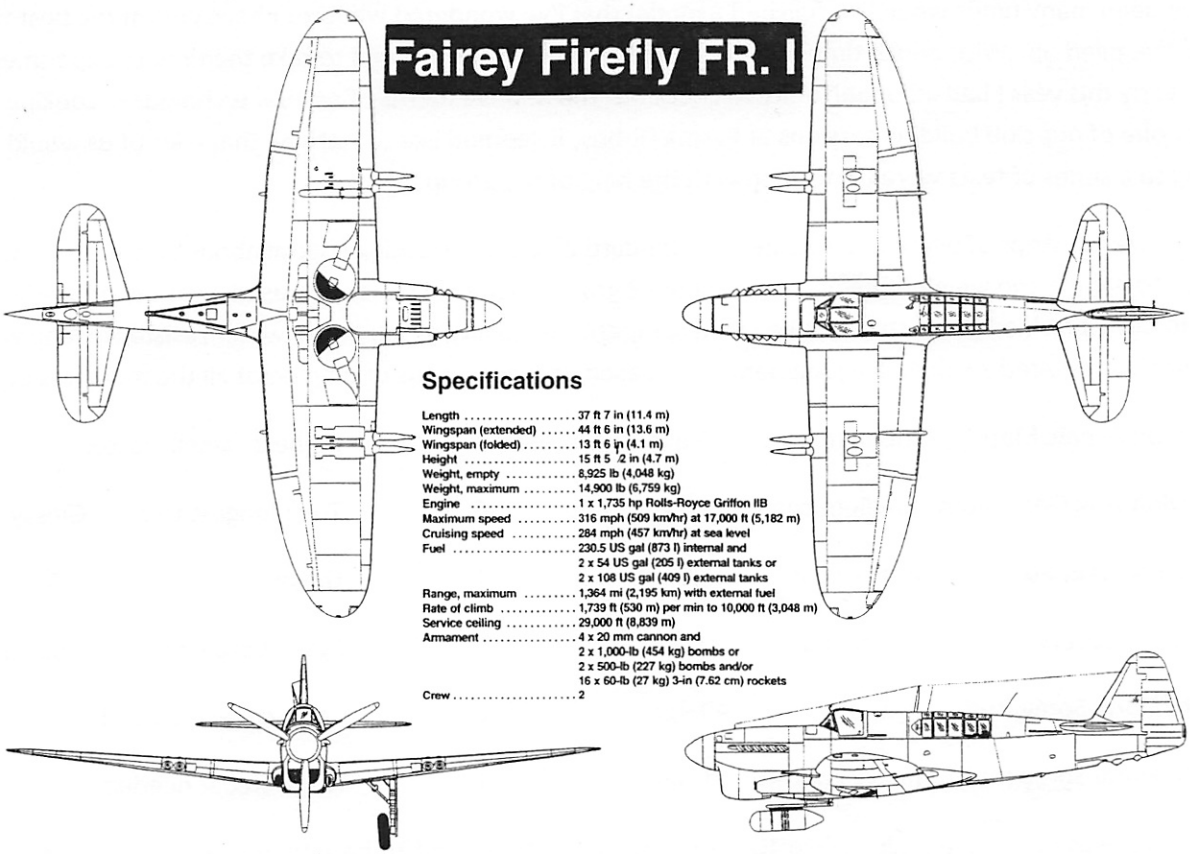
CROSSWINDS #127

Fairey Firefly FR. I



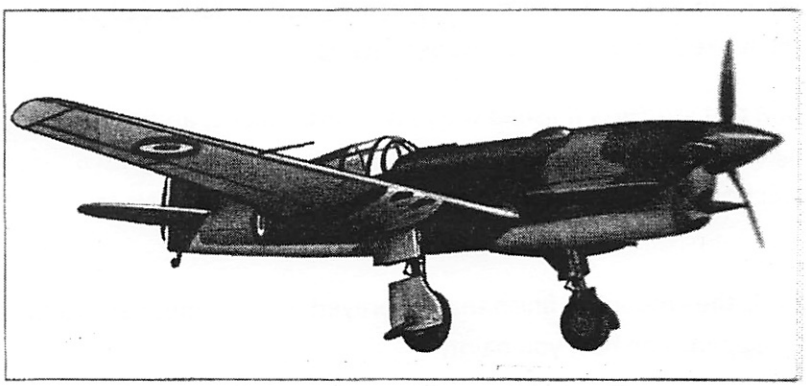
Specifications

Length	37 ft 7 in (11.4 m)
Wingspan (extended)	44 ft 6 in (13.6 m)
Wingspan (folded)	13 ft 6 in (4.1 m)
Height	15 ft 5 1/2 in (4.7 m)
Weight, empty	8,925 lb (4,048 kg)
Weight, maximum	14,900 lb (6,759 kg)
Engine	1 x 1,735 hp Rolls-Royce Griffon IIB
Maximum speed	316 mph (509 km/hr) at 17,000 ft (5,182 m)
Cruising speed	284 mph (457 km/hr) at sea level
Fuel	230.5 US gal (873 l) internal and 2 x 54 US gal (205 l) external tanks or 2 x 108 US gal (409 l) external tanks
Range, maximum	1,364 mi (2,195 km) with external fuel
Rate of climb	1,739 ft (530 m) per min to 10,000 ft (3,048 m)
Service ceiling	29,000 ft (8,839 m)
Armament	4 x 20 mm cannon and 2 x 1,000-lb (454 kg) bombs or 2 x 500-lb (227 kg) bombs and/or 16 x 60-lb (27 kg) 3-in (7.62 cm) rockets
Crew	2

CROSSWINDS
RUSS BROWN
4909 N. SEDGEWICK
LYNDHURST, OH 44124

CLEVELAND FREE FLIGHT SOCIETY

1939 - Caudron C.714



Caudron C.714 Dime Scale
Courtesy of Mike Nassise

Some Comparisons of Model Finishing Methods

There have been many times when I've finished a model that I've wondered whether I have gotten the best finish for the grams I've piled up. With bench time at a premium, I'm not usually inclined to take the time to experiment. However, early this year I had an opportunity to check out the relative merits of several techniques. Looking for a subject for one of our club building sessions at Parma Hobby, it seemed like something that a lot of us would find interesting so a series of tests were performed with the help of the group.

For starters, we cut strips of white Esaki tissue to a standard 2" x 8 ¾". Nothing special about that size, it was just convenient to handle and weigh them as they weighed 2 grains on my old scale. We used a variety of off-the-shelf products to put a finish on these strips so we could compare the quality of the finish, water resistance, and weight. The conclusions that required a subjective judgment were based on a consensus of opinion of all the modelers present.

Krylon Acrylic Matt	medium coat	+0.6gr	shrink level 2	Highest "smell" factor
Krylon Low Odor Gloss	medium coat	+1.1gr	6	Took longest to dry Glossy
Blair Marker Fix	heavy coat	+1.2gr	1	Glossy
Krylon Preserve It	heavy coat	+0.9gr	1	Made tissue very translucent
DM Floral Spray (red)	light coat	+0.9gr	4	Color coverage good
DM Floral Spray (red)	heavy coat	+1.3gr	1	No overcoat needed

The shrink level was rated on a scale of 0 to 10, with 0 being no shrink, and 10 bare tissue. All finished samples were soaked in alcohol. No forehead slapping moments here. The heavier finishes did a better job of keeping the water out of the tissue. The Marker Fix (also sold as "workable fixative in other brands) gave excellent water /shrinkage resistance, dried quickly. Krylon Preserve It was a bit lighter, but the difference in the appearance was noticeable, as noted above. The Design Master Floral Spray provided good coverage and did not require any further finishing.

Silver

Silver, or any other metallic color on tissue is a special case. The easy way out is to buy some from Shorty's Basement, but for those who want to make their own, here are a couple of ideas we tried at our test session. We used the same test strips as in the finishing tests above.

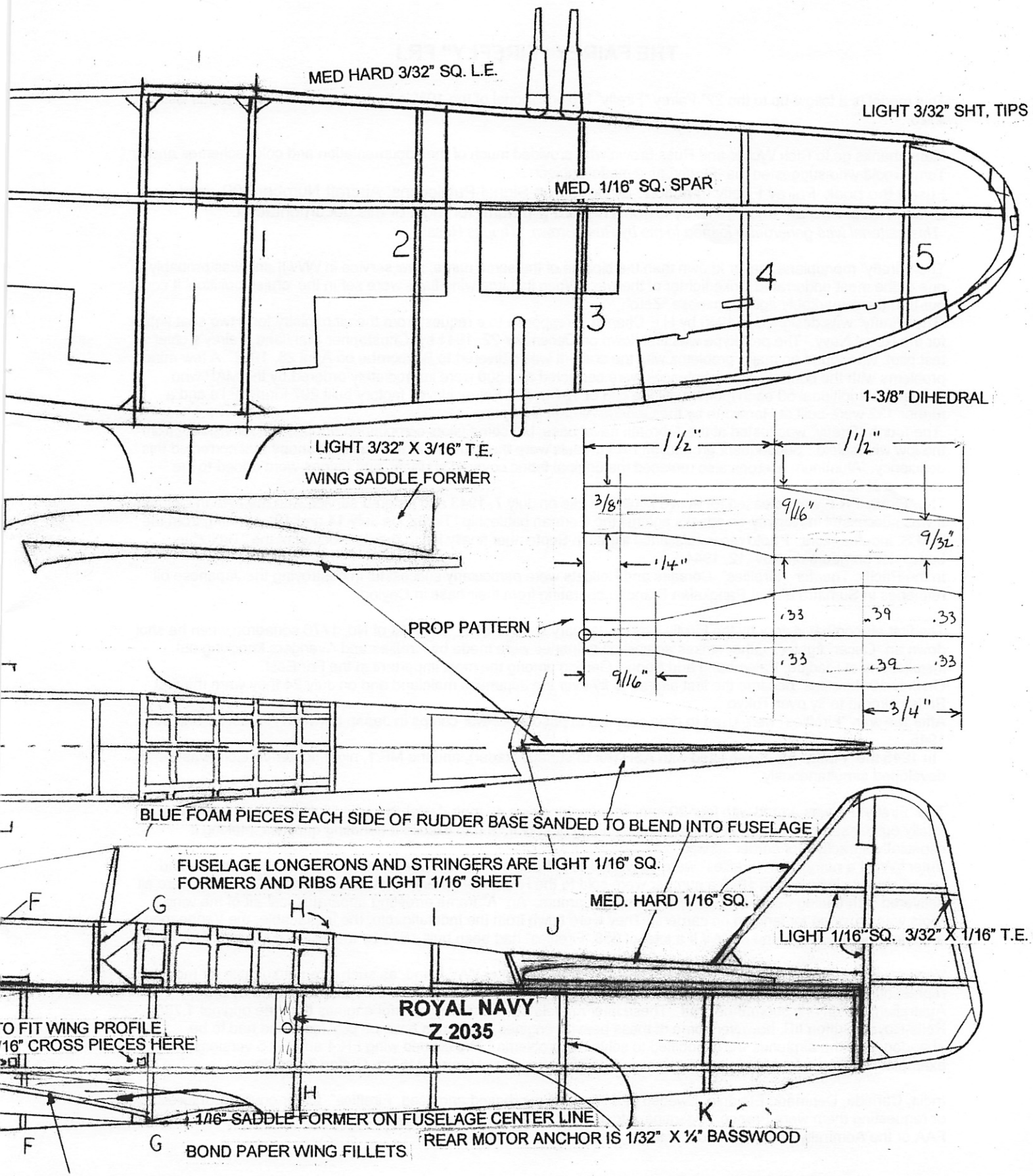
Golden (brand name) Fluid Acrylic Iridescent Silver was added to the spray bottle with isopropyl alcohol and lightly sprayed on a strip of Esaki. We wanted to see if a bit of sparkle added over a strip of gray chalked tissue would be a convincing way to get a silver finish. Weight gain was minimal, but so was the coverage. A heavy coat added some weight, and the coverage was a little better, but it still looked too gray to recommend its use.

Design Master Floral Spray did a much better job. One test strip was finished with sliver DMFS alone, and another over a base coat of chalk. The chalk gave a more convincing color and allowed a lighter coat of spray. Of course with a minimum of DMFS, you get a minimum of finish protection on the tissue so an overcoat will be needed. No free lunch there.

One of the big variables in these kinds of comparisons is the amount of finish that is sprayed on. It comes back to the question of "How much does a coat of paint weigh?" Depends on how you paint!

Rich Weber / Wingnut

CROSSWINDS Readers with the dreaded red X at issue renewal code #127 or lower can send $18 per year to Russ Brown 4909 N. Sedgewick, Lyndhurst, Oh 44124 – U.S. A.



ROYAL NAVY
Z 2035

16" FAIREY FIREFLY FR.I

Plan by Steve Griebling
for CROSSWINDS, 2008

THE FAIREY "FIREFLY" FR.I

This model is a follow-up to the 22" Fairey "Firefly" Biplane model of the 1930's that appeared in Crosswinds issue #125.

Many thanks go to Rich Weber and Russ Brown who provided much of the documentation and color schemes and to Tom Arnold who suggested the "Firefly" as a model subject
I used the book 'Fairey Firefly in action' by Squadron Signal Publictions, Aircraft Number 200, and British Naval Aircraft since 1912 by Owen Thetford (Putnam) for most of this documentation.
This material was generously loaned to me by Russ Brown. Thanks Russ!

The "Firefly" monoplane, better known than the biplane of the same name, saw service in WW II and was probably one of the most underrated strike fighter of the war. When its large wing flaps were set in the 'cruise position' it could out-turn the remarkably agile Japanese "Zero".
The 'Firefly" was designed in 1940 by H.E Chaplin in response to a request from the air ministry for a two seat fighter for the Royal Navy. The prototype was first flown on December 22, 1941 by Christopher Staniland, Fairey's chief test pilot, who found no major problems with the craft. It was delivered to Boscombe on April 28, 1942. A few minor problems with the control surface balances were corrected and 300 were immediately ordered by the MAP who wanted an additional 50 each month until the end of 1944. The Fairey Hayes factory built 297 Firefly F.I's and a further 132 were built at Hanworth by the General Aircraft Company.
The fourth "Firefly" was tested at the Arbroath naval base, but some pilots complained about the poor visibility from the low windshield. Subsequent production FR.I models were then fitted with the bulging canopy that corrected this deficiency. Aluminum ailerons also replaced the original fabric covered surfaces and farings were added to the cannons at this time.
The "Firefly FR.I" was released for active squadron use on July 7, 1943 and entered service with the FAA in October. It was successful in Norway on attacks against the German battleship "Tirpitz" on July 14 and 19 operating from the H.M.S. indefatigable. Photo reconnaissance flights in September finally led to the destruction of the "Tirpitz" by Lancaster bombers on Nov. 12, 1944.
In the Pacific Theater "Fireflies", Corsairs and Hellcats were particularly successful in destroying the Japanese oil refineries in Sumatra and at Pangkalan Brandan operating from their base in Ceylon.

The first air combat victory by the Firefly was on January 2, 1945 by Lt. D. Levitt of No. 1770 squadron when he shot down an "Oscar" fighter. Other strikes against oil refineries were made by Fireflies and Avengers knocking out installations at Pladjoe, Palembang and Songei Gerong among the most important in the Far East.
On July 10 "Fireflies" became the first aircraft to fly over the Japanese mainland and on July 24 they were the first British aircraft to fly over Tokyo.
After the war, "Fireflies" were used to drop supplies to prisoner-of-war camps in Japan between August 21 and 30, 1945.
In 1945 the "Firefly' FR.1 was fitted with ASH (Air to surface Radar), and the MF.1, night fighter version, was developed simultaneously.

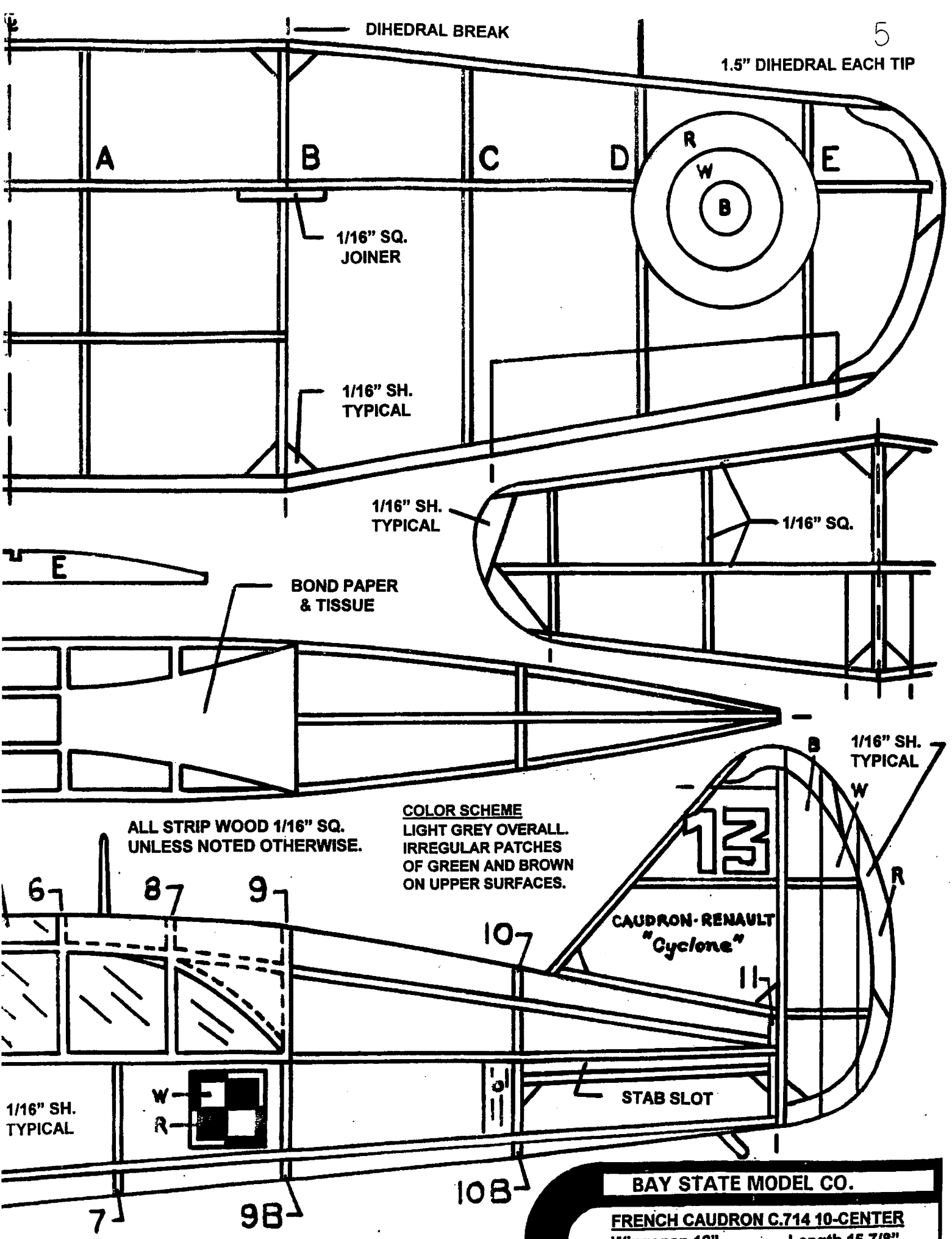
The "Firefly" F.I was armed with four 20 mm. cannons and was 40 mph. faster than the "Fulmar" which had been totally outclassed by German aircraft at the beginning of WW II. It had excellent handling qualities, making it especially attractive for carrier service.
After WW II a number of "Fireflies" were converted to T.1 and T.2 tactical weapon trainers with dual controls and raised rear cockpits and in 1945 a number were sold to the Royal Netherlands Naval Air Service. "Fireflies" were all delivered with folding outer wing panels for use on carriers. An "A" frame arresting apparatus just aft of the wing roots was provided for landing on carriers. They were flown from the Indefatigable, the Implacable, the Vengeance and the Vindex. At the end of WW II a total of 658 "Fireflies" had been built., 574 by the Fairey Factories.

Versions FR.3, FR.4, FR.5, FR.6 and FR.7 were all produced after WW II and, as such, are not suitable for models representing aircraft from WW II. The FR.5 was used in the Korean conflict and the AR.6 was used by the Australians as an anti submarine craft. These later models utilized more powerful engines than the original 1,735 Rolls-Royce Griffon IIB, however some of these heavier engines resulted in balance problems and had to be abandoned or the airplanes were modified to solve the problems. The clipped wing FR.4 and FR.5 versions, for example, required a four bladed prop to absorb the higher power of their 2,245 hp. Griffon 74 engines.

India, Canada, Denmark, Ethiopia, Sweden and Thailand purchased and used "Fireflies". Other countries interested or requesting them were France, Argentina, Afganistan, Lebanon, Finland, Egypt, Saudi Arabia and Lebanon, but the FAA or the Admiralty prevented most of these purchases.

Steve Griebling for Crosswinds, 2008

Renewal rate for "Crosswinds" will now be $18.00 per year, (same as FAC Club News).



ALL STRIP WOOD 1/16" SQ.
UNLESS NOTED OTHERWISE.

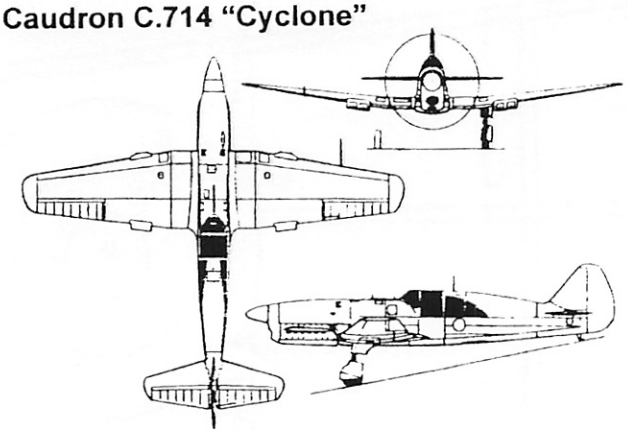
COLOR SCHEME
LIGHT GREY OVERALL.
IRREGULAR PATCHES
OF GREEN AND BROWN
ON UPPER SURFACES.

BAY STATE MODEL CO.

FRENCH CAUDRON C.714 10-CENTER
Wingspan 16" Length 15 7/8"
Designed & Drawn by Mike Nassise, 8/08

TO BE COPIED FOR RESALE

Caudron C.714 "Cyclone"

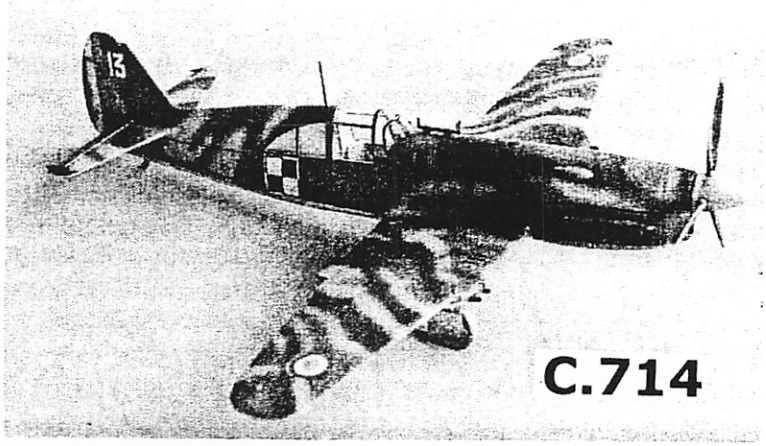


Dime Scale Caudron C.714 Courtesy of Mike Nassise

From "Tailspin" September/October, 2008

The C.714 was a short-range day fighter powered by a 450 horse power Renault 12 RO1 inline piston engine. It had a top speed of 301 mph, a ceiling of 29,850 ft and a range of 559 miles. The wing section of the airplane was so shallow that it was impossible to install its four 7.5 mm machine guns internally, so they were mounted in streamlined pods, each holding a pair of guns below each wing.

Although light and fast, the wooden construction of the C.714 did not permit the use of a more powerful engine in the aircraft. It was soon found to be no match for contemporary German fighters such as the Bf-109 in clinb rate and manoeuvrability. Thus, despite certain advantages that it possessed, such as the fact that it was made of non-strategic materials and easy to build, it was withdrawn from service in February, 1940.

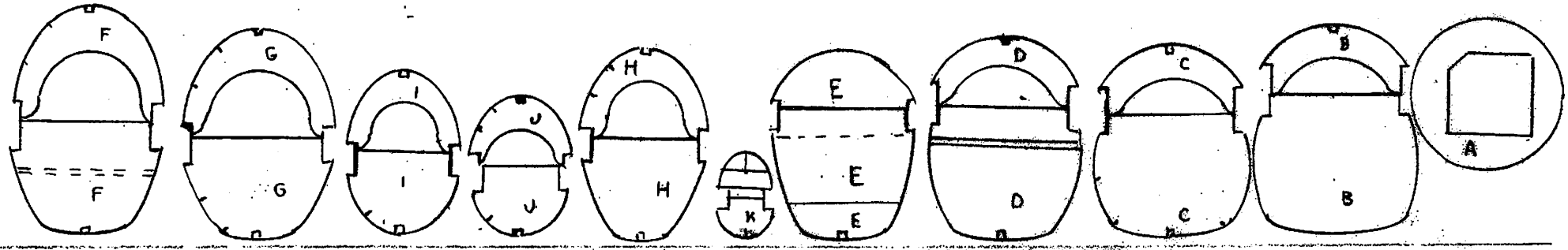


Caudron C.714's were used to equip an all-Polish squadron which came to be known as the "Warsaw Group" (GC 1/145). This unit saw action against the Germans between June 2 and June 13, 1940. Its pilots were credit ed with 12 confirmed victories in that short period of time. Following the collapse of France, small numbers of C.714's were used by the Vichy Air Force, and about 20 were confiscated by the Germans.

The 10-Cent C.714 has a lot going for it. Good moments, a fairly large wing area, and a nice long fuselage that will hold a sizable motor, make it a strong candidate for your next Dime Scale ship. Don't let the French camouflage scheme scare you off; its real easy to do. Cover the entire model in gray tissue, then use Krylon spray paint to lightly apply the irregular patches of green and brown over the gray on the upper surfaces. Leave quite a bit of gray showing and you'll love the results.

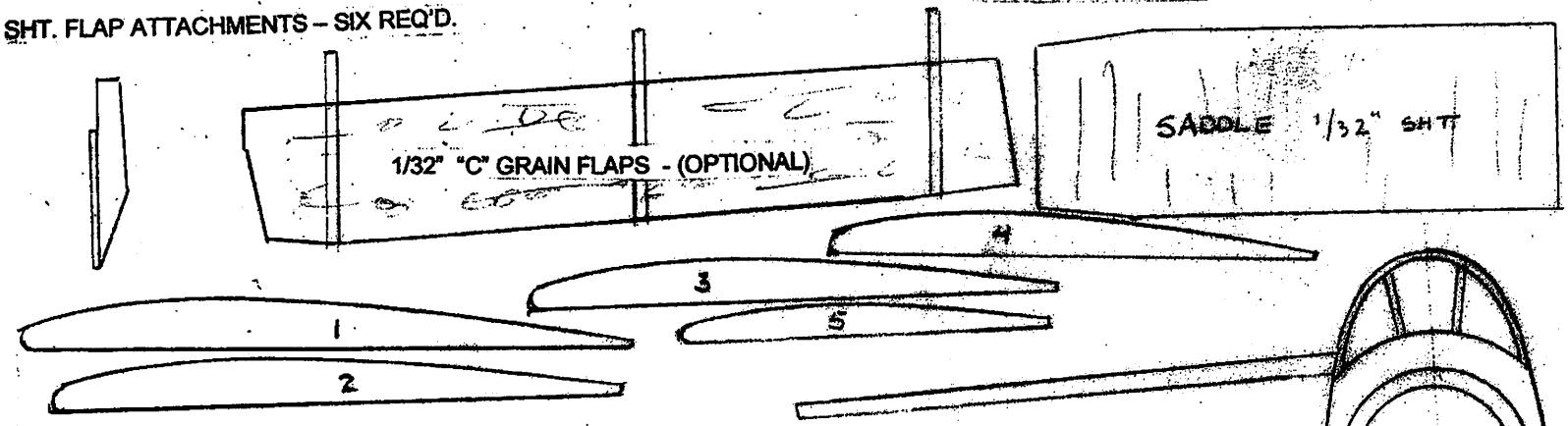
Caudron C.714 "Cyclone". Conceived as a "light fighter" of all wood construction that could be built rapidly and in large numbers, the Armee de l'Air hoped that the C.714 could rapidly increase the supply of modern fighters in the French service on the eve of war with Germany. It was, as with so many other things, too little too late for France.

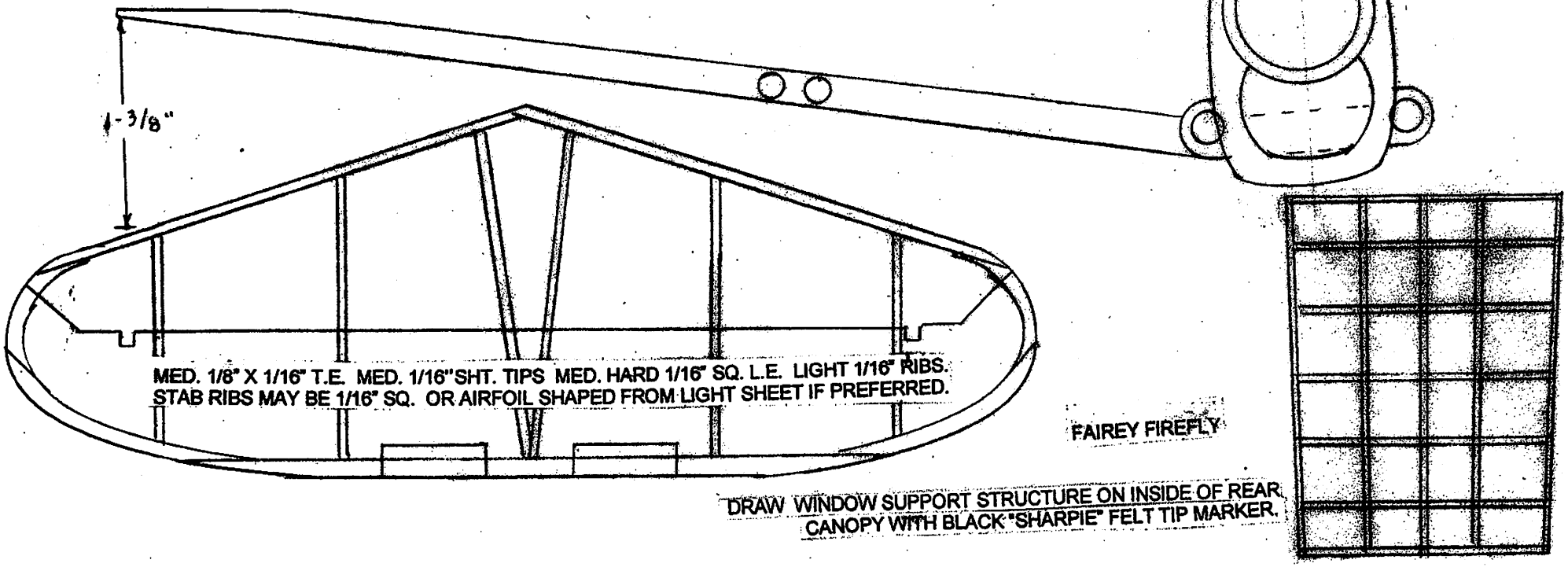
First flown in the summer of 1938, the radical new design was derived from a series of successful racing planes built by Marcel Riffard in the early 1930's. Its performance during initial flight tests was so very promising, surpassing that of most fighters of the time, that two orders for 100 aircraft each were placed almost immediately with the manufacturer.



FORMER PATTERNS

1/16" SHT. FLAP ATTACHMENTS – SIX REQ'D.





MED. 1/8" X 1/16" T.E. MED. 1/16" SHT. TIPS MED. HARD 1/16" SQ. L.E. LIGHT 1/16" RIBS.
STAB RIBS MAY BE 1/16" SQ. OR AIRFOIL SHAPED FROM LIGHT SHEET IF PREFERRED.

FAIREY FIREFLY

DRAW WINDOW SUPPORT STRUCTURE ON INSIDE OF REAR CANOPY WITH BLACK "SHARPIE" FELT TIP MARKER.

The Fairey "Firefly" Model

The 16" model on these plans was designed to meet the requirements of dime scale construction which specifies balsa no less than 1/16" thick , no vacuformed canopies and other "modern" building improvements such as laminated tips. If your model is not intended as a "Flying Aces" dime scale entry, these restrictions need not apply.

The main plan shows a scale stabilizer, but an enlarged stab is recommended since the stab is somewhat forward of the vertical tail unit.

Construction is all conventional except for the wing saddle which is made of a single former on the fuselage centerline to which is glued a light weight 1/32" sheet rectangle with its grain running across the fuselage. This piece is sanded to conform the fuselage contours after it has been glued in place. The saddle former is aligned by and glued to the four extra cross pieces shown on the side view of the plan. This determines the correct amount of decalage.

Use of the Fairey-Youngman flaps is optional. I decided to use them to increase wing area.

I have shown stringer notches only at the centerline of the formers. You can determine how many and where you want to position other stringers, and keep them nice and straight.

You will want to sand the balsa nose blocks to the shape of former "B", but notice that the lower, rear block extends just a little below former "C" at its rear end. Note that there are stringers between the two cockpits. I suggest five here and on the rear deck .

The stabilizer may be made flat by using all 1/16" strips, or can be made with an airfoil by using light 1/16' balsa ribs cut to an airfoil section. The thicker, airfoil construction tends to resist warping better. There is really no other reason to use it. Light weight blue foam is shaped to form the two air scoops at the wing roots and the tailplane fairings. The two balsa blocks forming the nose of the model should be made of light to medium balsa and hollowed to reduce their weight. The front block should be laid out and its two holes drilled with a ½" drill bit at the exact location for the air scoop and for the rubber motor center line. The upper hole is particularly critical because you will center the 1/32" plywood nose plate over it and blend the nose contour to this nose plate by sanding the block. You can make the air scoop hole squarish by the use of a rat tail file or a strip of sandpaper wrapped around a ¼" dowel.

A pattern for the pilot's cockpit is shown on the plan. Use .003" acetate sheet for both cockpits. I suggest you temporarily join the two sections of the forward cockpit with a strip of tape and use a tiny drop of cyano as a permanent adhesive. Strips of black trim strip can be used to hide the joints and also serve as the cockpit framework lines.

The rear cockpit is much simpler. Draw the framework lines on its inside surface with a black "Sharpie" marker before you attach the canopy.

Machine guns may be made from 3/16" sq. light balsa, shaped as shown and notched to fit the leading edge of the wings.

Make the spinner from pine to provide a bit of nose ballast as far forward as possible. The Free wheeler designed by Henry Struck is very simple, compact and reliable for planes with spinners. I recommend it.

I'm no expert regarding camo and its application, so I asked Rich Weber for his advice – which is as follows:

1. Use Rembrandt "permanent green deep" chalk for coloring the tissue for the undersides of the plane.
2. Put down a section or two of newspapers to act as a smooth backing
3. Lay a sheet of Esaki on top and rub the chalk on a sheet of sandpaper then shake the resulting dust on to the tissue and rub it in using a paper towel or facial tissue. Work carefully to always move the pad away from where you hold the tissue down so you won't tear or wrinkle the tissue. You will get better saturation if you apply the dust to the dull side of the tissue. Add more chalk as necessary to get the color as dark as you want it to be.
4. The tricky part in doing a chalked camo scheme has been getting the upper surface pattern to match up on the various pieces of aeroplane. Rich recommends the new Pan Pastels. These come in little plastic tubs and they can be applied to the model after it has been assembled. That makes matching the pattern a cinch. These come with an assortment of small spongy applicators that look a lot like the ones girls use to apply make-up. You can apply these free hand, following a camo diagram or make up paper masks. Pan Pastel 840.3 (Paynes Grey) is a pretty good match for the FAA "Extra Dark Sea Grey". "Dark Slate Grey" is a bit more work. It's a dark greenish grey. Rich finds a dab of gray, green and a tiny bit of brown comes close to this color. He recommends the use of the little plastic cups that coffee creamer at restaurants furnish for mixing the colors. They can be rinsed out for re-use.
5. Rich recommends you practice on an old airframe for your first attempts at chalking on a model.

The balsa nose blocks should be sealed with three coats of sanding sealer sanded between coats with 400 grit paper. I colored these blocks, the foam air scoops and the foam rear deck fairings with acrylic (Tamiya) paint to

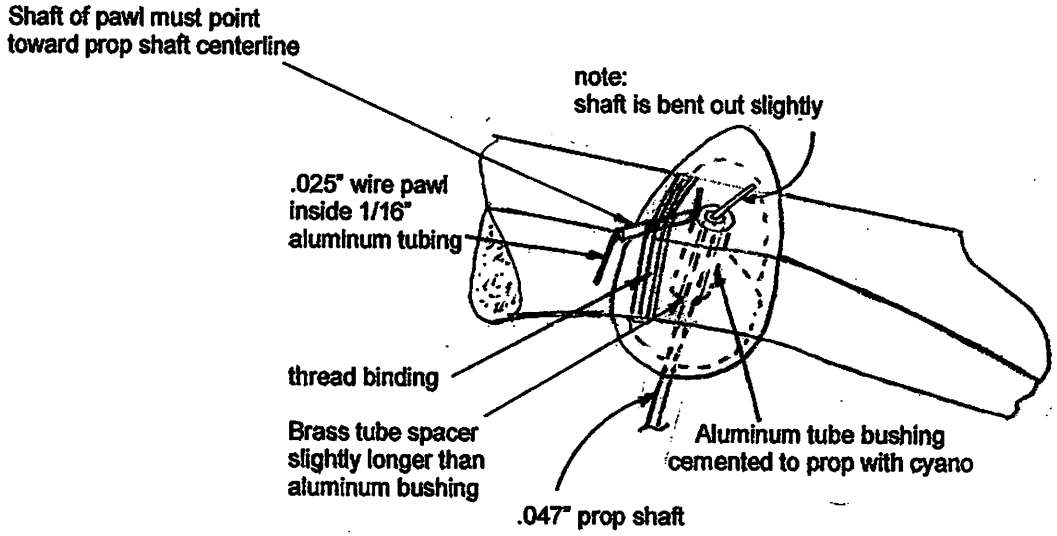
match the chalked tissue. You will probably have to mix several colors of the acrylics together to obtain a good color match.

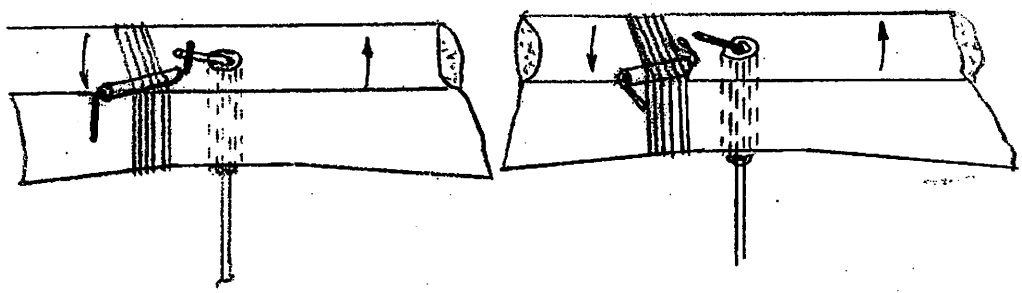
My model weighed 18.1 grams without motor and I decided to power it with four strands of .090" rubber at twice the hook to hook length – braided.

The sketch below shows the Struck type free wheeling device I recommen for planes with spinners. The motor may be removed from the prop hook for winding the rubber directly, or use a blast tube for winding to protect the model in case the rubber breaks.

Steve Griebling for "Crosswinds"

STRUCK TYPE FREE WHEELER – RECOMMENDED FOR PLANES WITH SPINNERS





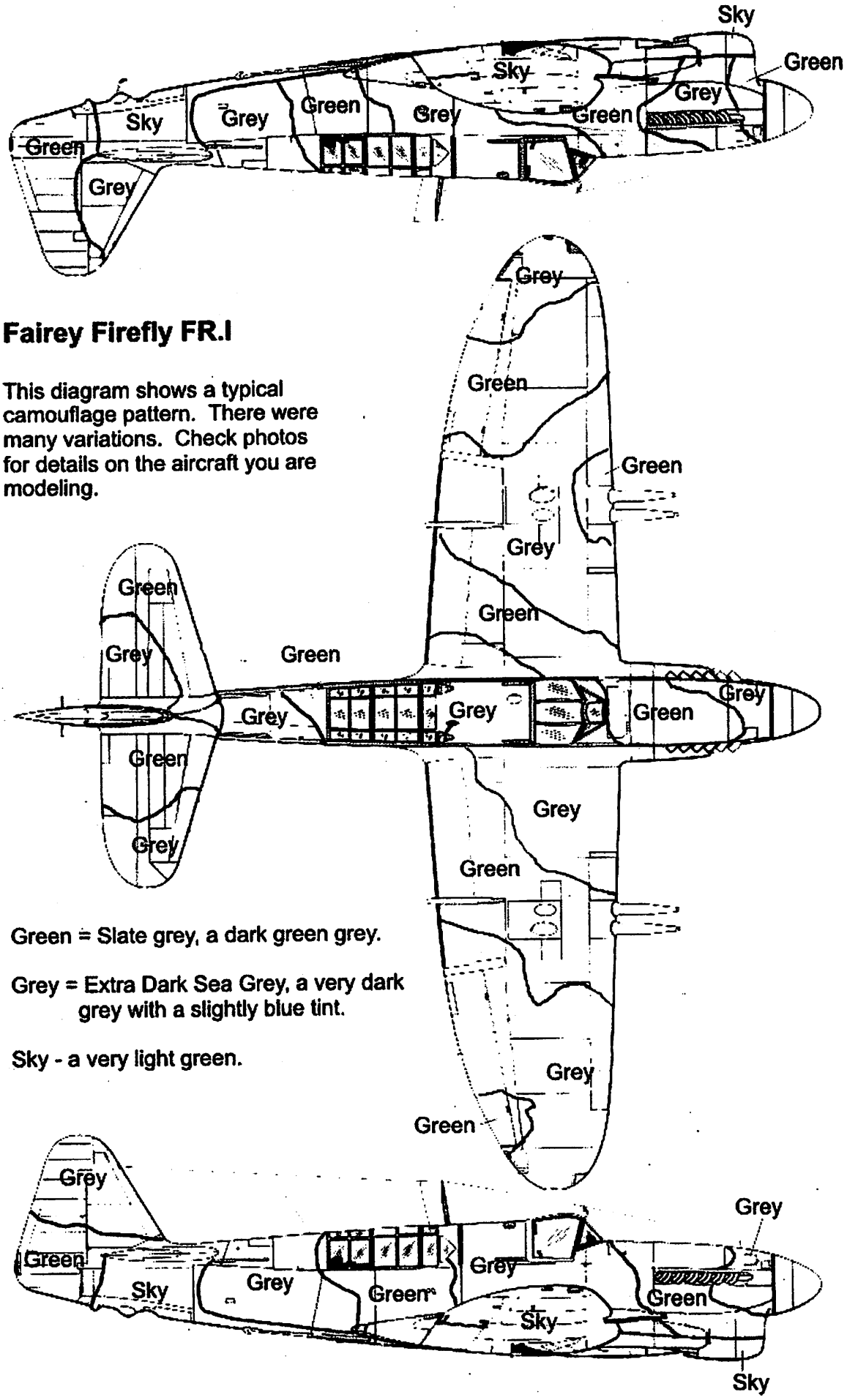
Struck free wheeler
In power driving mode

Bent end of prop shaft
Engages pawl and other
End of pawl drives prop blade

Struck free wheeler
in free wheeling mode

Bent end of prop shaft
clears pawl which flips
clear of the prop shaft
And no longer rests
against prop blade

Crosswinds back issues are available in the Blue Fox archives from Russ Brown at 4909 N. Sedgewick, Lyndhurst, OH 44124 - - phone (216) 382-4821. Crosswinds back issues are $5.00 each for 1 or 2 issues; three for $14.00; $4.50 for four or five and $4.25 for six or more.



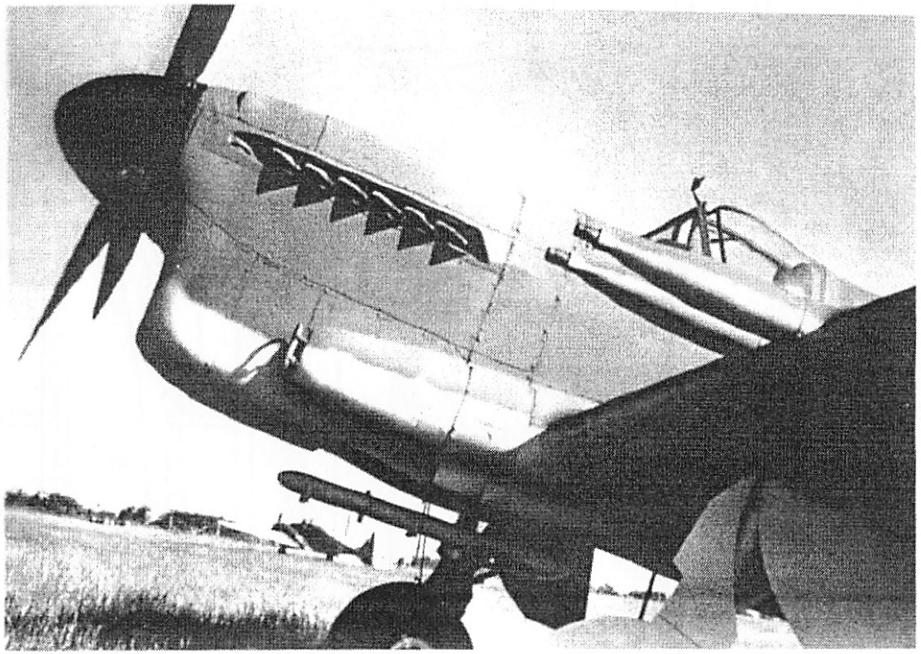
Fairey Firefly FR.I

This diagram shows a typical camouflage pattern. There were many variations. Check photos for details on the aircraft you are modeling.

Green = Slate grey, a dark green grey.

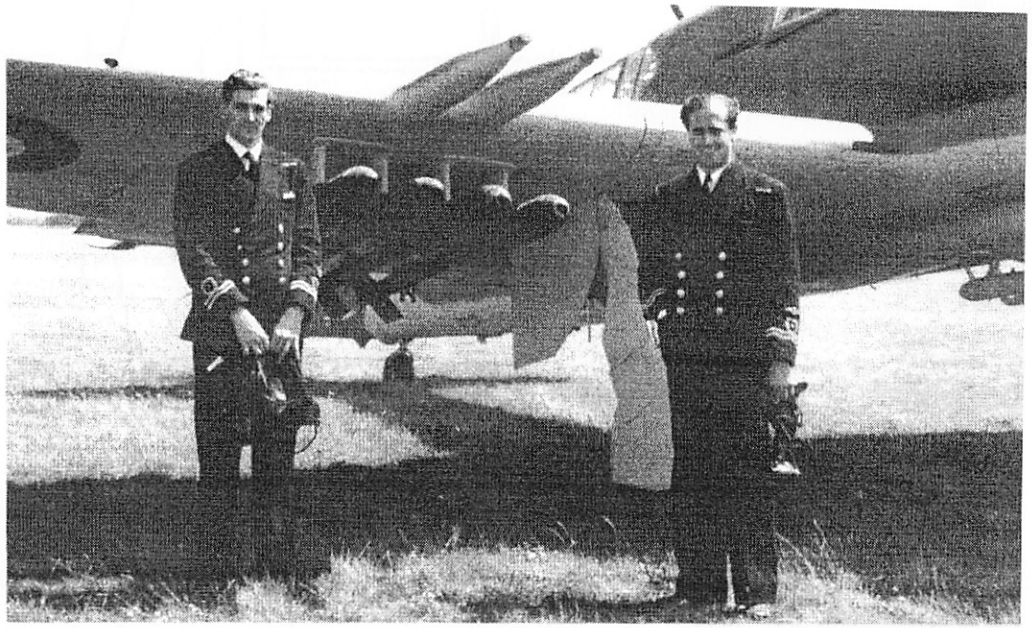
Grey = Extra Dark Sea Grey, a very dark grey with a slightly blue tint.

Sky - a very light green.



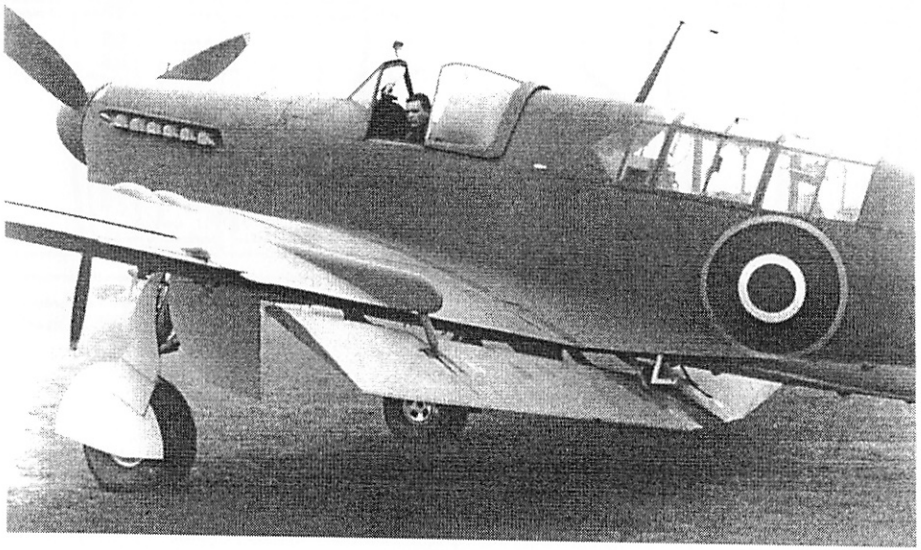
▲ The 12-cylinder Rolls-Royce Griffon IIB engine was designed specifically to give high power to low-flying naval aircraft and was chosen as the powerplant for the new Fairey Firefly. The IIB was installed in the first 470 Fireflies, after which the Griffon XII was used. Both engines were rated at 1,735 hp at 1,000 feet, but the Mk. XII had a more powerful supercharger and strengthened reduction gear.

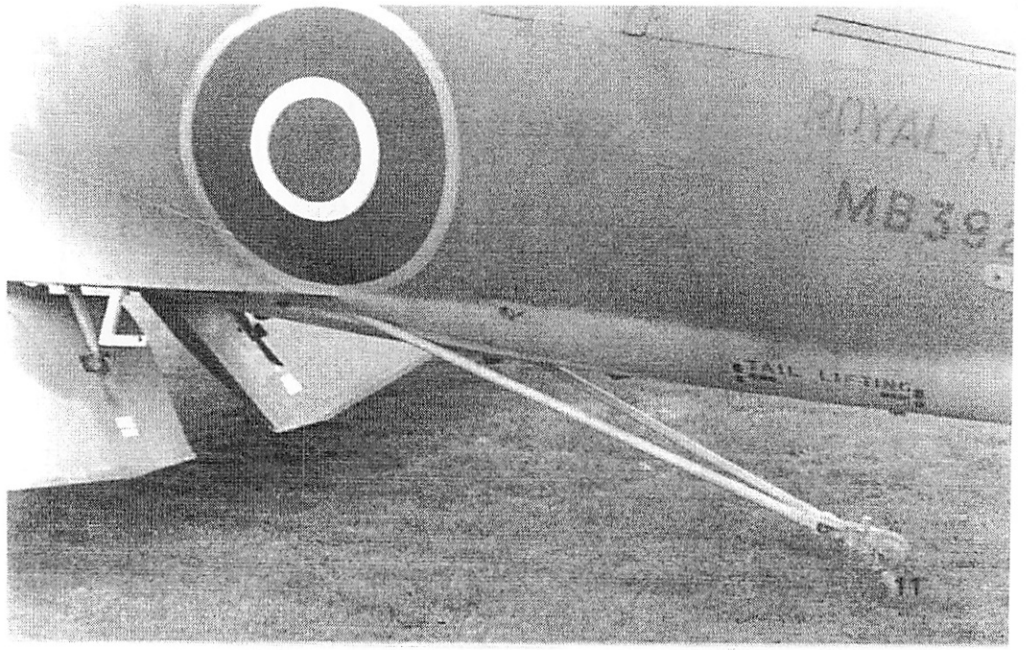
▼ The Fairey-Youngman flaps enhanced the performance of the Firefly and when lowered to the cruise position gave it a definite advantage over other fighters. The flaps allowed a tighter turning circle which, in the hands of a good pilot, could be used to good effect when in combat. (Flight)

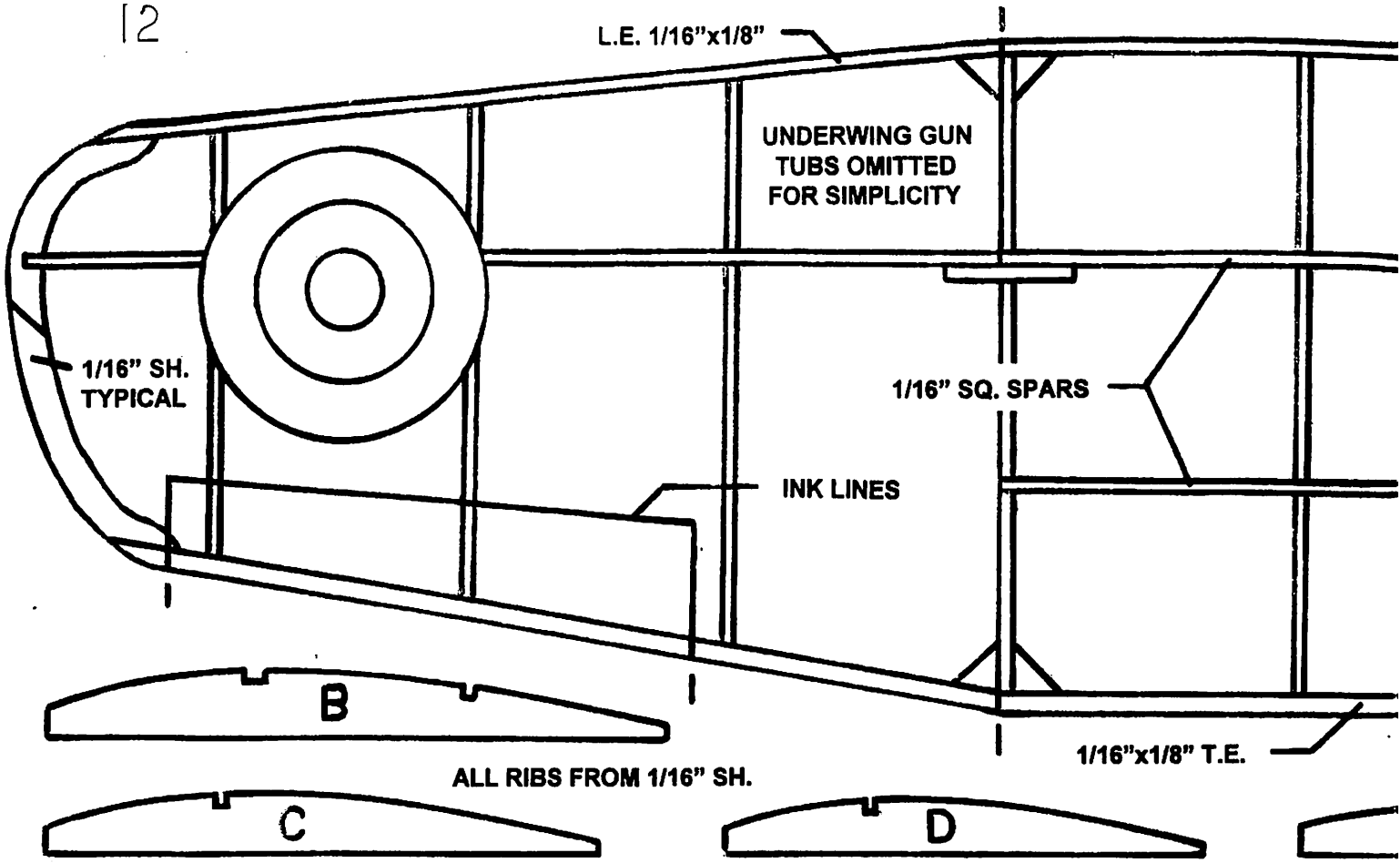


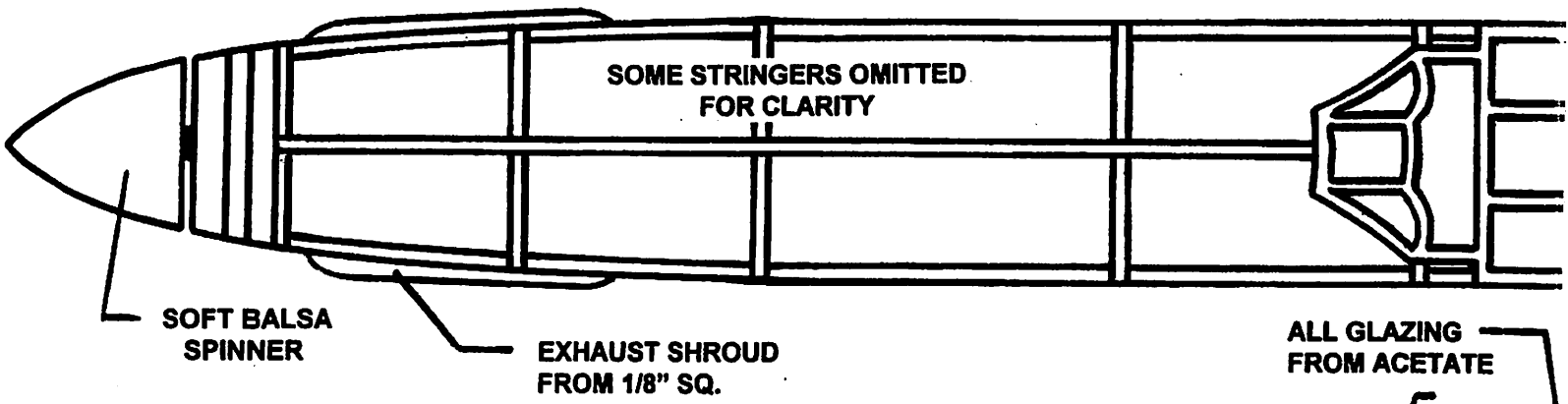
▲ A naval pilot and his observer give an idea of the size of the Firefly FR.1. The rocket projectiles (RPs) are fitted on zero-length Mk.VIII carriers which required two saddles to mount each rocket, one forward and one aft. A second tier could be mounted below using a double saddle. These have 60-lb heads, which were painted dark green; those with a white circle were semi-armor piercing, while those with red circles were high-explosive.

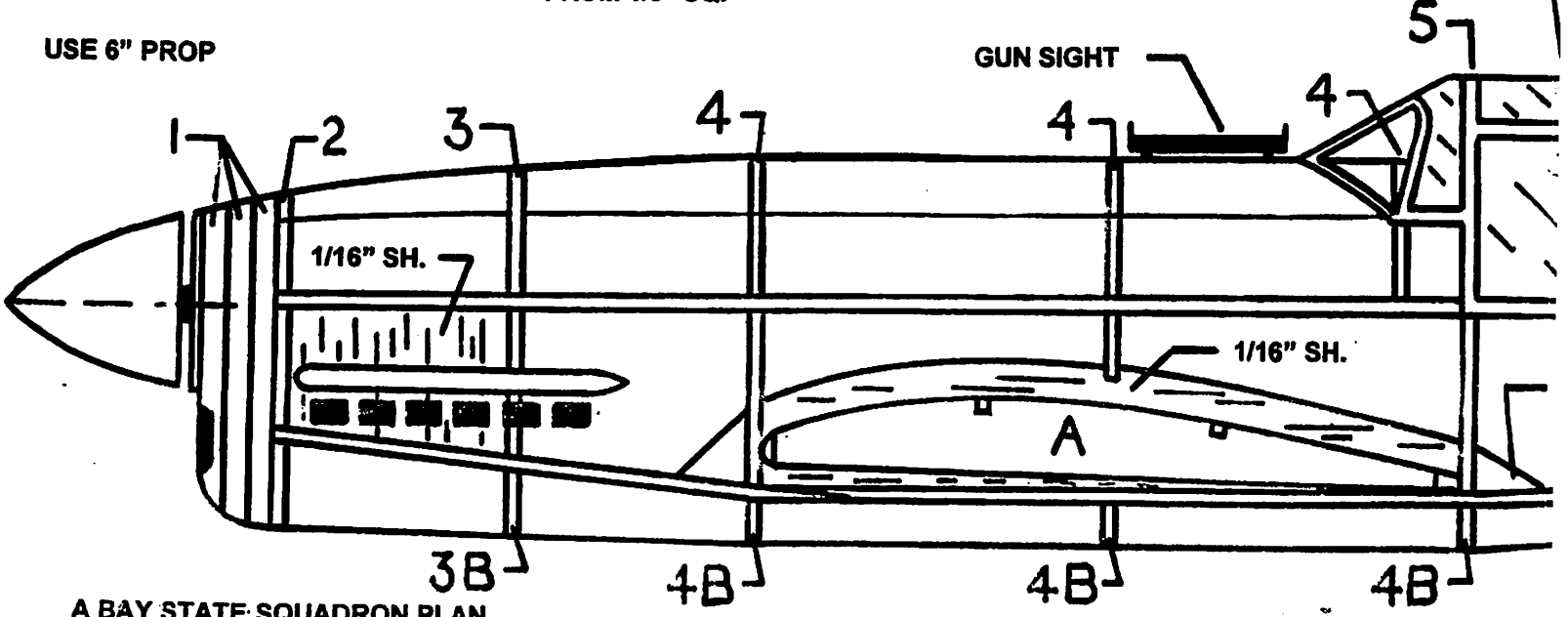
▼ The A-frame arresting gear comprised a transverse torque shaft from which two tubes converged at their attachment to the hook. The hook was held by a snap fitting operated by a lever in the cockpit. A damper mounted inside the lower fuselage absorbed the sudden shock imposed on the airframe when catching the arrestor cable. (Flight)









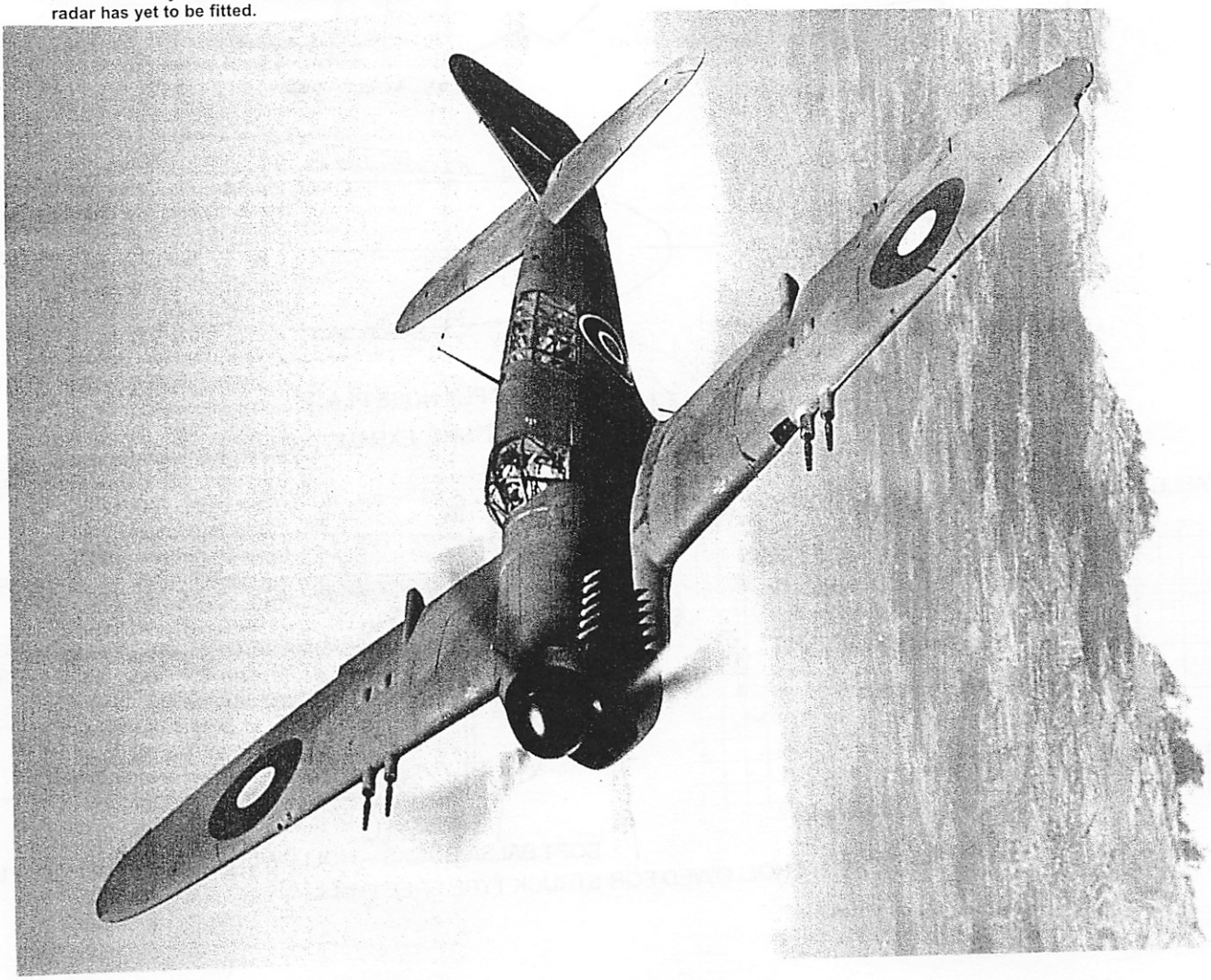


A BAY STATE SQUADRON PLAN

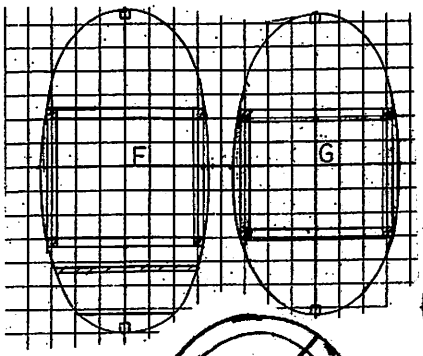
NOT

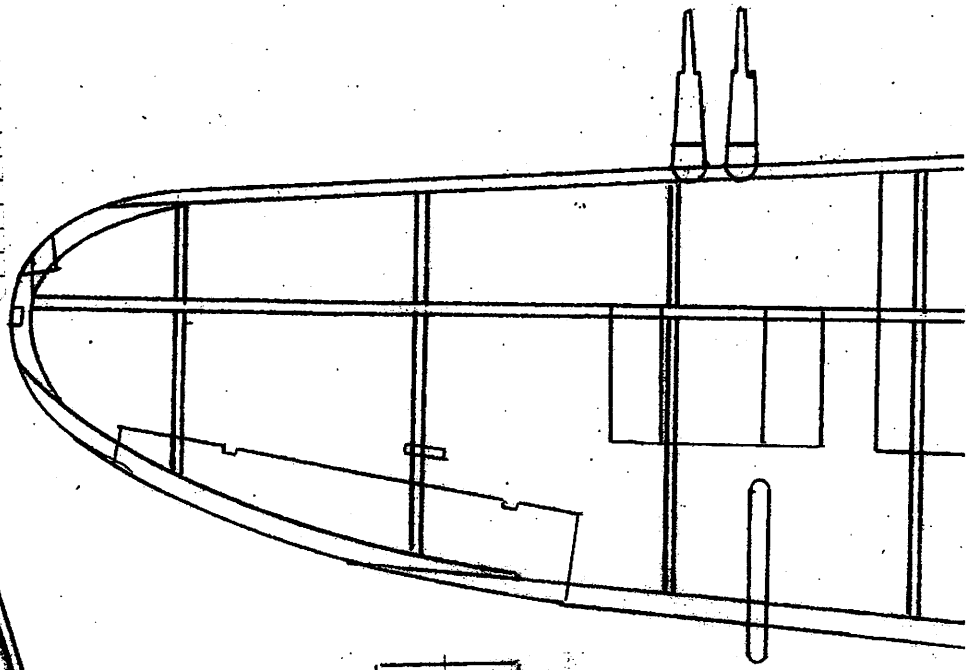


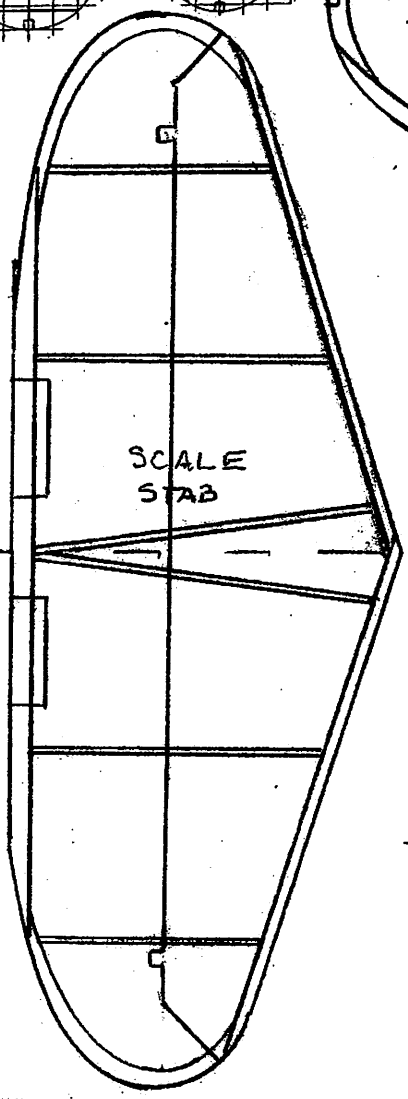
A production Firefly FR.1 during a test flight before delivery to a front-line squadron. The radar has yet to be fitted.

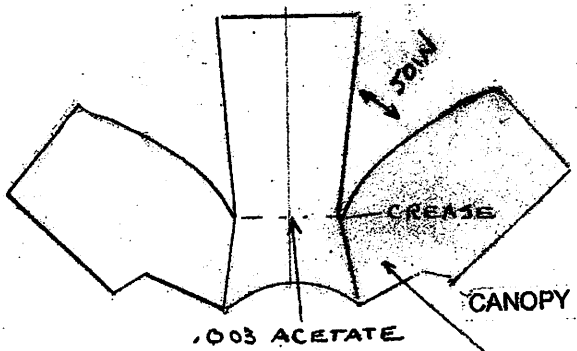


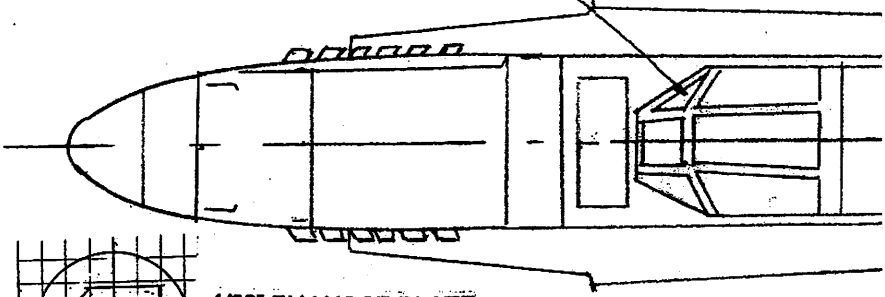
▲ Firefly F.1 Z2035 in 1942 with a black spinner. The Hispano 20 mm cannon are not faired in at this stage. Noticeable is the restricted view of the pilot with the earlier low windshield and lower canopy. The fairings on the mid-trailing edge house the flap linkage mechanism.

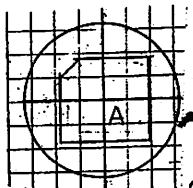








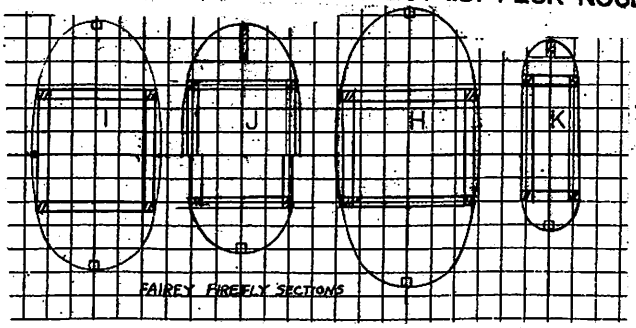


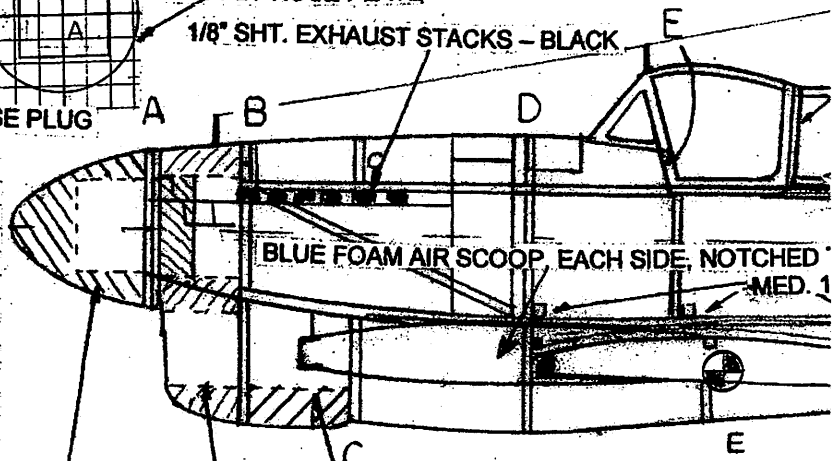


1/32" PLY NOSE PLATE

1/8" SHT. EXHAUST STACKS – BLACK

REMOVABLE BEARING SUPPORT 3/64" I.D. "PECK" NOSE PLUG

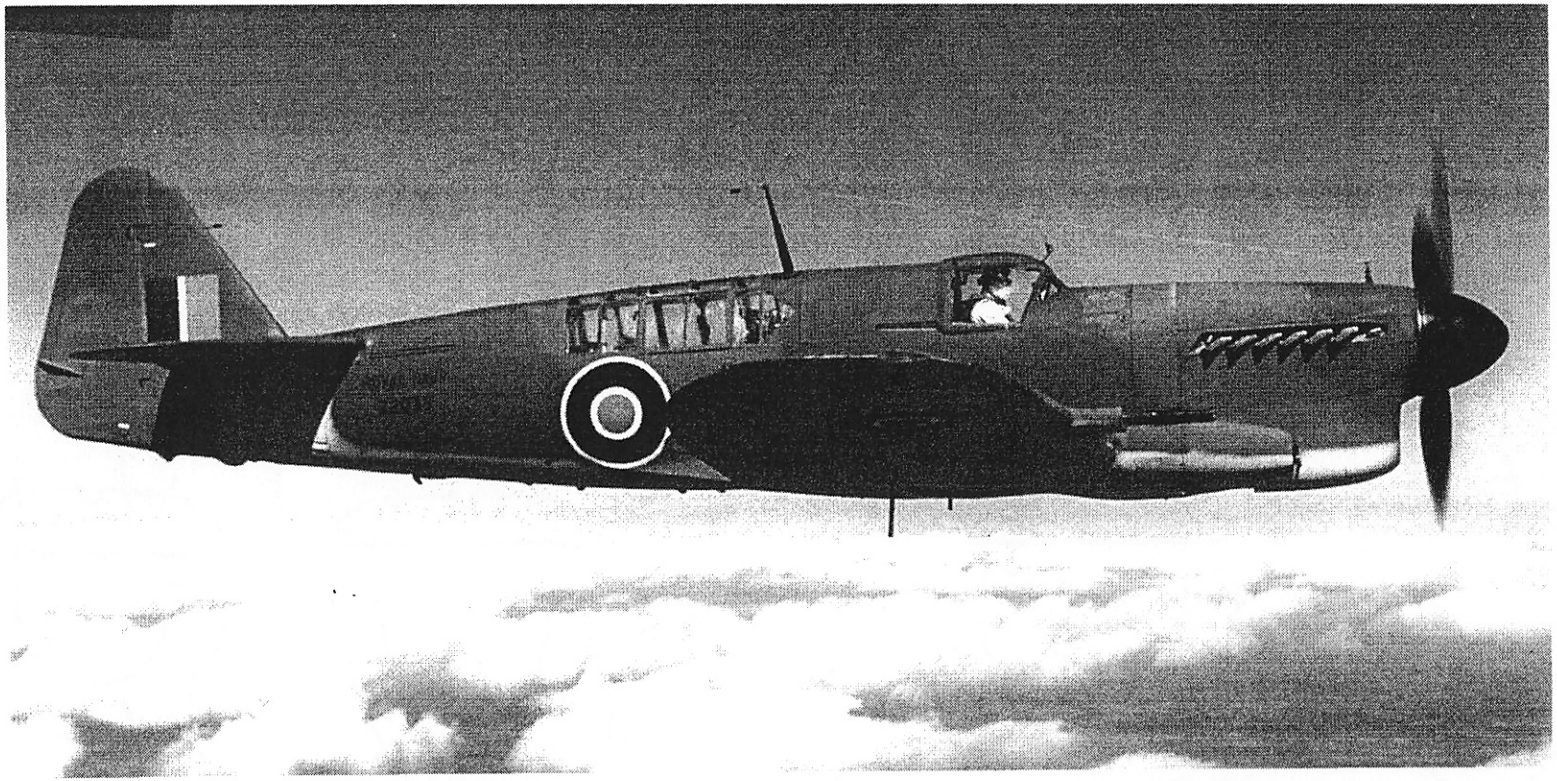




SOFT BALSA BOCKS – HOLLOWED FOR LIGHTNESS

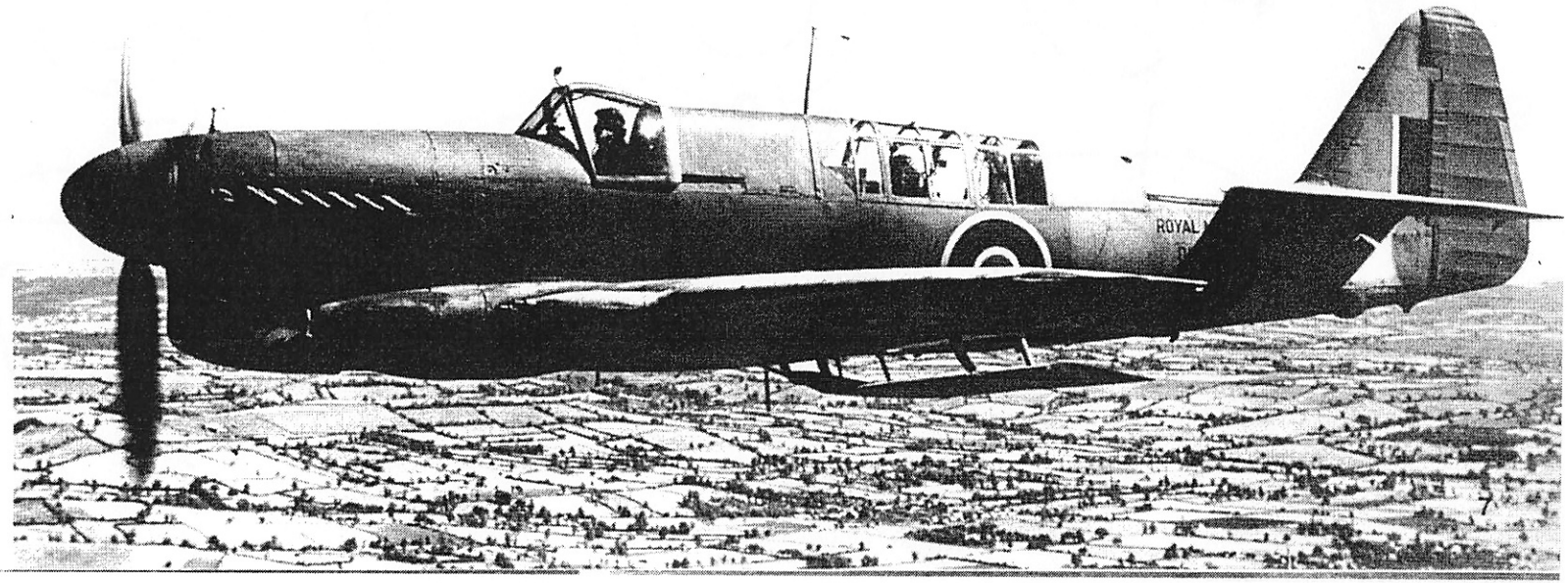
LIGHT

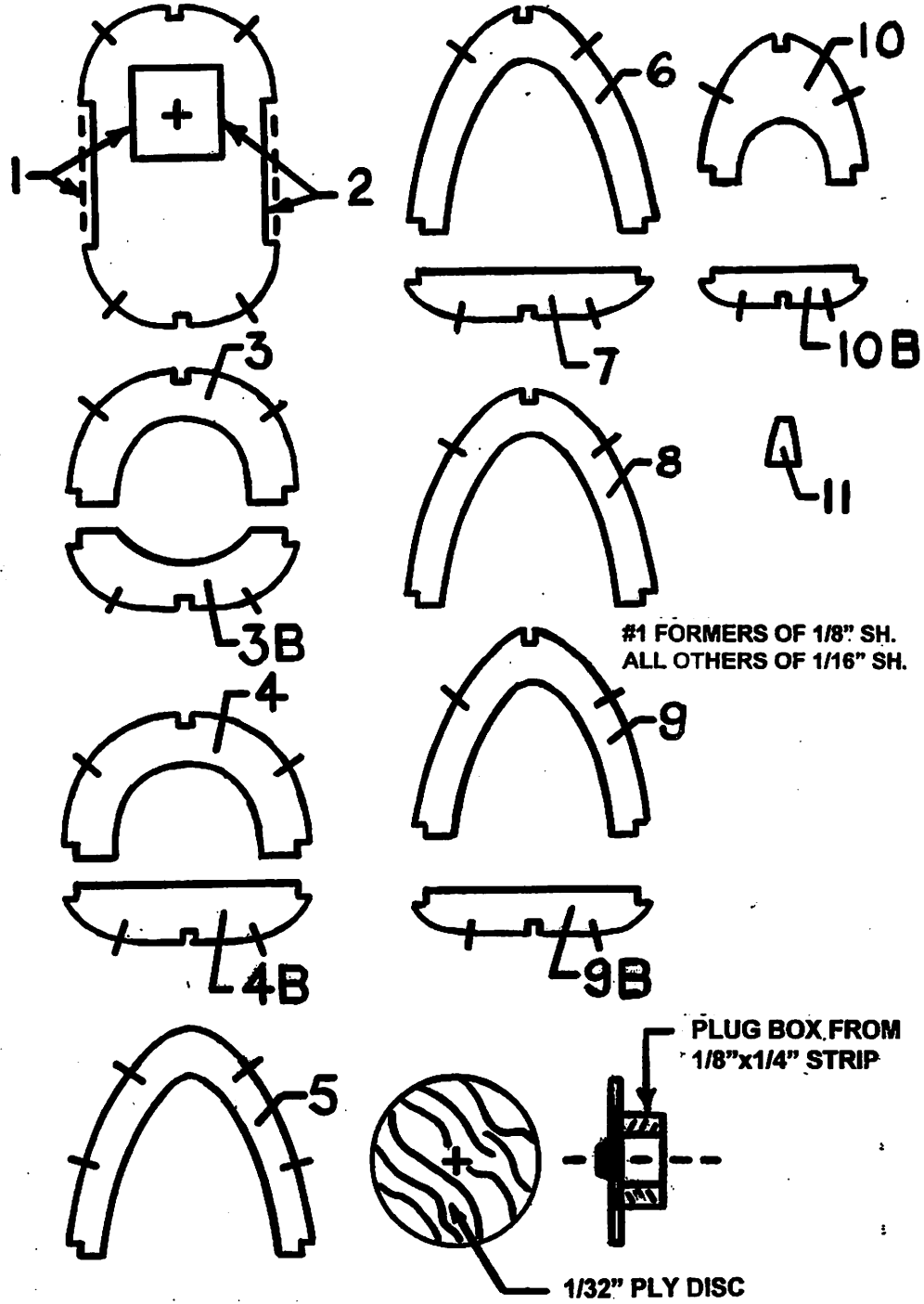
PINE SPINNER HOLLOWED FOR STRUCK TYPE FREE WHEELER



◂ Another view of Z2035 showing in profile the low windshield and pilot's hood. The aircraft's Fairey-Youngman flaps are fully retracted out of the airflow. The thin slot visible above 'ROYAL NAVY' houses the wing retaining arm which locks the folded wing alongside the fuselage.

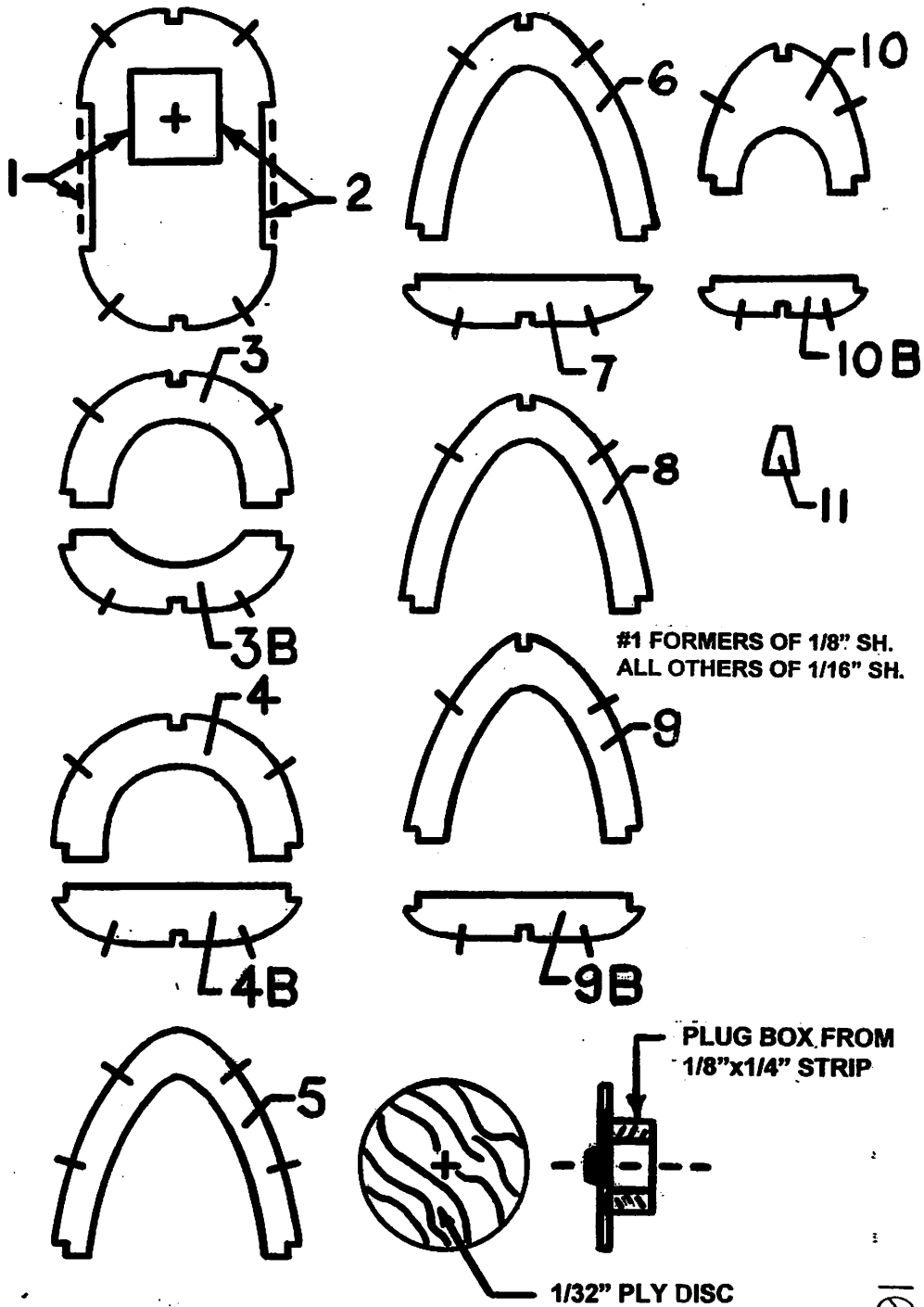
▸ Firefly FR.1 DK418 showing the Fairey-Youngman flaps in the cruise position. There were four positions for the flaps: HOUSED (fully up), CRUISING (first quadrant), TAKE-OFF (second quadrant), and LAND (fully down). With the flaps at CRUISING they offered maximum maneuverability but could not be used for normal flight.





BAY STATE MODEL COMPANY
CAUDRON C.714 "CYCLONE"

PARTS SHEET



BAY STATE MODEL COMPANY
CAUDRON C.714 "CYCLONE"

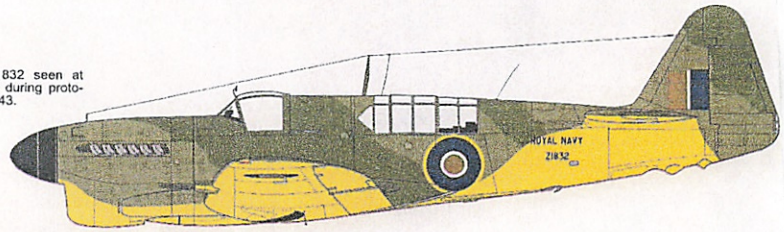
PARTS SHEET

Fairey Firefly camouflage and markings

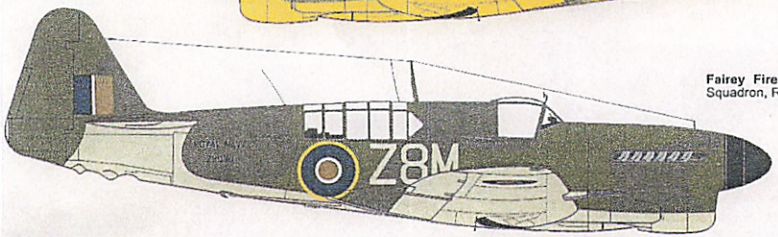
Drawings by David Howley

FAIREY FIREFLY COLOUR KEY

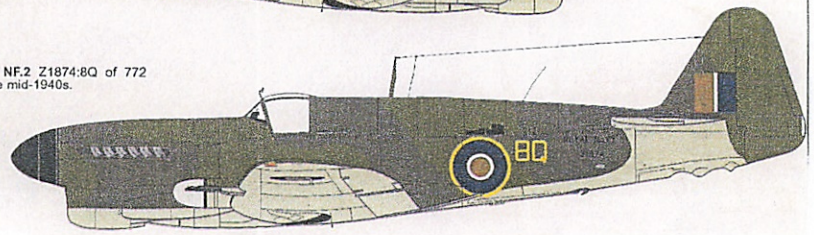
Black · White · Yellow · Roundel Red (Dull) · Post Ofice Red · Roundel Blue · Aluminium · Dark Green · Extra Dark Sea Grey · Dark Slate Grey · Sky Grey (RCN) · Medium Sea Grey · Sky · Dark Earth



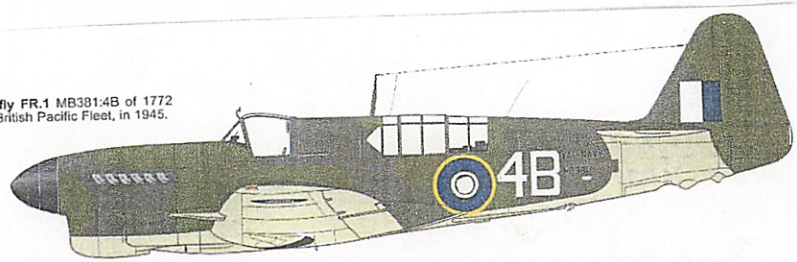
Fairey Firefly FR.1, Z1832 seen at A&AEE Boscombe Down during prototype trials, July-August 1943.



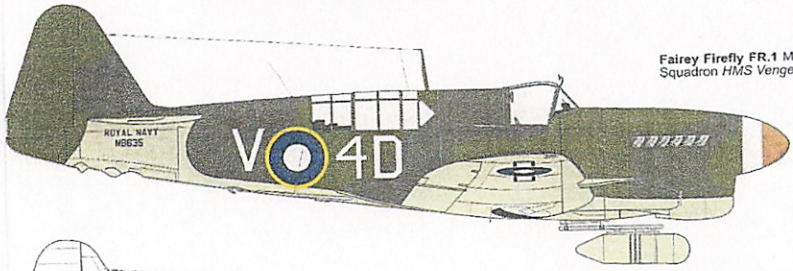
Fairey Firefly F.1 Z2030:Z8M of 790 Squadron, RNAS Zeals in 1945.



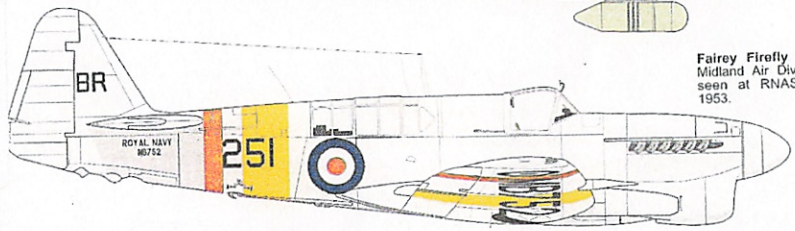
Fairey Firefly NF.2 Z1874:8Q of 772 Squadron in the mid-1940s.



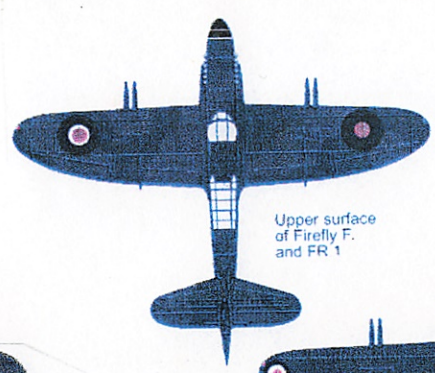
Fairey Firefly FR.1 MB381:4B of 1772 Squadron, British Pacific Fleet, in 1945.



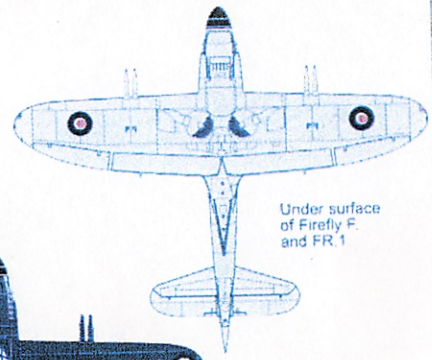
Fairey Firefly FR.1 MB635:V-4D of 812 Squadron *HMS Vengeance* in 1946.



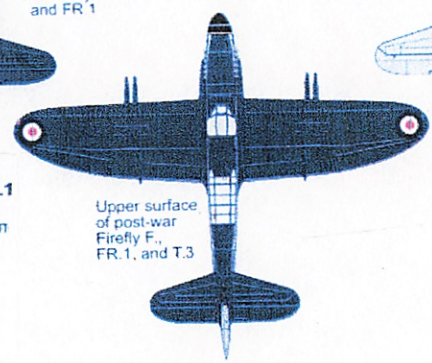
Fairey Firefly F.1 MB752:251-BR of Midland Air Division, RNAS Bramcote seen at RNAS Ford, 26 September 1953.



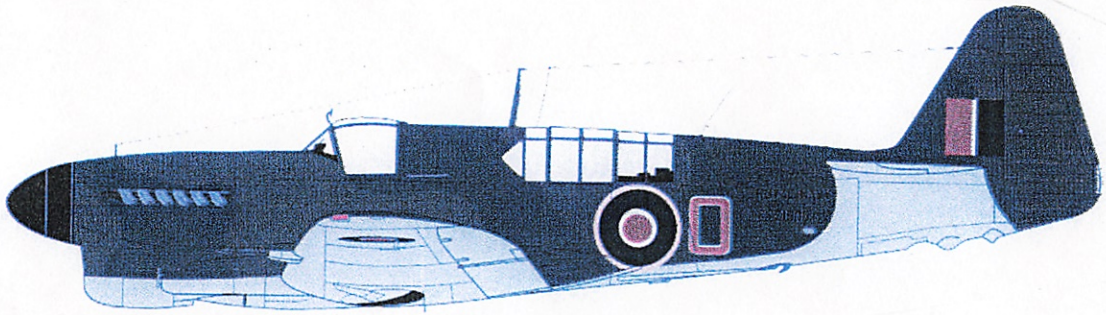
Upper surface of Firefly F. and FR.1



Under surface of Firefly F. and FR.1



Upper surface of post-war Firefly F., FR.1, and T.3



Fairey Firefly FR.1 Z1905:O of an unknown squadron in the mid-1940s.