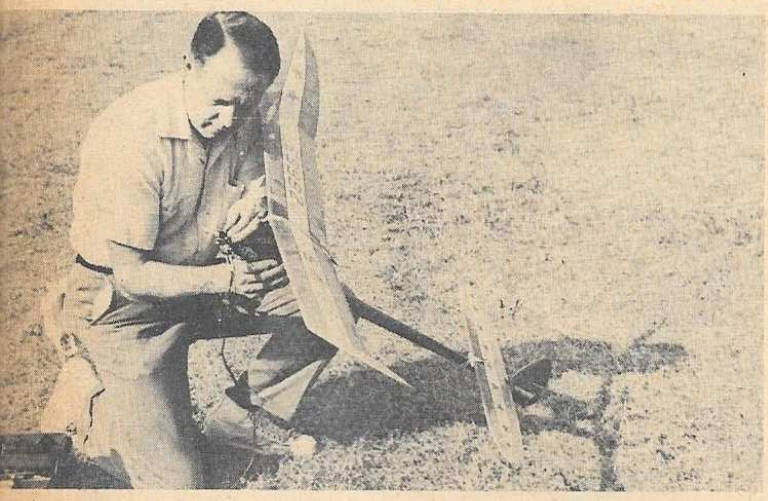
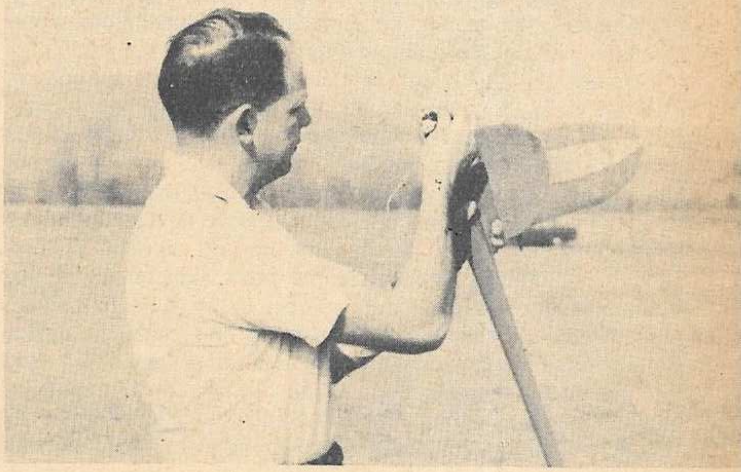
Pix for this article excellent course for successful free flight—photo above shows best method of starting engine, good fuel, hot batteries.

After engine is started comes the one factor separating winners from losers, tune the engine until properly peaked, then back off half a turn.



Starting batteries disconnected, now we try engine for surge—stand on end thrust rapidly upward, note if engine continues without faltering.



URANUS

by OSCAR MAYES

1/2A CONTEST WINNING FREE FLIGHTER APTLY NAMED FOR THE GOD WHO WAS THE PERSONIFICATION OF HEAVEN AS THIS IS THE ONE PLACE THAT IT HEADS FOR.

► The Uranus is a high performance contest aircraft designed by and intended for the serious free flighter. The construction is fairly simple and any average modeler can manage it. Trimming must be precise and gradual. If you are inexperienced but have flown some free flight, the Uranus will offer you a thrilling challenge and reward; as it is a very stable and exceptionally fast model.

At the end of the 1962 contest season, the Uranus was conceived; when we realized that in order to compete with the high caliber ships brought about by the new rules, it would be necessary to have a design that would climb very well and still have a slow flat glide. To obtain this, we decided on a wing area of approximately 275 square inches, an airplane with little or no frontal resistance and

lightly loaded, coupled with an airfoil with which we have had good experience and the Uranus exceeded our expectations.

Such functional extras as elliptical surfaces, rudder aft of stab, assymetric fuselage and an NACA 4407.5 airfoil were employed. These all helped to obtain the streamlining, looks and performance we wanted. The airplane also had be rugged for our fields are small and our trees large and numerous.

At the beginning of the 1963 season, the Uranus saw action, and in its first contest with poor weather, and 75 contestants, it was the only model to max out that day. Later in the season, it was to repeat that feat; only this time against a field of 85 contestants. This speaks well for the consistency of the design. The FAI version (still in testing) now holds the Junior National Record for my son, Jim.

To date the Uranus has taken nine trophies and five merchandise awards out of a possible sixteen places. Flown in the late evening, near dark, it consistently averages 3:20 to 3:40 on eight to ten second engine runs. This is because of its flat glide and surprisingly fast climb; due in part to the fine power supplied by the Cox Tee Dee .049. This power is absolutely necessary for good transition from power to glide in all contest ships.

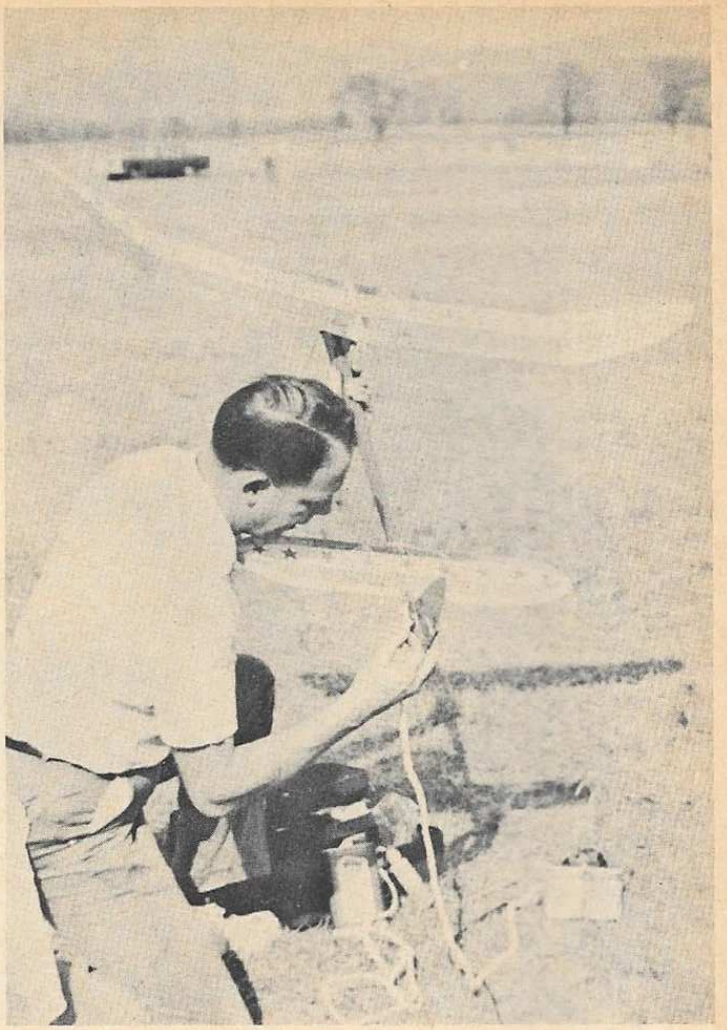
I want to thank Joe Wagner, a fellow modeler, for his helpful advice. His knowledge helped me greatly.

CONSTRUCTION: There is nothing unusual about the construction of the model that the average modeler cannot cope with. The geodetic wing is really quite simple, a little extra work, but it will pay off in strength and a warp free structure in both wing and stab. The side mounting for the Tee Dee .049 is clean and functional, yet is one of the strongest methods there is for mounting this type of engine.

This airplane should be built entirely of contest balsa and our preference is "SIG." Your model, if built according to instructions, and of SIG Contest Balsa will weigh approximately 6½ oz. and be very rugged. Choose your wood carefully for lightness and strength.

Cut out the two sides for the fuselage, add longerons. Cut out balsa filler block #1 and glue to the right hand side. Fit first the three fuselage formers that hold motor mount and pylon in position. Next, cut motor mount out of 3/16" hardwood, perferably birch or maple. Any lumber yard will rip out a piece of maple to this thickness. Drill motor mount to receive motor and cement a brass plate using contact cement to the back side of the motor mount. Solder the four nuts to this brass plate to receive motor bolts. This makes a clean front end, with the motor well faired in, glue this assembly to filler block #1 and into the other three formers using a white glue. Add filler block #2 and #3, then remaining formers. Fit the gas tank (Perfect #17). Glue sides together inserting top, bottom and pylon. Let this dry for at least 24 hours before carving the fuselage round to streamline. Sand pylon smooth and add pylon platform, dowel reinforcement using white glue here too.

The wing is built conventionally except for the geodetic ribs. Before starting the wing, note that there should be 3/16" wash-in built into the right panel, do this by raising the leading edge at the polyhedral break. First, lay down the outside framework of the wing; for example: leading edge, notched trailing edge, and tips. Next add wing ribs cutting and fitting each one individually, first notching the top of the rib half way down to receive the other crossing geodetic rib. After all ribs are in place double glue each joint, notch ribs and insert spars according to the plans. Your next step is adding dihedral using 1/32" or 1/16" birch plywood for dihedral gussets Use ⅛" hard balsa triangular gussets at these



If engine falters, readjust needle valve and try again. If it holds it is now operating at peak. Insert D/T fuse in snuffer and ignite it well.

If fuse is burning well the next very important step is to set fuel-flood off time and release it almost simultaneously with the aircraft.



THEY SHOOT ROCKETS, LOWER LANDING GEAR

6 New "ACTION-IN-TH

THAT COME ALIV



BALSA WOOD!

*RUBBER POWERED!

Kit A8-149
Wing Span 17"

MESSERSCHMITT ME-109-G

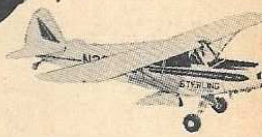
DROPS BOMB

Automatically in Flight!

Authentic rubber-powered flying scale model of the most famous German fighter and fighter-bomber of World War II. Automatically DROPS BOMB in flight with simple mechanism in kit.

$1.49

PIPER SUPER CUB
Kit A7-98
Wing Span 18"



98c

DUSTS CROPS
Automatically in Flight!

This world-famous trainer and personal aircraft was specifically developed for agricultural CROP DUSTING and similar work. Authentic model does the job with uncanny realism.

OKIE'S GOT Satin Finish BALSA!

HILLBILLY PRICES FOR PENNY PINCHERS

36" LONG SHEETS

THICK	2" WIDE	HOW MANY	3" WIDE	HOW MANY
1/32	5¢		8¢	
1/16	6¢		9¢	
3/32	7¢		10¢	
1/8	8¢		12¢	
3/16	10¢		15¢	
1/4	12¢		18¢	
3/8	15¢		24¢	
1/2	20¢		30¢	

BLOCKS AND PLANKS

	12" LONG	HOW MANY	18" LONG	HOW MANY	36" LONG	HOW MANY
1x2	12¢		18¢		36¢	
1x3	18¢		27¢		54¢	
2x2	22¢		33¢		66¢	
2x3	33¢		49¢		99¢	
3x3	49¢		99¢		$1.49	

EXTRA SPECIAL: 1/8 x 5 x 24 sheets 15¢

All wood under 8" density unless you say otherwise. Okie pays the freight on ten bucks or more. Check the stuff you want, give us your name and don't disremember to send check or money order.

BALSA OKIE'S *Arkoma, Oklahoma*

NAME_____

ADDRESS_____ CITY_____

Uranus

joints and gauze well. Use white glue on the plywood dihedral gussets.

The stab is built exactly as the wing. The rudder is cut out of 3/32" sheet balsa and is inserted between the two fuselage halves when gluing them together. Don't forget the anti-warp strip inserted in the rudder. Before covering, dope all surfaces with at least two coats of 50-50 fuelproof dope, we prefer three or four. After this and sanding, cover both the wing and stab with SIG Superfine Tissue.

We covered our fuselage with silk. This adds tremendous strength with little or no extra weight. Finish fuselage with four coats of dope and talc, sanding after each coat. Use 2 or 3 coats of color dope, your preference. Next, add two coats of very thin clear dope, work fast and flow it on. For fuelproofer, use three coats of "Comet Fuel Proofer" thinned with regular dope thinner; this helps it adhere to the doped surfaces better. After this has dried, give the fuselage a light rub down with rubbing compound and then wax it several times with Simoniz; especially around the motor area. This will do a good job of fuelproofing the model.

The wing and stab are doped with eight coats of 50-50 (50% dope-50% thinner) butyrate dope. Let the airplane cure for several days and then steam out any warps that may have appeared, leave the 3/16" wash-in in the right panel.

FLYING: First glide the airplane after having balanced it at 1⅛" forward of the rear of the trailing edge of the wing. Add stab tilt for glide turn, (right side high looking from the rear of the model) and adjust glide by adding plus or minus incidence in the stab. You will find the transition from power to glide best in a tight right pattern. The glide will amaze you if your ship came out under 7 oz.

After you are satisfied with the glide, try a short engine run of not more than 3½ sec. If you have the necessary wash-in (3/16" in right wing panel) according to the plans and all surfaces are warp free, the model should fly right off the bench. It should climb extremely fast at about a 70 degree angle making one or two spirals during a ten second engine run.

DROP LEAFLETS, DUST CROPS, BOMB ENEMY TARGETS

AIR" Flying Models WHEN ALOFT!

BY Sterling MODELS
BELFIELD AVE. & WISTER ST.
PHILADELPHIA 44, PA.

Just as spectacular as our original 6 "action in flight" flying scale models! These marvelously ingenious, authentically detailed new model planes unleash a deadly duet of "bombs" . . . operate landing gear . . . seed clouds . . . dust crops . . . or drop leaflets. And all this *action* is *automatic* . . . while the planes are in flight!

Manufactured with consummate skill and precision, every one of these six great new models is made of selected precision-cut BALSA WOOD, sanded to micrometer tolerances for easy, no-sweat assembly and thrilling flight performance. All come complete with highly detailed, formed plastic parts and prop, rubber wheels, ready-to-install precisely-finished wire parts, rubber band motor and authentic scale decals. *CONVERT ONE OR ALL TO POWERED CONTROL LINE OR FREE FLIGHT! Kits A-1 to A-6 also take R/C. Complete instructions on easy full-size plans.

BE SURE TO SEE THE FIRST 6 IN THIS AMAZING SERIES OF FLYING MODELS!

Kit A-1 *FOKKER D7* Fires Rocket .....$
Kit A-2 *STEARMAN PT-17* Dusts Crops .$
Kit A-3 *BEECHCRAFT BONANZA* Drops Gear .....$
Kit A-4 *THUNDERBOLT P-47* Drops Gear .....$
Kit A-5 *NIEUPORT 17* Fires Rockets ....$
Kit A-6 *STUKA DIVE BOMBER* Drops Bomb .....$

AT HOBBY DEALERS EVERYWHERE
If there is no dealer near you, you may order direct. Add 10% for packing postage (each kit). 15% outside U.S.A. Minimum postage 35c.

CURTISS HAWK P-6E
Kit A10-149
Wing Span 16"



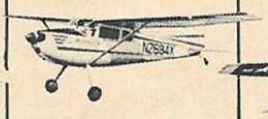
$1.49
DROPS 2 BOMBS Automatically in Flight!
Legendary U. S. Army Air Force fighter of the fabulous 1930's, these glamorous planes were actually squadron-painted to resemble a hawk. This faithful replica DROPS BOMBS in duet automatically with simple mechanism.

AT-6 TEXAN
Kit A9-149
Wing Span 18"



$1.49
OPERATES LANDING GEAR Automatically in Flight!
U. S. Army and Navy pilots alike learned to fly on this famous World War II advance trainer! This model in perfect scale OPERATES LANDING GEAR that automatically lowers just prior to landing.

CESSNA 180
Kit A11-98
Wing Span 17"



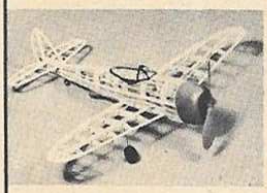
98c
SEEDS CLOUDS Automatically in Flight!
This beautiful and versatile 4-passenger personal aircraft is adapted for use as a cloud seeder to produce rain! This model in perfect scale SEEDS CLOUDS dramatically, with amazing likeness.

L-19 BIRD DOG
Kit A12-98
Wing Span 17"



98c
DROPS LEAFLETS Automatically in Flight!
This remarkable airplane was the U. S. Army's "jeep with wings" in Korea. Used originally for artillery spotting. Model DROPS PROPAGANDA LEAFLETS in flight.

THUNDERBOLT P-47



Frame construction shown above is typical of simple assembly design used in all models.

STERLING MODELS, Dept. MAN-3
Belfield Ave. & Wister St., Phila. 44, Pa.

☐ Please send me catalog showing your line of airplane control line stunt and models, R/C scale and trainer models, Magic models, boat models, and many accessories. Enclosed is 10¢ to cover handling mailing.

☐ Please send me book, "Secrets of Model plane Building," showing and explaining sign and construction, covering and finishing flying and adjusting, control systems, Enclosed is 15¢ to cover handling and ma

Name
Address
City
Zone State

WHEN IT'S MADE BY STERLING, IT'S UNCONDITIONALLY GUARANTEED . . . IN WRITING!

If the model tends to go straight up and over on its back, or to the left add a little right thrust—note the word: *little*. All adjustments should be in small amounts and never make two adjustments at the same time. Keep adding slight changes in thrust until the ship has the proper climb to the right.

If the model has a winding tendency to the right under power but the glide is okay, add slight left rudder, remembering the rudder adjustments are extremely sensitive and dangerous. If the model winds to the right under power but the glide has a stall then add positive incidence in the stab instead of adjusting the rudder. You should have little or no trouble if you carefully follow the instructions.

Watch out. Be sure to fuse this model even with short motor runs during testing. This model will scare you with its climb until you are used to it. Lots of luck.

Tornado PROPELLERS

BRILLIANT in Color

Color all the way thru won't flake or wear off!

Good Looks . . . still . . . or spinning and safely visible!



2 Blade Tractor

SIZES	PRICES EACH
5-3 5-4 5½-3	
5½-4 6-3 6-4	25¢
7-4 7-6	40¢
8-4 8-6 8-	60¢
9-4 9-6 9-7 9-8	
10-4 10-6	85¢
11-4 11-6	$1
RC 12-4	
12-5 12-6	$1.50

3 Blade Tractor
5-3 5-4 6-3 6-4 50¢

3 Blade Pusher
6-3 50¢

2 Blade Pusher

EACH	
5½-3 5½-4	
6-3 6-4	25¢
8-6	85¢
9-6 10-6	$1

Extra Air-Pull . . . TORNADO'S blade curves are power engineered! Almost unbreakable . . . chemically inert to fuels.

New!
3-BLADE NYLON Propellers
Brilliant ALUMINUM Color



Use with .29 to .45 displacement engines. 9-6 Tractor $1.50 each. More sizes later.

Looks like metal. Color all the way thru. Specially designed for **RC** and Flying Scale. Provides welcome ground clearance and max power from your engine.

GRISH BROS.
ST. JOHN 1, INDIANA