



# LYNX!

By O. F. W. FISHER

BIPLANES HAVE ALWAYS HAD A SPECIAL APPEAL IN C/L STUNT AND MANAGE THAT EXTRA PERFORMANCE WHEN REQUIRED.

► The Lynx MK 15 biplane is the end product of steadily developing the stunt C/L biplane theme over a period of fourteen years. The negative stagger configuration was chosen as the designer feels that distinction and general appearance is enhanced; also there are certain structural advantages. Aerodynamically it is unimportant as negative stagger while flying upright becomes positive stagger when inverted.

Lynx bipes have been flown in open stunt competitions with considerable success and on a couple of occasions, gave a good account of themselves in the Gold Trophy at the British Nationals. The O.S. 35-powered Lynx Mk 6 came 7th at the Nationals in 1958, and the Mk 15 placed well up the field in 1964. Original Mk 15 is powered by a Glow Chief .35. All up weight works out at 2 lbs 10 oz.

In spite of its 593 sq. in. of wing area, and thanks to its biplane configuration, the Mk 15 is compact, strong and easily transportable. It is spectacular to watch in the air and its performance is only governed by its pilot. As well as being a first class competition performer, it is ideal for demonstration flying, and general display work.

Construction is quick and ultra simple throughout; but the completed model is strong and, like most simple things, very effective.

*Fuselage:* Cut the two fuselage sides from medium soft 1/4" balsa sheet and snap together to ensure identity. Sand paper the outer faces and mark inner ones with the bulkhead positions. Cut out rectangular 3/16" medium/soft sheet bulkheads. Assemble over the top view starting with the parallel section from F6 to the nose. Ensure that the grain in all bulkheads runs vertically on bulkheads F1, F3 and F6-9 and runs across fuselage on the other bulkheads. This is very important. Use a set square and check (Continued on page 40)

Top—negative stagger for the wings and the twin rudders add to its businesslike appearance. Center—thick wing section improves L/D for better performance. Bottom—short coupled design adds to performance in the maneuvers that require just a little extra to complete.

Along with the past Year Books and special model supplies he always offers for sale when a new book is introduced, Frank this time has listed a Rubber Power Pack consisting of the basic parts from the new JASCO's newcomer kits. These parts—12" x 9/16" O.D. plastic tube, 7" dia. plastic prop, 2 special plastic wing clips and 2 wooden buttons—sell for 60¢ and should have no end of possibilities for beginning youngsters.

We'd like to hear more about those new Jasco kits, Frank.

\* \* \*

### BEGINNER'S WORKSHOP KIT

Again we give a tip of the hat to Paul K. Guillow, Inc. for filling another need of the beginning modeler. Too often a newcomer does not have all the tools and accessories necessary to build a model, a fact frequently overlooked by more experienced modelers who have acquired such equipment over the years. Now Guillow's has come up with all the basic tools and accessories needed to build simple rubber powered flying models, in one convenient package.

Selling for \$2.29, this "Beginner's Balsa Model Workshop Kit" contains 20 different items. These include cement, dope, thinner, brush, modeler's knife and razor blade, steel straight pins, 7" x 29 1/2" workboard, cutting board, wax paper, sandpaper, clay, additional rubber power fittings and a detailed model building instruction manual.

\* \* \*

### POCKETFULL OF INFORMATION

America's Hobby Center, Inc. has just reprinted their 18th edition of Bernard Winston's Gas Model Plane Construction Booklet. This 64 page, pocket-sized mini book contains hundreds of illustrations and simplified instructions covering FF, C/L and R/C. Among the subjects cov-

ered in this inexpensive how-to-do-it instruction manual are: model structures, basic glue joints, mounting engines, mounting accessories, sanding and finishing, doping, covering, wings, fuselages, tail surfaces, assembling and repairs.

The handy booklet may be obtained by sending 25¢ to America's Hobby Center, Inc., 146 W. 22nd St., New York, N. Y. 10011. Please say that you saw this mentioned in M.A.N.

\* \* \*

### FREE FLIGHT UNDER PRESSURE

Bob Stalick, writing in *Playboy Patter*, newsletter of the Willamette Modelers Club, Inc. in Oregon, has some good advice on using pen bladder pressure in free flight models:

"One of the major arguments for pressure fuel systems is the more consistent performance which can be obtained over the conventional suction systems. Other benefits include: more positive fuel shut-off and more power—rpm (with an enlarged venturi.) Pressure is available from two sources—engine pressure and pen bladder pressure. In my experience pen bladder is to be preferred for its cleanliness.

"*Making the Fuel Tank.* First it will be necessary to purchase a length of 1/8" brass tubing, a package of Kurth's 1/2 A pen bladders and balloons, some fine copper wire and some surgical tubing. Next cut off a 3/4" length of tubing and file the edges smooth so they do not cut the bladder. Slide the bladder about halfway onto the tubing. Wrap a half dozen or so loops of copper wire around the bladder and tubing and pull tightly. Using a pliers, grasp the two ends of the wire and twist to hold it securely. Slide the penny balloon on the bladder and wrap a couple loops of wire around the bladder and the tube repeating the above procedure. Slide the

surgical tubing over the remaining portion of the brass tube and your tank is ready.

"*Installation.* Now, it is ready to install on your model. There are several ways to do this. First, the bladder tank can be fastened to the engine intake pickup tube using the surgical tubing—running the tubing through the timer holder. The tank can be allowed to hang underneath the timer and the plane. If this seems unsafe or insecure (which it isn't) a couple of rubber bands can be wrapped around pins glued to the fuselage side, holding the pen bladder to the fuselage side behind the timer.

"For the sake of streamlining, the tank may be installed inside the fuselage or nacelle, behind the timer, with the fuel tubing running through an opening beneath the timer. This is the system the author prefers. Replacement of tanks is more of a problem, unless a large enough opening is allowed, otherwise the timer must be removed to gain access to the tank. It will then be necessary to fuel proof the inside of the fuel tank compartment in case there is a leak in the bladder or fuel line. As surgical tubing tends to rot, it is wise to replace it as soon as it shows signs of softness."

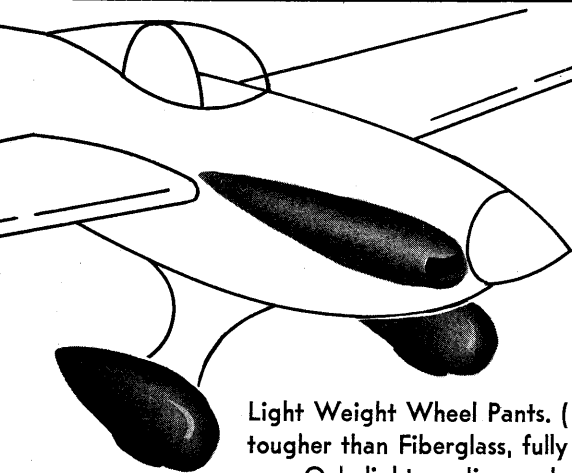
Next month we'll conclude Bob's remarks with his tips on the actual use of a pen bladder pressure fuel system.

### Lynx!

(Continued from page 17)

alignment regularly as it is essential that this should be perfect. Draw in the tail of the fuselage and fit F9, followed by F7 and F8. The engine bearers are cemented against the inside of the fuselage sides. The engine should be mounted with 1° right side thrust built in. Smear the inside of the engine compartment with fuelproof balsa cement.

The fuel tank should be of 100 c.c.



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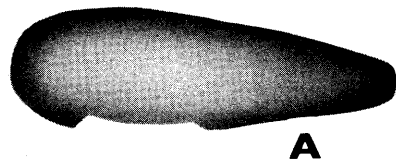
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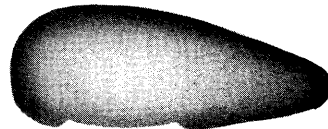


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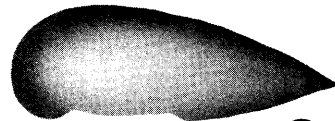
## The Final Touch



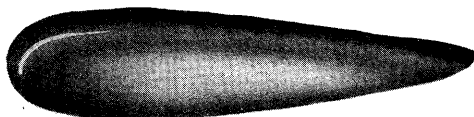
A



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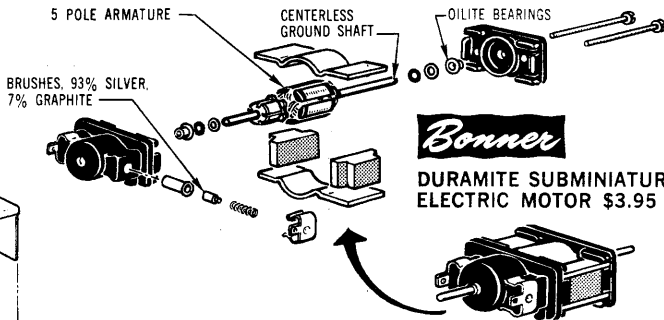
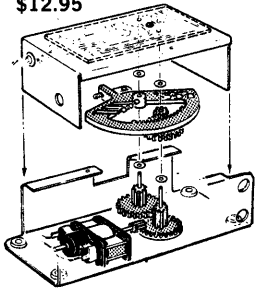


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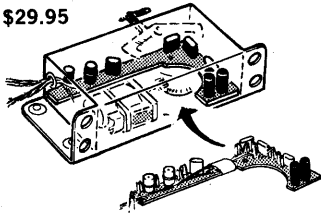
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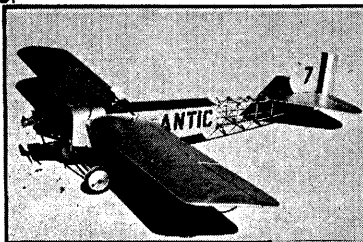
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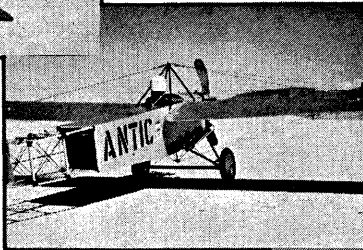
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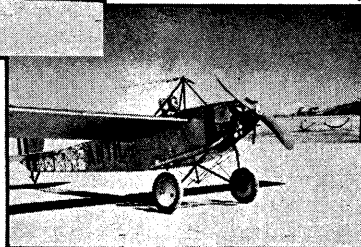
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(approx. 3 ozs.) capacity and preferably be of the baffle/pressure/wedge type. The feed tube must of course be on the same level as the carburetor intake.

The fiber or bushed steel ball-crank is mounted on a 1/8" plywood platform. Use a 1/8 white steel pivot bolt, washers, and lock nuts. Lead-out wires are 18 s.w.g. Movement of the control mechanism must be perfectly free. Cut slots in the fuselage sides for lead-out wire egress. Allow for the 0.8" rearward rake of the lead-outs. Top and bottom of the fuselage is sheeted with soft 1/4-grain 3/32" sheet balsa.

Undercarriage: 1/8" dia. piano wire is located in the fuselage by binding to two stub engine bearers with carpet thread and cementing securely.

1" dia. tailwheel is held in a 14 s.w.g. "U" piece, the open ends of which are bound to scrap uprights and bound in place. Bend the last 1/8" of the wire uprights into the balsa uprights to prevent the wire pulling downwards.

Tailplane: This unit is cut from a piece of rectangular medium/hard balsa 18"x3". Section should be as per the side view on the plan. Outer ends of the tailplane should be cut so that 1/2° fin offset is built in.

The elevator is cut from a piece of rectangular medium/hard balsa 17.75" x 2.5" and cut to section as per side view on the plan. Steel control horn is affixed to the elevator with two sets of 8 blind nuts, bolts and washers.

Elevator is attached to the tailplane by six heavy duty tape or tube and wire hinges, located three on either side of the fuselage. Elevator movement should be 40° up and down, and be ultra free.

Fins are built up from 3/8" x 3/16" soft balsa and shaped to airfoil section. When covering, cement covering material to inside cross member of each fin which abuts tailplane end.

Mainplanes: Pin down lower half of 1 1/2" x 1/16" trailing edge and lower rear 1/4" x 1/4" main spar. Fit 3/32" ribs in position followed by 3/8" x 3/8" leading edge, top rear 1/4" x 1/4" main spar and top half of 1 1/2" x 1/16" trailing edge; sequence is important. Care must be taken to ensure that the leading edge is parallel to the plan.

Remove pins and fit top and bottom front 1/4" x 1/4" main spars. Sheet top of center section and two outer panels on lower wing with 1/16" sheet. Sheet underside of center-X of upper wing only with 1/16" sheet. Bind 1 oz. line counter weight, in used balsa cement tubes, in the outer wing tip of both upper and lower wings.

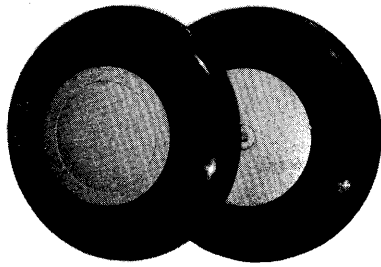
Give wings and fins a coat of clear dope and sandpaper to ensure a smooth finish. Select closely woven light weight nylon covering material. Cut a panel to shape with fair "overlap" and "weave" spanwise. Soak in cold water, lightly squeeze out excess moisture; so that covering is evenly moist, but does not drip. Cover lower surfaces of wings first. Pull wet nylon into place over structure, ensuring weave is "span-wise." Pin lightly in position and dope through from the top surface. Remove pins when half dry and dope through pin holes, etc., pulling out creases.

Assembly: Fit the tailplane in the slot at rear of fuselage and connect push-rod before sheeting rear section. Cement lower wing in position, checking that it is parallel to tailplane. Next fit 3/16" hard balsa, airfoil sectioned, inter-plane struts followed by upper wing. The 1/16" ply line guide is cemented to outside of the inboard inter-plane strut. Check its position very carefully; cement the tail fins on ends of the tailplane checking offset and that they are parallel to each other. Use a set square to ensure perpendicularity to the tailplane.

Finish: Give nylon surfaces three coats of heavy clear dope and one of fuelproof

SEMI PNEUMATIC TIRES  
NYLON BEARINGS

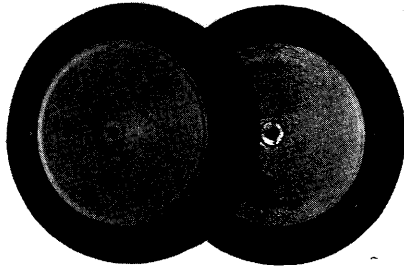
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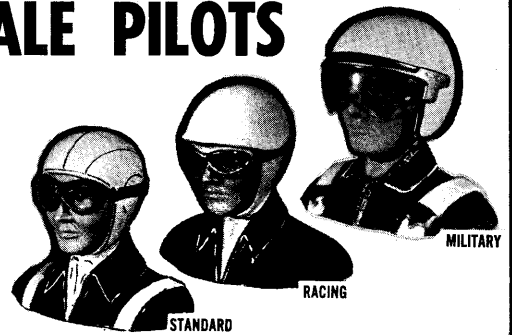
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Wood surfaces have two coats of sanding sealer and one of clear dope, which are sanded between coats, followed by two coats of color dope and one coat of fuel-proofer. Clear dope mainplanes before assembly, balance of finish is done after assembly.

**Flying:** Make up a set of braided steel .015 lines 61 ft long. Check that all controls are absolutely free. Carry out first flights on a calm day. Take off down wind. If your motor is not fully run-in, lacks power, or is unreliable, shorten wires. Use a 10 x 6 or 3-blade 9 x 6 propeller for .35 class motors, 10 x 5 for .29 and a 9 x 6 for .19 motors.

Finally, I should like to take this opportunity to wish all Lynx builders as many happy hours flying as I have had with the Lynx 15 and its prototypes, and I feel sure that you will find the flying of this stunt bipe a unique and satisfying experience.

## R/C News

(Continued from page 29)

from takeoff until landing.)

The main point of the message is, that with any radio equipment, but particularly with proportional, the best receiver antenna is a vertical wire whip.

One of these similar messages came from the granddaddy of model R/C equipment, Vern Macnabb of Citizen-Ship.

"Probably the first thing anyone will hear when the subject of proportional systems is being discussed is the term 'fail safe'

or 'glitch.' It seems that when you are flying proportional, sometimes, for no apparent reason when the plane is not very far out, it will go into 'fail safe' which is an indication of the fact that the receiver lost the transmitted signal . . .

"Even more strangely, this seldom occurs at extreme range, but always occurs when the plane is considerably inside its reliable range. It simply does not make sense.

"The answer is that it is not a function of sensitivity, or power, although increased transmitter power could help—and some of the more elaborate transmitters have gone up to one watt. It is caused by phase shift interference from signals traveling by different paths and cancelling each other when they get to the receiver. The most common example of this that we know is selective fading which we hear on distant broadcast stations at night. This is caused by a ground wave and a sky wave, which has to go a greater distance, coming in 180° out of phase and cancelling out the carrier, with the net result that the signal is distorted.

"How this occurs so close to a model plane is a little hard to understand, but apparently a signal going out from the transmitter and hitting a car and bouncing off, or maybe traveling a considerable distance and hitting a metal signboard or electrical tower or wires and bouncing off will arrive at the receiver 180° out of phase from the transmitted signal. Obviously, this signal will be weaker than the transmitted signal, and therefore the condition is most likely to occur when the transmitter antenna is pointed at the plane

and would be particularly bad if the plane also had a straight wire antenna that was parallel to the fuselage. In this case, the reflected signal and the transmitted signal might be very close to the same strength and cancel each other out giving 'fail safe.'

"From the experiments that we run, the best solution for preventing this is the proper installation of your antenna. Apparently the best installation is a vertical antenna in which the lead from the receiver runs back through the fuselage to about 6" from the trailing edge of the wing, and then a 30" stiff vertical wire is erected at this point. We never have had a 'fail safe' with this particular installation. The next best installation is to run the antenna from the receiver directly out through the side of the fuselage to one end of the stabilizer, up over the top of the fin, and terminating at the other side of the stabilizer. The third best system (*The one most of us use*. R/C Ed.) is to run the wire back through the fuselage to the rear edge of the wing, up to the top of the fin, and then at right angles to one corner of the stabilizer.

"Installations in which the wire is run down the length of the fuselage or simply run up to the top of the fin are INADEQUATE and should NEVER BE USED."

So there! Don't say we didn't tell you. Incidentally, many old timers will recall that in the days of low powered and unreliable R/C gear, one of the prime requisites was a vertical whip antenna. Around and around we go!

We also noticed that the target drones

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