

# MAX FAX

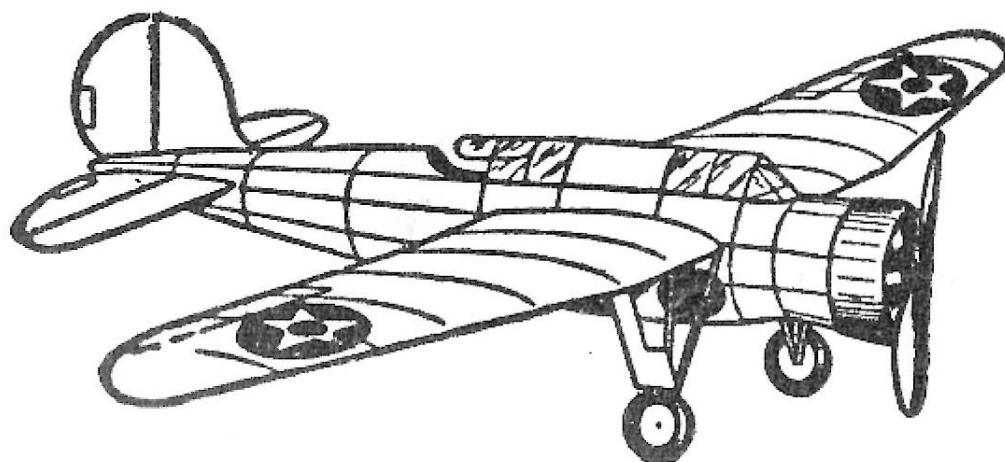


**Journal of the D. C. Maxcuters**

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

Editor: Stew Meyers

SEPT-OCT 2009



**COMET 30" BREWSTER SCOUT KIT #E23**



## COMING ATTRACTIONS

OCT 24 & 25 2009 SATURDAY & SUNDAY

FLYING ACES CONTEST WAWAYANDA, NY

CD TOM HALLMAN 610-395-5656 JOHN HOUCK 610-488-6235

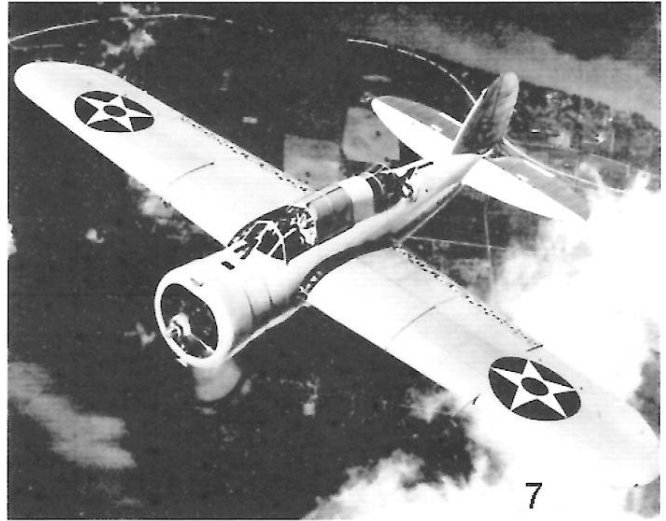
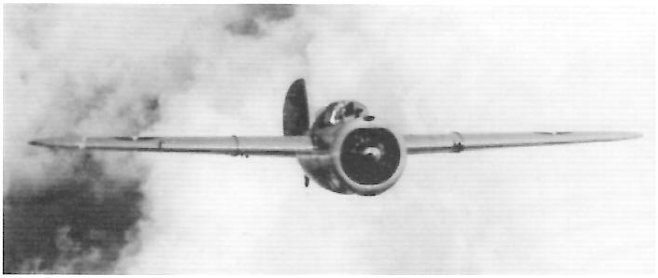
NOV 6 & 7 Eastern States Free Flight Championships at Ingleside, MD

NOV 13 & 14 2009 FRIDAY & SATURDAY NOTE DATE CHANGE

FALL KUDZU CONTEST RAEFORD, NC

CD DAN DRISOLL 703-684-0908 STEW MEYERS 301-365-1749

INDOOR FLYING IS BACK ON AT BAUER  
FROM NOON TO 2:15 PM ON MONDAYS.



**Brewster XSBA-1 Issue**

In model form, we have been able to locate three flying model plans of the XSBA-1: One by Nick Limber in January 1939 Flying Aces, the Comet #E23 kit from about 1940, and one by Tom Stark in the February 1979 Model Airplane News. (Man Plan #345 XSBA-1) There was a three view in the September 1937 Air Trails.

The only plan we could find for the SBN-1 is the P2 Peanut plan by Dave Diels. This plan appears to be quite accurate when compared to photos of the actual aircraft.

All of the plans appear to represent the XSBA-1 as it appeared after the factory modifications and its return to Anacostia, but before the tail modifications. All of the plans show differences. The Tom Stark plan appears to have been based on the Air Trails three view. With all of the modifications to the real aircraft, it is difficult to say which plan is the most accurate. However, the Comet wings obviously have too high an aspect ratio.

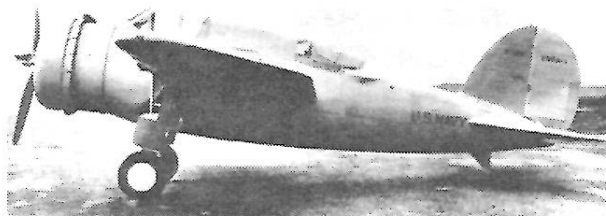
Dan Driscoll, my partner in putting out MaxFax, scored a rare Comet Brewster XSBA-1 kit # E23 on Ebay. I had long seen this kit in old advertisements and wanted to see the plans. Here they are!

The January 1939 Flying Aces Limber plan features a fuselage carved from balsa and I consider it not worth building so it's not in this issue. The Stark MAN plan is a winner with unofficial Nats wins in '71, '72, '74 and the Comet plan looks like a flyer as well. I can't get all these plans full size in this issue so I am showing the MAN plan the original magazine size. If you can't get the full size plan #345 from MAN. I'll be happy to send you a PDF of this plan enlarged to the full size. For that matter, I'm happy to send you a pdf of the original Comet plan if you can get it printed. Of course you can get the Diels P2 SBN-1 plan from him. ([www.dielsingineeringinc.com](http://www.dielsingineeringinc.com))

Under current FAC rules (2009), the XSBA-1 qualifies for Golden Age Military Combat Scale, if built with landing gear down, and the SBN-1 qualifies for WWII Combat (It was mass produced and intended for combat, although it never was used for combat). Both aircraft qualify for Maxecuter Navy Scale.

**PHOTOS PAGE 2**

1. XSBA-1 as originally produced with long cowl and low canopy.
2. XSBA-1 modified with short cowl higher canopy and more powerful 1820 engine.
3. Diels kit of SBN-1.
4. XSBA-1 modified with short cowl higher canopy and more powerful 1820 engine.
5. SNB-1 with flaps deployed.
6. XSBA-1 modified with short cowl higher canopy and more powerful 1820 engine.
7. XSBA-1 modified with short cowl higher canopy and more powerful 1820 engine
8. XSBA-1 modified with bigger tail and more dihedral.
9. XSBA-1 with modified cockpit and bigger tail.
10. SBN-1 from VT-8



Remember if you wait until you receive three red X's to renew you are already six months behind and thus only extend your membership by six months. After three more issues you will again see red X's.

We do have back issues for 2008 and 2009. If you want one, they are \$2.50 a pop if you are willing to wait for the next mass mailing. Or \$3.50 if you require instant shipment.

## **Brewster XSBA-1 and Naval Aircraft Factory SBN-1**

*Dan Driscoll*

The United States Navy issued a specification for a scout-bomber in 1934 and the competition was won by Brewster. One prototype, the XSBA-1, was ordered, and the prototype first flew on April 15, 1936. The aircraft underwent acceptance trials at NAS Anacostia and was returned to Brewster for modifications. These modifications included a larger engine with a short chord cowl and the enlargement of the cockpit area that resulted in a noticeably higher cockpit canopy. After the aircraft was returned to Anacostia, at least three different configurations of the vertical tail were tested. Further tests were conducted by the National Advisory Committee on Aeronautics (NACA) and more modifications were made to the tail.

After two years of testing and modifications, the XSBA-1 was approved for production. However, by that time, Brewster was heavily involved in the development and production of the F2A Buffalo fighter and was in no position to produce the approved version of the XSBA-1. The Navy acquired a license to produce the aircraft itself at the Naval Aircraft Factory (NAF) and ordered 30 aircraft designated as SBN-1.

The NAF encountered production delays and the first production aircraft appeared in 1941. By that time, the SBN-1 was obsolete, and they were relegated to training duty with squadron VT-8. Due to a lack of spares, they were withdrawn from service in late 1942.

As for colors, the XSBA-1 was overall Navy Aircraft Gray, with top surface of the wings Navy Orange Yellow. Fabric covered surfaces were doped aluminum. National insignia appeared only on the wings in four positions. The SBN-1 was overall Navy Aircraft Gray with the national insignia in four positions, as shown on the Diels plan.

## **Brewster XSBA 1**

*BY TOM STARK*

The Brewster XSBA-1 was quite a revolutionary airplane when it first flew in 1936. With an internal bomb bay and a top speed of 263 mph it was perhaps the most advanced dive-bomber of its day. However, a decision was made to have the Naval Aircraft Factory produce it instead of Brewster and by the time production versions began rolling off the assembly line in 1940, it was obsolete. Less than 30 were produced and they were relegated to training duty. While the real XSBA-1 was not a resounding success, the model has been. It won unofficial indoor Navy Scale event at the Nationals in 1971, '72 and '74.

The mid wing and relatively clean lines promised spiral stability and good performance. However, the short tail and fairly small stabilizer did cause some concern about longitudinal stability. Therefore a cautious approach to the design was taken and a small profile "model of a model" was built. The profile model flew quite well, so the model presented here was designed and built. The initial tests were gratifying except for one thing: it wouldn't turn. After a lot of trimming it was finally discovered that turns were possible by thrust adjustment and the result was a very fine flying indoor/outdoor model. Flight times average about 60 seconds and with a good scale score the model has been a winner.

Light weight and low drag are keys to success in rubber powered scale models. You will notice from the photographs that the structure of the XSBA-1 is very light yet it has proven to be a very rugged model. This is largely because a light model flies slower and hits things with much less inertia. For example, did you ever see a feather break by falling to the ground? If you intend to build your model primarily for outdoor flying, firm balsa should be used. Light balsa should be used for indoor flying except where noted. Construction is relatively simple but there are a few areas that may be unfamiliar so read the following carefully to avoid time consuming mistakes. You can start building any part first but since the wings require the most work, let's begin with them.

Although the spars and ribs are built up from strip wood, the wing is actually quite simple to build. Begin by making two sets of spars directly on the plan. If you intend to fly your model primarily outdoors the spars can be cut from 1/16" sheet balsa. Make the laminated wing tips by spacing pins around the inside of the tips at about 1/4" intervals. Cement two 1A2. by 1/16 inch strips together after first wetting them with water. While the cement is still wet form the strips around the closely spaced pins, using other pins to hold them in place. You may have to select from several pieces of wood to find the proper grain that will bend around the tips without breaking. Since 1,3r x 1/16 inch balsa isn't generally available, you will have to cut the strips from sheet balsa. This is worth the small extra effort since it insures that all the strips are of consistent grain and weight. Now pin the leading and trailing edges to the plan and cement them to the tips. Use "C" grain or firm balsa for the trailing edges, since soft balsa tends to warp and wrinkle the tissue due to the pull of tissue when it is water-shrunk. Add the 1/30 x the inch rib bottom strips, and when the cement is thoroughly dry, remove the pins from the leading edge and the tips, and place shims under them. You will have to crack the leading and trailing edges at the second rib from the tip since the tips are bent up considerably which adds to the effective dihedral. The spars are now cemented in place over the bottom rib strips, pinning them to the plan. The rib upper strips can now be installed by bending them over the spars and cementing them to the leading and trailing edges. If the strips tend to crack when being bent over the front spar, you can correct this by firmly rubbing the inside curvature of the strips with an object like a model knife handle. This crushes the balsa slightly and induces a curvature. On the larger inboard ribs, small 1/32 x 1/16 inch balsa uprights may be added about mid-point between the spars to increase the rigidity of the ribs. While this all may sound complicated, it goes very quickly and avoids time-consuming cutting out of ribs from sheet balsa.

You do need to do some sheet balsa cutting for the fuselage bulkheads. Most of the bulkheads are made in right and left hand halves

joined with 1/16" square strips. You can trace the bulkhead patterns onto sheet balsa using carbon paper. Mark the locations of the wing spar ends on the appropriate bulkheads to aid installation of the wings later. Now pin the "1/16" square balsa fuselage outline strips to the plan, noting that in the front and rear cabin areas there are no outline strips. The left hand halves of the bulkheads are cemented to these outline strips. Insure that the bulkhead halves are exactly 90 degrees to the plan by using an appropriate right angle reference such as a drafting triangle. The stringers can now be added to this half of the fuselage. While the cement is drying you can add the 116" square joining strips to the right hand halves of the bulkheads. After the cement is completely dry on the left half of the fuselage it can be removed from the plan and the right halves of the bulkheads cemented in place. Now add the remaining stringers and formers 1 A, 1B, 6A and 7A. The fuselage is now substantially complete except for a few detailed parts and the cowl sheet which you can now install.

The tail surfaces are straightforward, on the plan built structures. The stabilizer outline should be built first then shimmed up before adding the spar and ribs. This is so that it can have an airfoil shape sanded into it.

The landing gear is connected to the wings only. The gear is impressive to the judges and should be constructed with considerable care to insure that it demonstrates your best workmanship capabilities. With the landing gear installed, you can cover the wings with Japanese or some equally light tissue. Do not water-shrink the tissue at this time or the root wing rib will be deformed by the pull of the tissue.

Before final assembly, you can cover most of the fuselage and the tail surfaces. However, leave some portions of the fuselage covering so that you have access to the wing spar stubs enabling you to add a good coat of cement, insuring a firm fuselage-wing joint. The wings can now be attached to the appropriate places on the bulkheads that you marked earlier. Be sure that the proper amount of dihedral is in each wing. After the wing is firmly cemented to the fuselage the remaining covering can be added to the fuselage. You'll notice that there is a gap between the root rib and the fuselage in

some places. This can be covered with narrow strips of tissue. Once this is done, water-shrink the tissue. The stabilizer slips into a slot between two stringers. A small piece of tissue should be used to close the rest of the slot once the stabilizer is in place. An opening should be left in the tissue near the motor peg at the rear of the fuselage to provide access for installing and removing the rubber motors.

Give the covering two or three coats of low shrink clear dope. The cowl wood grain should be filled with several coats of sanding sealer and painted light gray as should the landing gear. Also paint a small piece of bond paper to be used as cabin outline strips. The cabin windows of very light clear plastic should be installed with the utmost care to avoid getting cement on the clear areas. Now cut "1/16" wide strips of the gray painted bond paper and cement them in the proper places on the windows. The control surface outlines and other line markings should be made with India ink doped over or with thin strips of black tissue. The wing insignia can be a decal if you are fortunate enough to have the proper size, otherwise, you can make them with blue and red tissue and white solid color decal material.

A scale propeller adds immeasurably to the attractiveness of the model when it isn't being flown. For example, initially the model didn't have either a scale propeller or a sheet balsa covered engine cowl and the scale scores were in the high 50's. When the scale propeller and sheet-covered cowl were added the scores went into the 70's even though the plane was older and a little dented in places.

The flying propeller shown on the plan with the size rubber also indicated on the plan will give an endurance of around 60 seconds. The blades are formed by soaking "G" plywood blades in water, then binding them with string to wrap around a three-inch diameter bottle. This is then heated in an oven at about 250 degrees until dry. The result is permanent curvature in the blades. You'll note the peculiar shape of the propeller shaft hook. If bent properly, the hook will prevent the rubber from climbing up the shaft even though it is up to three times longer than the distance between the hook and the rear peg.

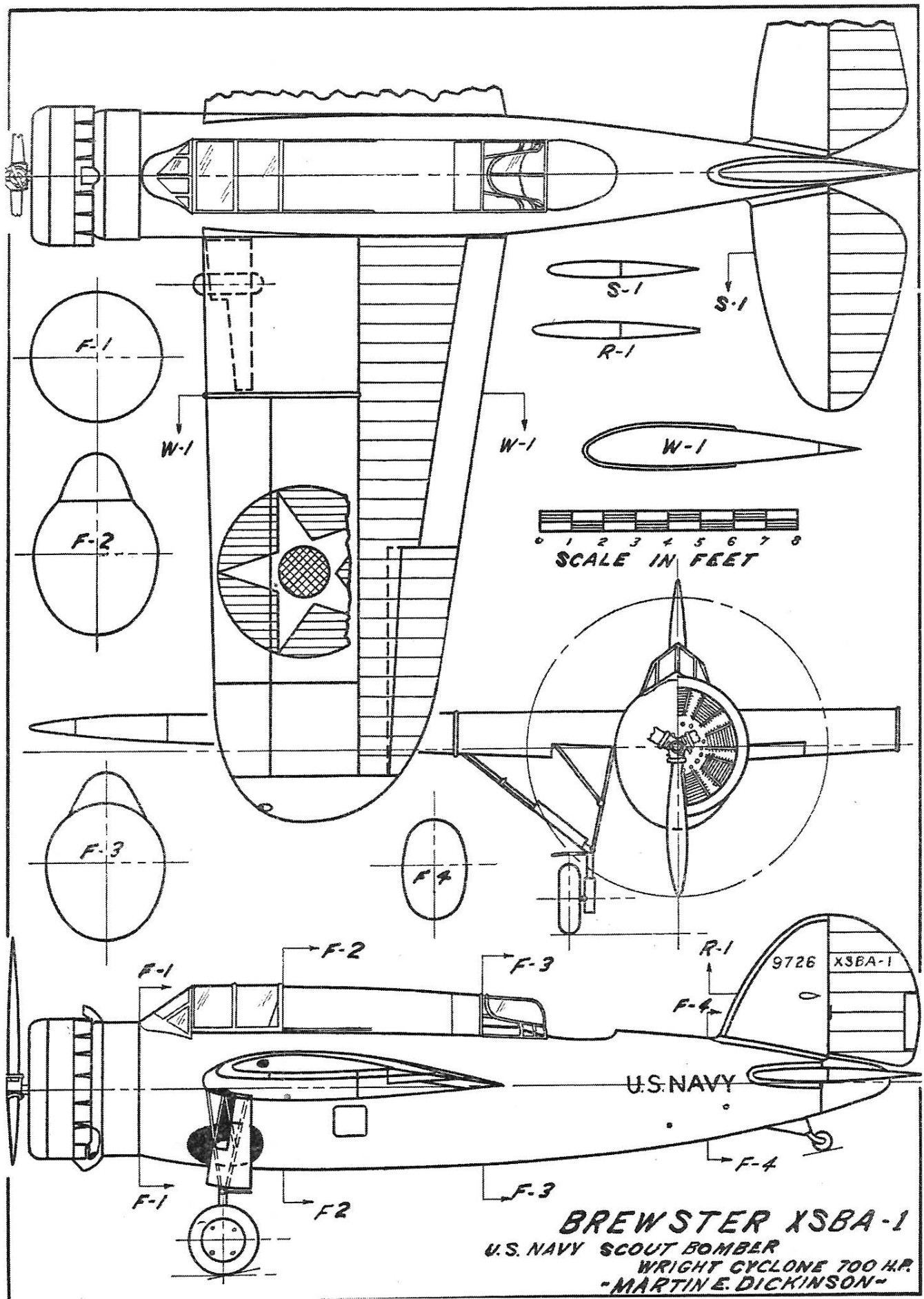
Before attempting any flights, carefully inspect for any warps in the wings or tail surfaces. If any are discovered steam out by twisting the warped surface in the direction opposite the warp while holding it over the spout of a steaming tea kettle. When the surfaces are warp-free, remove the propeller and use clay to ballast the plane so that it balances where shown on the plan. Now conduct gliding tests over a grassy area or indoors over a smooth floor. The glide should be smooth and straight. If a large amount of ballast change is required the stabilizer may have to be loosened and shimmed to a new angle. If the model turns sharply during the glide tests check again for warps or alignment of the tail surfaces. When the glide is satisfactory, install the propeller and rubber, making sure that the plane balances at the same place where a good glide was found. Initial powered flights should be with about one half maximum turns and the model will probably fly straight ahead. The original model refused to turn under power with rudder offset or weights on the wing tips. However, offsetting the thrust line of the propeller using shims behind the nose plug produced good left turns.

If you intend to fly the model outdoors, a folding propeller should provide excellent performance. In that case more rubber should be used so that the model can gain considerable altitude and have a chance to use its gliding ability. A Brown CO, motor would work very well in the XSBA-1.

Photos of the real XSBA-1 for proof of scale turn up now and then in aviation magazines. The July, 1972 Airpower magazine has a good side view photo on page 13. The book "Dive and Torpedo Bombers" from Sentry also has some good photographs.

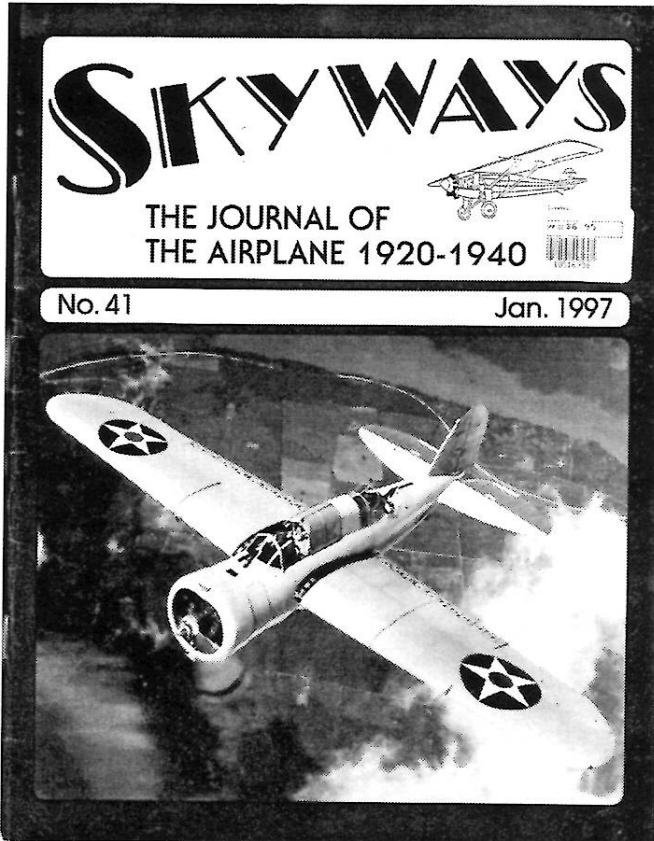
If you choose to build the XSBA-1 you'll be rewarded with an interesting and colorful model of a little known bomber that represented the Navy's transition from biplanes to monoplanes. If your model performs as well as the original you'll receive many compliments about how well your unusual little dive bomber flies

*This article accompanied the plans in the February 1979 Model Airplane News.*

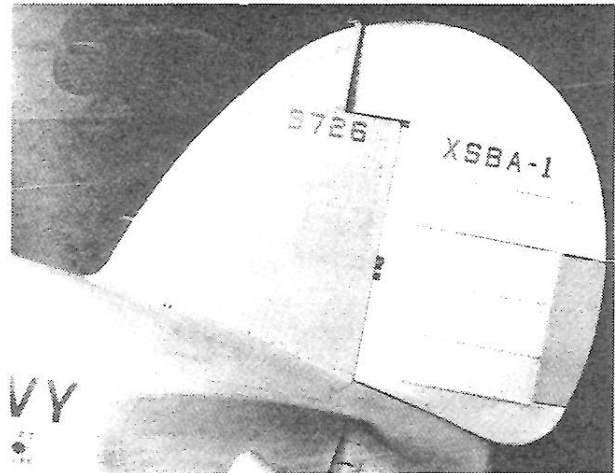








## Different XSBA-1 Tails Flight Tested during the Anacostia Tests



Modified.

Photo: USN/Editor's Collection

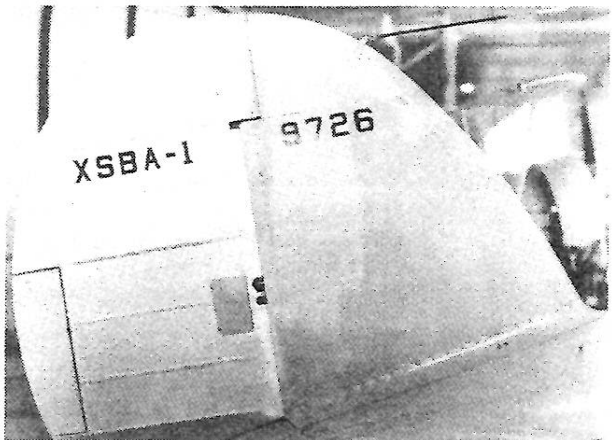
Intermediate.

Photo: USN/Editor's Collection



Final.

Photo: USN/Editor's Collection



THIS ISSUE OF SKYWAYS HAS A GREAT SPREAD "ANACOSTIA FLIGHT TESTS THE BREWSTER XSBA-1 SCOUT DIVE BOMBER" WHICH CHRONICALS THE MODS MADE TO IT AND THE DEVELOPMENT OF THE SBN.

### Specifications (SBN-1)

#### General characteristics

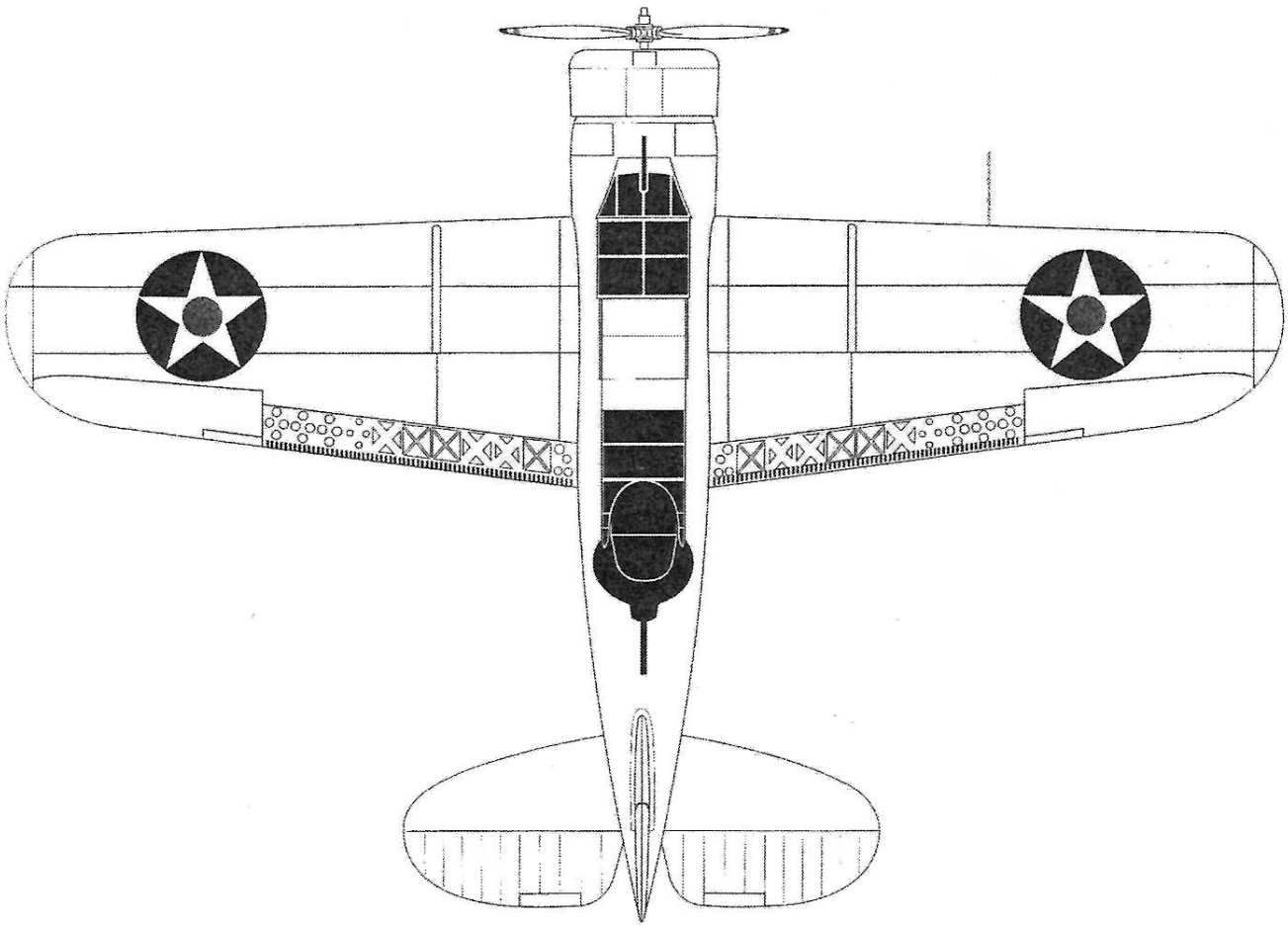
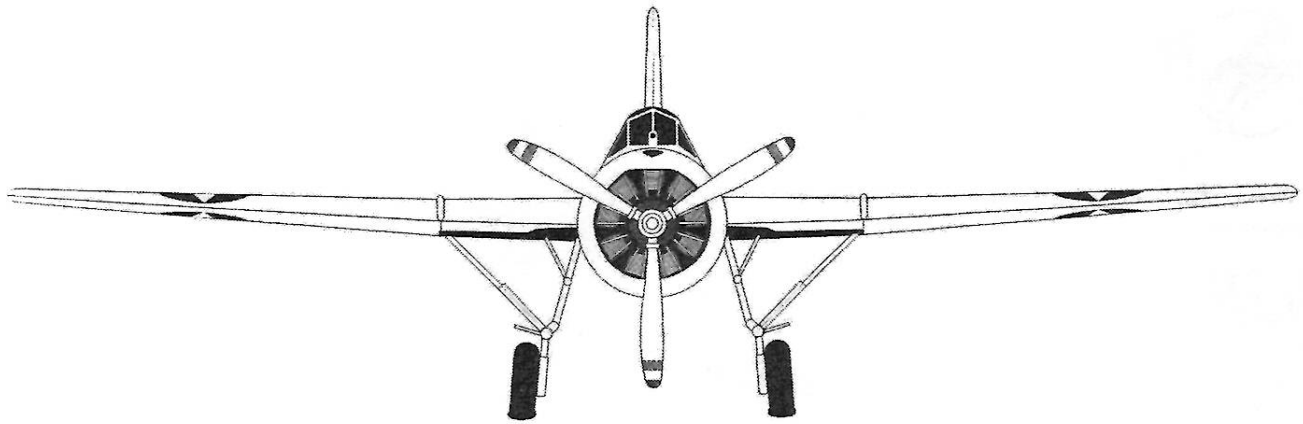
- \* Crew: 3 (pilot, navigator, gunner)
- \* Length: 27 ft 8 in (8.43 m)
- \* Wingspan: 39 ft 0 in (11.89 m)
- \* Height: 8 ft 7 in (2.64 m)
- \* Wing area: 259 ft<sup>2</sup> (24.1 m<sup>2</sup>)
- \* Gross weight: 3759 lb (3066 kg)
- \* Powerplant: 1 × Wright XR-1820-22 Cyclone radial engine, 950 hp (709 kW)

#### Performance

- \* Maximum speed: 254 mph (409 km/h)
- \* Range: 1015 miles (1633 km)
- \* Service ceiling: 28,300 ft (8625 m)

#### Armament

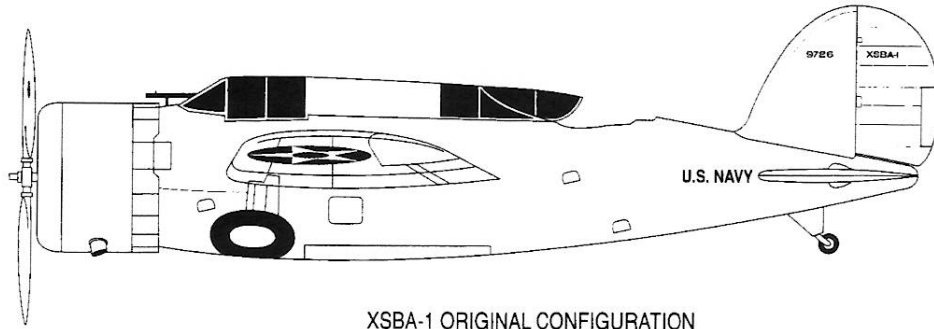
- \* 1 × rearward-firing, flexible 0.30 machine gun
- \* Up to 500 lb (227 kg) of bombs



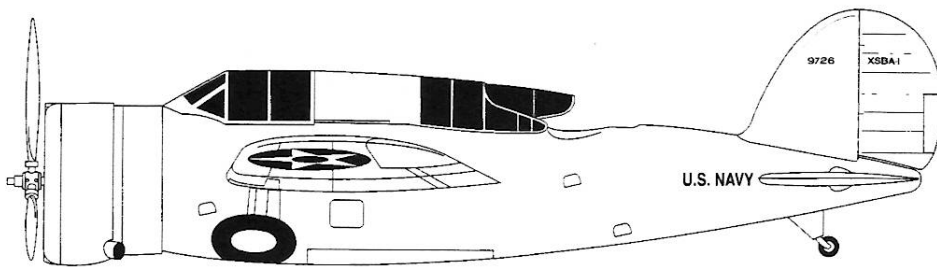
BREWSTER XSBA-1 SCOUT DIVE BOMBER  
MODIFIED CONFIGURATION FOR U.S. NAVY TESTS

*Ted Williams*  
Copyright 1996, Ted Williams

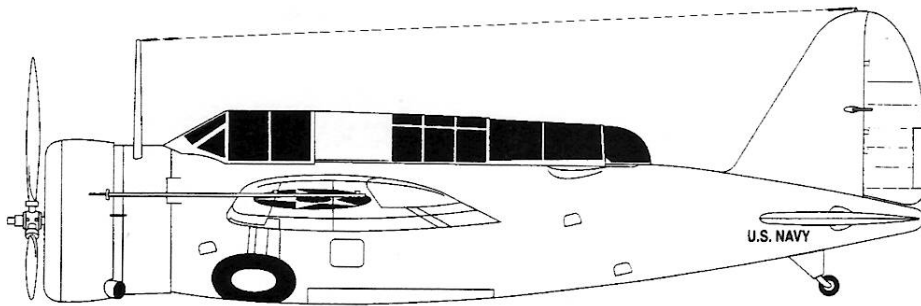
THESE VIEWS ARE FROM SKYWAYS #41 THERE ARE LOTS OF GOOD PHOTOS AS WELL



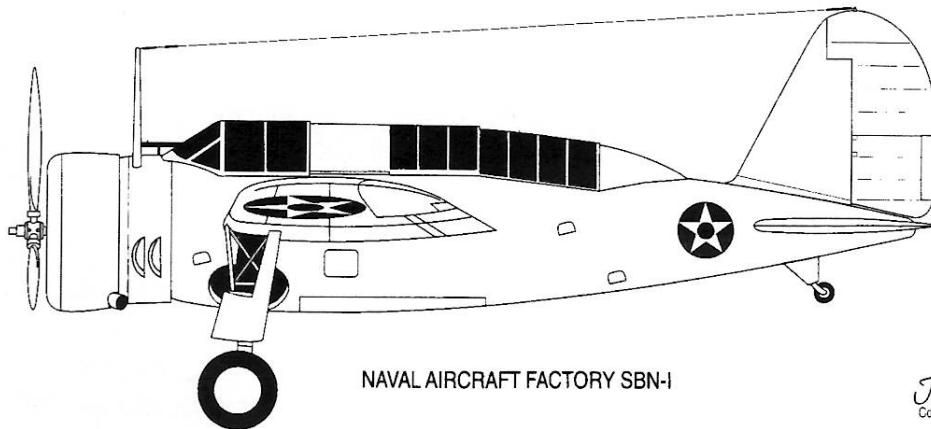
XSBA-1 ORIGINAL CONFIGURATION



XSBA-1 MODIFICATION FOR U.S. NAVY TESTS



XSBA-1 NACA TESTS



NAVAL AIRCRAFT FACTORY SBN-1

*Jed Williams*  
Copyright 1996 Ted W. Smith

## After Thoughts Stew Meyers

I'm afraid I get wrapped up in the plans I stick in this rag. I ended up building all the dimers in the last issue. They took about a week apiece to build and all fly great! See the photos on page 19. What's worse, the Comet XSBA-1 in this issue is calling to me.

I apologize for monopolizing the photo page with photos of the dimers I built. Our staff photo editor is recovering from knee surgery and hasn't had the opportunity to put together the photo pages.

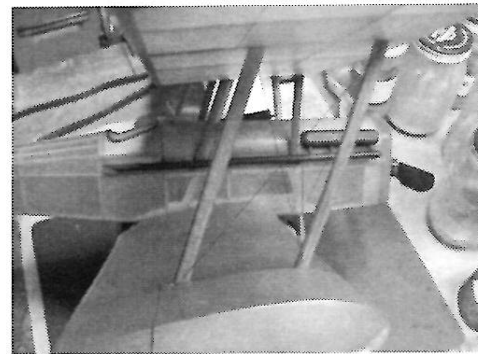
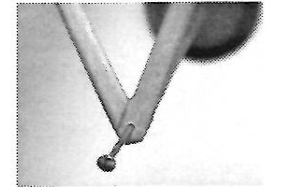
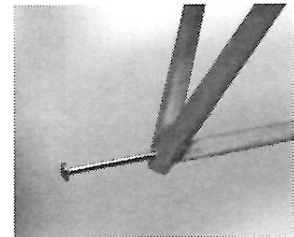
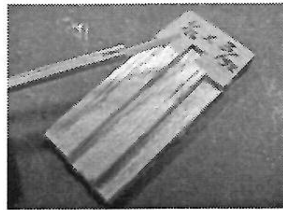
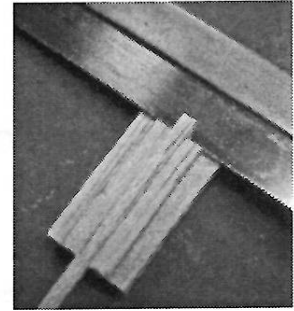
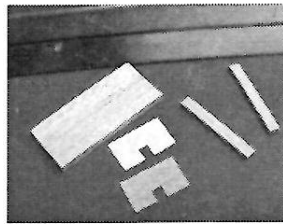
A few comments here on building these dimers. The Sig hinge material that I used for tabs on the ends of the interplane and cabane struts worked so well, that I used it for the landing gear as well on the Megow Camel and Spad. I like it better than a staple or monofilament pin. After slitting a few struts with a zona saw, I came up with a jig that makes the job very easy and quick. When you have no real building talent to eyeball it, a jig really helps.

For a 1/16th inch thick strut, I cut a piece of 1/64th plywood the width of a zona saw blade and then cut a 1/8" deep notch the width of the strut, in this case 3/32". I cut a matching piece of file card stock and glued it to the back and glued this sandwich to a scrap piece of balsa. (The file card and 1/64ply place the saw blade in the middle of the strut.) Then I glued guide pieces of 1/16x1/8 on either side of the slot.

To use this, you place the un-rounded strut between the guides flush with the end of the notch. Hold the strut in place with you thumb and run the saw flush on the plywood across the strut. The stiffening rib on the saw will prevent it from going in too deep and you get a nice centered cut in the end of the strut 1/8" deep. Since I am using a very fine 52 tpi 4-1/2 inches L x 13/32 inch W x .008 inch thick saw the slot is not quite thick enough for the 0.010 Sig hinge material. Pulling a strip of 320 sand paper through the slot a few times takes care of this. Or you can chase it with a slightly thicker saw. Say 32 tpi which is 0.010 thick. I like using the finest saw to begin with because you are less likely to split the wood.

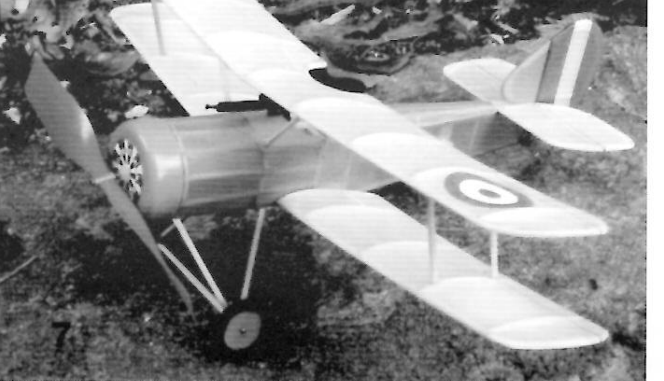
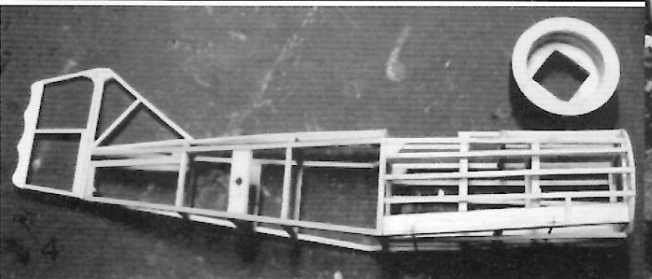
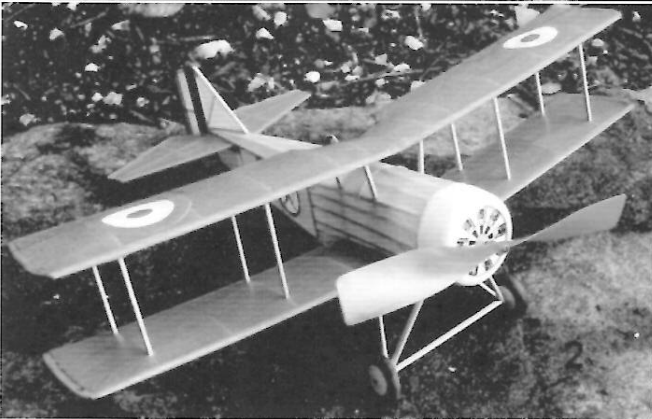
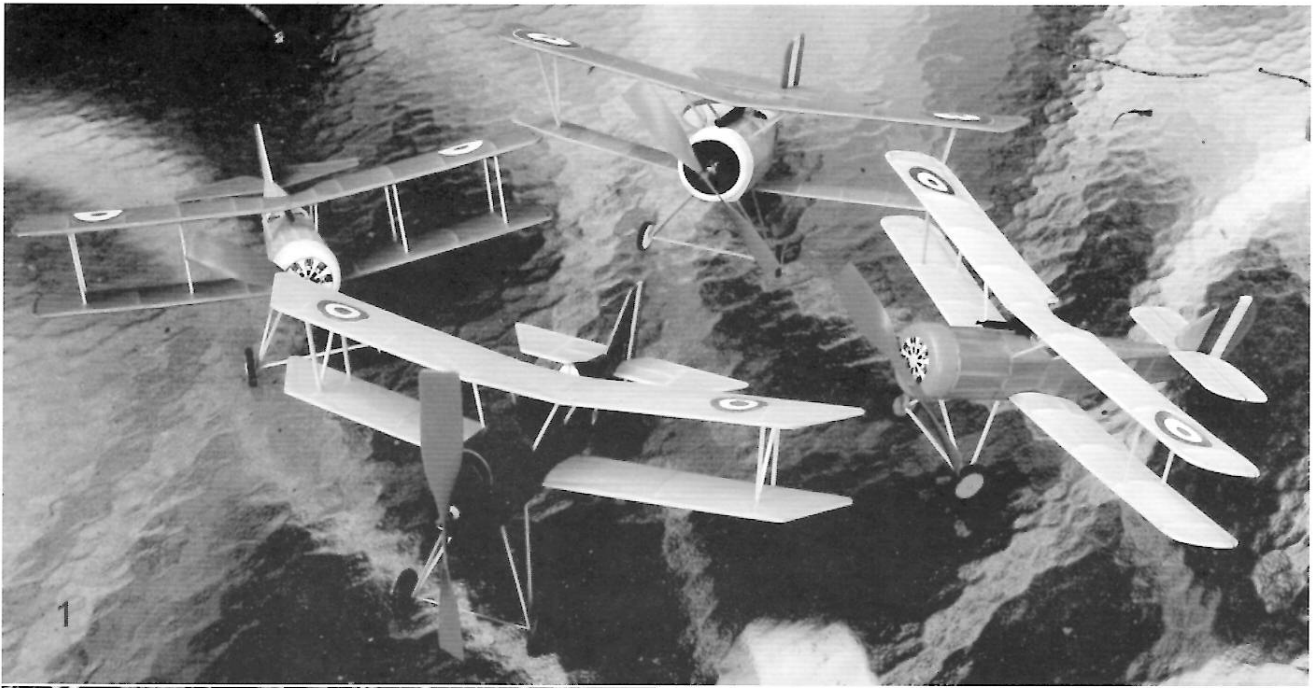
After slitting both ends of the strut, I cut the required angles on the ends before gluing in a 3/32 wide strip of Sig hinge with cyano. After it sets, I cut the end of the protruding tab to 1/8". I then shape the cross section of the strut and finish it. If you are to add rigging, drill a #77 hole in the side strut 1/32 of an inch from the end of the strut. The imbedded Sig hinge and the cyano it is glued in with reinforce the hole so the thread won't cut it when you tension the rigging. (Of course these simple Megow dimers don't show rigging on the plans and none was added, but it's there on my SE-5.)

The Sig hinge nicely reinforces the "V" of the undercarriage strut that is so common to WWI aircraft. On these light dimers a hole can be drilled through the "V" in to the cross bar. A cut pin in this hole will provide a good shear connection and holds the wheel in place. Use Ambroid for this joint as you don't want to glue the wheel to the pin.



### PHOTOS PAGE 19

1. The four MEGOW dimers from the last issue of MaxFax.
2. The MEGOW SPAD with its radial engine.
3. The long nose MEGOW CAMEL. The BRISTOL SCOUT is identical except for the rudder.
4. Bones of the MEGOW SPAD. Note the laminated cowl and uprights at the cabane positions.
5. MEGOW NIEUPORT rebuilt from one I built 15 years ago. Note all MEGOW Frenchies have orange wings and white fuselages.
6. MEGOW SPAD. You can get this kit from Penn Valley Hobbies, it's their Spad 11 SFM-2265-MEG.
7. MEGOW CAMEL. Note all MEGOW Brits have white wings and orange fuselages.



# BREWSTER XSBA-1 ISSUE



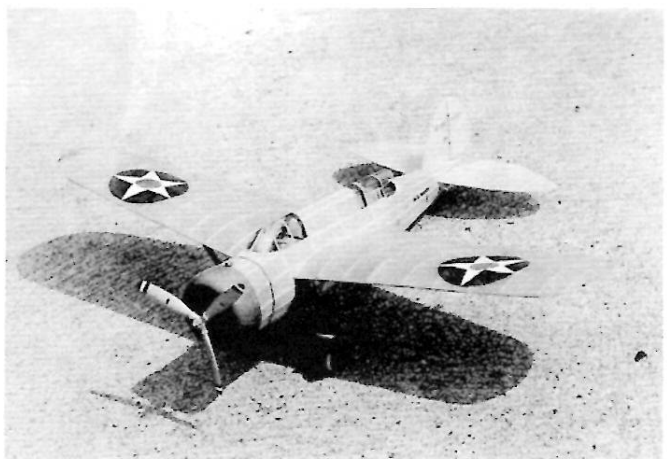
Author's young son Andrew displays proper form for ROG release.



It was a good release as seen by this smooth, realistic take-off!

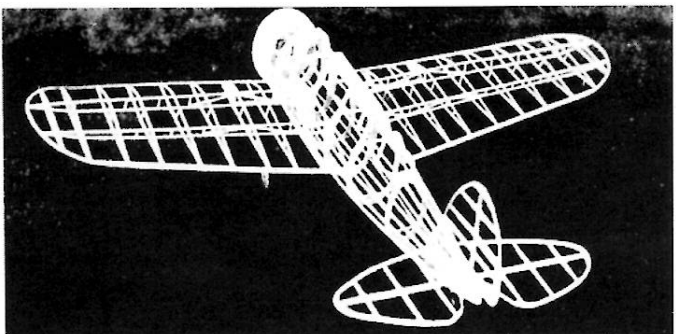
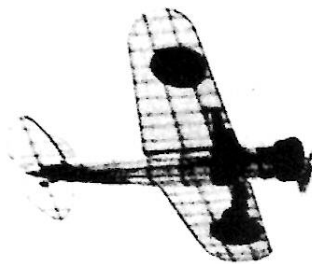


Landing gear on real Brewster folded into both wing and fuselage. Careful duplication of this complex gear impresses scale judges.



The XSBA-1 had clean lines for 1936. It was the forerunner of a number of Brewster Aviation dive bomber designs for the Navy.

MORE PHOTOS FROM  
THE FEBRUARY 1979  
ISSUE OF MODEL  
AIRPLANE NEWS  
ARTICLE BY T. STARK



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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 \$20 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.

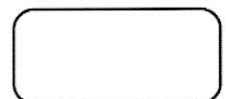
PUBLISHING DATES - Six issues of MaxFax are sent each year as close to the nominal dates as possible, but since this is a volunteer publication nothing is guaranteed except that six issues will be sent to all members.

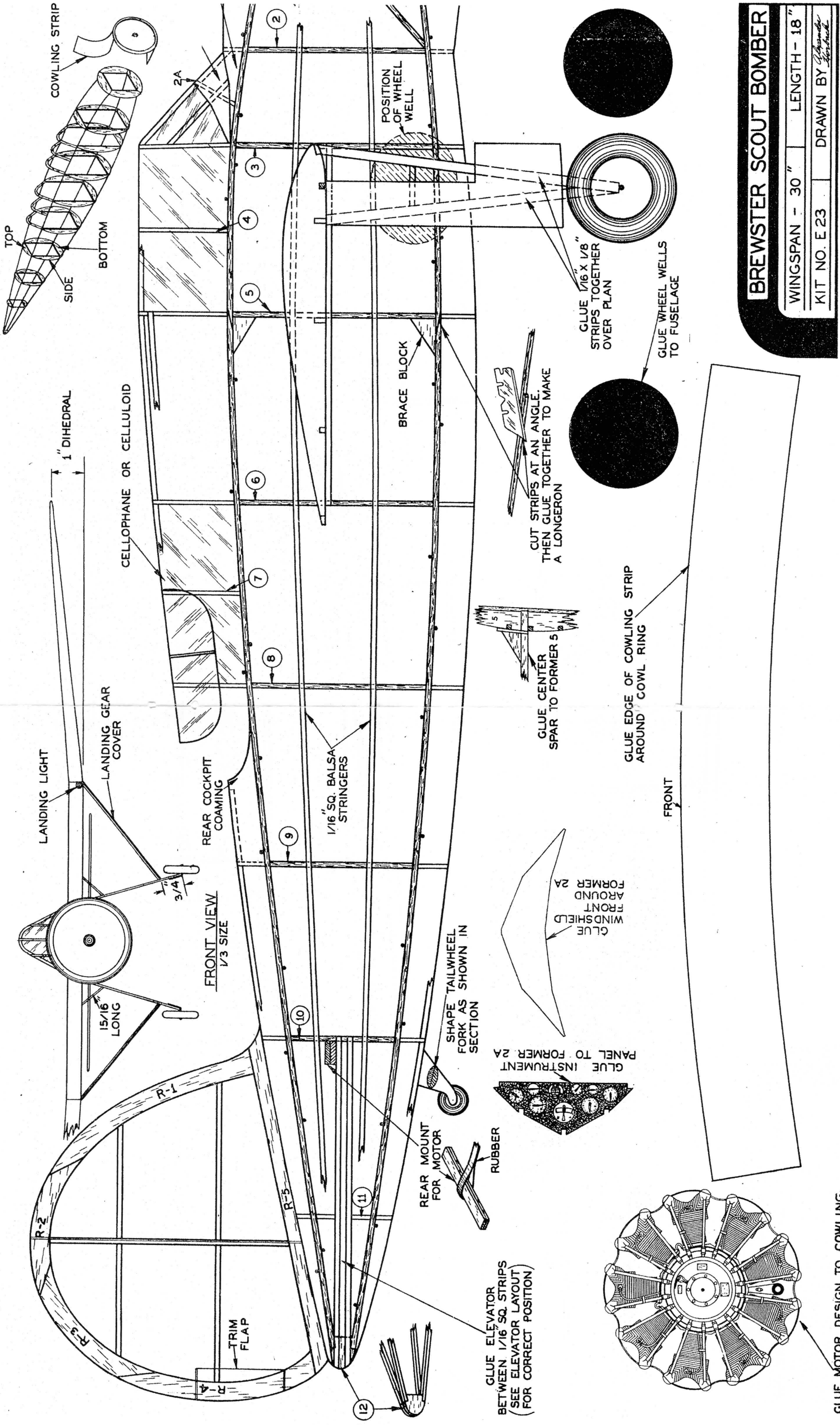
CONTACTS - Material for the newsletter and membership questions should be addressed

to Stew Meyers phone 301-365-1749. Email gets immediate attention. [stew.meyers@VERIZON.net](mailto:stew.meyers@VERIZON.net)

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Your DUES are due

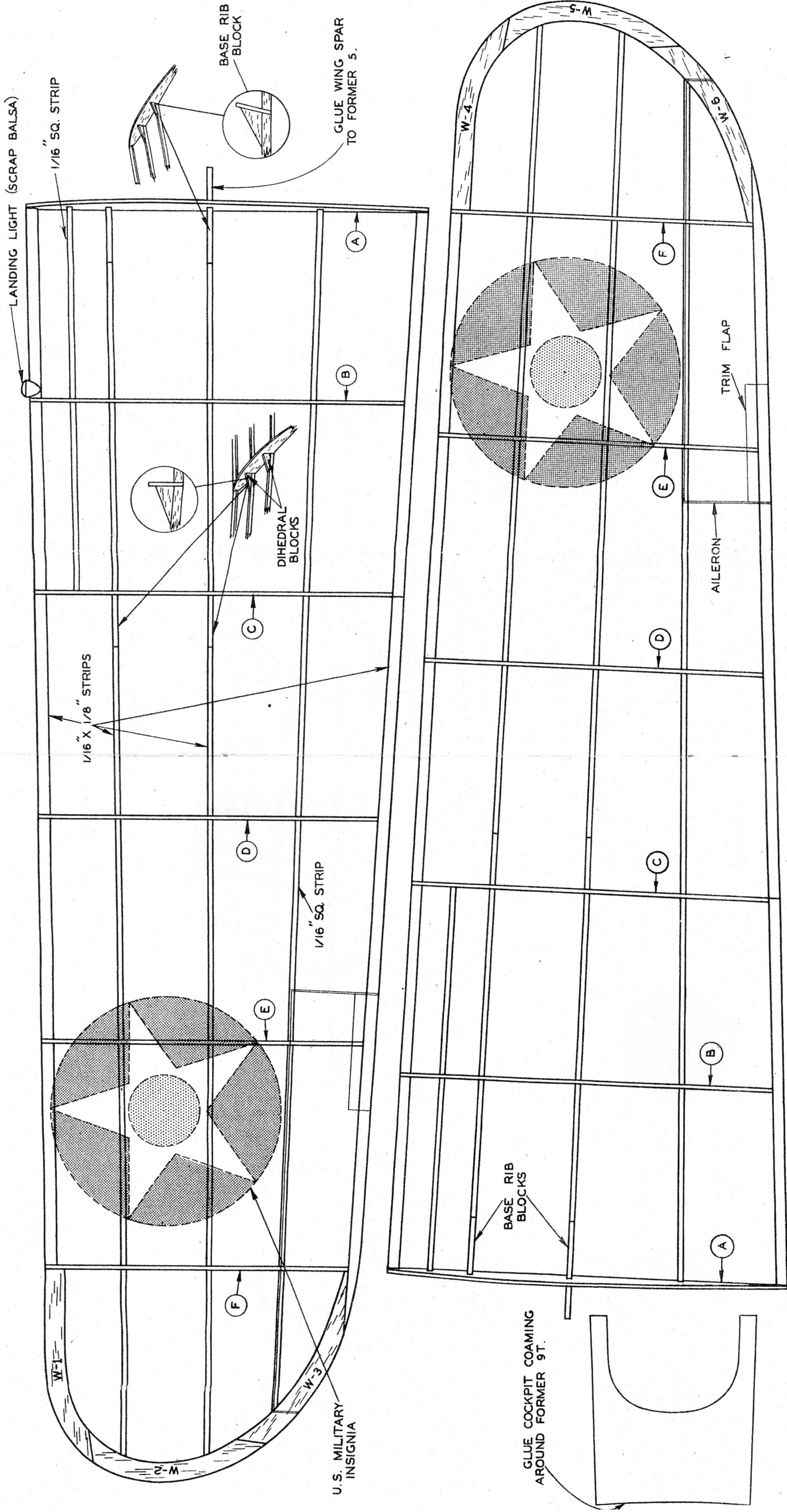




**BREWSTER SCOUT BOMBER**

WINGSPAN - 30"      LENGTH - 18"  
 KIT NO. E 23      DRAWN BY *G. H. ...*

GLUE MOTOR DESIGN TO COWLING

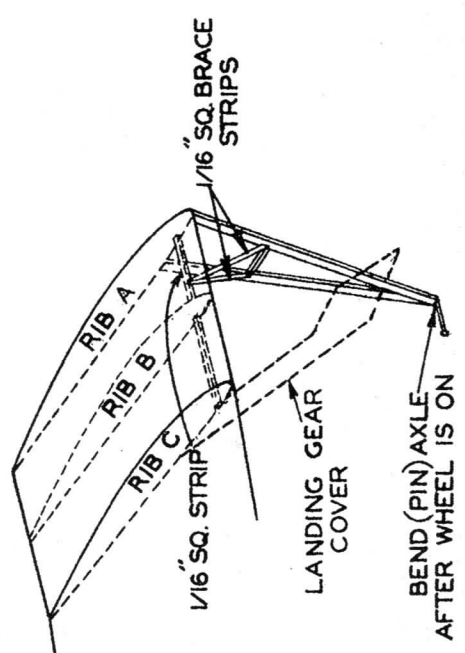
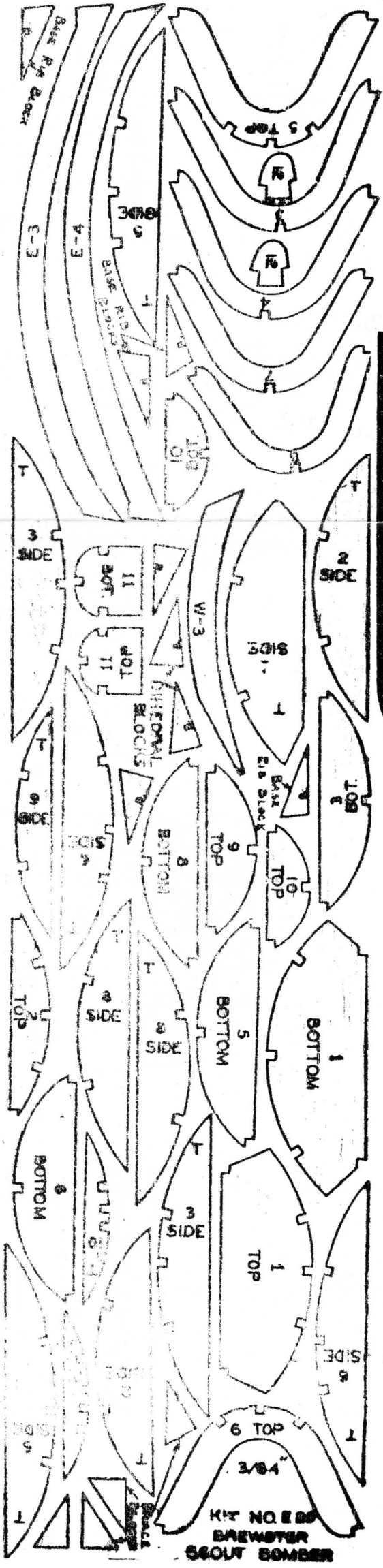
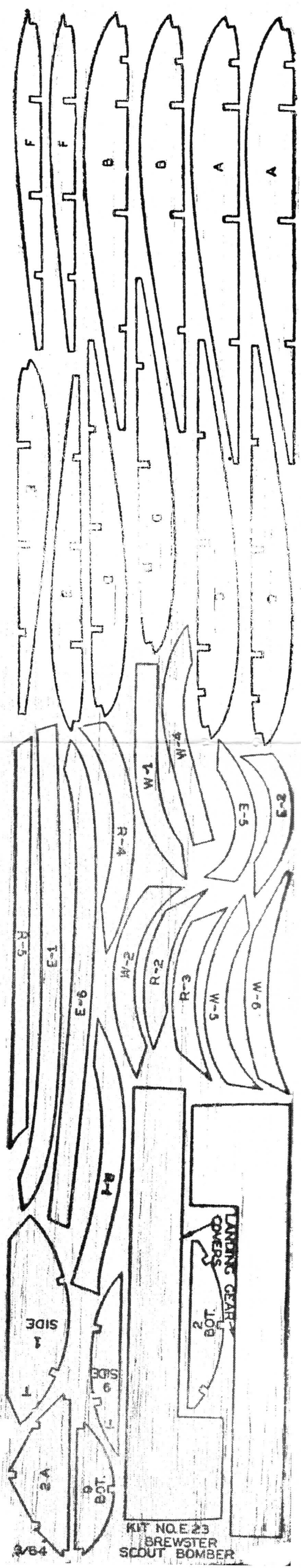


**BREWSTER SCOUT BOMBER**

WINGSPAN - 30"    LENGTH - 18"

KIT NO. E.23    DRAWN BY *Spencer*





**COLOR SCHEME**  
WING & TAIL - YELLOW  
FUSELAGE - RED

**BREWSTER SCOUT BOMBER**  
WINGSPAN - 30"    LENGTH - 18"  
KIT NO. E 23    DRAWN BY *John ...*

