#733

NOT ALL LIGHTPLANES WERE CUBS! MANY PILOTS STILL LOVE THE

1941 TAYLORCRAFT BC-12-65

TAYLORCRAFT's 1941 model BC or BF-12-65 (the "C" means Continental engine, "F" means Franklin engine) has always been one of my favorite airplanes. It is only five years younger than I am, so you might say we grew up together.

The first model of the Taylorcraft that I built was the 54-inch-span Comet rubber-powered model kit. Over the years I have built and flown many different kit versions of the Taylorcraft. None were true to scale, and most deviations included flat-bottomed or undercambered airfoils and enlarged tail surfaces.

One of the really unique flying qualities of a full-scale Taylorcraft comes from its semisymmetrical airfoil, which is the NACA 23012. Properly balanced RC models of the Taylorcraft that use this airfoil section fly as well upside down as upright and require very little *down* elevator to do so.

Let me digress a moment to explain how this airplane came to be. Way back in 1929 C. Gilbert Taylor designed and developed the plane that would become the now-famous Piper Cub! Apparently differences of opinion about the future of that design caused the split between Taylor and Piper that was responsible for the creation of what would become the Taylorcraft Airplane Company of Alliance, Ohio.

The new company's main product was the Taylorcraft in more variations than we have room to list. A small sample of that list includes a two-seat tandem version used by the Army in World War II and known as the L-2. On the opposite side of the scale is a tricycle-geared version known as the F-22, which was introduced in 1985.

The aforementioned design differences between the Cub and the T-Craft resulted in the latter's gaining a 22 mph increase in cruise speed with the same size engine as the Cub and corresponding increases in overall performance. In short, a Taylorcraft just flies better than a Cub. Likewise, models of Taylorcrafts fly better than Cub models.

Let me tell you a secret and give you some advice before you begin construction of your model Taylorcraft. The secret is that no two Taylorcrafts are alike! Maybe none ever were, but since so few remain, it is not likely that any two could be found exactly alike. Even when painted in the same colors and along the same scheme, there are differences. Let me share one example with you.

The unique flying qualities of the full-scale Taylorcraft are captured by this quarter-scale model. It's both slow and graceful—and aerobatic!

■ James L. Simpson

I designed a quarter-scale version of Duane Cole's famous clipped-wing T-craft. The rudder hinge line was 11 inches (the significance of the scale and the measurement will become clear in a moment) measured top to bottom on the model as published in *RCM* in 1979. Not long thereafter a modeler from Canada sent me a note saying he had been to a local airport and measured a full-size Taylorcraft rudder hinge line and felt my plans were off 2¼ inches, so he enclosed

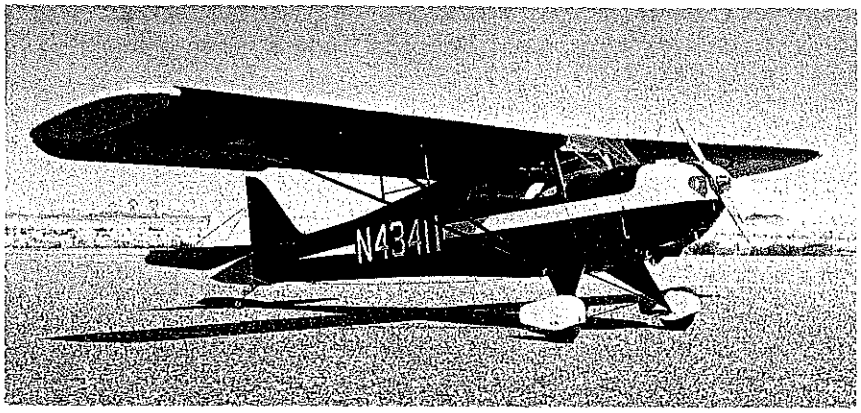
The 1941 Taylorcraft BC-12D is typical of all the Taylorcraft line. Since the 1930s they have been—and still are—flying our skies. They have certain flying characteristics that are unique. If you have ever seen one fly you know what I mean. If you haven't—it would be worth the trip to go watch one.

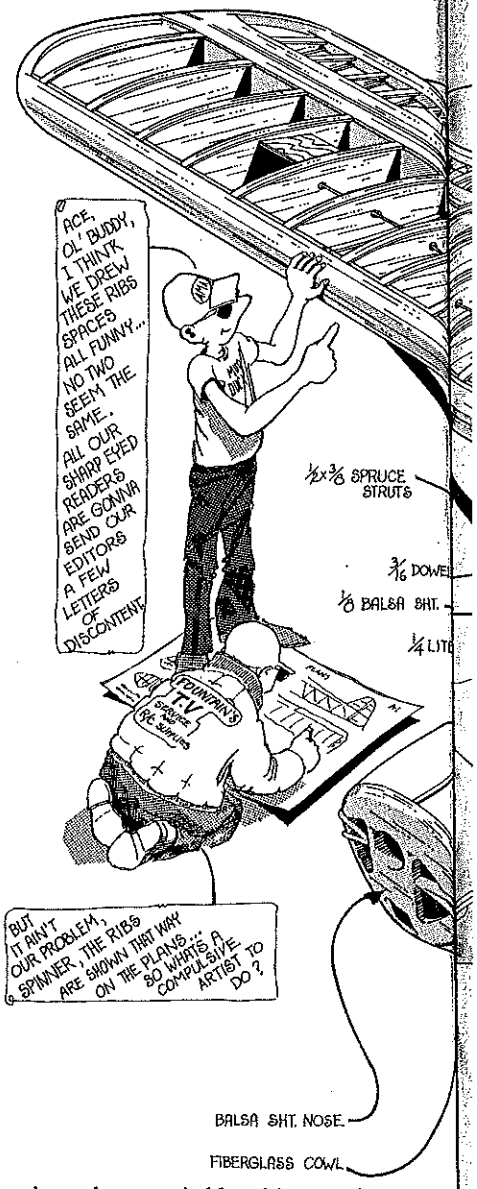
My first three T-craft models were of the overpowered, clipped-wing version that fly almost like big RC pattern planes. Full-scale clipped-wing T-crafts are still very competitive in full-scale aerobatics meets.

This full-span, low-powered version flies more realistically than any scale model I have ever seen. The reasons are because it is light (11 pounds), and we are flying them here in New Mexico at an altitude of over a mile above sea level on two-stroke .90s with 16-x 4½ props. That is like using low gear in a car.

The results were especially outstanding when I watched Pat Tritle fly this prototype at our most recent IMAA fun-fly. Most notable were realistic climbouts, loops that required down elevator during the first quarter of the maneuver, and the spins. Such spins! Slow motion and slow descent rate. Truly beautiful to watch.

With the foregoing in mind I assure you that building and flying this model will reward your efforts. It's like nothing you've ever seen before! →





Well, is it full-scale or a model? Paul Tritle's beautiful rendition of this big T-craft model shows how realism is enhanced by attention to little things. Little bulges on cowl top were on the full-scale plane Paul based his model on. They covered the plane's special ignition system wires. Not all T-crafts had them.

a corrected drawing of the vertical fin and rudder. I assumed he was correct, and *RCM* includes the enlarged drawing with each plan sale.

Many years later I was attending an air show featuring Duane Cole, so I measured the rudder hinge line—and guess what? It was 44 inches long, so I was right after all! Just for grins I have measured 11 other Taylorcrafts, and they vary from 44 to 54 inches, with the majority being around 51 inches.

The advice is as follows: If you want a great-flying standoff scale plane, just build it as shown and cover it with MonoKote of your favorite subject colors. If you want any higher degree of scale, then do your homework first. Find the full-size plane you want to copy and study the details. Take two or three rolls of pictures. Draw, measure, and make notes. Compare these with the plans, *and make detail changes to the plans as necessary.*

The prototype shown in the accompanying pictures was built from these plans. It is of a full-size Taylorcraft that lived at Coronado Airport in North Albuquerque, New Mexico. Pat Tritle built the model and incorporated a myriad of special scale details, such as the two long bumps seen on top of the engine cowl. These housed part of the full-scale plane's special ignition system. Doesn't Pat build beautifully and with great scale detail? They are not shown on the plans because they are unique to that particular plane.

Incidentally, the full-size plane is no more. It was destroyed in a most unusual low-altitude, low-speed accident there on the airport.

The prettiest picture of a 1941 Taylorcraft I ever saw was on the cover of *Sport Aviation* magazine's May 1990 edition (published by the Experimental Aircraft Association [EAA] at 3000 Poberezny Road, Oshkosh, WI 54903). The aircraft pictured there is featured in an article by Norm Petersen about how a man named Lowell Thomas (Tom) Baker restored it. You may want to write EAA and purchase that issue if you do not have a suitable subject nearby.

The scale three-view drawings I used for outline were done by Don Pratt in July 1966 and published in the February 1968 issue of the now-defunct *American Aircraft Modeler* magazine. The drawing describes the full-size airplane as being Cub yellow over chocolate brown.

As I was writing this I got a telephone call from my good friend Gil Horstman who now lives near Spokane, Washington. Gil said he had recently found (finally) a Taylorcraft in yellow and brown and would send pictures. We had been looking for such an example for many years. Then he chuckled and confessed that it was a "ragged-out mess." So we are still looking, in case you know of one.

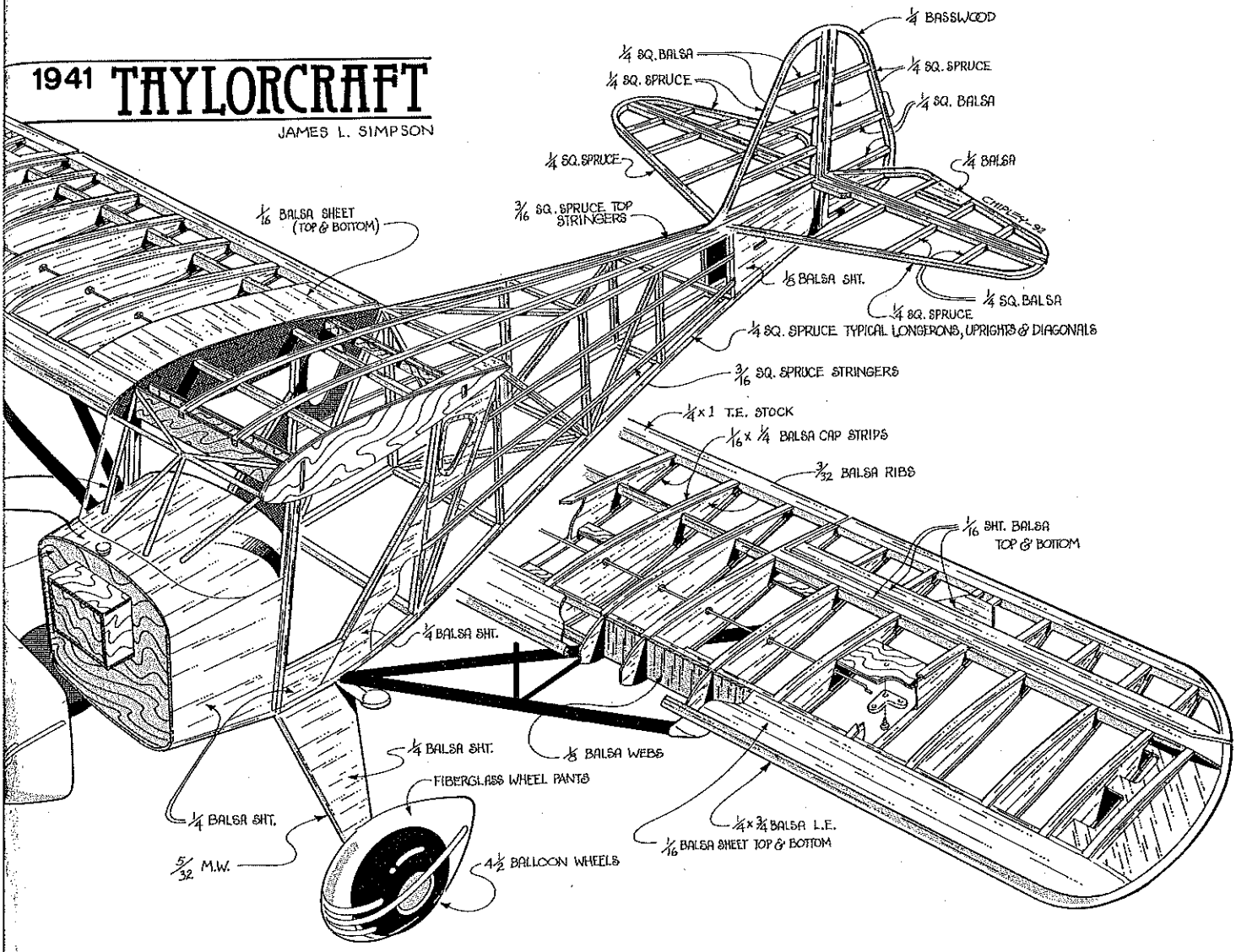
Gil is also a Taylorcraft lover and has a ⅓-scale version under way. Years ago in a hangar-flying session Gil and I agreed that the Taylorcraft is first choice for a one-airplane stable. The BC-12 is a fine trainer. A clipped-wing version is a great aerobatic airplane. Either version is also a good choice for any level of scale modeling! Now, aren't you glad you read this far?

Swooshing in over the New Mexico tumbleweeds for a landing. How's this for realism? Note the wing's very flat dihedral.

One last note before we begin construction. The blue-and-yellow version built by Pat Tritle won first place in its first scale contest, which was the Northern New Mexico Scale Classic. Static score was 80.10 and flying was 76.45. Not bad, since Pat says there's lots more detail he *plans* to do. His favorite

1941 TAYLORCRAFT

JAMES L. SIMPSON



comment was about how well the plane flies. Again, our congratulations to Pat for such a great job.

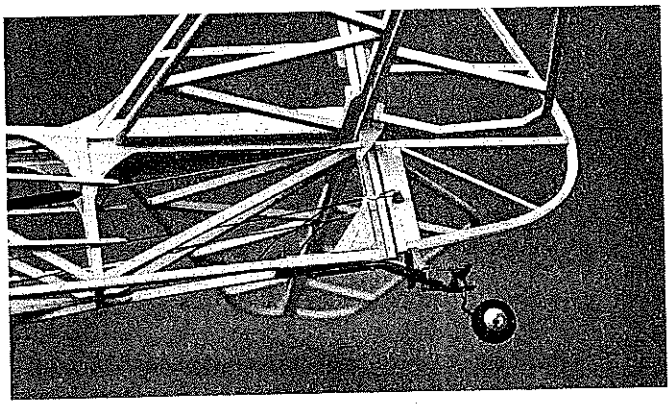
CONSTRUCTION

Let's begin with the tail, since tails are easy to build and give the illusion of being one-third done when finished!

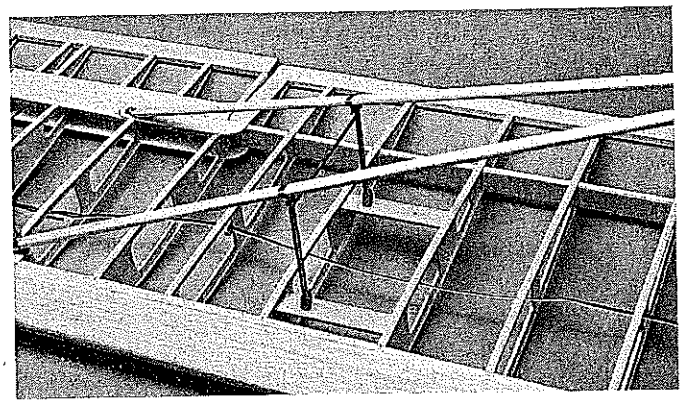
First, the builder needs to make some decisions. Does he want to form the tips from strips of 1/16 x 1/4-in. balsa soaked in ammonia water and then white-glued together around a form? Or does he prefer to cut the curved pieces from 1/4-in. sheet basswood?

Next, is he building true scale using the trim tabs as shown on the elevator and rudder? Incorporate the selections into the remainder of the structure's frames, which are outlined with 1/4-in.-square spruce and use 1/4-in. balsa cross pieces. Build the framework over plans covered with waxed paper. After the glue dries completely, remove the waxed paper and shape the hinge lines to match your choice of scale or sport version as shown on the plan.

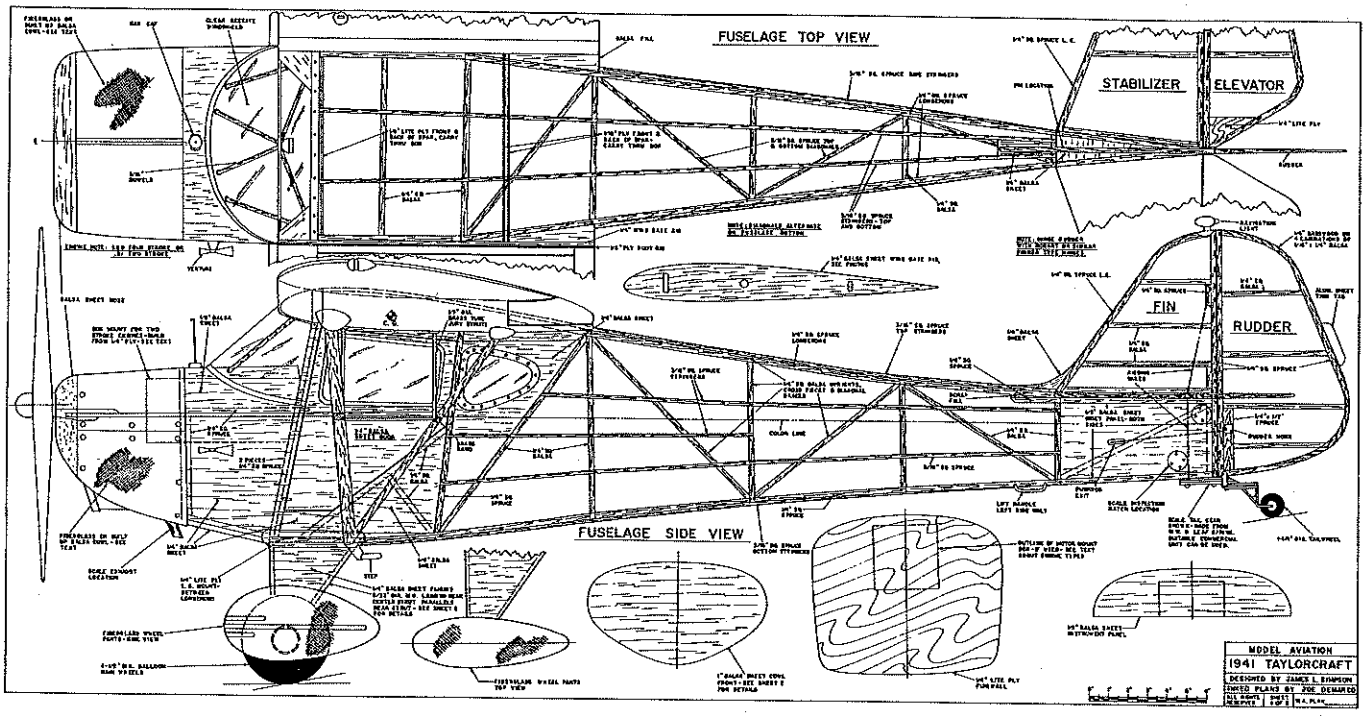
Finally, round the outside edges of the frames to simulate the steel tubing used on the full-scale plane and finish-sand the flat sides. Drill holes for brace wires (small if



Bare bones of the tail feathers. Tail wheel is a C.B. Associates medium-size unit. The rudder uses pull-pull cables; the elevator, a solid pushrod.



Detail of the wing strut installation. That's the aileron servo cable snaking along out to where the servo is installed (not visible here).



you use black, nonstretch fish line) which will be glued in place after covering and final assembly. Drill holes large enough for 2-56 bolts if you plan to fabricate scale fittings for the brace wires.

Cut out or stack sand a complete set of wing ribs. Don't cut off the aileron portion at the trailing edge. These will be separated later. Cutting lightening holes in the ribs is optional. Drill ⅛-in. holes in all ribs for aileron pushrods and hinge pins. Use short lengths of yellow Nyrod for bushings in these holes.

As I said in the beginning, what makes this plane fly so well (all else being equal) is the shape of the airfoil, especially the bottom curve. Unfortunately, that curve also makes it harder to build the wing properly. Readers may know an easier way to do it than I am going to describe here. If so, please share it with us.

First, another decision. Does the builder want scale rib locations on the ailerons? If the answer is yes, then DO NOT glue aileron ribs to the trailing edge. If the answer is no, then cover the wing plan with waxed paper and pin the trailing edge in place over the plan. Do not cut it at the inboard end of the aileron yet.

Use the ¼ x ¾-in. balsa that will later become the leading edge as a jig strip and pin it in place over the plan where the *front spar* is shown, but *under* the waxed paper. *Be sure the waxed paper is draped over the top of this strip.* Put the bottom spar in place *on top of the waxed paper* and hold it there by pinning a rib in place. Only the aft end of each rib (within one inch of the trailing edge) should be touching the building board surface. Glue the ribs to the trailing edge.

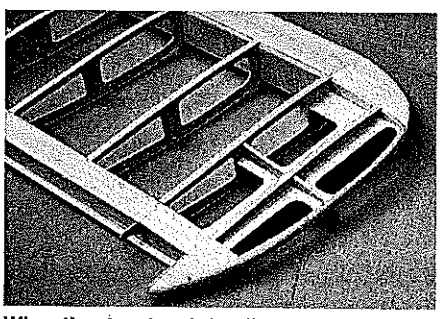
Check the spar alignment and rib placement, and glue the ribs to the bottom spar. Cut a strip of ⅛-in. balsa the same width as the distance between spars (approximately one inch). Cut lengths to fit between the ribs, and glue them in place between each rib from the second rib all the way out to the tip plate (12 places in each wing panel). Use the same process to install the 3/32 x ½-in. rear spar webs, and use 3/32-in. sheet balsa shims to secure the rear spar in place over the plan. When satisfied that both spars are perfectly straight, check the fit, then glue both top spars in place.

Check the front view of the wing tip to see the approximate location of the tip plate (more toward the top of the wing) and glue it to the fourteenth rib. Glue the upper and lower tip ribs to the tip plate. Bend and glue the spars to the tip plate. A little carving will be necessary to get the correct shape. Remove the wing from the plan to make this easier. Add the laminations (top and bottom) to the tip bow and taper them to receive the leading edge planking.

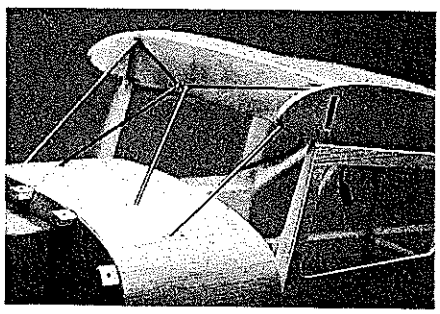
Select a piece of 1/16 x 2 x 48-in. balsa that is at least medium weight (not soft or light) for the bottom leading edge planking. Stick five-inch lengths of masking tape to the bottom, centered on each rib location, so that three inches of tape is out front, sticky side up. Pin the planking in place with the rear edge aligned with the centerline of the front spar.

Slide a strip of balsa the same size as a fuselage longeron under the aft end of the wing to hold the ribs level, and glue the front lower spar to the planking. Start in the middle and, with the wing secured to the building surface (using weights or pins), use the tape to lift the planking until it contacts the bottom of the rib. Glue planking to the rib with CyA glue, and "squirt" it *(Ed. note: Means spray it lightly with accelerator)* so it sets immediately.

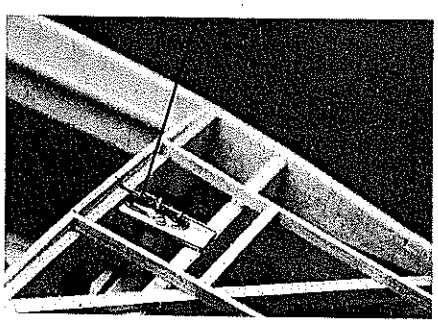
Repeat the procedure for one rib on each side of the center rib. Keep at it until all the ribs are glued. Add the top planking (after



Wing tip structural detail reveals basic tip plate. Note an aileron hinge post protruding from the trailing edge.

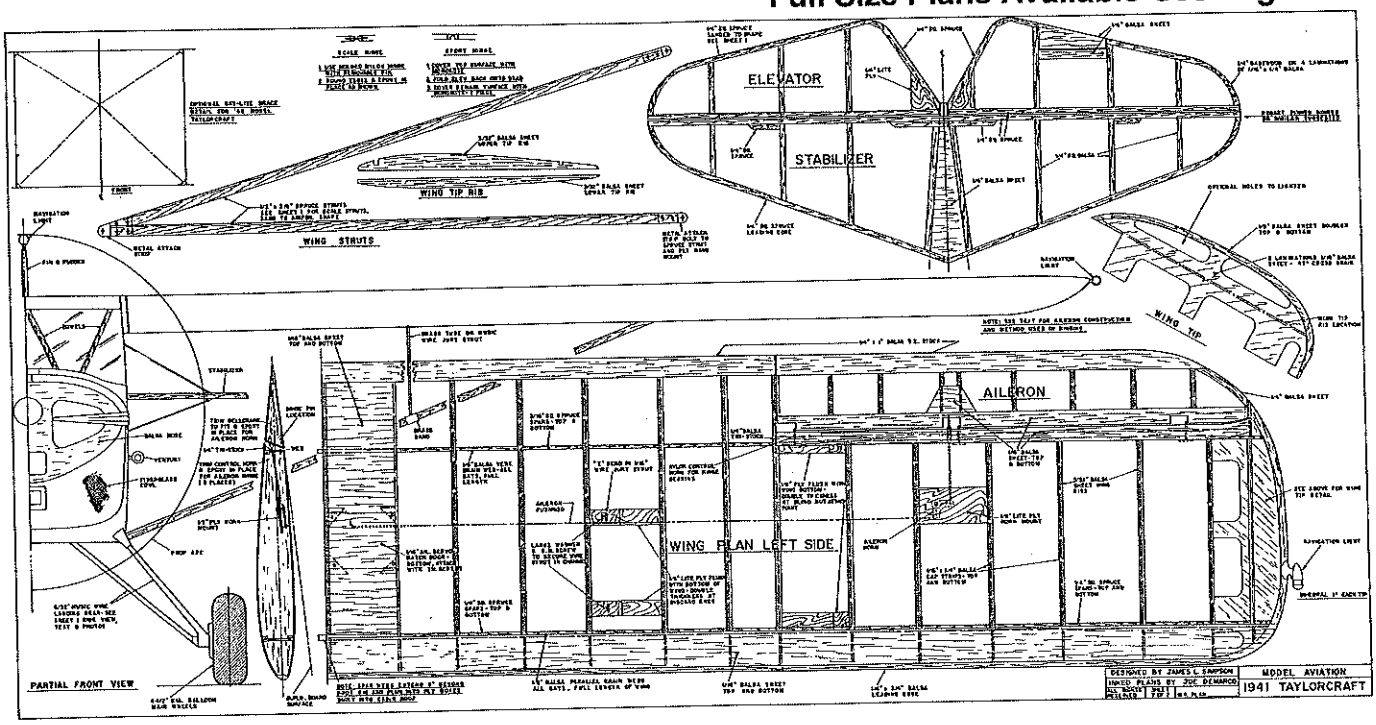


Cabin and windshield brace details; engine mount box and cowl hold-down blocks; forward portion of wing mount.



Two birds with one stone: Scale radio antenna is also part of the fuselage hatch cover's spring-loaded latch.

Full Size Plans Available-See Page 182



removing all pins in front of the spar location) using "slow" CyA glue. Using the free end of the pieces of masking tape, secure the sheeting in place around the front of each rib. Also use tape or weights to secure the aft edge of the planking to the top spar. Let everything dry overnight.

Remove the pieces of tape and use a long (at least 11 inches) sanding block to sand the planking and rib fronts flat to receive the ¼ x ¾ x 48-in. balsa leading edge. Be sure the wing is flat on the building surface, true, and will not move. Glue the leading edge in place and secure with pins or tape. Let the glue dry completely, as this step closes the structural "D" tube and sets the wing straight (or twisted if you didn't get everything straight and true) for life!

Use an X-Acto saw and cut the ailerons loose by making the first cuts the angled cuts through the ribs, then cut the trailing edge. Now, go back and cut the rib stubs off even with the back edge of the rear spar. Glue the 1/16 x ¾-in. balsa planking over the aft spar at the aileron cutout. Glue the ¼-in. triangle stock underneath. Add all the cap strips top and bottom. Cut all the strut mounts and doublers and install them. Do the same with the aileron bellcrank mount.

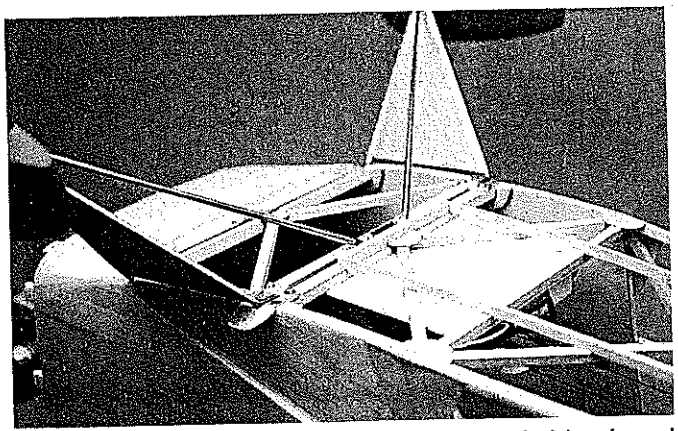
Carefully remove the portion of the root rib between the top and bottom spars. Cut the plywood spar webs 8⅝ in. long. Be sure the slight taper is on the bottom and toward the fuselage. Epoxy them between each set of spars. Add the 1/16-in. sheet balsa planking and hatch for the aileron servo as shown on the plan.

The aileron can be built flat on the plan. Pin the trailing edge down over waxed paper and add the ribs (if you elected scale locations). If the nonscale rib location option was chosen, then pin the ribs down (since they are already glued to the trailing edge). Thread a piece of Sullivan inner Nyrod (the yellow part) through the ⅛-in. holes in the ribs at the hinge pin location. This tube runs the entire length of the aileron. Push a piece of 1/16-in. music wire through the tube, then with the tube perfectly straight, glue the Nyrod to each rib. When the glue dries, remove the 1/16-in. piece of wire.

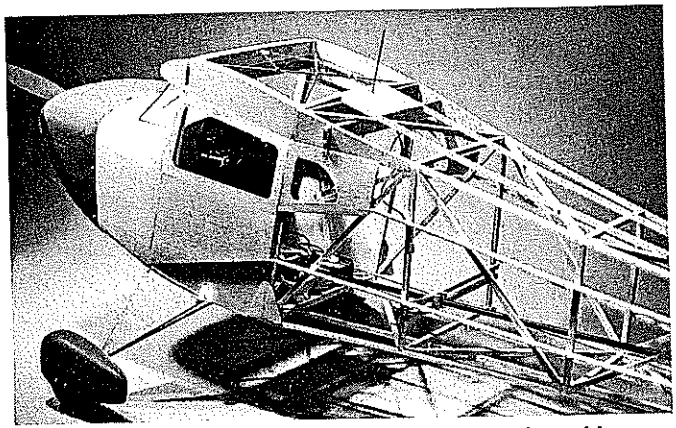
Add the carefully rounded balsa leading edge to the aileron. Add the 1/16-in. sheet and the cap strips top and bottom. Cut notches in the aileron leading edge in three places as shown on the plan.

Builders have three options for controlling the ailerons. The aileron servo may be mounted out in the wing in place of the bellcrank shown, or it may be put in the wing root (my preference) or inside the cabin area. Any choice requires a short pushrod from the wing to the aileron. I've shown a nylon bellcrank epoxied in place between aileron ribs. Balsa block fillers are used to make a snug fit. The pivot point for connection to the pushrod is shown set back 7° aft of perpendicular to give a differential aileron travel of 26° up and only 19° down. We feel this is optimum.

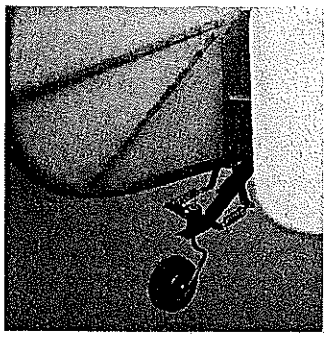
The differential aileron travel may also be accomplished using offset bellcranks or by use of a computer radio. Regardless of the method used, differential aileron movement definitely helps minimize adverse

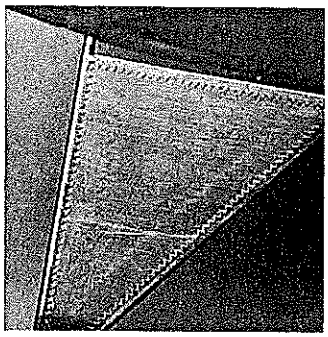


Alternative landing gear mount uses channeled hardwood blocks. Radio receiver mounts under scale seat on a plywood floor. Access is via cabin doors.

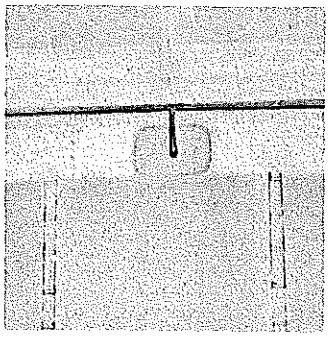


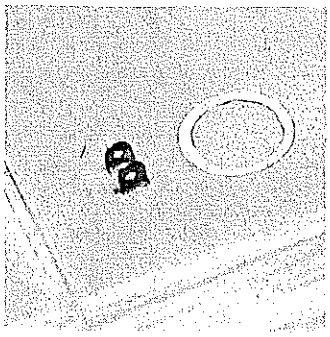
Sheet balsa panels have been added and the entire cabin area, including the side stringers, blended smoothly using a sanding block and elbow grease.



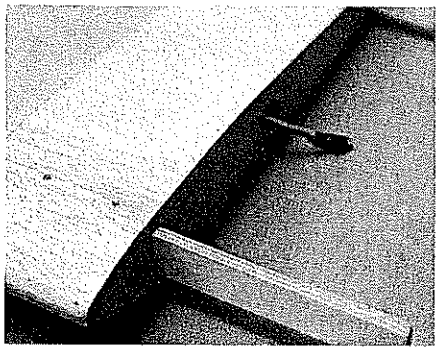


Some of the little details in the covering: (left) note simulated rib stitching in the rudder; (right) balsa fills void between landing gear wires and has pinked tape edging.





Wing-bottom detailing: (L) "rib stitching" and rim for an inspection hole cover; (R) scale "U" bracket for attaching jury struts and another inspection hole rim.



Wing root reveals protruding wing spar stubs. They will slip into the boxes built into the cabin roof.

yaw, which is the tendency for the plane to turn toward the *down* aileron (the opposite of what we want the plane to do).

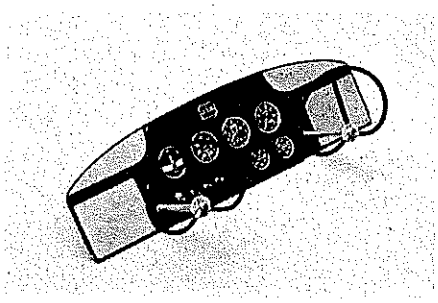
To insure no binding in the aileron hinge line, first cut three slots in the 1/8-in. yellow Nyrod tube at the horn locations. Now cut three slots in the rear spar webs at the hinge-horn locations. Push three nylon control horns through these slots. Put the wing and aileron in place as shown on the plan, and thread the 1/16-in. wire through the Nyrod and the previously mentioned horns. Use 1/16-in. balsa shims to hold the clearance gap between the aileron and the spar constant.

When satisfied with the fit and alignment of the aileron, epoxy the horns in place at the front of the aft spar.

It is interesting to know that Pat Tritle used 1/16-in. plywood for the horns instead of the nylon ones. When the epoxy cures, remove the shims and check the hinge action. Connect the pushrod to the previously mentioned aileron horn, and, if necessary, bend a slight bow in it to avoid having to cut a clearance notch in the aft top spar. The 1/16-in. wire hinge pin can be made removable by bending a short "L" in the end toward the wing tip and gluing it into a slot in the wing tip.

Before building the second wing panel, it would be worth the builder's time to construct the spar carry-through boxes that used to ensure proper spar alignment during construction of the second panel. Build the second wing panel the same way as the first one.

Now we get to the fuselage. More decisions. If a scale tail wheel assembly is not wanted, select a suitable commercial substitute. Likewise for the cowl and wheel pants. Most important, don't even *think* of overpowering this model! The prototypes fly perfectly with 1.20 four-strokes or .91 two-strokes. Hold your maximum engine size to



Pat Tritle's scale instrument panel. The control wheels were fabricated from bent brass rods soldered together.

that. Also, you must know that the prototype weighs 10½ pounds dry!

Finally, give some thought as to how the control surfaces are to be driven. Some builders like pull-pull cables to the rudder and a solid pushrod to the elevator from servos under the seat. Others prefer solid pushrods with the radio in the fuselage bay aft of the wing trailing edge and an access hatch on the bottom of the fuselage. It is *your* plane, so do it *your* way!

Start by building one fuselage side over the waxed-paper-covered plan. Then unpin that side, sand it smooth, and build the

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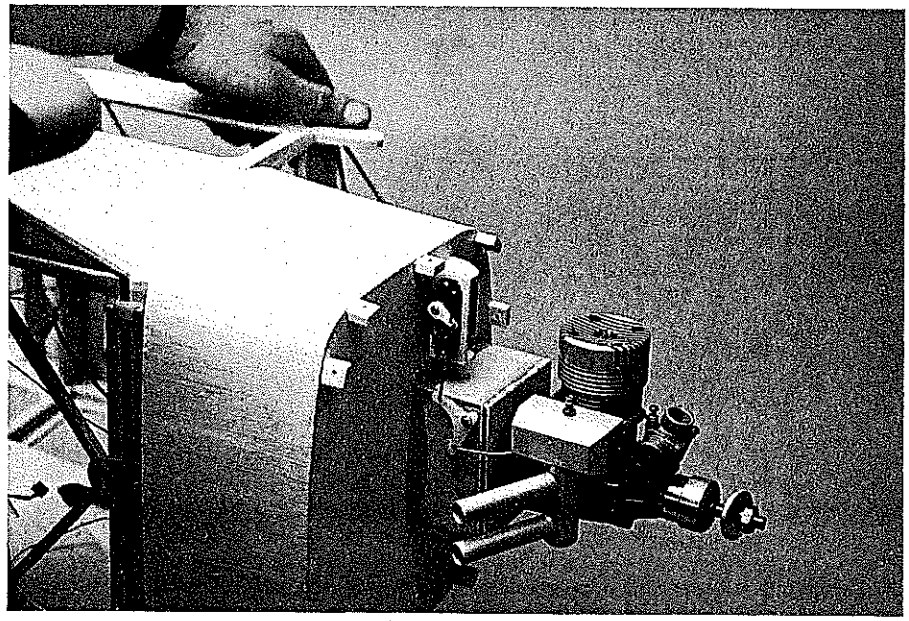

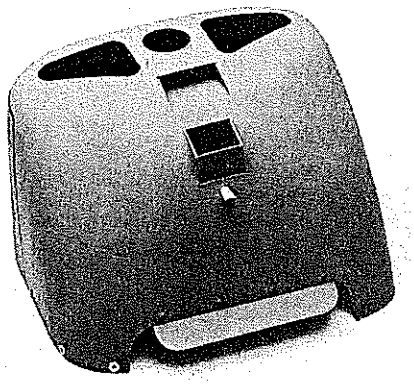

Above: A molded fiberglass cowl. Builder can either make his own or buy a commercial unit.

Left: SuperTigre .91 with Slimline muffler mounts radially to extension "box." The throttle servo is nearby on the firewall—why not?

items can be tested to determine if they function as intended. Their durability can also be observed.

a) Landing gear
b) Folding wings
c) Hood, canopy, and hatch

7) Assembly methods: Building a model gives a good indication of the sequence of assembly operations that is required for the full-scale aircraft. These operations include the following:

a) Skinning
b) Component alignment
c) Canopy installation

An excellent article, "Dynamic Modeling," featured in the July and August 1987 issues of *Sport Aviation,* explains in detail the use of scale models for simulating the dynamic flight characteristics of full-scale aircraft. A bibliography of the reference material I have used to design my aircraft follows this article.

In the next installment of this series on the Snipe, I will cover the design, building, and testing of the model and the conclusions reached concerning flight performance.

To be continued

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Taylorcraft/Simpson

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second side directly over the first side with waxed paper in between. Remember these sides are framework only. The sheet stuff will be added later.

Cut the ¼-in. Lite Ply gear mount to fit between the lower fuselage longerons. It is 5¼ in. front to back. Use large pins or small nails to securely attach it to the building surface over the waxed-paper-covered top view. Use at least three large right triangles to hold the fuselage sides vertical. Make sure that the tail posts are the same height above the bench. You don't want to build a twist into the fuselage!

Before gluing the fuselage sides to the landing gear mount, sand the correct taper in the aft ends of the sides so that when they are pulled together over the plans the two will be a total of ¼ in. thick. Next, glue the longerons to the landing gear mount.

Carefully cut the fuselage crosspieces to length and glue them in place across the top of the cabin between the uprights that define the cabin doors. Use triangles to hold the

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Should you be interested, but not willing to cut out the wing ribs and bend the wire, Chuck Gill (The Airplane Works, 2184 Gilbride Road, Martinsville, NJ 08836; Tel.: [908] 356-8557) has kits available that are priced at $225. Build both, and restart WW I?

Stress test: One recurrent nightmare associated with designing a model airplane kit for a manufacturer is the possibility of structural failures either from poor workmanship or overpowering the design. As a consequence, I tend to overstructure—just in case. That then leaves me wondering just how much excess power the design could actually handle.

John Walker's Big Bingo! in the photo is powered by a SuperTigre 4500! John modified the vertical fin and turtledeck formers, but made no changes to the rest of the fuselage or to the wings. The two-part wing with aluminum pipe/phenolic tube joiner was retained.

He frightened me a bit, admittedly, but the 20-pound model will climb at an 89° angle right on out of sight, has spectacular pulling power through inside and outside maneuvers, and is just plain awesome. After more than 60 flights, no sign of surface flutter or structural cracking has been observed. So I really still don't know what too much power for the Big Bingo! might be. ✈

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cabin upright and square.

Join the tail posts using a triangle to align them above the plan and hold the joint perfectly vertical. If the builder misses here, the fuselage will be twisted and the tail will be tilted with respect to the wing. When satisfied that all is well, add the remaining crosspieces and the diagonals as shown on the plan.

Notice that the bottom longerons have a gentle curve, but the top longeron has a definite "break" at the aft door upright. It may be necessary to crack that joint, then reglue it to get it right.

Now it's time to select another option: mounting the engine. If a four-stroke or long-shaft engine is to be used, the builder may wish to mount it on a radial mount directly to the firewall. In this case the firewall is cut to shape and glued to the front of the framework. Add the ¼-in. sheet balsa to the sides and bottom as shown on the plan. Mount the engine, install the fuel tank with the top third of the tank above the needle valve, and secure the tank to prevent foaming of the fuel when the engine is running.

On the other hand, most two-stroke engines are relatively short, so for these we use a box that fits a square cutout in the firewall and extends all the way back to the instrument panel. The fuel tank will be mounted inside this box, which has the aft end open for access to the tank. The front of

the box is ¼-in. plywood. The radial engine mount is bolted to it. The length of the box is cut to properly position the engine's propeller drive washer about ⅛ in. ahead of the cowl. It is best to build the box and fit it to the firewall before mounting the firewall and adding the ¼-in. sheeting as outlined in the previous paragraph.

After the engine and tank are installed and the fuel tubes are sorted out, the instrument panel and the ⅛-in. sheet balsa planking between it and the firewall can be installed. If the builder has elected to buy a fiberglass cowl, it may now be fitted to the plane, either flush with the firewall or overlapped as preferred.

If the builder elects to make the cowl, use ⅜-in. or ½-in. balsa to rough in the bottom and sides to fit between the firewall and the nose bowl. Since there is no compound curve in the top cowling, ⅛-in. balsa sheet may be formed by wetting one side only to curve it across the top, which may be made removable if desired.

Carve and sand the bottom and sides to match either the plan or the specific full-scale aircraft being modeled. The nose bowl is sheet balsa and must be carved and sanded to match the rest of the cowl. Balsa cowls may also be bolted to the firewall cowl-mounting blocks in the same manner as the fiberglass ones.

The key elements of the cabin roof/wing center section are the spar carry-through boxes and the wing root ribs that are made of 1/16-in. plywood laminated to 3/16-in. sheet balsa. Make two root ribs exactly alike. The front spar carry-through box is epoxied to the top of the doubled spruce fuselage uprights. The root ribs and rear carry-through are fitted, then epoxied to the fuselage top side longerons and top cabin crosspieces.

Carve a triangular-shaped balsa block to fill the gap between the root rib aft of the rear spar carry-through and the top fuselage longeron. Add the top fuselage stringers after the ¼-in. square balsa crosspieces are installed.

Bend the landing gear from 5/32-in.-diameter music wire using the front and side views as guides. Remember that the brace wire goes from each axle to the middle of the aft main wire. Clean the wires where they will join, sand them shiny, bind with soft copper wire, and use plenty of heat to solder. If all this isn't done in the order given, you'll be sorry!

The final steps are to fit the struts to the wing, then assemble the wing (with struts in place) to the fuselage with the whole works upside down on the workbench.

Put a 1½-inch-thick block under the cabin roof. With the wing tips touching the workbench, this will give the desired 1° dihedral when the plane is upright. With the wing taped in place, fit the main struts to the fuselage near the aft main gear strut point as shown and install the hold-down bolts through the landing gear plate into large blind nuts.

Set the plane upright, block up the tail, and check each main wing panel for proper incidence at least three places on each panel. If no warps are present, drill holes for four bolts (two through each root rib or one in each spar stub and carry-through box—builder's choice) to secure the wing panels to the fuselage.

Now install the radio and all the control linkages. Be sure all work smoothly *and in the proper direction.*

Add all the structural scale details desired (such as gear-axle-to-wheel-pant attachment or wing strut cuffs) before covering. If fabric covering is used, it is better to wait until after the plane is covered before adding such details.

The plane is covered using the builder's favorite method. One prototype was covered with Sig Koverall and doped. One was covered with Coverite and not doped. Two were MonoKoted. I have seen some restored full-scale Taylorcrafts that were so shiny they looked MonoKoted.

Before flying the plane take the time to check for any warps. Correct any that are found. Do control checks for smoothness and proper direction. Use rate switches or exponential control to avoid overcontrol.

Check the balance point to be sure it is as shown on the plans or slightly ahead. Finally, run the engine and adjust the idle properly. Only when all of this has been done will the plane be ready to fly.

This model flies like an Old-Timer free flight, except it also loops, rolls, spins, and flies inverted beautifully! If readers think all that is special, just hide and watch when I get the latest clipped-wing version done. They're really hot! ✈

About the Cover

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Robert A. Benjamin describes himself as a traditional representational artist who has made a commitment to the portrayal of aviation subject matter. He is an artist member of the American Society of Aviation Artists.

Examples of Benjamin's work are on display in the San Diego Aerospace Museum; the Pearson Air Museum in Vancouver, Washington; and the U.S. Air Force Art Program collection. He is also the artist behind a sizable collection of art work to be displayed at the AMA Museum in Muncie, Indiana.

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