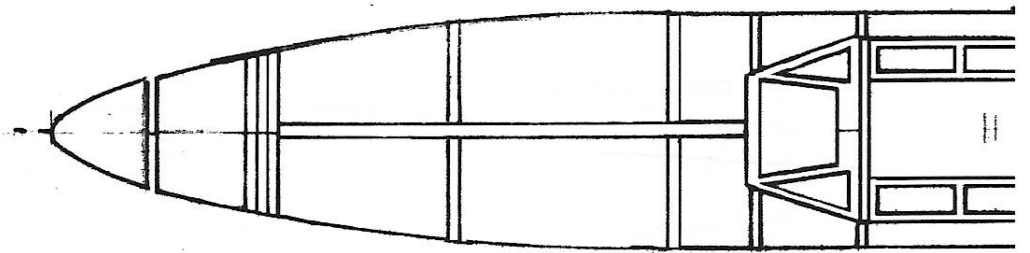
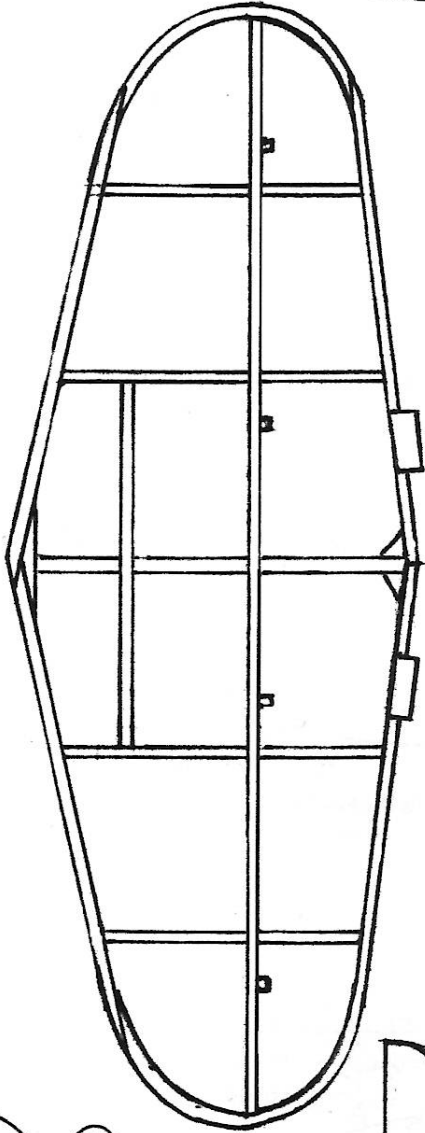
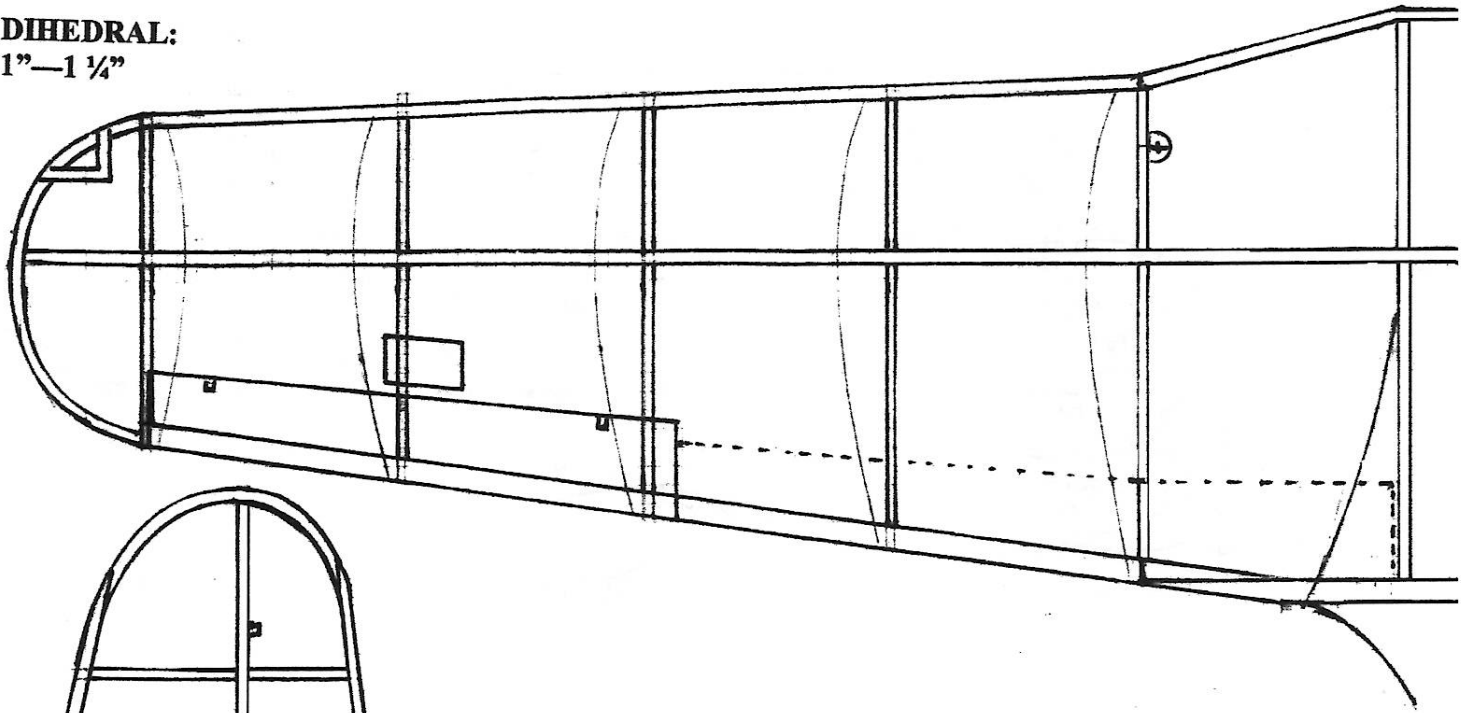
The Percival P.50



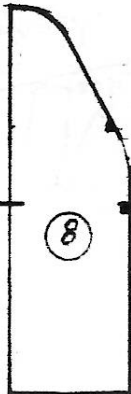
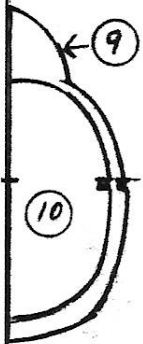
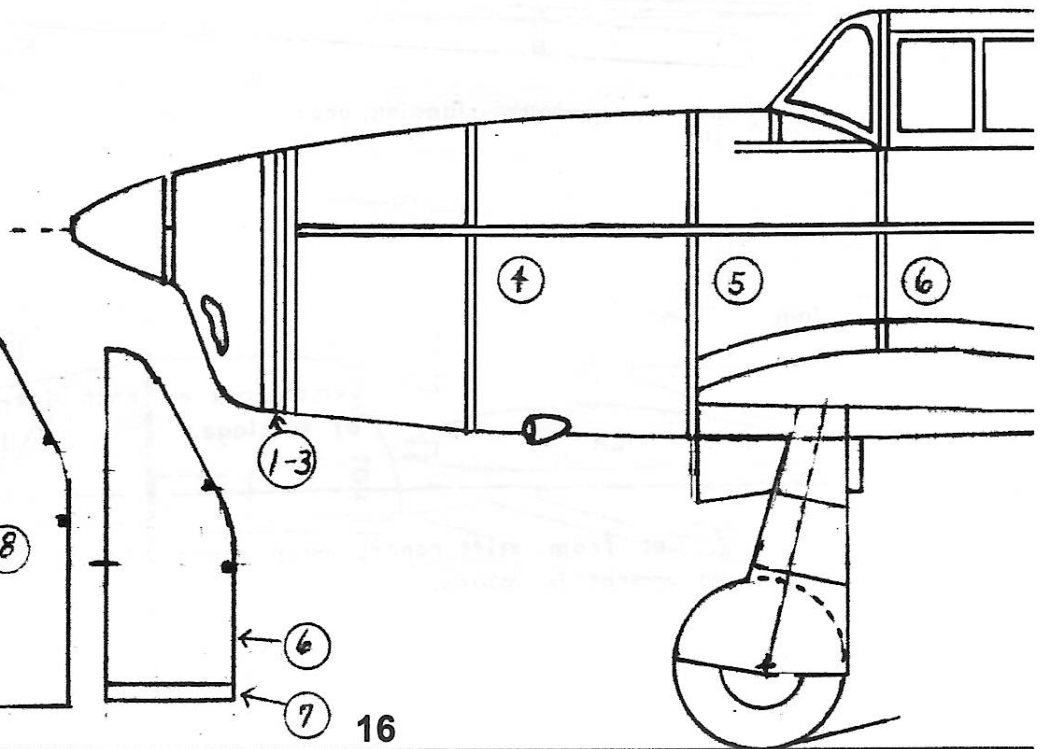
alt.



**DIHEDRAL:**  
1" — 1 1/4"



**REFERENCE:**  
3-VIEW by Len Wiczorek





## National Building Museum (NBM) – March 6, 2005

Nineteen freeflight and about 10 RC flyers attended the funfly. The Baltimore area group of John and Sharon Appling and Al DeRenzis again completely dominated the helicopter event. Their nearly identical models flew nearly identical patterns and were aloft double the time of the other two entrants. The six entries in the Phantom Flash event were way down – last year we got over 20 entrants at one funfly. Our next funfly at NBM should be in the Fall, and we may have some new events. Phantom Flash and helicopter will definitely be events. Announcements will be on the coming events page of this newsletter and the Maxecuter website.

### Rules for Phantom Flash:

1. Must use unmodified, one piece, molded plastic prop not to exceed six (6) inches. Clay may be used to balance prop.
2. Six (6) gram minimum weight for airframe without rubber motor.

### Single Blade Helicopter

Bill Hannan designed several simple single blade helicopters in the 1970's, and a copy of his plan and article for the "Unicopter" can be downloaded from the Maxecuter web site (<http://www.his.com/~tschmitt/NBM/NBMcontest.html>).

### Single Blade Helicopter Rules:

1. Must be single blade, single motor helicopter similar to the Bill Hannan designs. Contestants are encouraged to design their own, but they must look like a real helicopter in profile.
2. Motor stick cannot exceed eight (8) inches.
3. Single blade cannot exceed six (6) inches from center of hub to tip of blade.
4. Two motor helicopters okay if based on real helicopters such as the Boeing Vertol CH-46 or Piasecki "Flying Banana". Each motor must meet blade and motor stick rules.

## NBM Results – March 6, 2005

**Grand Champ – John Appling**

<b>14g. Bostonian (6 entrants)</b>		
1	Ross Summers	Bostard
2	Dave Mitchell	Zaptonian
3	Rich Gillis	Swift

<b>P-Nut Scale (7 entrants)</b>		
1	Dan Driscoll	O-H 7
2	Rich Gillis	Cougar
3	Ross Summers	Found

<b>Phantom Flash (6 entrants)</b>		
1	Stefan Prosky	
2	Bonnie Simperts	
3	Steve Fujikawa	

<b>WW II No-Cal (10 entrants)</b>		
1	Steve Fujikawa	P-39
2	Dave Mitchell	Typhoon
3	John Appling	FW-190D

<b>Dime Scale (6 entrants)</b>		
1	Frank Rowsome	Ong
2	Stew Meyers	Robin
3	Dave Mitchell	Cessna AW

<b>Penny Plane (5 entrants)</b>		
1	John Appling	6:44
2	Glen Simperts	5:45
3	Frank Rowsome	4:02

<b>Ready-to-Fly (5 entrants)</b>		
1	Sharon Appling	Firefly (2:25)
2	John Appling	Firefly (2:21)
3	Frank Rowsome	Firefly (2:07)

<b>Helicopter (5 entrants)</b>		
1	Sharon Appling	Agusta 109
2	John Appling	Agusta 109
3	Al DeRenzis	Agusta 109

## PERCIVAL P.56 PROVOST

*Designed and drawn by Albert E. Hatfull.*

The Percival P56 Provost is an all-metal two seat primary trainer seating the instructor and pupil side by side. It is powered by a Cheetah 17 radial engine.

### BUILDING INSTRUCTIONS

#### FUSELAGE.

Pin the top and bottom strips of 3/16" x 1/16" and pieces B, C, E and F, to the Side View of the fuselage on the plan, apply cement to all the joins. Cement the half formers 4, 5, 6, 7, 8, 9, 10, 11 and 12 over their correct positions on the previously laid members. Hold these formers upright with pins placed on either side of them. Cement the 1/16" x 1/16" stringers into the notches in the half formers, note the join in the longest stringer which extends to the extreme tail. Add the short stringers between formers 4 and 5 on the outside. Leave out the lowermost stringer. The other stringers fit on the inside of half former 5 at the front. Add piece M in between stringers where shown. Cement piece D and the small pieces of 1/16" x 1/16" constituting the cabin frame in place. When dry, remove this side from the plan then cement the second (or right hand) set of half formers to the other side, directly opposite and using the same procedure as for the first (or left hand side) set of half formers. Cement piece 6a in place across the stringers as per side view. Bend the tailwheel wire as shown, mount the wheel on the wire and bind the unit in place, cement well. Assemble four pieces 1, 2 and 3, as sketched on plan to form a ring shape, sandpaper the inside to shape, cement to the front face of former 4 and sandpaper the outside to shape. Cut out pattern "Z" from stiff paper and wrap round formers 4 and 5, cement in place. Cut out two pieces "Y" from pattern provided using a postcard or a similar material and cement in position on either side of the fuselage at the wing position. Cut out the pieces of celluloid for the cabin as drawn on the plan, apply cement to one edge of each piece when fixing, position it correctly and allow the cement to dry then apply cement to the other three edges and carefully press down. Cement pieces P1, P2 and P3 together, then cement the nose plug into the centre hole as drawn in the top right hand side of plan. Bend a hook on the wire supplied, push the other end through the nose plug from the rear, place two cup washers on the wire then the plastic air screw, bend the wire at a right angle and push into slot in spinner. Tissue cover the top and sides of the fuselage, leaving the underside.

#### WINGS.

Retain the 1/16" x 1/16" lower spar in position on the plan by placing pins on either side, pin the 1/4" x 1/16" Trailing edge in place, trim off the dotted portion and cement in place as shown by arrows on Port Wing. Cement the wing ribs to these members, notice the template used to tilt ribs Ri to obtain 1" dihedral when the two halves are assembled. Apply cement to the slots in the "noses" of the ribs and push the 3/16" x 1/16" Leading edge into these slots, trim away at the root. Add the tip pieces of 1/4" x

1/16" and the gussets from scraps of spare sheet. Check the tilt in ribs R 1 again and cement the top spar into the notches provided. When both wing halves are constructed and set, shape the tips, remove from plan and sand smooth. Construct the "Landing gear spar from 1/4" x 1/16" as shown. Bend the landing gear wire to the pattern drawn, bind and cement firmly to the landing gear spar, mount the wheels on the axles, install this unit into the notches in ribs R1, 2, 3 and 4 on the underside of the wing, cement firmly in place. The top surface of the wing may now be tissue covered. Apply cement to those parts of the fuselage which make contact with the wing, then gently press the wing into position in the gap in the fuselage (see Side View) check that the wing is "square" with the fuselage from every angle. Add piece A of the fuselage. Cement the two lowermost stringers (previously omitted) into the notches provided, make a joint near former 12 and carry these stringers back over piece C, on either side of the tailwheel. The underside of the fuselage and wings may now be tissue covered. Water shrink the tissue and apply a coat of dope.

#### TAILPLANE AND FIN.

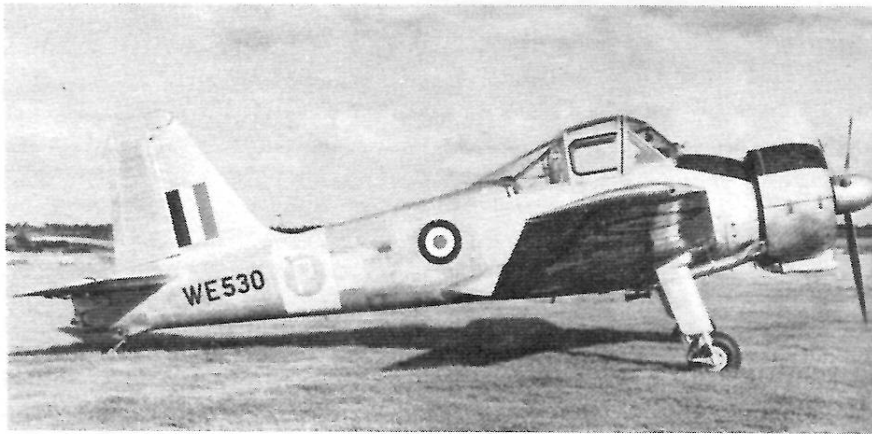
These are built flat on the plan by pinning down the outlines of the correct size stripwood, then adding the cross pieces. Cut the tips to the shapes drawn, finish to a smooth contour when removed from plan, using fine sandpaper. Cover both sides of fin and tailplane with tissue, water shrink and apply one coat of thin dope. Pin both these members to a flat surface while the dope is drying to avoid warping. Cement the tailplane in the position shown at rear of fuselage, then cement the fin directly over the centre line of the tail, to the top member of the fuselage. Cement the "Dorsal fairing" in position. Add the details drawn on the plan: —Aerial, airscoop, etc. Using thin coloured dope the model may now be finished silver all over with a matt black anti-glare panel on top of the nose cowling, also paint former 4 and inside the radial cowling black.

#### FLYING.

Tie the ends of the strip rubber together, double over to form four strands then drop the knotted end down through the hole in the nose. Use the small peg pushed through the holes in pieces 'M' to retain the rubber motor. Wind about 25 turns on each of the 10 loops separately then place both loops on the motor hook. Plug piece P3 of the nose assembly, P1, P2 and P3 into the square hole in former 4. With the model now fully assembled it should be made to balance level when held on the fingertips at the wing spar position by adding small pieces of plasticine to either the nose or tail. Test glides may then be made preferably over long grass. Hand launch the model gently from shoulder height on a slightly downward path directly into the wind. If a dive results add a small piece of plasticine to the tail, if the model stalls add a small piece to the nose. When a long flat glide has been perfected, hand turns may be applied to the rubber motor, starting with about 75 turns and gradually increasing to 200-250. If the model should stall under power, insert a piece of 1/32" balsa in the top of the nose block.



The first prototype WE 522 Cheetah 17 powered. Note anti-spin chute on tail.



The second prototype WE530 Cheetah 18 powered and lowered tail.



Third prototype G-23-1 Leonides powered in formation with WE530.

### KIELKRAFT P-56

The KielKraft kit is based on the WE 522 first prototype since the text refers to the Cheetah 17 it used and the plans feature the characteristic large dorsal fin. Only two P56 aircraft were built with the Cheetah engine, WE522 and WE530 which had the fuselage modified aft of the cockpit. The third prototype G-32-1 was the Leonides test bed. Following the extensive trials with G-23-1 all three prototypes were equipped with the Alvis Leonides which was standard on the production models.

The first two prototypes with the Armstrong Siddeley 350 hp Cheetah 17 or 420 hp Cheetah 18 had an all up weight of 4,050 lb, a wing loading of 18 lb/sq ft and a power loading of 9.64 lb/hp. Maximum speed 177 mph and cruising speed 153 mph. Stall speed 64 mph flaps down. Service ceiling 17,500 feet, initial rate of climb 1,360 ft/min. 10,000 feet could be reached in a little over ten minutes. The third prototype with the geared Alvis Leonides 25 550 hp engine, weighed 4,250 lb raising the wing loading to 19.85 lb/sq ft and reducing the power loading to 7.73 lb/hp. Max speed was now 200 mph and cruise 170 mph. The stall speed became 67 mph. Service ceiling was now 22,500 ft and 10,000 feet could be reached in seven minutes.

### Modifying the KK kit

You can easily modify the KielKraft kit of the Cheetah powered P-56 prototype to become a Leonides T1. After all that's what Percivals did. Make the nose a little longer and extend the cowl aft adding the "elephant ears". Be sure to enlarge the air-scoop / oil-cooler and make sure the reduction gear housing is there behind the spinner. While I was at it I would generally lighten the structure to more closely resemble that of Claude's version.

Stew Meyers

### USING THE PLANS

YOU NEED TO STRAIGHTEN OR REMOVE THE STAPLE, AND REMOVE THE PLANS PAGES. YOU THEN CAN XEROX THEM AND BUILD AWAY. TO REPRODUCE PARTS LAY A XEROXED COPY ON Balsa FACE DOWN AND BURNISH THE OUTLINES WITH AN ACETONE SOAKED Q-TIP.

## Percival Provost T MK. 1.

*Mike Dale*

The piston engined Percival Provost was the rare, happy result of a combination of bureaucracy that wanted change and an individual who was determined to give them more than they asked.

The Royal Air Force, in the aftermath of WW11, still believed that a real pilot needed to learn how to fly a powerful piston engined aircraft with its tail firmly planted on the ground and all the related problems of torque and the ambition of the tail to swap places with the propeller on landing. The RAF also wanted to eliminate the problem of training pilots in low powered, low wing loading aircraft such as the Percival Prentice then, at a later stage of training, finding they couldn't handle faster and more complex aircraft. It was wasteful in terms of both money and morale to eliminate pilots in training after they had been on the program for several months. They also needed an aircraft that could climb quickly to a safe aerobatic altitude.

The Percival Prentice, then in use as the basic trainer in RAF, was designed to fit some of these training requirements but, as it weighed 3800 lbs with only 250 horsepower, was roundly criticized by RAF instructors who had to spend too much time gaining altitude for aerobatics in the anemic beast. Arthur Bage, Percival's designer, was not about to let that happen again and took full advantage of the new Air Ministry specification.

His first prototype of the Provost was powered by an Armstrong Siddeley 450 hp radial which gave excellent performance for what was now an aircraft that weighed only 250 lbs more than the Prentice. It had a top speed of 177 mph and its initial rate of climb at 1360 fpm was a vast improvement over the Prentice. However, Handley Page had also designed a competitor with the new, supercharged 550hp Alvis Leonides radial and Bage quickly had the second prototype built with the Leonides engine.

The performance of the Provost was transformed. It now had a top speed of 200 mph, an initial rate of climb of 2200 fpm and the supercharging took the aircraft to 10,000 feet in much the same time as the early wave of WW11 fighters.

Handling, borne out of the accelerated learning of the War, was excellent. Large control surfaces combined with power and relatively high wing loading produced an aircraft with no real vices and a roll rate of over 90 degrees a second. It was relatively easy to fly and land but the light controls gave handling comparable with the fighters of the time. Ground handling was enhanced by the small cross section of the Leonides engine which made possible good forward visibility while the wide stance of the undercarriage helped in crosswind landings.

However, pneumatics, not hydraulics, powered all the auxiliary items including the small brakes. The result was a landing technique that relied heavily on the rudder because the brakes did not work well at high speed and overheated easily. Fortunately the rudder was very effective and could influence the direction of the aircraft when taxiing even with the engine at idle. On takeoff, full rudder authority was available literally from opening the throttle which was fortunate because the tail wheel, in common with most British military aircraft of the time, was free casting and had no firm locking device, only a barely noticeable detent.

Overall, the Provost was an enormous improvement with its side by side seating which gave the instructor the ability to give instruction close up and personal. In my case it was too personal sometimes as, Jaroslav Sodek, my instructor would decide that, if I was flying too well, I needed distraction. He did this by the simple expedient of rapping me over the head with his flying gloves. At the time I was not amused but he certainly taught me to concentrate on what I was doing!

The training program was a great success. Approximately forty per cent of the first course never soloed and were washed out in a matter of a couple of weeks. The remaining students flew 130 hours on the Provost and then moved on to the De Havilland Vampire, a jet fighter currently in service with the RAF. It is a tribute to the Provost training that it took only an average of eight hours for us to go solo on this 450 knot fighter and this included emergency and spin training. As usual, I was below average and took ten hours but did manage to be the first pilot on the course to go solo at night. I couldn't see where I was going and this seemed to help my youthful concentration.

My Provost is the result of an eight year, ground up restoration by Kampel Engineering of Wellesville PA and was the Reserve Grand Champion Warbird at the EAA Convention in Oshkosh in 1998. It is in the markings of the aircraft in which I went solo over fifty years ago and is based at Culpeper VA.

## DOCUMENTATION

Mike Dale provided me with photos of his aircraft and two swell references on Percival aircraft:

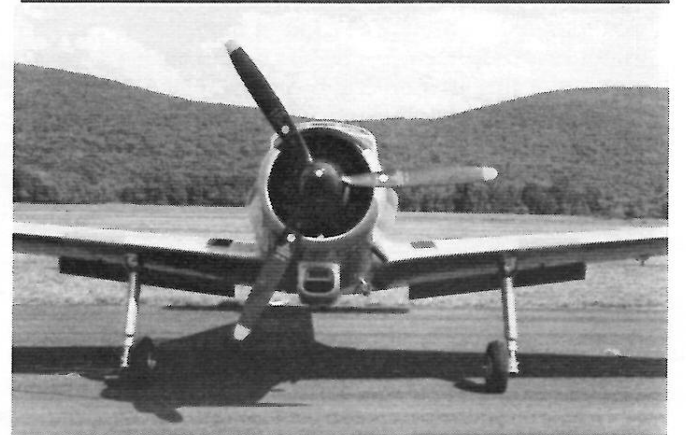
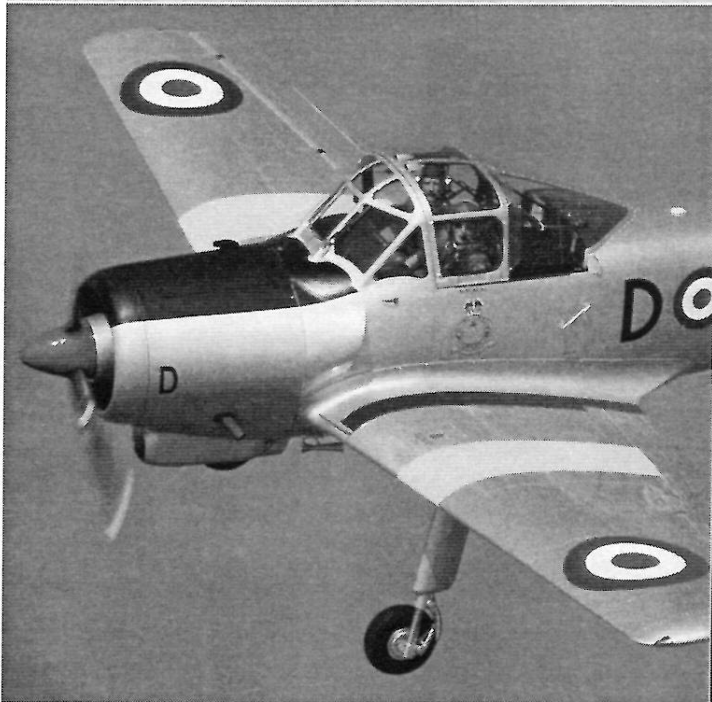
*Percival and Hunting Aircraft* by R. John Silvester  
ISBN 0 9513386 0 9 and

The Archive Photographs Series: *Percivals Aircraft*  
compiled by Norman H. Ellison

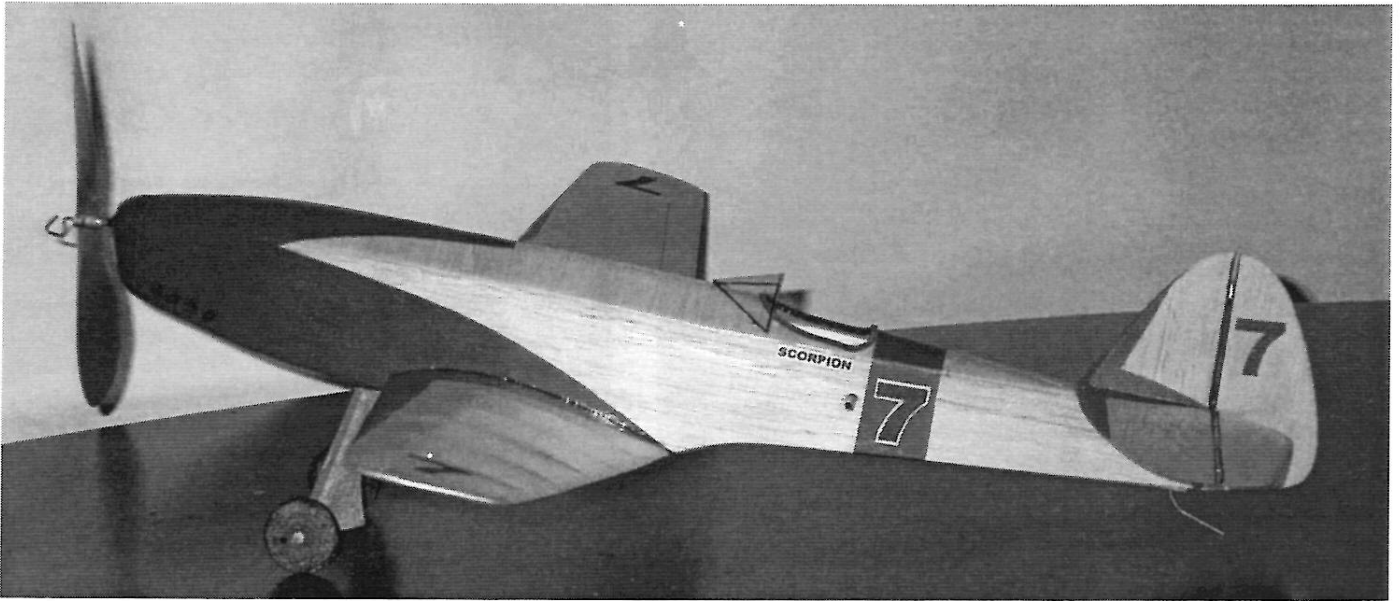
ISBN 0 7524 0774 0.

Model Activity Press Ltd. offers a CD ROM with 30 jpg images of the Provost. [www.modelactivitypress.com/](http://www.modelactivitypress.com/)

*Stew Meyers*



**Mike's Provost T1**  
Check out AIR CLASSICS vol.35 Num. 9  
for more details.



Hi Stew,

You ask me to keep construction notes on the Scorpion. For what they're worth, here they are and an attached photo.

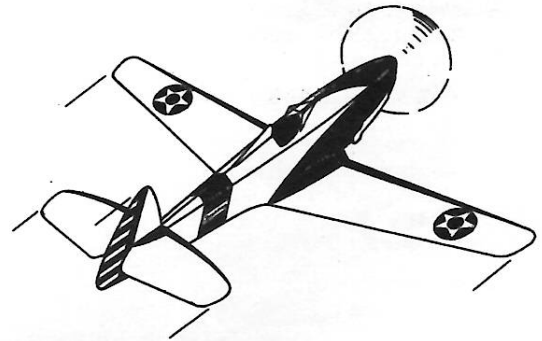
**GENERAL:** I had some oversized 1/16" sheet balsa (between 1/16" and 3/32") that the supplier did a poor job of cutting before he sold it to me. I used it everywhere that 1/16" was called for. It was 7-8 lb stock. I've scanned the plan into my computer. I printed the plan on heavy card stock. This gave me excellent patterns for the fuselage sides, formers and ribs (good tip). Since it isn't scale I took some liberties with the clothes. I'm satisfied with the way it looks. The model weighs 25 grams and is slightly tail heavy. It hasn't been glided it yet. I have a 6" prop on it but I hope to be able to fly it with a 7" prop. The biggest problem I had was trying to keep the fuselage from becoming a banana. Built-up frames are easier to control than sheet ones.

**FUSELAGE:** I used 1/20" sheet balsa as you suggested. I also covered the bottom of the fuselage with it, instead of tissue, because the lower edge of the sides is too fragile without it. I can understand why Lindsey did it. I moved the rear motor peg forward one bay hoping for better balance and also to get more space for the motor. I relocated the cockpit aft for a racier look and it is also right over the rear peg. Convenient. I installed a 1/32" wire landing gear instead of trusting the balsa legs.

**WINGS:** I made the wings as one piece and cut saddles into the fuselage for it. Instead of following the plan design I used a 1/8" square strip for the leading edge and sanded it to shape. Instead of using a 1/8" wide trailing edge I made it 5/32" wide. I left the spar on the bottom of the wing and added another one just above it. The ribs and wing tips are 1/16" thick balsa. The wings have 1 1/2" dihedral and 3/32" washout in both wings.

TAIL: I made the stab and rudder adjustable.

Claude Powell



### Photos P23

9. The winning helicopter team from Baltimore, Sharon Appling, Al DeRenzis, and John Appling with their Agusta 109's.
10. Stew Meyers, MaxFax editor, and Jim Coffin, CAMMA Newsletter editor, up to no good.
11. Fran and Rob Rabb with a Guillow's Spitfire, one of Rob's fleet of the series.
12. Don Gray with a Comet Talyorcraft Dimer. He ought to have a model of his full scale J3.
13. New Maxecuter Tony Pavel with his ornithopter.
14. Indoor ace Steve Fujikawa with his five minute plus No-Cal P39.
15. Maxecuter President Stefan Prosky with his electric free flight camera plane. That's the camera he's holding. He has some interesting video of our flying at NBM.



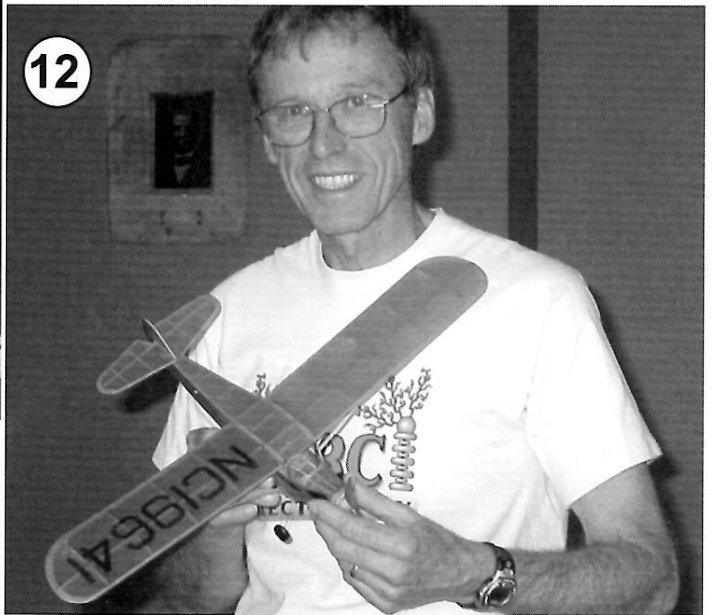
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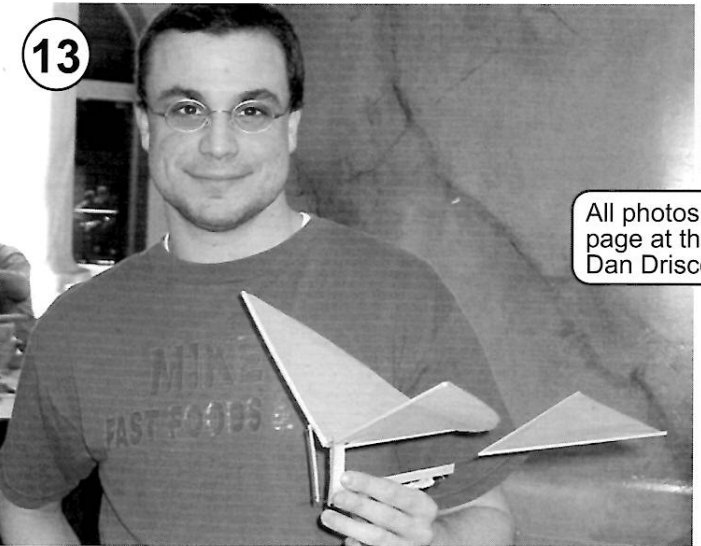
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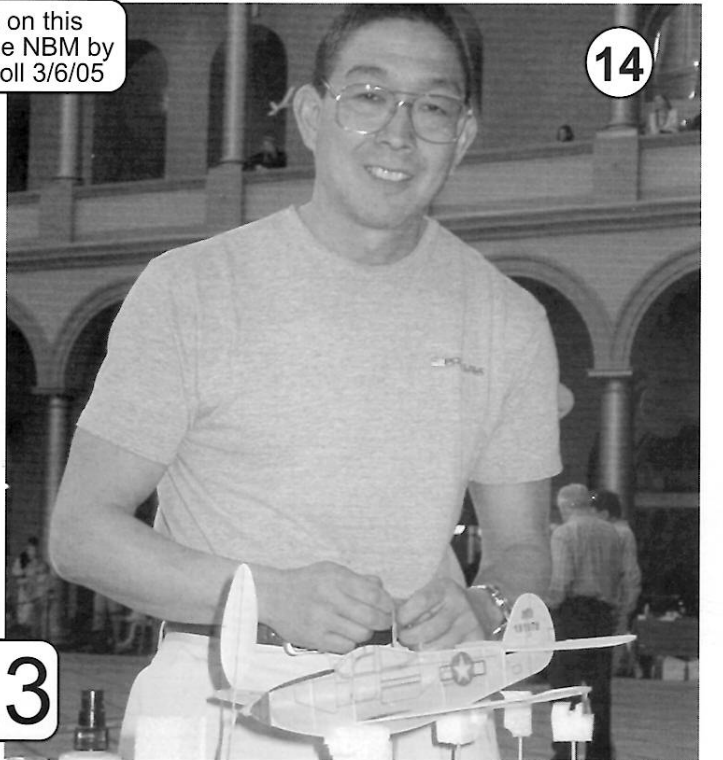


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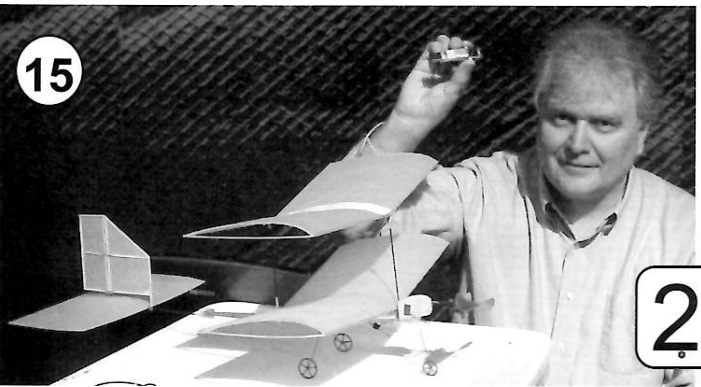


13

All photos on this page at the NBM by Dan Driscoll 3/6/05



14



15

23



CLUB OFFICERS -President: Stefan Prosky 414 11th Street SE., Washington, DC 20003  
Secretary: David Mitchell 230 Walnut St. NW., Washington, DC 20012  
Treasurer: Stew Meyers, 8304 Whitman Dr., Bethesda, MD 20817 ---- *Note change - Stew has replaced Norm!*  
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, Stew Meyers.

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 301-365-1749. Email gets immediate attention. [stew.meyers@erols.com](mailto:stew.meyers@erols.com)

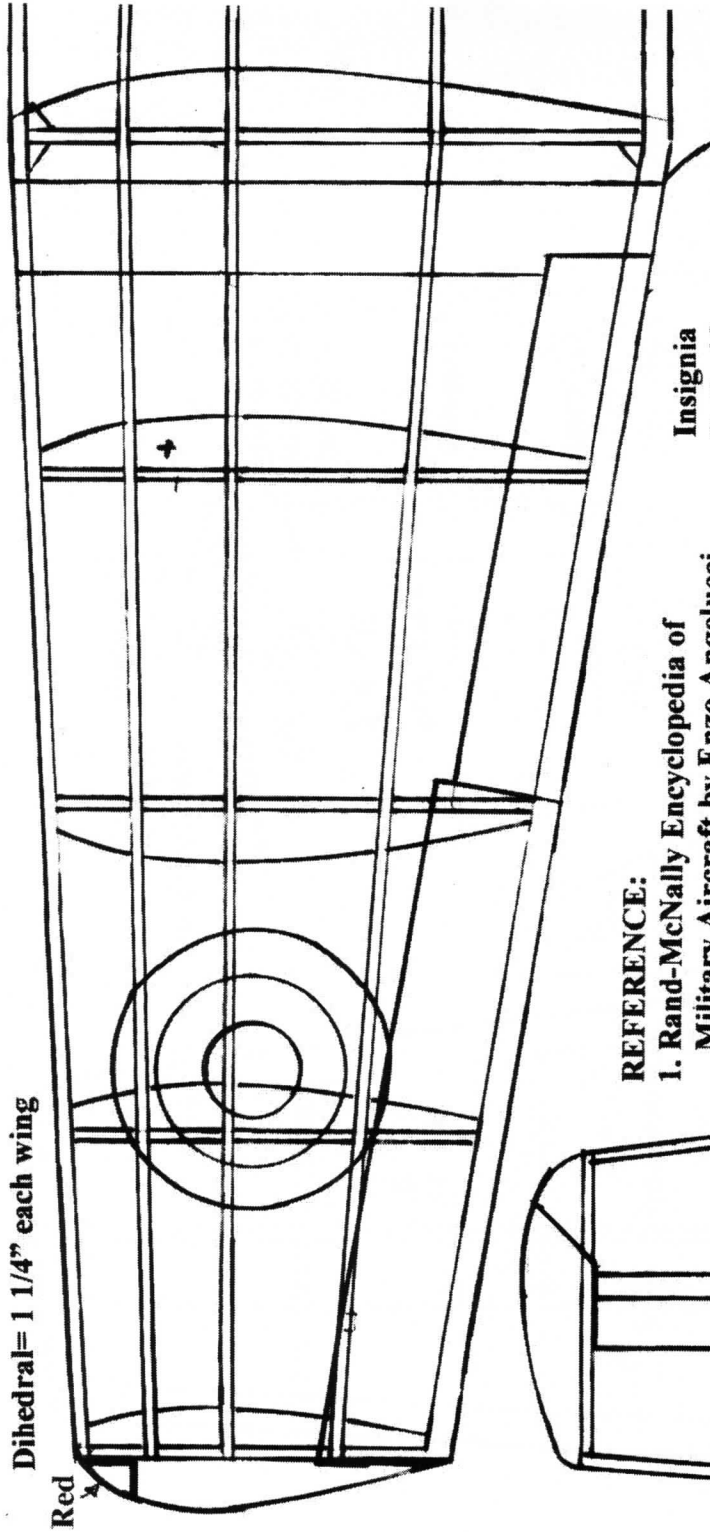
Maxecuter web site: <http://www.his.com/~tschmitt/>

**Your DUES are due**



Dihedral = 1 1/4" each wing

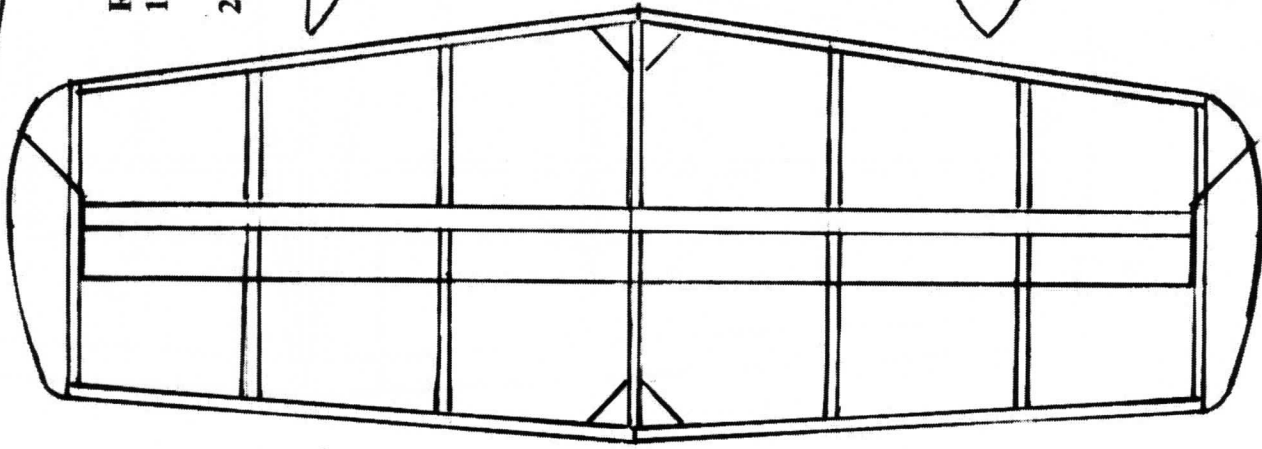
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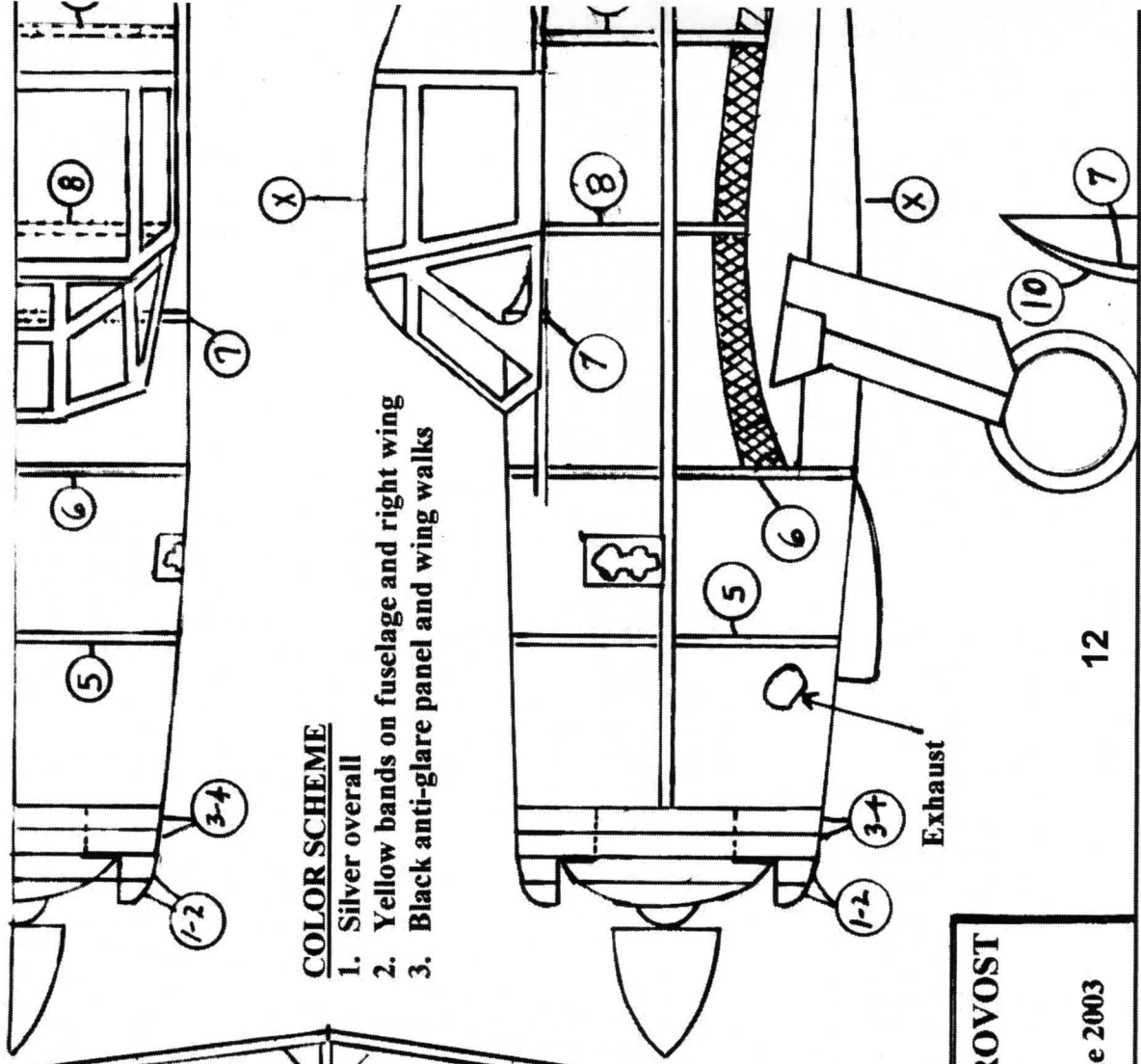
1. Rand-McNally Encyclopedia of Military Aircraft by Enzo Angelucci
2. 3-view - author unknown

Insignia  
Both sides  
Both wings



**COLOR SCHEME**

1. Silver overall
2. Yellow bands on fuselage and right wing
3. Black anti-glare panel and wing walks



Exhaust

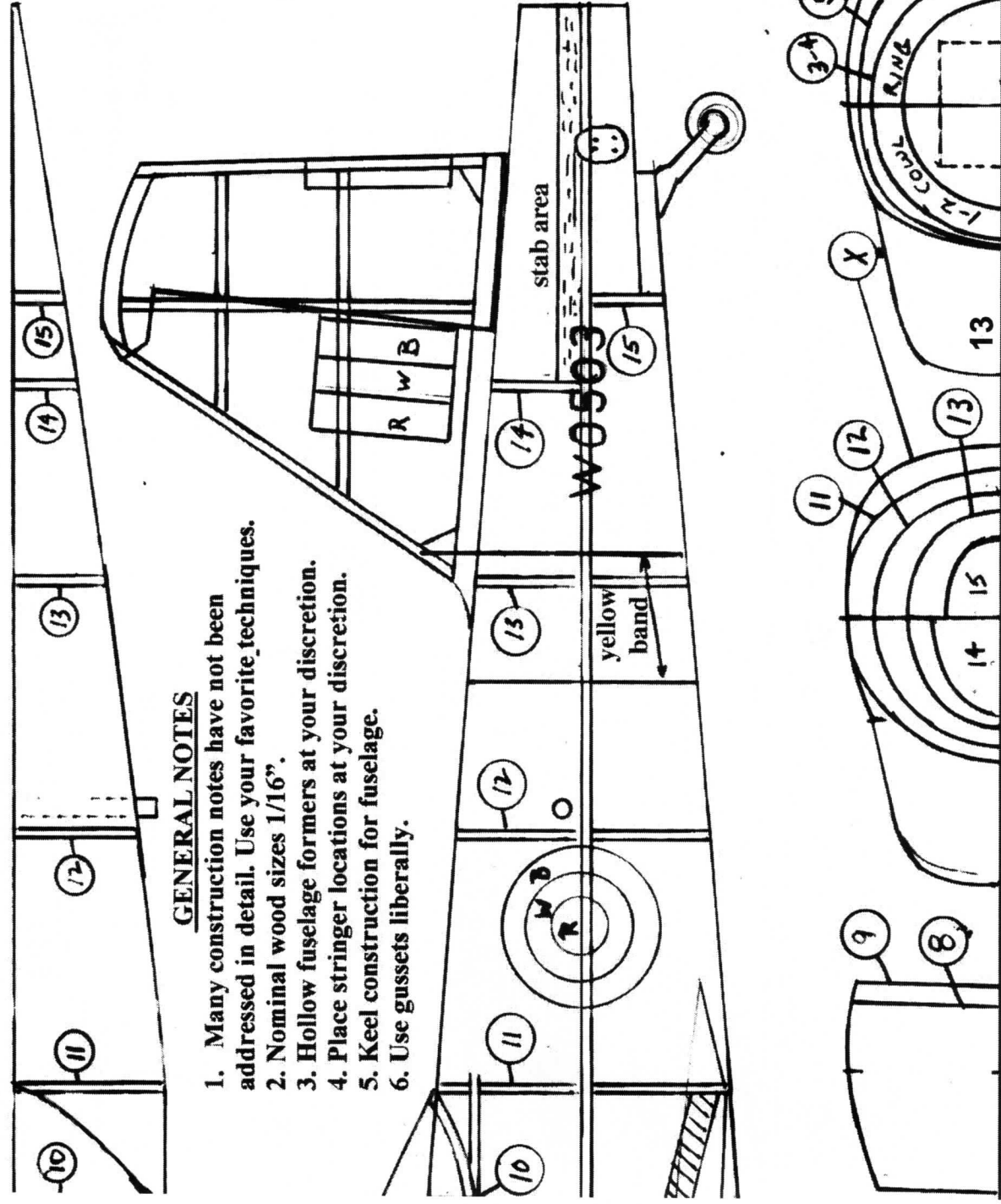
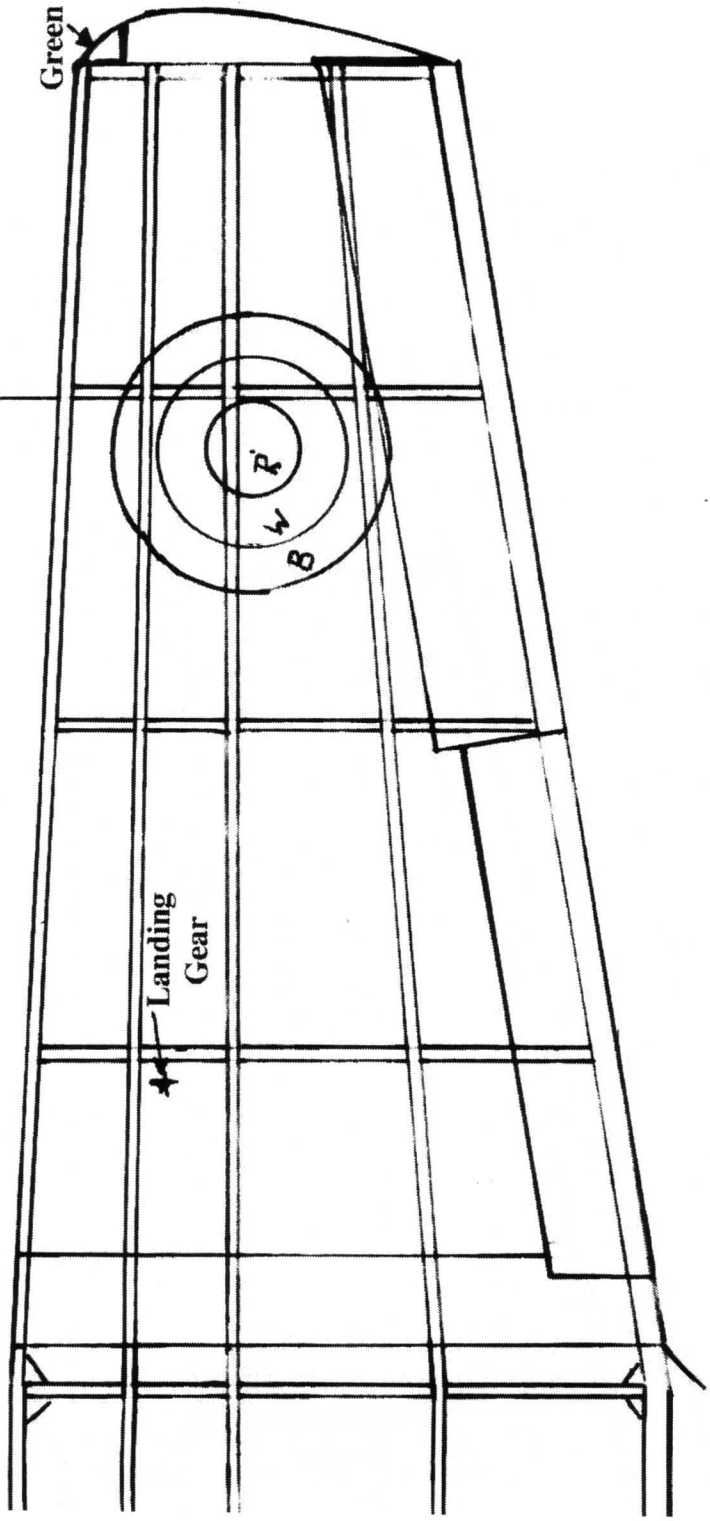
**HUNTING PERCIVAL PROVOST**

Service life = 1951-1960

Wing Span = 16"

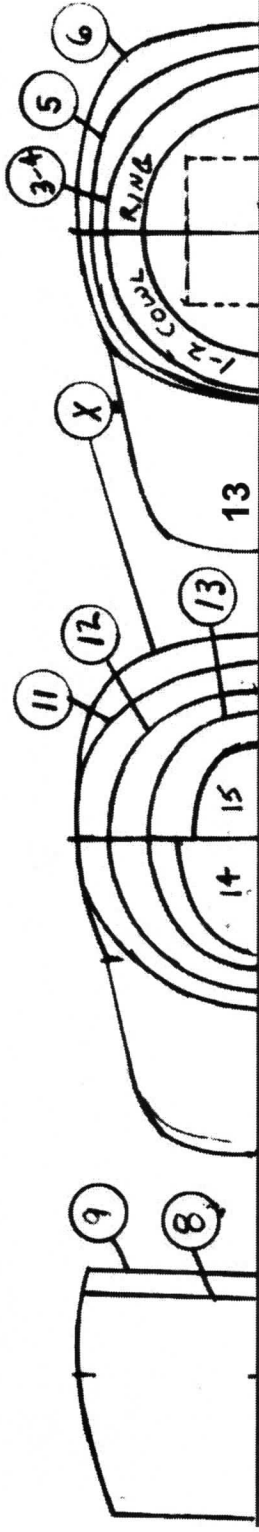
Designed: Claude Powell - June 2003

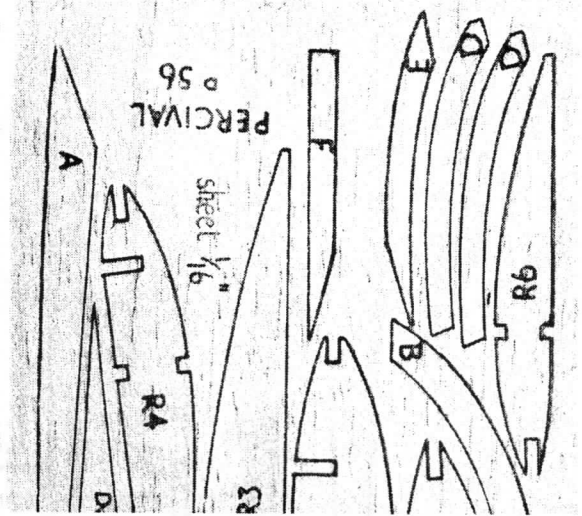
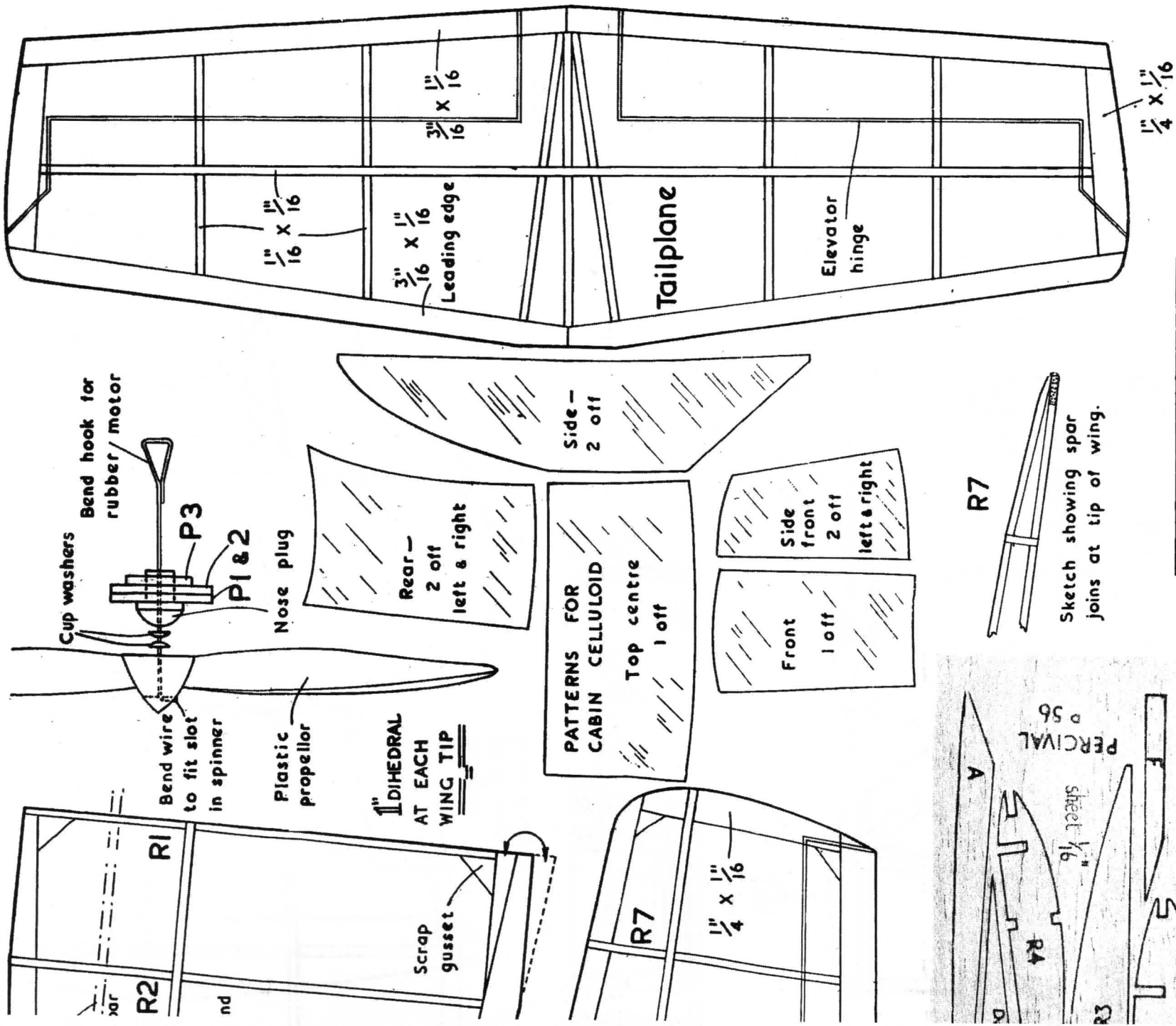
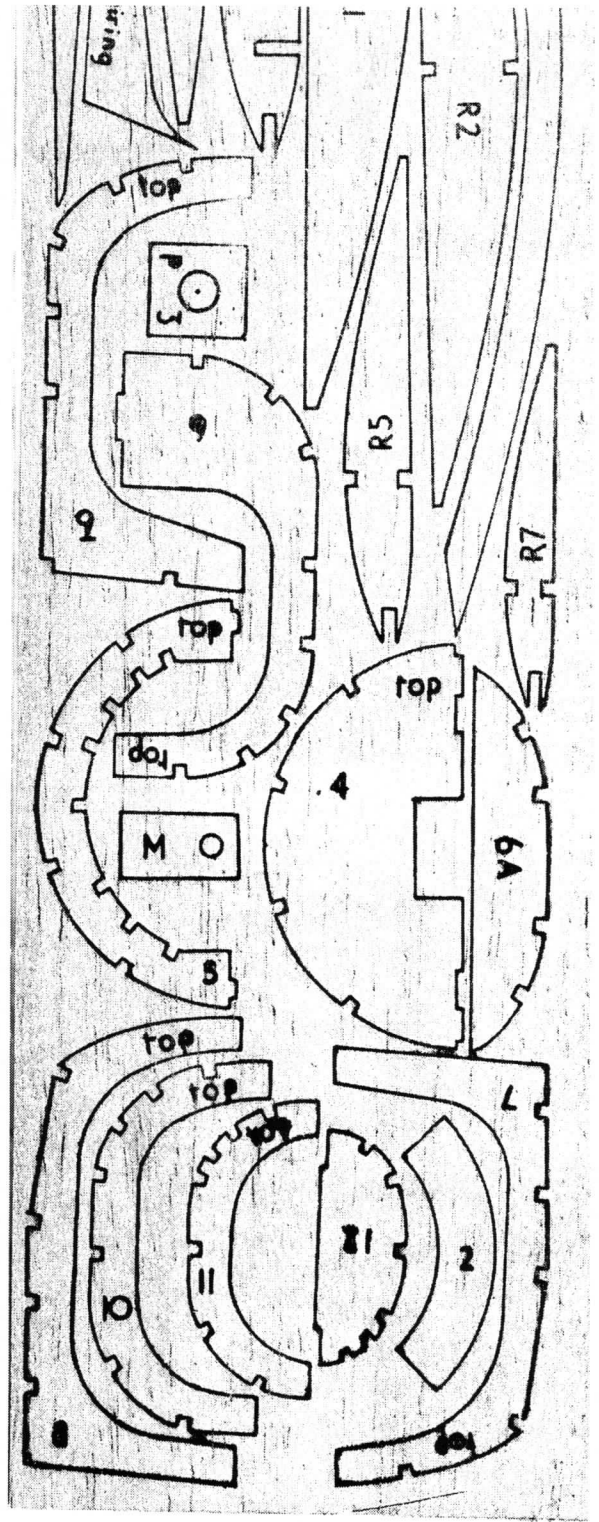
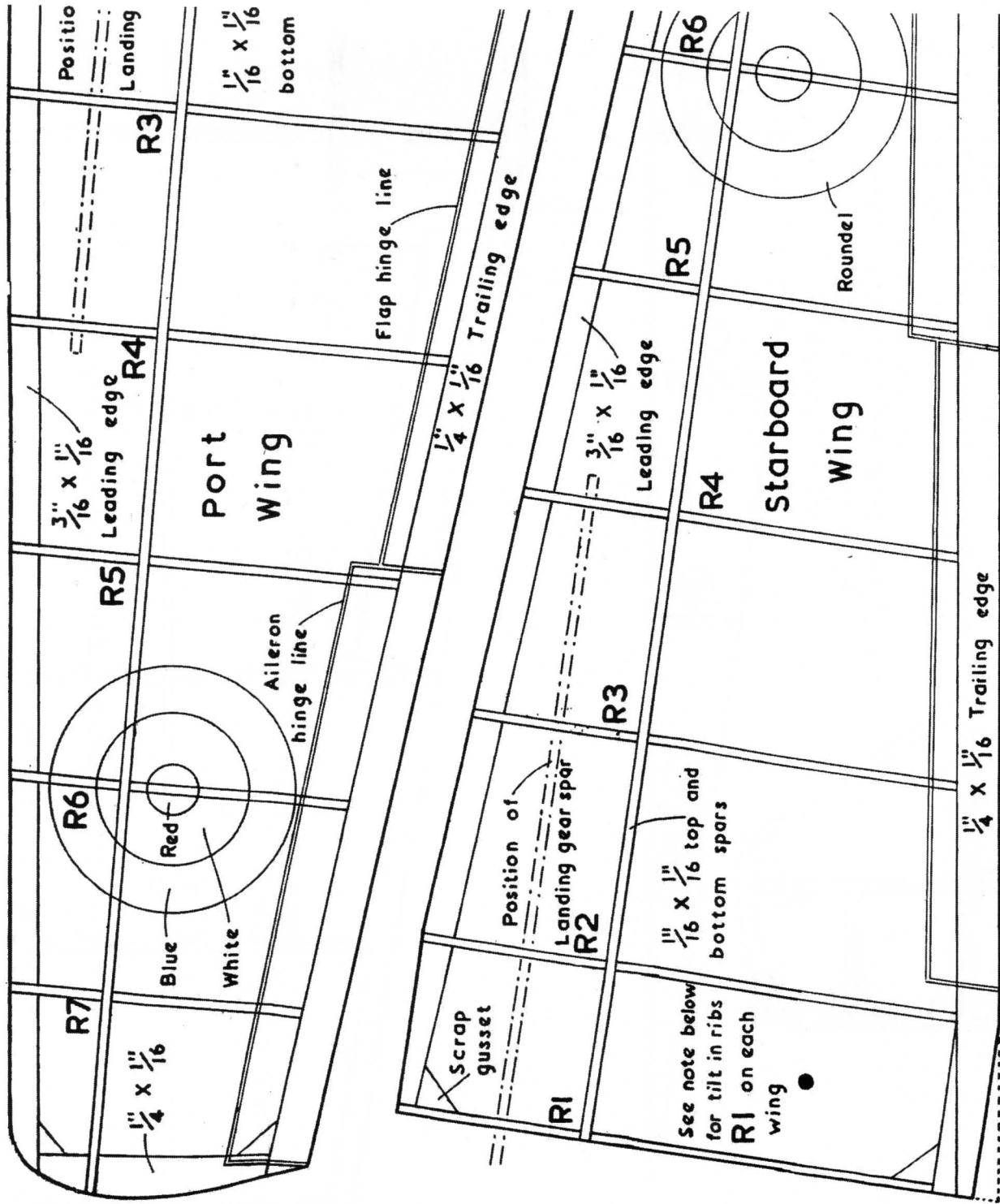
Green



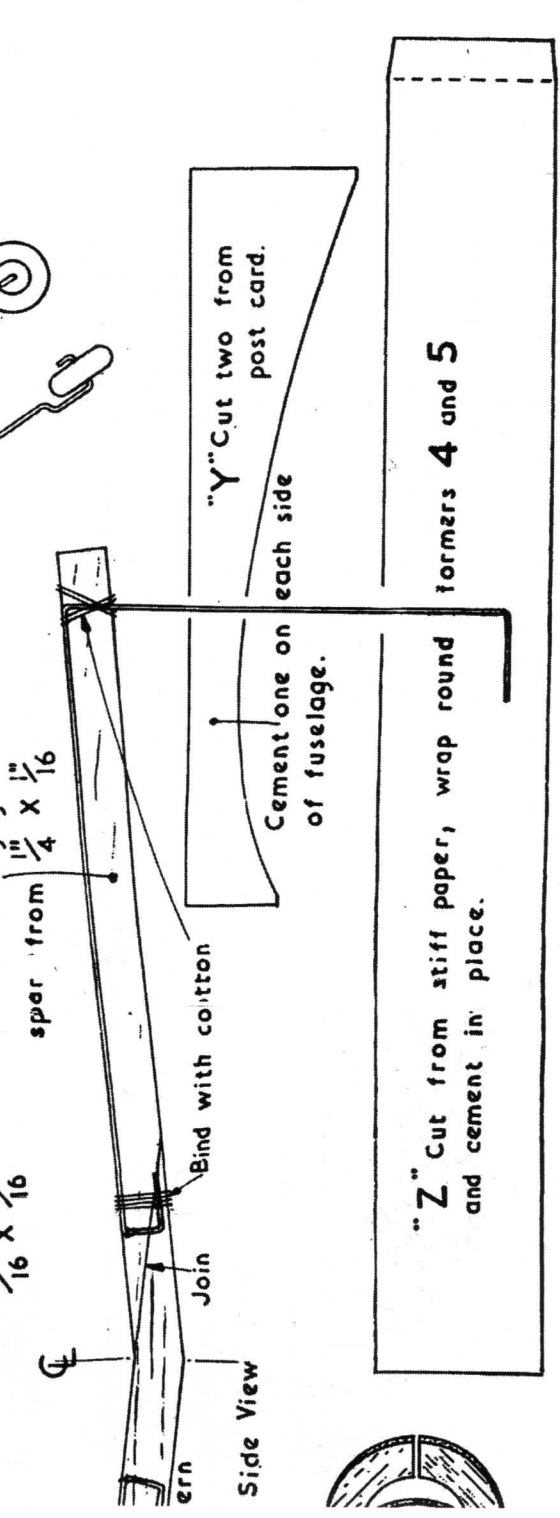
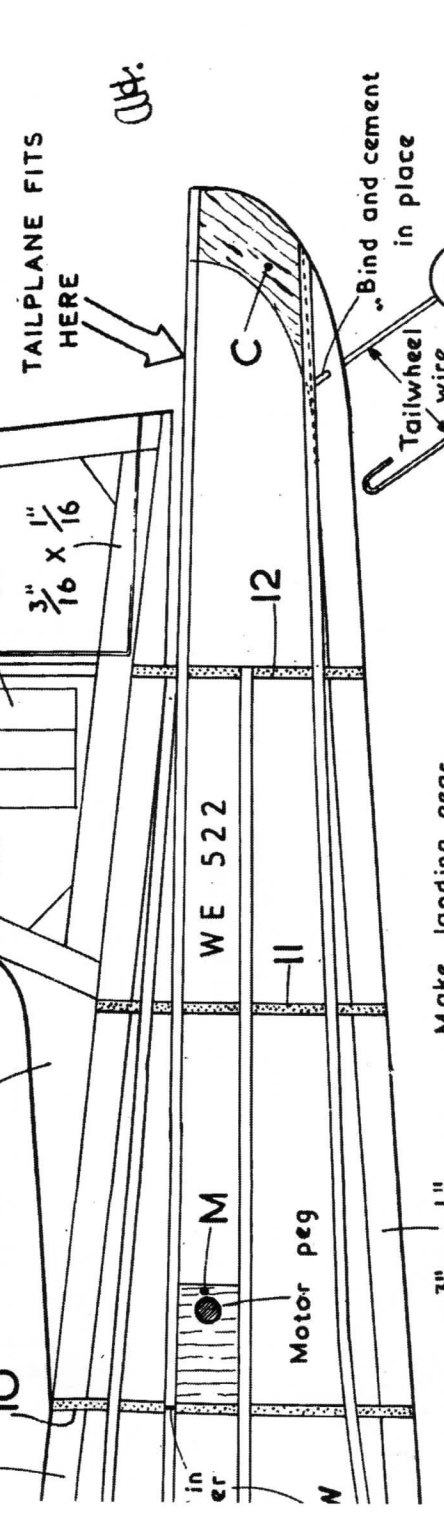
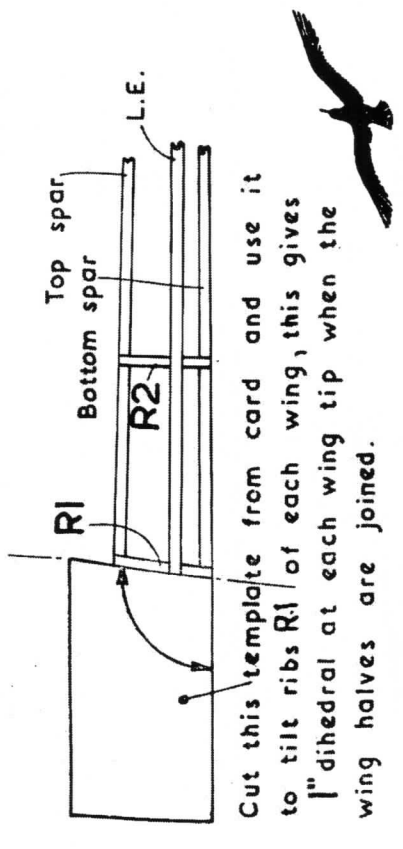
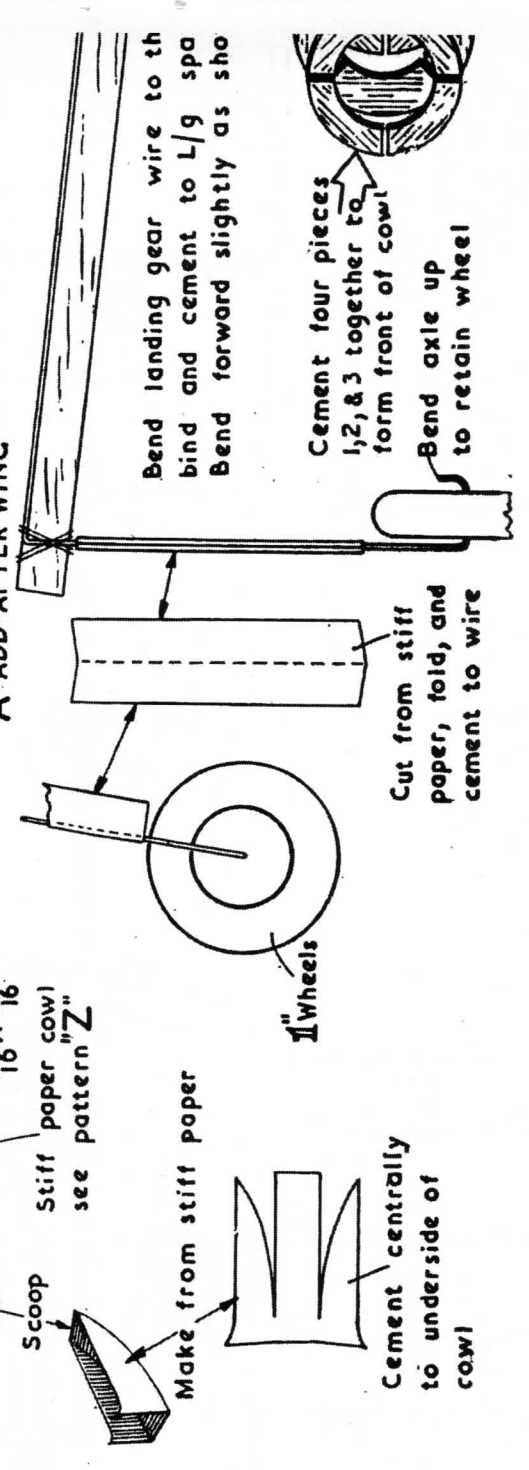
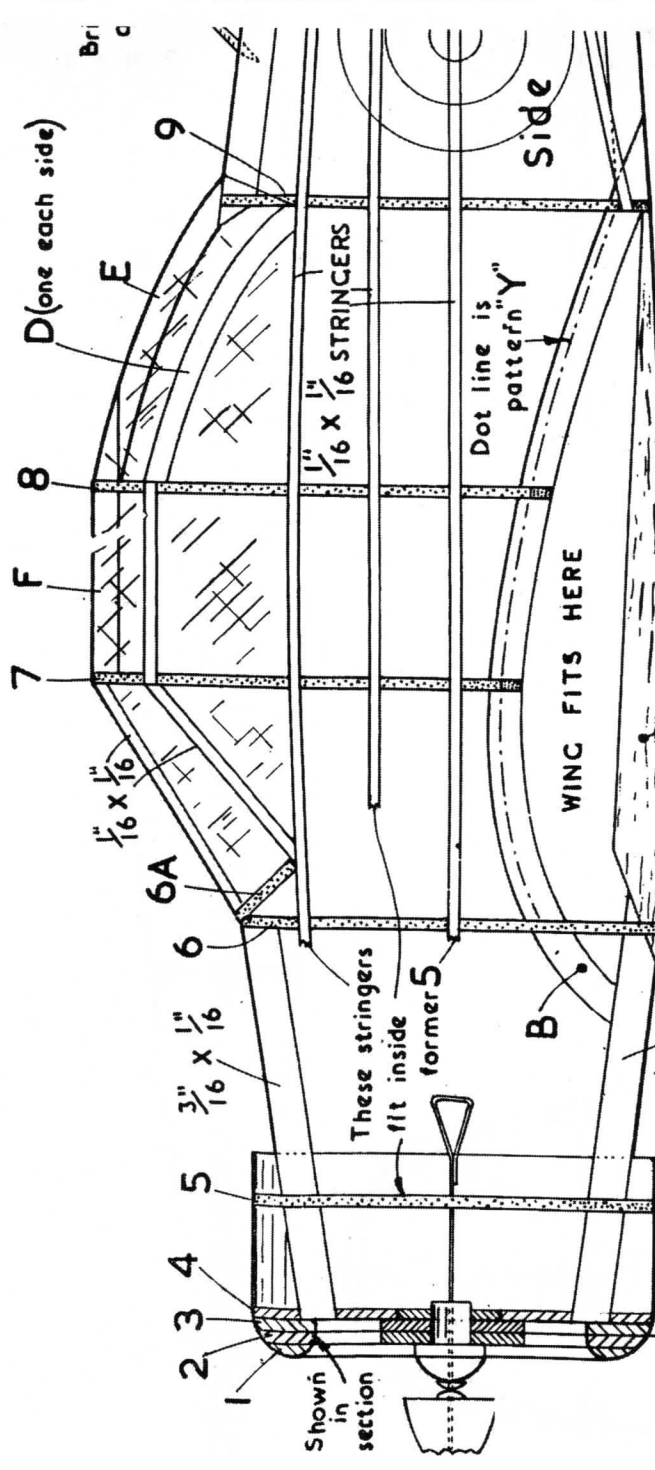
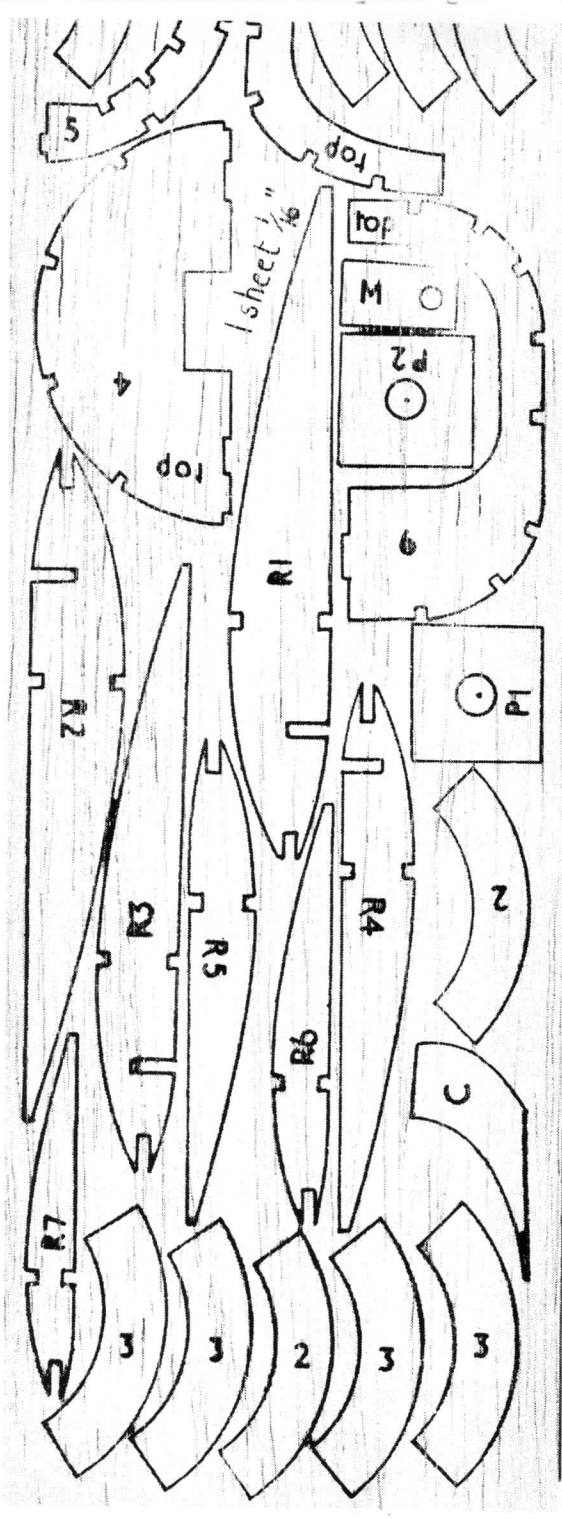
**GENERAL NOTES**

1. Many construction notes have not been addressed in detail. Use your favorite techniques.
2. Nominal wood sizes 1/16".
3. Hollow fuselage formers at your discretion.
4. Place stringer locations at your discretion.
5. Keel construction for fuselage.
6. Use gussets liberally.

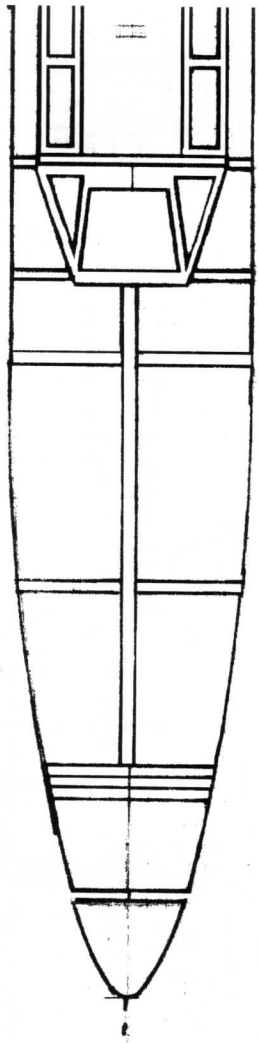
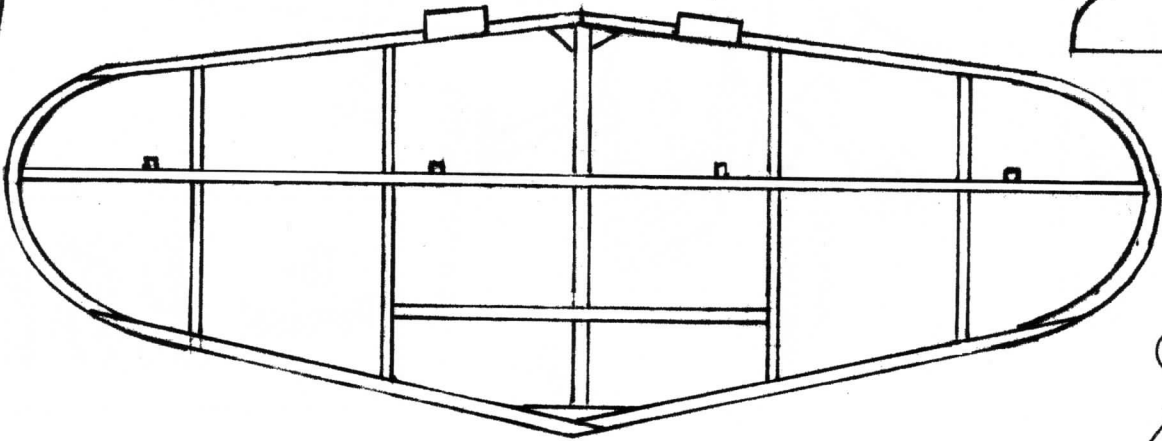
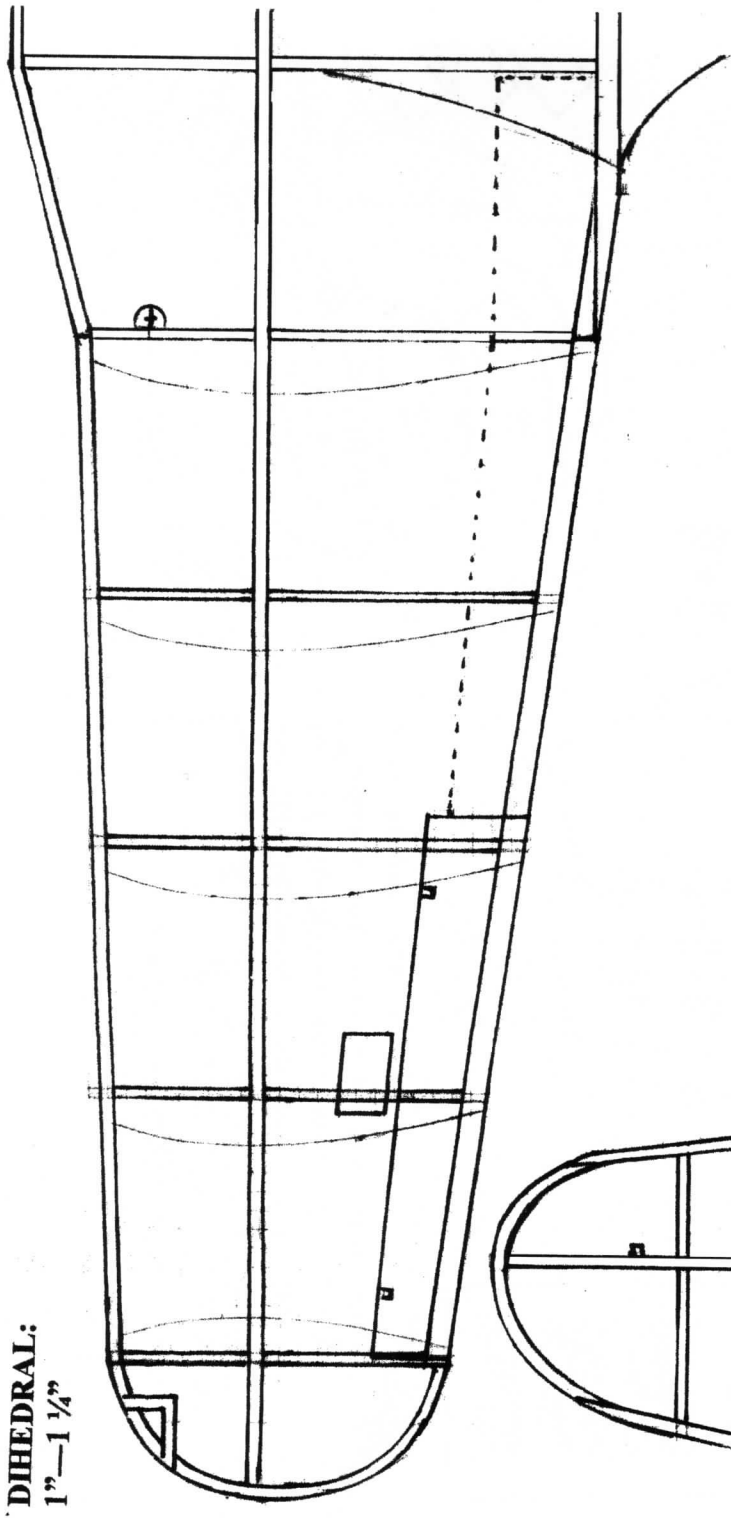




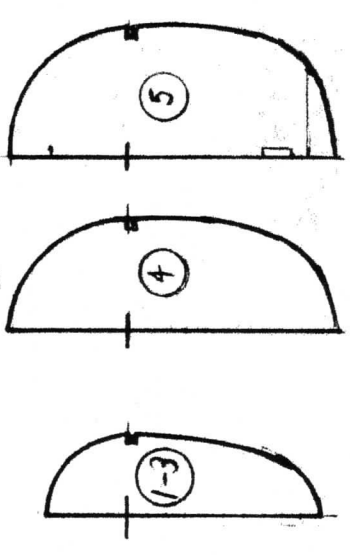
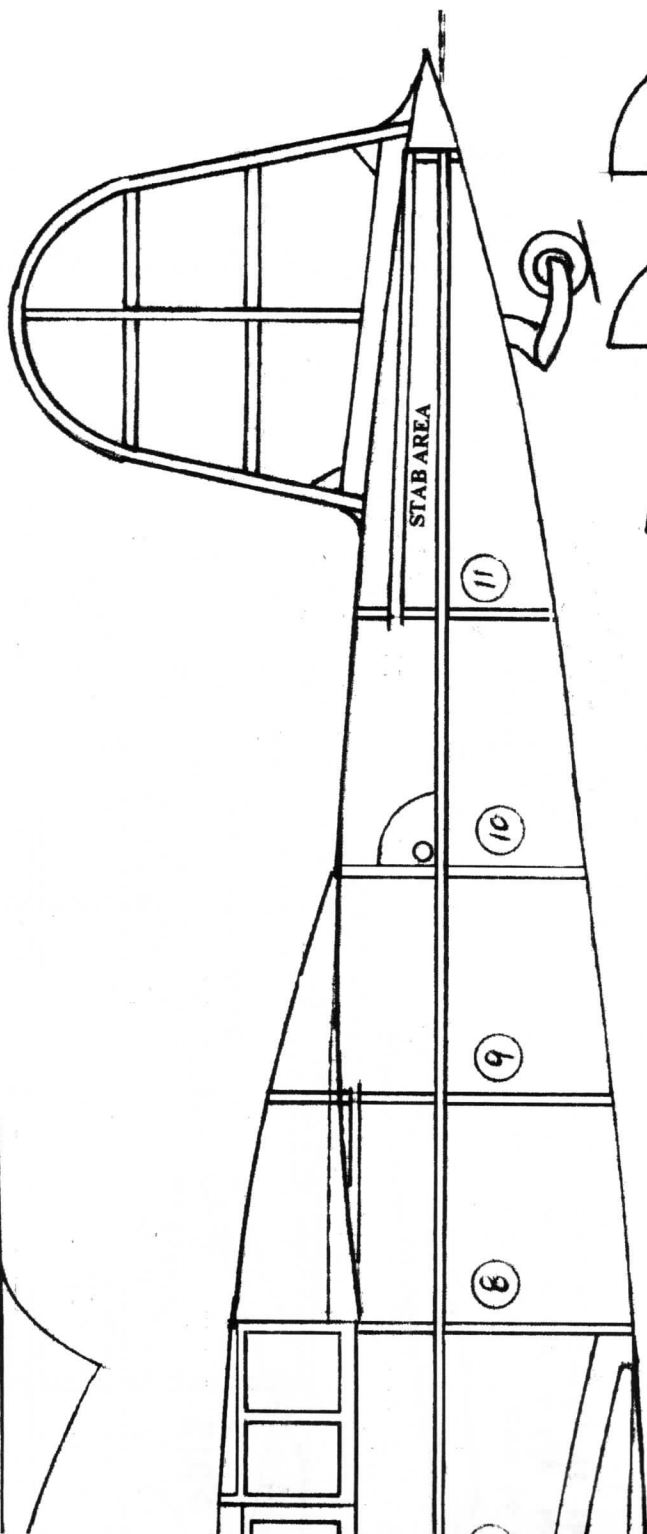
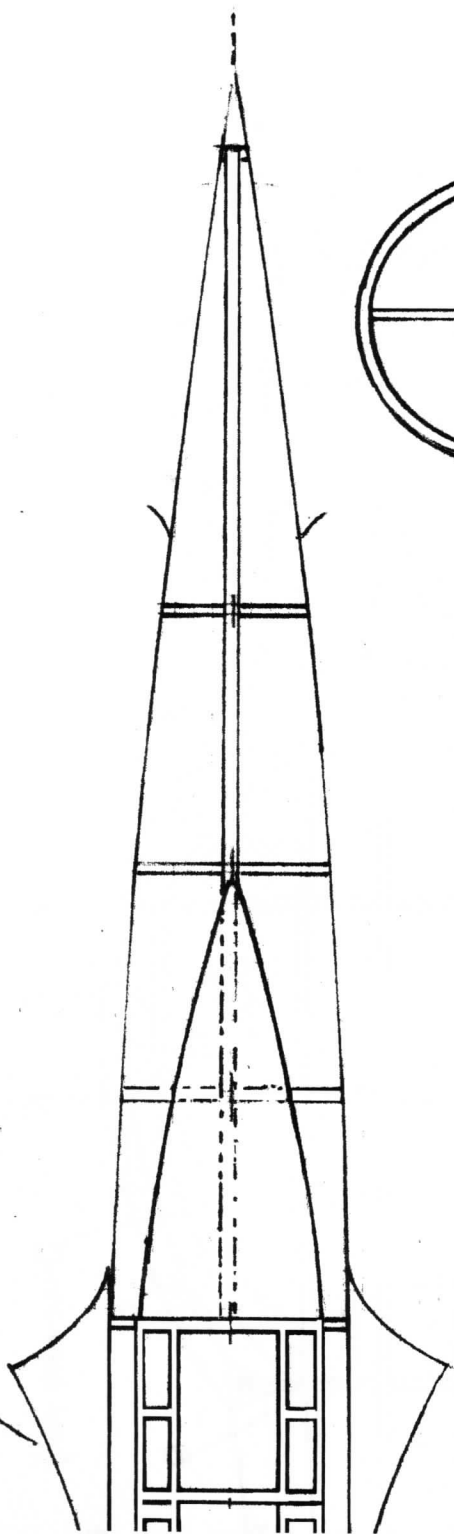
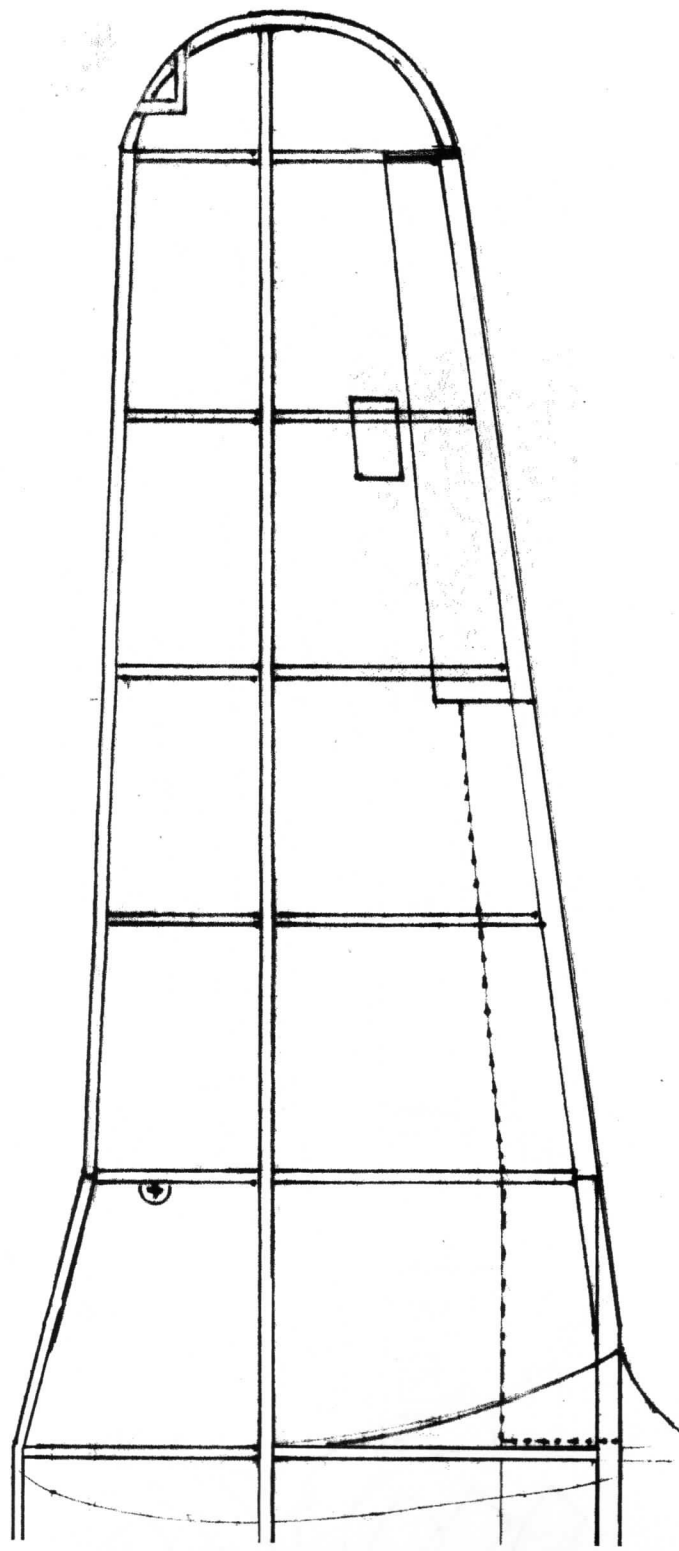
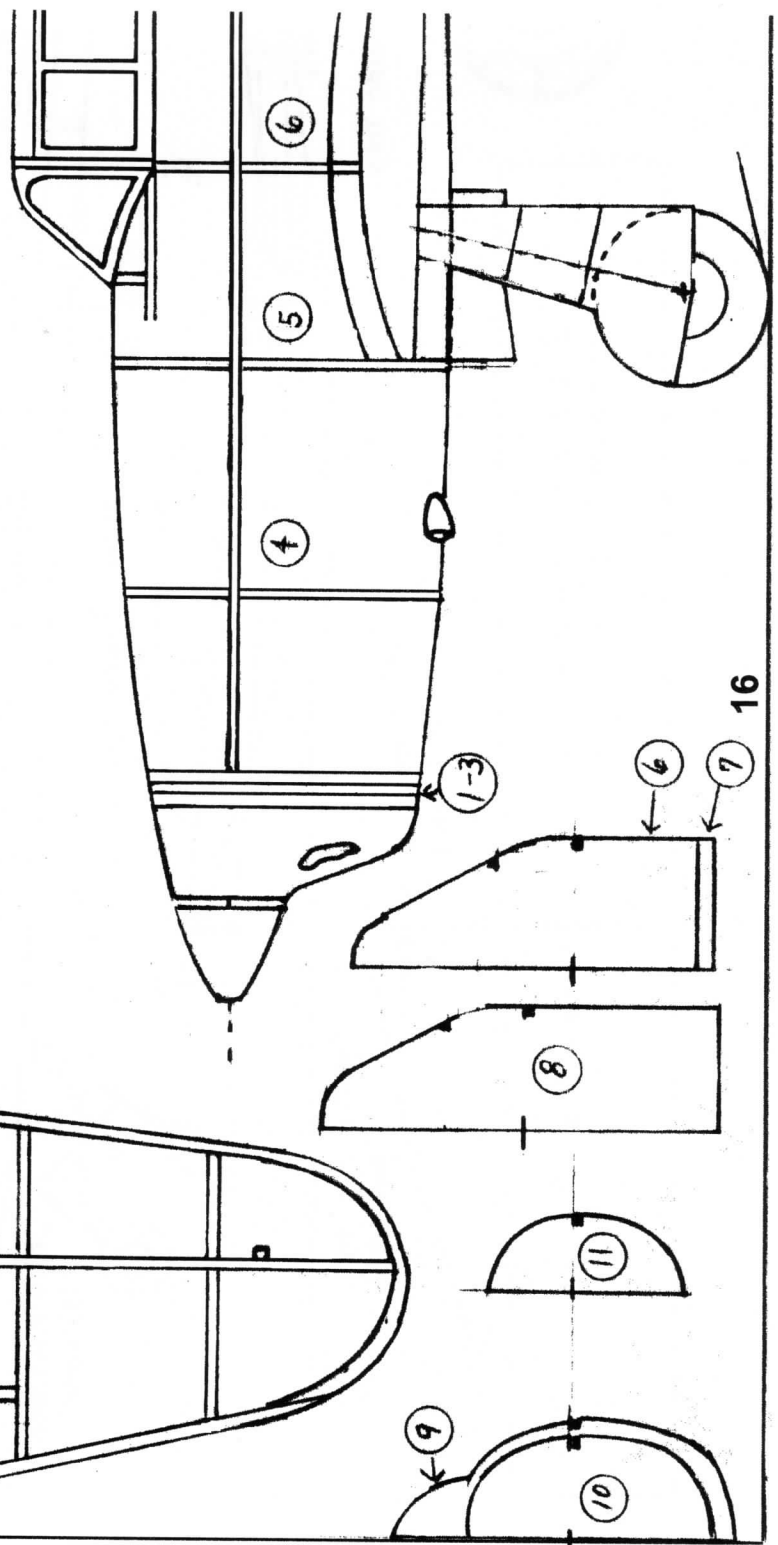
The Percival P.56



**DIHEDRAL:**  
1°-1 1/4°



**REFERENCE:**  
3-VIEW by Len Wiczorek



**FIAT G-46**  
Introduction=1947  
Wing Span=16"  
Designed:  
Claude Powell-June 2003