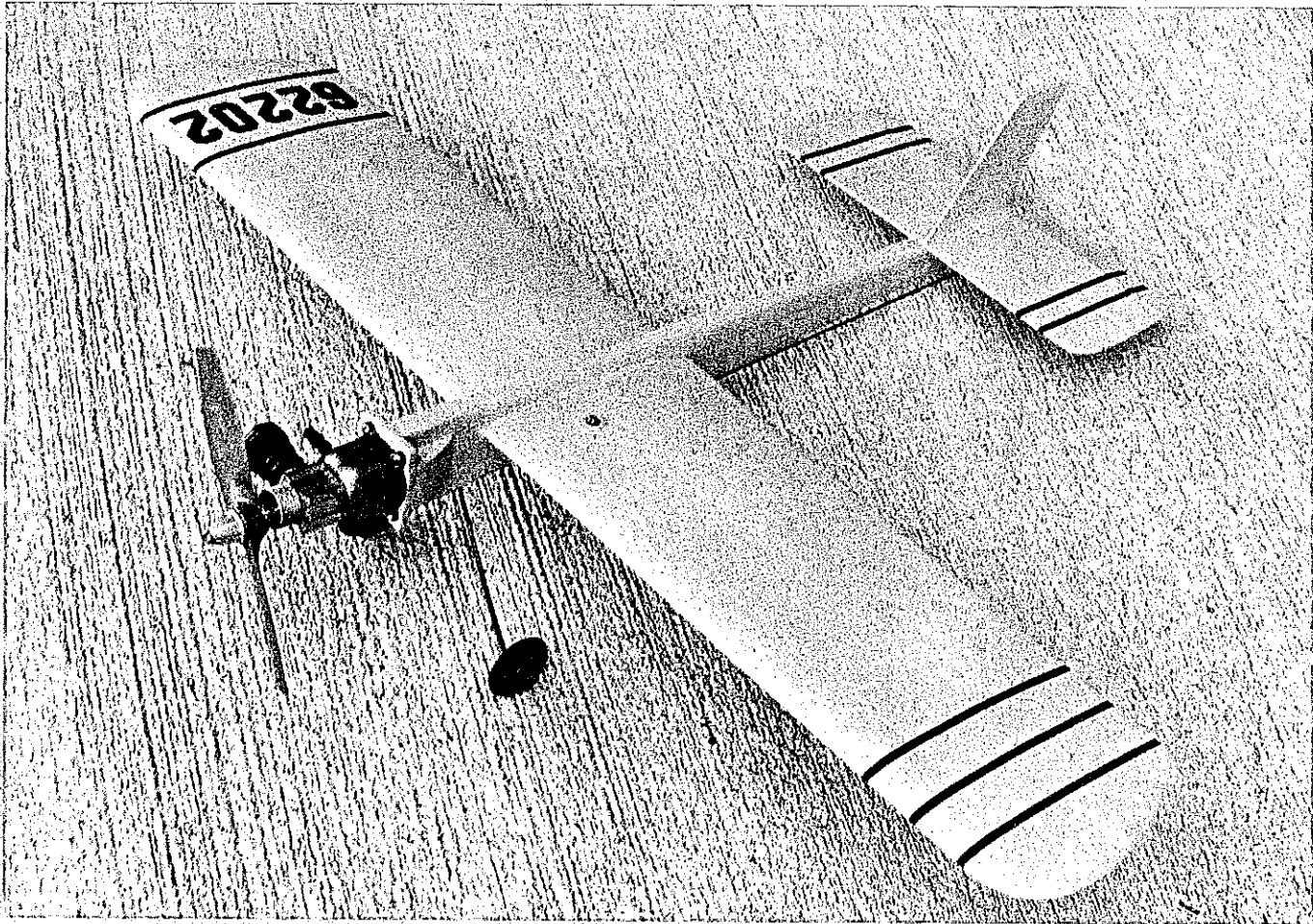


WIDOW



WHEN MY TWO children started flying Control Line last summer, we started with 1/2A airplanes because they are inexpensive to operate, the integral-tank Cox engines can tolerate a lot of abuse, and the small airplanes survive the inevitable unintentional landings much better than larger models.

Their initial experience was with an

Sporting clean lines and with lots of spunk on a Cox Black Widow engine, this model is the next step in Control Line flying for many young beginners.

excellent first model developed by Ron McNally from the AMAzer trainer and

Richard L. Perry

used by the Northern Virginia Control Line Association to introduce well over a hundred potential CL pilots to the sport in just one summer. The NVCLA "brick" provided an excellent introduction, but by the end of the second flying session, both children were ready to move up to something else.

The kids wanted a model that looked

WIDOW

If the young modeler in your family is already bored with his or her first basic Control Line trainer, consider this one for the second step. It is durable and heavy enough for good control feel, yet it is capable of simple aerobatics.

like an airplane. I wanted something that would be more maneuverable, would have a solid feel on the end of the lines, and would be a simple and easy introduction to the skills needed for 1/2A competition flying. The model that evolved from these requirements is the Yellow Peril, named after the Navy's N3N primary trainer of the 30s and 40s.

Our model is designed to be durable. The 1/8-in. fuselage, 1/4-in., wing, and 1/8-in. basswood tail surfaces are very tolerant of abuse, and they provide sufficient weight to give good control feel. The weight of the model and reasonable streamlining give it good glide characteristics. A large wing also helps in this respect, providing sufficient maneuverability for basic aerobatics.

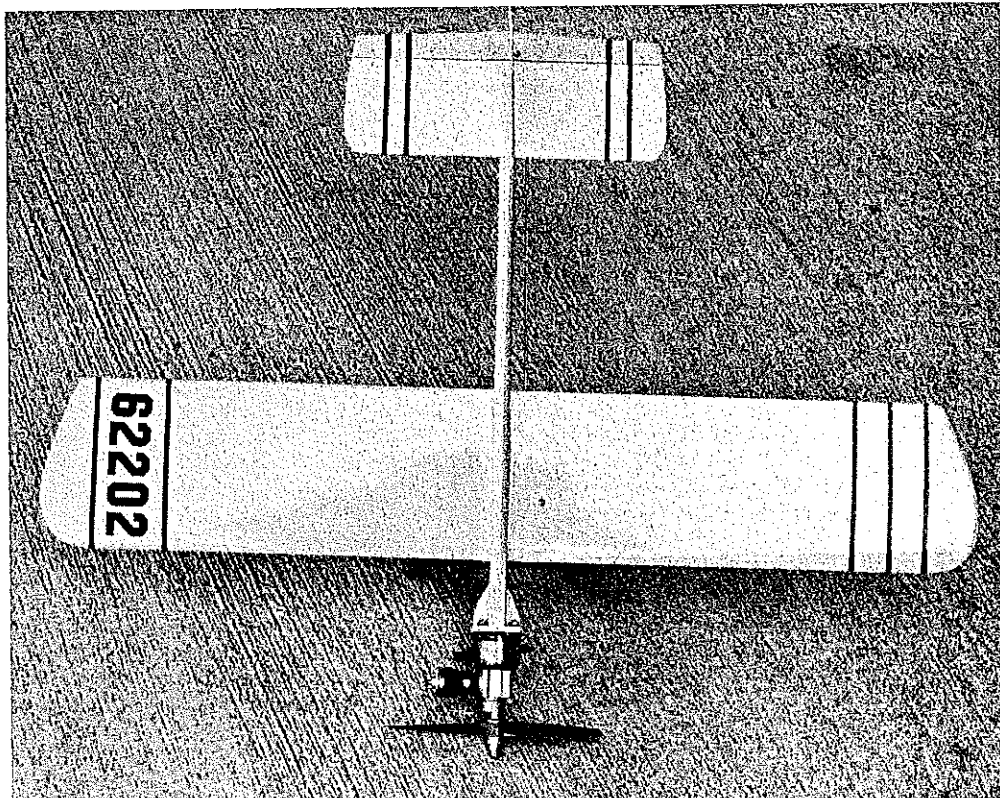
I believe that a landing gear is appropriate for an early model. An airplane with a landing gear helps develop the landing and takeoff skills required for racing and for bigger airplanes. It also provides an early opportunity to fly from smooth surfaces and to avoid the "fear of pavement" which sometimes develops when beginners fly exclusively over grass.

The Yellow Peril is not difficult to construct using hand tools, but a jigsaw, power sander, and high speed grinder (such as a Dremel Moto-Tool) make the job considerably easier. The use of power tools, epoxy glue and finish, and the desirability of cyanoacrylate (CyA) glues make adult assistance appropriate for a younger modeler. The advice of an experienced modeler can be helpful to a beginner of any age, both in constructing the model and flight preparation.

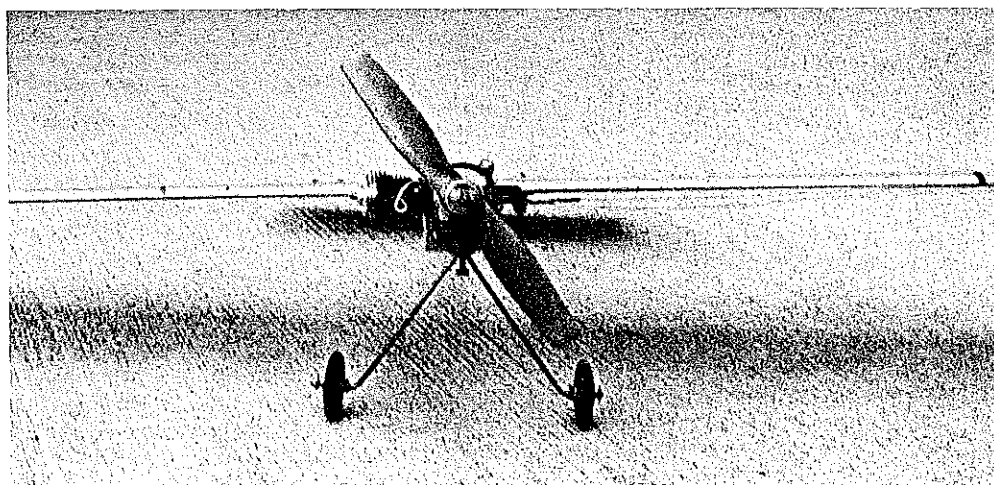
As with any model building project, it is important to stress the use of respirators and/or dust masks around toxic fumes and particles, protective gloves when handling solvents, and eye protection when working with power tools. It's best to learn the proper safety precautions early.



Our author's daughter, Eve, has greatly improved her pilot skills with the Yellow Peril.



Above: Large tail on this model provides good stability, while the center of gravity has been placed far enough aft to give it nice maneuverability as well. Below: With minimal frontal area and reasonable weight, it is an excellent plane for teaching the skills of 1/2A racing.



Construction is very straightforward. The wing is shaped from medium 1/4-in. sheet balsa. Airfoiled stock, available from Sig, is very easy to shape into a good wing section with hand sanding. A belt or disk sander speeds the process when using standard sheet stock. A proper airfoil with a round leading edge and a relatively sharp trailing edge is essential for good performance. The thin trailing edge of the wing can be reinforced with CyA glue (Hot Stuff, Jet, Zap, etc.).

The two pennies which serve as wing weight can be inset into the bottom of the wing to reduce drag. One penny is sufficient when using props with left-hand rotation or when flying exclusively on .008-in. x 35-ft. lines. The bellcrank mount and lead-out guide are added after the wing is glued into the fuselage.

The fuselage is cut from 1/8-in. medium

sheet balsa. The model, as drawn, is intended for either a Cox Black Widow or a Golden Bee engine and landing gear. If you use a Babe Bee engine, lengthen the nose by 1/4 in. Also add 1/4 in. to the nose if the landing gear is to be omitted. The wing cutout is best made with a jigsaw. If a jigsaw is not available, it is easier to shape the wing cutout if the fuselage is in two pieces. Draw a line the length of the fuselage that passes along the bottom of the wing opening, and split the fuselage along this line. Separate the two parts of the fuselage, cut the top part to fit around the wing, and then reassemble the two fuselage pieces.

The engine mount and balsa reinforcing pieces are installed next. If machine screws and nuts are used to mount the engine, the reinforcing pieces can be shortened vertically to allow access to the

MODEL AVIATION

YELLOW PERIL

1/2A ADVANCED TRAINER

Designed by DICK PERRY

ALL RIGHTS RESERVED

TIP WEIGHT
two pennies



ENGINE MOUNT - 1/8" plywood
Drill 1/16" and use 3/8" #2
sheet metal screws to
attach engine



Top

BELLCRANK MOUNT



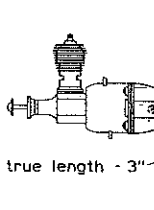
Bottom

1/16" plywood

Lengthen nose 1/4" for Babe Bee engine.
Lengthen nose 1/4" if landing gear is omitted.

WING
1/4" balsa

COX BLACK WIDOW



true length - 3"

PUSHROD - 3/64" dia

1/2 A nylon bellcrank,
attach with 2-56
bolt 3/4" long

TAIL SURFACES

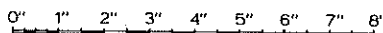
1/16" basswood

Drill stab and elevator (1/16" dia.) for
"figure 8" hinges of 1/2 A dacron
flying line.

LEADOUTS
.012 or .015 cable
or .015 solid

Leadouts should be in
holes 2 & 4 for training
and for .012" lines.
Use holes 1 & 3 for
.008" lines.

LEADOUT GUIDE
1/16" plywood



Balance point 1" to 1 1/4"
aft of wing leading edge

FUSELAGE - 3/8" balsa

LANDING GEAR
5/64" dia

To mount gear, drill 3/16" hole,
fill with epoxy, insert gear.

1" dia streamline wheels

SKID - 3/64" dia

ELEVATOR HORN
1/32" brass or
small Goldberg

back of the engine mount. Attach the mount with epoxy, or reinforce it with fiberglass tape for adequate strength. Drill 1/8-in. holes for the mounting screws, and put a drop of CyA glue in each hole for added strength. Sheet metal screws, #2 x 3/4 in., will hold the engine in place. Drill the fuselage and cut the landing gear slot as

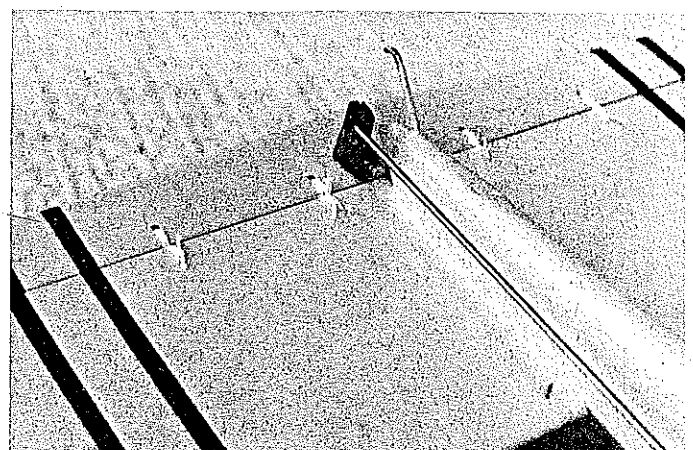
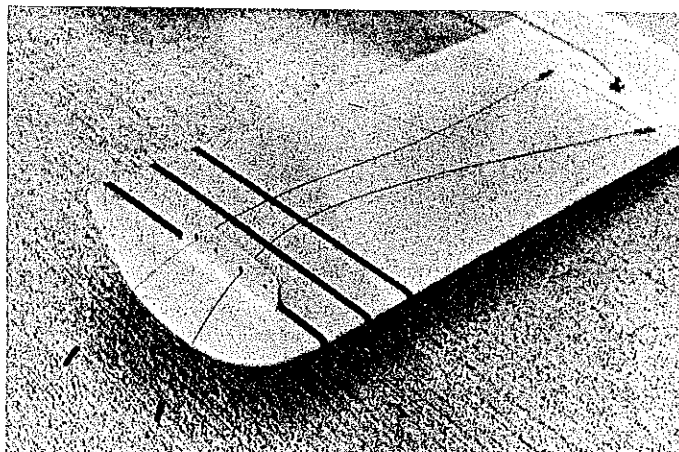
shown on the plan. Bend the gear wires to shape, and mount the gear by filling the hole and groove with epoxy and inserting the gear wires. The epoxy should fill the hole and mounting groove flush with the bottom of the fuselage.

Tail surfaces are cut from 1/8 basswood

sheet. The 1/8-in. holes for the sewn Dacron (1/2A flying line) hinges should be drilled before the stabilizer is glued to the fuselage. Attach the elevator after the model is painted.

Glue in the wing, and recheck alignment before the glue sets. Epoxy is recom-

Continued on page 172



Left: The lead-out guide has a selection of holes to suit the requirements of a particular flight. Adjustments allow a full range of line sizes and missions—from training to racing. Right: Sewn Dacron flying line hinges are easily made, flexible, and produce minimum hinge gap.

FULL SIZE PLANS

- No. 490 Weekender** \$5.75
 RC Low-wing sport flier for .20-size 4-stroke engine spans 47 1/2 in.
- No. 491 Yellow Peril** \$3.25
 CL Advanced trainer is all-balsa, spans 23 in., uses 1/4A power.
- No. 492 Circulator** \$2.50
 FF A-1 Towline Glider spans 51 in., uses fiberglass tail boom.

No. 193 Stiltfitter: CL Stunt model (McDonald) winner 1976, 1980, 1982 FAI World Champ	\$ 3.75
No. 239 Blue Bird: RC Ken Willard's formation plane, 4-channel, 10-power	\$ 3.75
No. 262 Crashmaster: CL Crash-proof trainer, two sizes—15-30- and 35-40-power	\$ 1.25
No. 299 Gee Bee Sr. Sportster: RC 1/2-scale by Halflke for .91 power. Prototype span 30 in. Two-and-a-half sheets	\$11.75
No. 302 Mini F-16: RC Sarpolus' .049 ducted fan sport flier for 2-channel. Balsa wings, tail, fuse structure	\$ 2.75
No. 310 1930 Fleet Biplane: RC Sport Scale for .35-.40, 4-channel. Wingspan 56 in. 1/4 scale. Two sheets	\$ 6.25
No. 314 Drake II: RC Ken Willard's flying boat for 3-channel, 1.5-power. Fly from land with removable gear	\$ 3.75
No. 326 Taylor Cub: RC Don Sruil's Schooyard-Scale for .049s, 2-3 channel. Spans 50 in.	\$ 3.50
No. 332 Zephyr: RC Small, 2-channel glider for hand-launch or tow, thermal, or slope soaring	\$ 2.00
No. 358 Plicca: FF Indoor Easy B Rubber-power contest-winner by W. Van Gorder	\$ 1.00
No. 386 Laser 200: RC Sport Scale replica of championship Aerobatic flier. Uses .40 power, 4-5 channel. Two sheets	\$10.75
No. 398 Gee Bee R-1: RC Halflke's latest 1/2-scale spans 75 in., weighs 15 lb., flies on .90 or larger. Four sheets (no doc.)	\$22.25
No. 414 Electric Sparky: RC electric-powered fun flier for .05 motor, 3-channel RC is scaled up 1939 rubber-power favorite	\$ 8.50
No. 422 Scooter: RC Two-Meter Sailplane has won Nats event in 1982, 1983, plus many other contests	\$ 5.50
No. 426 China Clipper: RC Fabulous, 74-in. span Sport Scale flying boat for four .10-size engines and 4-channel. Three sheets (no doc.)	\$20.00
No. 430 Ironside: RC Zippy little sportster for .10-.15 power and 3-channel RC	\$ 4.00
No. 433 Watts Up: RC Electric-powered glider for 2-3 channels, .035 motor spans 52 in.	\$ 4.50
No. 437 Kingfisher: CL Profile Carrier plane spans 40 1/2 in., uses .35 engine	\$ 6.00
No. 438 Crusler: FF Embryo Endurance rubber-power fun ship has big-model characteristics	\$ 2.00
No. 440 Cavalier: RC Old-Timer-like new design has a huge wing for slow, easy flights. For .35 power, 3 channels. Two sheets	\$17.25
No. 441 Hit Wit: FF Hot, small, lightweight competition ship for .15 power by designer Harry Murphy	\$ 4.75
No. 442 Lazy Duck: RC Big canard sport flier for 1/4A, .09 power, 2 channels. Uses many foam board parts	\$ 6.50
No. 444 Firebolt: RC pusher canard sport/pattern uses .40 pusher engine and 4-channel. Has swept-forward foam wings	\$ 6.50
No. 445 Nesmith Cougar: CL Scale model of popular homebuilt won at the Nats. Uses .21 engine, spans 41 in.	\$ 9.25
No. 446 Le Crate: RC Electric-powered sport flier for .05 motors, 3-channels. Two versions: parasol or cabin	\$ 5.50
No. 447 1/4A Miss America: RC Old-Timer 1/4A Texaco model for .049 glow, 2-channels	\$ 6.50
No. 449 Softie: CL Sport/Stunt plane for .40-size 4-stroke engine builds fast and easy	\$ 6.00
No. 452 Gee Bee Z: RC Quarter-scale spans 71 1/2 in., uses .90 power. Four sheets	\$16.00
No. 453 Smoothie Profile: CL Profile rendition of Bob Palmer's super-Stunter of the early Fifties for .35 power	\$ 5.50
No. 454 Sweet P-30: FF Neat, stick-and-tissue Outdoor Rubber P-30-class model is a contest-winner	\$ 2.00
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No. 464 Sundancer: CL 1/2A sport flier is all-sheet-balsa, cae use Tea Deo .049	\$ 7.00
No. 465 Blue Max II: RC Fun-fly sportster for .40-size engines spans 52 in. Lightweight structure	\$ 5.75
No. 466 Competitor: CL Stunter for .60 power has 850 sq. in. of wing area	\$ 2.50
No. 467 Alco Sport: FF Rubber Scale design won at the '83 Nats for designer Don Sruil. Wingspan is 26 in.	\$ 6.75
No. 468 Smoothie: CL Stunter for .29/.35 power. Design is based on hybrid Smoothie/Nobler	\$20.75
No. 469 Don Kichot: RC Sport Scale rendering of Polish homebuilt pusher. Spans 75 in., uses .40-size 4-cycle engine. Four sheets	\$ 6.50
No. 470 Stroker: RC Mid-wing sportster uses .40/.45 four-stroke engine, spans 50 1/2 in., tail-dragger	\$ 5.75
No. 471 Megaes Aetos: CL Profile Stunt trainer spans 54 in., uses .35/.40 engine. Flapped wing	\$ 5.50
No. 472 Paracraft: RC Craft has flexible, parafol wing, uses 3 RC channels, .60 engine	\$12.50
No. 473 Tucano: RC Sport scale turboprop trainer spans 66 in., uses .60/.75 engines. Three sheets	\$ 5.00
No. 474 Pacer 15: FF Nordic A-1 Towline Glider won the 1983 World Champs	\$ 4.00
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No. 476 Manta 250: FF competition 1/4A plane has manta-ray-shaped wing, spans 43 in.	\$ 3.25
No. 477 Mandarin: CL Sport Stunter uses sport .15 engine, spans 35 in.	\$ 3.00
No. 478 Buttercup: RC Cute, ellin sportster uses micro 2-ch. RC or pulse-rudder. Spans 27 in., for .020-.035 power	\$11.00
No. 479 Four-Stroke Rooster: RC Sport/Aerobatics ship has 1920s styling, uses .90 4-stroke engine, spans 85 in. 2 sheets	\$ 6.00
No. 480 Ridiculous: CL Fabulous competition Stunter has 550 sq. in. wing area, flies on TD .049/.051, spans 47 1/2 in.	\$ 7.00
No. 481 Europa: RC Sailplane for FAI competition has fiberglass fuselage, foam wings, wing flaps, stabilator tail. Spans 110 in.	\$ 7.50
No. 482 Golden-Ager: RC Sport/Aerobatic model looks like a Golden Age sportster. For .60 engines, spans 62 in.	\$ 3.00
No. 483 CGS Hawk Ultralight: FF Outdoor "Gas" Scale plane uses CO-2 power, spans 29 in.	\$19.75
No. 484 Aeronca K: RC Quarter-Scale of '30s lightplane spans 9 ft., uses 1.2 cu. in. 2-cyl., 4-stroke engine, weighs 1 1/2 lb. Three sheets	\$ 1.75
No. 485 Hawker Hunter: CL Fun-scale of British jet fighter has 18 1/2-in. foam wing, uses 1/4A power	\$ 8.25
No. 486 Miles-Atwood Special: RC Sport-Scale of Golden Age air-racer uses .21 engine, spans 45 in.	\$10.00
No. 487 Cap 21: RC Scale Aerobatic plane for .40-size engine spans 62 in. Two sheets	\$ 5.00
No. 488 MB-7: FF Jumbo Rubber Scale of 1920-era Thomas Morse Scout biplane spans 37 in.	\$ 5.00
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tionals in the previous week. The top three in both events were identical. Milos Malina also scored the fastest times in both events.

The Australian team certainly deserves its win since its team members were well-prepared and exhibited a strong team spirit. These Aussies race hard and play hard; they will pose a formidable threat in future World Championships.

The U.S. team fared quite well in spite of the adversity caused by the loss of both models flown by Dave Shadel. Ernie Nikodem must be commended for his quiet determination which netted him 5th place. Many minor problems plagued Tom Christopher, and his Caudron 561 racer shows excellent promise under more favorable conditions. Gary Hover also did an excellent job as team manager in representing the U.S. in all official functions. He also worked hard in watching each U.S. flight and providing valuable information on shaving off a few seconds.

The U.S. was the clear underdog due to our lack of racing experience with no-nitro fuel and mandatory silencers. However, this World Championships has set a fire under many top U.S. Pylon pilots. The experiences from this event, plus that gained in future FAI Pylon Races, will produce a very competitive team for the next World Championships. We look forward to, and will work hard toward, this next event, wherever it may be.

Yellow Peril/Perry

Continued from page 96

mended for this joint. Use a sanding block to ensure that the stabilizer mount is parallel to the wing, then glue on the tail surfaces. An epoxy finish will last as long as the airplane, and Yellow Peril can carry the weight of a color finish.

Mount the elevator using "figure 8" hinges of 1/4A Dacron flying line with drops of glue to hold the knots. Don't use CyA glue for this unless it is the thick type; thin CyA glue will wick its way along the thread and cause the hinge to be stiff. Mount the control system and form the lead-outs using .012-in. to .015-in. cable or .015-in. solid wire. Add the 1-in.-dia. streamlined wheels, and ensure that they turn freely.

Yellow Peril flies best with the extra power available from a Cox Black Widow engine, although a Babe Bee is quite acceptable. The Cox Gray 5 x 3 prop or the Tornado 5 1/2 x 3 is a good prop for the Black Widow. Use a Tornado 5 x 3 or Top Flite 5 1/2 x 3 for the Babe Bee. For racing, the Tornado 5 x 4 is excellent.

Yellow Peril flies well on .008-in. or .012-in. x 35-ft. or on .008-in. x 42-ft. lines. For training, use the second and fourth holes in the lead-out guide. For racing, the first and third holes provide a little higher speed, and can be used for .008-in. lines.

If you build your own Yellow Peril, I hope you enjoy it as much as we have.