

RCM PRODUCT TEST

Top Flite Models FRESHMAN



The Freshman, manufactured by Top Flite Models of Chicago, Illinois, is designed for four channel radio operation, .29 to .40 power, and is an easy to build, easy to fly basic trainer.

Aside from the label which is dominated by a handsome rendition of a red, white and blue Freshman, the box in which our kit arrived was no different than most. However, what we found inside the box was a different story. All parts were carefully arranged and then protected from damage by layers of those little half spheres of styrofoam. Balsa, hardwood and plywood were top quality, to say the least. Die-cutting of the balsa - - - superb - - - most pieces were falling out of the sheet. Die-cutting of the plywood not quite as good; took some cutting to remove the parts from the sheets. Pre-shaped material such as wing leading and trailing edges - - - perfect. Although everything up to this point rated pluses, what was most impressive to us was the completeness of the kit: 4-40 screws and blind nuts for engine mounting; nylon nose gear mount with screws; control arm and spring steel nose gear strut; wire pushrods with housing for throttle and nose gear operation; formed wire

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IMPRESSIONS	E	G	A	F	P	IMPRESSIONS	E	G	A	F	P
Packaging	●					Pre-Shaped Parts	●				
Plans		●				Parts Match to Plans		●			
Written Instructions	●					Overall Parts Fit		●			
Quality of Hardwood	●					Ease of Assembly	●				
Quality of Fiberglass			NA			Fidelity to Scale			NA		
Other Materials	●					Flight Performance	●				
Accessories	●					Overall Appeal		●			
Die-Cutting		●									

E=Excellent / G=Good / A=Average / F=Fair / P=Poor

SPECIFICATIONS

Name	Freshman
Aircraft Type	Basic Trainer
Manufactured By	Top Flite Models, Inc. 1901 N. Narragansett Ave. Chicago, Illinois 60639
Mfg. Suggested Retail Price	\$44.95
Available From	Both Mfg. and Retail Outlets
Mfg. Recommended Usage	Basic Powered Trainer
Wing Span	48 Inches
Wing Chord	10 1/2 Inches
Total Wing Area	504 Square Inches
Fuselage Length	35 1/2 Inches
Radio Compartment Dimensions	(L) 14-13/16" x (W) 3 1/8" x (H) 2 3/4"
Wing Location	Shoulder Wing
Airfoil	Semi-Symmetrical
Wing Planform	Constant Chord
Dihedral	1 1/4 Inches
Stabilizer Span	18 Inches
Stabilizer Chord (incl. elev.)	5 1/2 Inches
Total Stab Area	92 1/4 Square Inches
Stab Airfoil Section	Flat
Stabilizer Location	Mid-Fuselage
Vertical Fin Height	6 1/4 Inches
Vertical Fin Width (incl. rud.)	5 1/2" (Avg.)
Mfg. Rec. Engine Range	.29-.40
Recommended Fuel Tank Size	6 Ounce
Landing Gear	Tricycle
Rec. Number of Channels	4
Recommended Control Functions	Rud., Elev., Throt., & Ail.
Basic Materials Used In Construction:	
Fuselage	Balsa, Ply & Hardwood
Wing	Balsa, Ply & Hardwood
Tail Surfaces	Balsa
Hardware Included In Kit	See Text
Plan Size	48" x 36 1/2" (1 sheet)
Building Instructions on Plan Sheets	Yes
Instruction Manual	Yes (23 pages)
Construction Photos	Yes (drawings)
Kit Includes	Die-Cut & Shaped Parts
Mfg. Rec. Flying Weight	Not Given
Wing loading based on rec. flying wt.	Not Given

RCM PROTOTYPE

Weight, Ready To Fly	60 Ounces
Wing Loading	17.1 oz./sq. ft.
Covering & finishing materials used	Super MonoKote, Pro Trim Tape
Engine Make and Disp.	Testor-McCoy .35
Muffler Used	Sanders Closed Front
Radio Used	Hobby Lobby
Tank Size Used	6 Ounce

trol, there would be no limit as to the maneuvers you could perform. The one-ounce fuel tank lets you fly gives you 6 to 8 minutes of fun filled, fast flying. Be ready when the engine quits to head for home. The glide is fast so keep up the air speed right through the landing to final touch down. If it is slowed down too much, it will stall right now.

This Chipmunk is a fast fun/sport aircraft for the quick reflexed flyer. The faster it went, the better it flew. We used a Cox Gray 6/3 prop and Carl Goldberg's Magnum Power 25 Glo Fuel in our prototype. □

RADIO SPECTRUM

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sinking up to 500ma of current, and if additional drive current is needed, a driver stage must be added as suggested by Figure 4A or 4B. This circuit will fit on the existing circuit board with only minor modifications, and a one-piece case assembly will be needed.

Figure 5 is another arrangement which will provide a reverse function at the expense of a separate reverse motor supply. This concept would be desirable in an application which required a limited reverse feature, and a small separate battery pack would provide a sufficient reverse capability. This circuit would also fit on the existing circuit board, which was the main reason for using two pairs of output transistors. As shown, this circuit could be expected to provide about 15 amps of stall current with 400ma of total base drive current, and the voltage loss would be about .3v into a 10 amp load. Any combination of battery voltages could be used as long as the total voltage of both supplies is between 6.0 to 18.0 VDC.

Figure 6 is a combination of examples 4 and 5. This arrangement could be assembled using the existing circuit board, but it would require hanging the components R12, C7, Q3, and D1 from the one-piece case assembly, and using unsupported solder joints.

In defense of the Darlington, it provides high current with only one large transistor that needs to have a heat sink. Sometimes volume is the major consideration.

☆☆

See you next month. □

FRESHMAN

from page 19

... main gear with mounting straps and screws; wheel collars for all three wheels and for retaining the nose strut in the mount; screw eyes for securing the fuel tank in position with rubber bands; hardwood servo tray rails with plywood scabs for wing and fuselage; nylon wing mounting screws with

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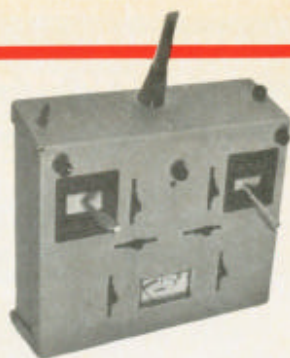
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tap; pre-formed aileron torque rods with nylon horns; poly hinges; wire and wood pushrod material for rudder and elevator; nylon control horns with screws for rudder and elevator; and metal snap links for all needed points. But - - - that's not all - - - in addition, there was a full size plan sheet, decal sheet, and a 23-page, fully illustrated construction manual that covers virtually every detail involved in putting the Freshman together.

Assembly of the Freshman was pretty rapid and pretty easy. This was due to the outstanding construction manual and the fact that little time had to be expended in cutting, sanding, or shaving of parts to get them to fit. Although we assembled our Freshman in strict accord with the manual, construction can be speeded up somewhat by building the wing and fuselage simultaneously. This is feasible because the plan sheet is only required for wing assembly. Speaking of wings, this is the only place where we ad libbed; we substituted 1" chord conventionally shaped ailerons for the 3/4" chord triangular shaped ailerons provided in the kit. After having observed that another Freshman equip-

ped with stock ailerons gave very, very poor response to aileron commands, we felt the change to the larger ailerons was desirable, if not mandatory. Anyhow, after a couple of weeks of sneaking a few hours here and a few hours there, our Freshman was eventually completed. We covered ours with white Super MonoKote and then "gussied" her up a bit with red and blue Scotch brand plastic color tape edged with Pro silver trim tape. The end result - - a pretty good looking airplane, not quite as pretty as the one portrayed on the kit box but, nonetheless, not bad at all.

Although "antsy" to fly our Freshman, Mother Nature intervened and grounded us with three continuous days of lousy weather. Eventually though, along came a fairly decent day, 10-15 miles per hour wind, partial overcast and fairly mild temperature; so - - to the field we went. Since we had some misgivings about the ability of our McCoy .35 to haul the Freshman, we ran a few fast taxi tests. Well, that .35 made the Freshman accelerate like a dragster. We believe that a good .25 would fly the Freshman with no trouble at all. We then taxied her to

the edge of the field, turned her into the wind, started advancing the throttle, and at about half throttle, she lifted off and headed for the clouds. Once we had her at a comfortable altitude, we tried hands-off flight; just a shade of down elevator trim and she was all set. Although fairly gusty upstairs, the Freshman flew just great - - did everything we asked of her. About the only things we didn't try were spins, snap rolls, and knife edges; we figured we'd try those at some later date. After some four or five minutes of tooling around, we closed the throttle to a fast idle and entered the pattern. Before turning onto final, we closed the throttle and headed her for the landing area. Over the fence she came at a fast walk. We then eased in a little more back pressure on the stick and let her settle in on the main gear with hardly a thump; landing roll 'bout 10-15 feet. Our reaction to the first flight? A perfect first ship for the beginner and a real fun airplane for the more experienced. Also, if our Freshman is any criterion, then the Freshman is due to become one of the most highly regarded trainers of all time.

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Yes, sir! The Freshman is a real fun airplane — fun to build, fun to look at, and more importantly, real fun to fly.

Note: The first run of Freshman kits had a 2 1/2" nose gear included and should have had a 3". The plans called for 1 3/4" nose wheel and 2" main wheels. These should all be 2 1/4". If your kit has the short nose gear, just contact Top Flite for a replacement. □

SOARING

from page 18/15

cords between the two servos.

Once the lead weights are crimped and are in their final position, use a drop of epoxy to ensure no sliding of weight to loosen adjustment. If you use Don's idea on your spoilers, I would suggest you get the feel of sailplane movement at an altitude where recovery is possible. Spoilers extended at different heights can be a handful for the inexperienced pilot.

Howard Short of Southern California,

uses a novel switch arrangement on his "Double Ugly" sailplane.

He uses monofilament line for his "Cats Whisker" switch actuator. A monofilament line is passed through a small hole on either side of the fuselage. The knob of the switch has a small hole drilled in it and the line is passed through this hole and knotted on either side. Pull the whisker on the left side — switch is on. After flight, pull on right — switch is off. Very clever and drag-free.



Howard Short's "Cats Whisker" switch actuator. See text for details.



100" RC ASW 15 held by Robert Tede alongside his full size ASW 15.

Robert Tede of Lake Tapawingo, Missouri, flies his 100" ASW 15 R/C sailplane on his lunch hour during the week. He then forces himself to pilot his 1:1 scale ASW 15 on weekend junkets. Both models are constructed of fiberglass and Bob holds the international F.A.I. Silver Badge #3108.

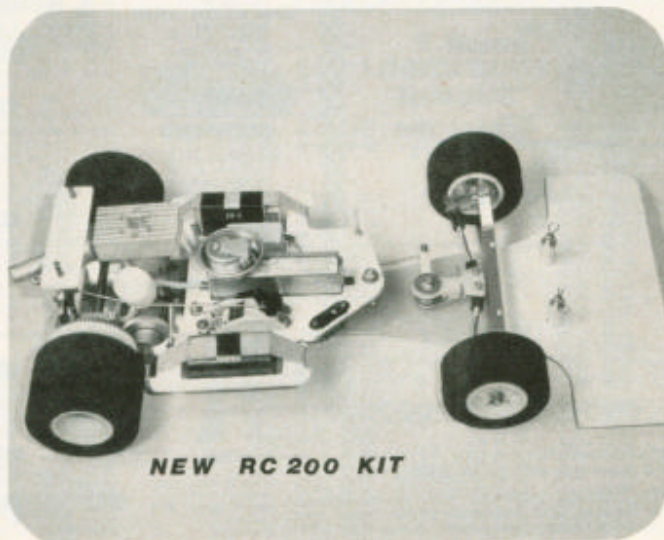
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