

Construction

Der Jaeger has become a classic in biplanes, and this great model is no exception.

DER JAEGER

by FLOYD MANLY

WELL, *Model Airplane News* has to take direct credit for this design. In the November 1984 issue they ran a page titled "Planes Worth Modeling," with four-views of the Der Jaeger that just begged to be built. Because I am a biplane nut and I had recently seen a 1/4-scale Der Jaeger that I liked, I was hooked!

The four-views were helpful in laying out my plans and I came up with a wingspan of 48 inches, or approximately 1/5-scale. I figured that a Fox*.40 I had on hand would fill the power requirements.

Before I get into the building sequence, there are a few construction features I'd like to talk about. I built up the cowl by carving a piece of white foam to shape, then painting it with a water-based Latex before applying the glass and resin. I then hogged out the foam and washed the cowl with gasoline—outside in the open air, of course!

The motor mount/tank box is designed to allow adjustment of over 1/2 inch to fit your favorite engine. A Semco Pitts Jr. muffler fits nicely.

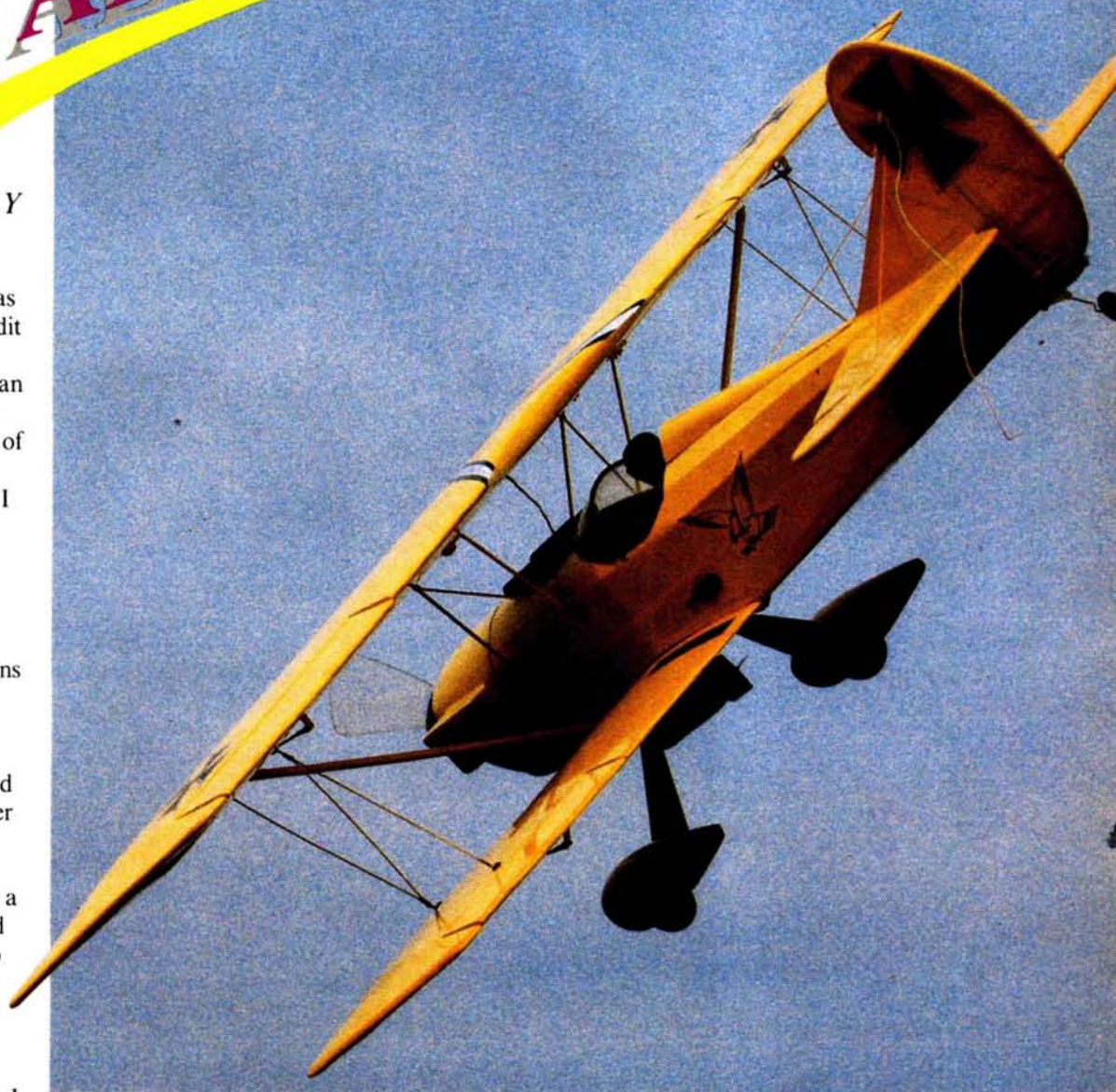
I used aileron servos in

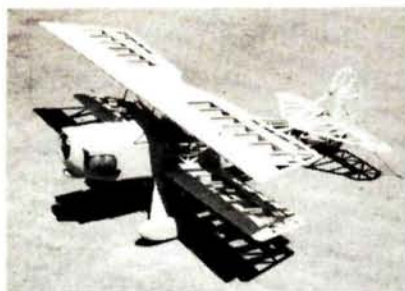
each wing because it is the easiest way of having four ailerons operating in sync. This also assures that the ailerons are in positive alignment with their respective wings during every pre-flight. Having an extra servo as a backup doesn't hurt either.

The wings are almost

industry-standard D-tube construction; extreme rigidity at a minimum cost in weight. Rib spacing is scale and their shape is fully symmetrical like a Skybolt or a Pitts. Wire landing gear is shown because I couldn't find a suitable bent aluminum one. The fairings are easy to build for scale points, but can be left off for

*Type: Sport Scale
Wingspan: 48 inches
Wing Area: 707 square inches
Engine: .40 to .50 two-cycle
.46 to .61 four-cycle
Channels: 4*





Manly's Der Jaeger exhibits good building techniques for an excellent flying model.

sport flying. The peculiar cabane attachment results in perfectly aligned wings at all times. All interplane struts are cosmetic only and the Der Jaeger will fly without them, but a biplane doesn't look right without all that garbage hanging out. Anyway, I wanted a plane that was *quick*, not necessarily fast.

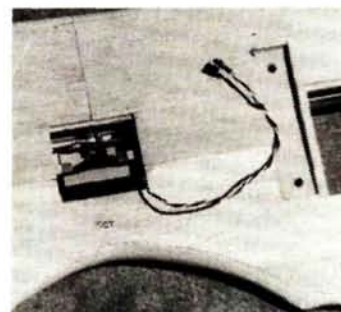
Back at the tail I added flying wires—again, just for cosmetic reasons—by punching holes in the surfaces and stringing heavy black thread. Cyanoacrylate glue holds them in place and stiffens the wires.

CONSTRUCTION. Protect your plans with waxed paper. I used cyanoacrylate throughout, except as noted on the plans.

Build two identical fuselage sides including the tail post and wing saddles. Cut the 1/4-inch ply firewall from the plans pattern. Before cutting the motor mount/tank box, attach the motor to the mount, then measure exactly from the back of the mount to the back of the spinner you intend to use. This measurement will determine how long the tank box needs



Nose cowling block is built-up. Note dummy engine.



Aileron servo is mounted in top wing.

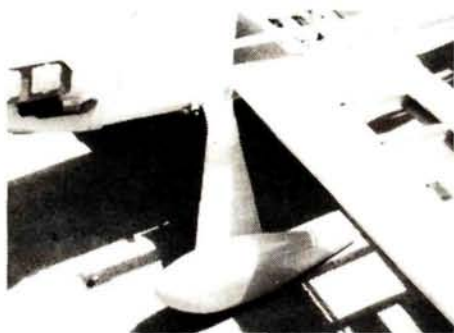
to be. Trial-fit the box into the hole in the firewall; you'll want a snug fit.

Glue the 3/16-inch balsa sides to their frames, one left and one right, of course. Then pin or weigh down the fuselage, inverted, over the edge of your bench so the firewall is butted against the

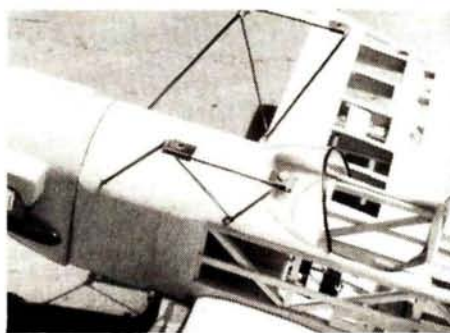
bench. Check for alignment and attach the firewall to the sides with thick glue. Add the gussets.

Cut the cabane plate, slip it under the inverted fuselage, and glue it to the firewall and fuselage side stringers. Leave the landing gear plate off for now. (Continued on page 98)

I put her through the paces and she high-stepped all the way.



Distinct and unique wheel pants and skirts.



Cabane setup on Der Jaeger is simple and strong.



Aileron hookup requires no-slop linkage.

REVOLUTIONARY PRODUCT FOR THE RC FLIER!!!
the U.S. Connection™
 Automatically Connects Wing Servo To Radio When Wing Is Bolted To Fuselage

Automatic Aileron Connector
Quick Disconnect
 In The Event
 Of A Crash

**DID YOU FORGET TO PLUG IN YOUR
 AILERON SERVO BEFORE TAKING OFF?
 NO MORE!**

FOR

- Sport
- Pattern
- Scale
- 1/4 Scale
- Pylon
- Gliders
- Boats

PATENTED
 EXTENSIVELY FLIGHT PROVEN
 UNDER THE MOST EXTREME TESTS!

INSTALL ONE IN EVERY PLANE
 In Seconds... After Plane Is Completed!
 Comes With Matching Plugs For Futaba,
 Airtronics.
 Wing To Fuselage Connection Can Now Be Shortened!

ORDER NOW!

\$18⁹⁵ EACH

*Add \$1.00 for postage & handling
 No C.O.D.'s - No Credit Cards

EXCLUSIVELY FROM
U.S.C.
 P.O. Box #4208
 Vero Beach, FL 32964
 Copyright: 1986 U.S. Connection™

FOR

- Ailerons
- Flaps
- Retracts
- Multi-Engine
- Battery Connection
- Total Safety!!!

PATENTED
 INSTALL ONE FOR EACH FUNCTION
 The Functional, Safety,
 Time-Saving Extension
 Lightweight - 1/2" x 1"

Wholesale Inquiries Invited

FILL OUT AND MAIL

Name _____
 Address _____
 City _____ State _____ Zip _____
 Radio Make _____
 Quantity _____

DER JAEGER

(Continued from page 47)

Add the 1/4-inch ply wing dowel plate, and glue to the wing saddle. This will assure true, square sides. Cut and glue the bottom cross braces, as you pull and align the tail together. Use a pair of Perma-Grit sanding sticks back-to-back (or folded sandpaper) at the tailpost to shape the stringers and the post to the

proper bevel. Align and glue the posts together. Cut the 1/8-inch ply tailwheel plate and use thick cyanoacrylate glue. Flip the fuselage over and add the top rear cross braces. Each should be cut exactly the same size as its bottom mate.

Use hard balsa for the 1/8x1/8-inch side stringers. Start at the front end and glue each side alternately, working toward the tail while making sure the overall alignment is still true. Add the 1/4x1/8-inch stringers to the top and bottom edges in

the same way. Then add the aft bottom stringers.

The top turtledeck will take some sanding and fitting, but will finish up the aft fuselage. Don't glue it in place until the fuselage is covered.

The last thing to do before the wings are completed is to glue the bottom wing attaching blocks and their gussets.

Note: It will be easier to work on the top wing cabanes if the front formers F1A, F2A, and F3A and their stringers are left off for now. The best sequence is to complete both wings before continuing, so skip that part of the construction, then pick up here later.

Seat the bottom wing, checking for skew on overall alignment and for firm seating. Measure for, or use an incidence meter to make sure you have 0° incidence in relation to the fuselage thrust line. Drill, tap, and install the wing bolts. Bend the wire cabanes per the drawing outlines and attach to the ply shelf with J-bolts.

Make up the top wing mounting plates and install on top of the cabanes. Bolt the wing to the cabane and check for alignment, incidence, and fore/aft position in relation to the bottom wing. Make the Z-bend braces, then wrap each end to the cabanes with copper wire. Solder their bottom ends to the cabanes, then check the wing placement again before soldering their top ends.

Recheck all wing alignments again. This is the most important check you can make; a biplane will not fly right when its wings are not true.

Make a pair of V-struts approximately the same length shown on the plans. Wrap and epoxy the top attaching plates only, leaving the bottom plates as slip-fits until checking the relation of the top and bottom wings again. Make all necessary adjustments to the cabanes! Don't use the V-struts to push or pull the wing for alignment.

The interplanes are the last set of struts to make. These are mainly cosmetic, but be sure they don't induce a warp in your panels. Now that the cabanes are in their final positions, add the top fuselage formers and sheeting. Trial-fit the 1/4-inch ply landing gear plate. Cut and glue the landing gear blocks to former F2. Drill holes for the landing gear wire, fit the gear and attach with J-hooks. Glue the landing gear plate in place. Fit, carve, and epoxy the balsa chin plate over the landing gear plate. Except for the tailfeathers, this should finish up major construction.



We Show Our Colors BECAUSE WE'RE PROUD OF THEM

You take a lot of pride in building your model. So why guess at the color of paint you're choosing to finish it.

We take the time to put a paint chip on every can of Perfect Paint so that the color you're buying is the color you want.

*...we take the guesswork
 out of finishing*

cheveron hobby products

PO Box 2480 • Sandusky, Ohio 44870
 Ph. 419 627-1877

The top wing has no dihedral, and is easiest to build upside down over the plans because all of its attaching plates and cutouts are on the bottom. Cut out all the ribs in pairs. Do not cut the ailerons loose yet. Just notch them for cutting later.

Cut the 1/4x1/4-inch spruce and balsa spars to length between outboard ribs. Cut the leading edge and sub-leading edge to length from wing tip to wing tip. Cut the leading edge sheets to length between outboard ribs. Pin down the top leading edge sheet over the plans and glue the spruce spar to it. Pin down a 1/4x1/4-inch jig stick over the index marks on the plans.

Place each rib over the spar to rest on the jig strip and glue them to the spar only. *Do not glue to the leading edge sheet yet.* Glue the previously assembled leading edge to each rib, taking care that the ribs are square with the spar and centered on the ribs. Glue the bottom balsa spar to all the ribs.

Glue the bottom leading edge sheet to the leading edge and sub-leading edge. Soften the wood for bending by brushing water on its outside surface, then carefully bend it down to be glued to the balsa spar. Glue the rear sheet from the center rib to the outboard rib. This will cover the aileron hinge area to be cut loose later. Note on the plans that these are actually two pieces of balsa. Outline the center section cut out, curved portion of the wing with a French or flexible curve. Trim and sand it to shape after the top sheeting is added.

Complete the center sheeting, then cut through the sheet and the balsa spar carefully to add the cabane wing fixtures. Drill and tap them for the attaching bolts when the wing is ready to be fitted to the cabanes. Add the bottom cap strips to stiffen the wing sufficiently enough to turn it over for work to be completed on the top side.

After installing all the top sheeting and cap strips, the wing will be stiff enough to flip-flop it around as you need to add the strut attaching plates and bellcrank brackets. Mark the ailerons and cut them out with an X-Acto knife and saw, *after* completing both wing tips.

Make a suitable cutout and brackets for your servo. Add the pushrods and bellcranks, then do the final sanding on the scalloped trailing edge. These are the final steps for the top wing.

Build the bottom wing in the same sequence as the top wing, however, build it in two halves with shorter pieces of material because of its dihedral.



CANNON
R/C SYSTEMS

MINI R/C & SPORT ENGINES

U/CONTROL ENGINES PROVIDE HIGH RPM'S FOR TOP PERFORMANCE; THROTTLED R/C ENGINES COMBINE DEPENDABLE IDLE WITH SMOOTH TRANSITION TO CONSISTENT HIGH SPEEDS. ALL START EASILY; MUFFLERS ARE STD.

.03 U/C



\$32.95
16,000 - 20,000 RPM

.03 R/C



\$35.95
6000 - 18,000 RPM

.061 R/C



\$38.95
5000 - 17,500 RPM

.061 U/C



\$35.95
14,000 - 18,000 RPM

.061 R/C-C



\$41.95
4500 - 21,000 RPM
FOR CARS & BOATS

GLOW HEAD & PROP WITH .03'S. GLOW PLUGS NOT INCLUDED.

CASH DISCOUNT PRICES SHOWN. VISA or MASTERCARD 5% higher. In Calif. add Sales Tax. Shipping \$3.00. 20% deposit req'd on COD's. Brochure \$1.00 in U.S., \$2.00 Foreign. Std. Dealer and Distributor Discounts.

13400-29 Salicoy Street North Hollywood, Calif. 91605 (818) 764-1488



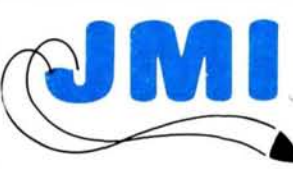

I've tried to make the plans self-supporting, but in every best-laid plan, something is always missing. After studying them for a couple of hours for omitted details, I gave up and decided to go flying.

FLYING. I peaked the Fox .40 to just above the four-stroke burble, and was ready to go. Advancing the throttle slowly, it rolled out about 10 feet and nosed over! Two more attempts at scale-like takeoffs resulted in the same em-


barassing thunk! The wheelpants and medium short grass just wouldn't let her build up enough speed for elevator control.

When people standing around started talking to each other behind their hands, there was nothing else I could do but get her in the air right away. I used a midget racer start by hitting full throttle then pushing her out as hard as I could. For

(Continued on page 101)



introduces the
Rolf Gleichauf
Modellbautechnik



CHRISTEN EAGLE I

Intro Price: \$279.95 (reg. \$329.95)
(Price includes shipping!)



Call (bet. 7-10 p.m. EST, Mon.-Thur.)
or write for ordering:

Kit comes with: White epoxy-glass fuselage, pre-sheathed foam wings, balsa sheet elevator, aluminum motor mount, spinner, hardware, and epoxy.

Also available: .60-.81 DF F-16A (info available on request)

Specs: span—49.5 inches
length—45 inches
area—806 square inches
two-stroke—.60-.90
four-stroke—.90-1.20

Call or write for ordering:

JMI

• 7001 Acton Rd. • Dalzell, SC 29040 • (803) 499-4313

DER JAEGER

about 10 seconds she resembled a drunken bumble bee, but she was flying!

I have to brag that the trim was almost right on. I put her through the paces and she high-stepped all the way. She did everything I had expected of her—snap rolls, inverted flight, knife-edges, and spins. Throttling back for slow flight, she coasted around nose-high, steady as a rock, except for a tendency to yaw. Earlier, during the loops, I noticed that she wouldn't hold a line over the top, but I blamed it on the strong winds. Later investigation and discussion revealed that the left ailerons weren't aligned. Two turns on the bottom clevis solved the problem.

The landing was an attention-getter. The Der Jaeger is a "dirty" aircraft in that it has a lot of wires, struts, pants and a bomb to slow it down. You have to come in under power with the nose up, or dive her to the numbers if you're dead-stick. She slows down real quick! The first landing ended the way the first takeoff attempts started, only in reverse. A beautiful flare, an almost three-point touchdown, a nice roll out, and a nose-over just before the tail was ready to drop. Thank you for glass props.

I had proved that she would fly; quite well from the remarks overheard, so I didn't push my luck with high-power slow-speed takeoffs anymore. That would be begging for a snap roll. Later flights from a paved runway were so scale-like that they sent tingles up the spines of all gathered biplane nuts!

**The following is the address of the company mentioned in this article:*

Fox Mfg. Co., 5305 Towson Ave., Fort Smith, AZ 72901.

SCHLUTER CHAMP

(Continued from page 65)

Head Lock Remote on one of the engine mounting bolts to allow starting with the cabin in place. The fan shroud is the same nice unit found in the Superior. It consists of two interlocking molded pieces and a vacuum-formed extension which is trimmed to fit the engine and bolted to one half of the shroud. The extension should be at least 1/4 inch from the engine or it will melt.

Construction continues with the tailboom, and tail rotor gearbox, which are identical to the Superior.



X-CELLENT RESULTS!

Now there are 16 OCTURA X-SERIES PROPELLERS

TO FIT ALL R/C MODEL BOATS LEGAL UNDER BOTH IMPBA & NAMBA ENGINE DISPLACEMENT RULES... From the 3.5cc outboard up to and including the 15 and 30cc marine engines there is now an Octura X-series metal propeller to get maximum performance.



RECOMMENDED APPLICATIONS	Model	Application
3.5 OUTRIGGER	X437 / 3	3.5 OUTBOARD TUNNEL
	X440	
	X440 / 3	
.75 DEEP VEE	X442	7.5 OUTBOARD TUNNEL
	X445	
	X447	
7.5 OUTRIGGER	X450	7.5 OUTBOARD
	X452	
	X455	
.65 SCALE HYDRO	X455 / 3	.65 DEEP VEE
	X457	
	X460	
.65 OUTRIGGER	X462	.90 DEEP VEE
	X465	
	X467	
TWIN .90 OUTRIGGER	X482	



"/ 3" Indicates 3-Bladed Propeller
* .250 Bore

OCTURA MODELS, INC. THE R/C MODEL BOAT PROPELLER PEOPLE
7351 N. Hamlin Ave • Skokie, IL 60076

Technopower's NEW BIG BORE 7




- Cast Iron Piston Rings
- 14x6-16x8 Prop Range
- Extra Heavy Crank Shaft Supported By Ball Bearings Fore and Aft
- Phosphor Bronze Valve Guide
- Master Rod Runs on Needle Bearings
- Rocker Boxes are Investment Cast—Balance of Engine is Bar Stock
- Hardened and Ground Steel Cams
- Hardened and Centerless Ground Valves
- Weight: 30 1/2 oz

- 7 Cylinder
- 4 Cycle
- Overhead Valves
- Glow Ignition
- Displacement 2.0 cu in.

- Red Line rpm 9000
- Flying rpm 8500
- 6 1/2-in. Diameter
- Hard Chrome Bore

TECHNOPOWER II INC.

610 North Street • Chagrin Falls, OH 44022




Send \$3 for catalog.

216-564-9787