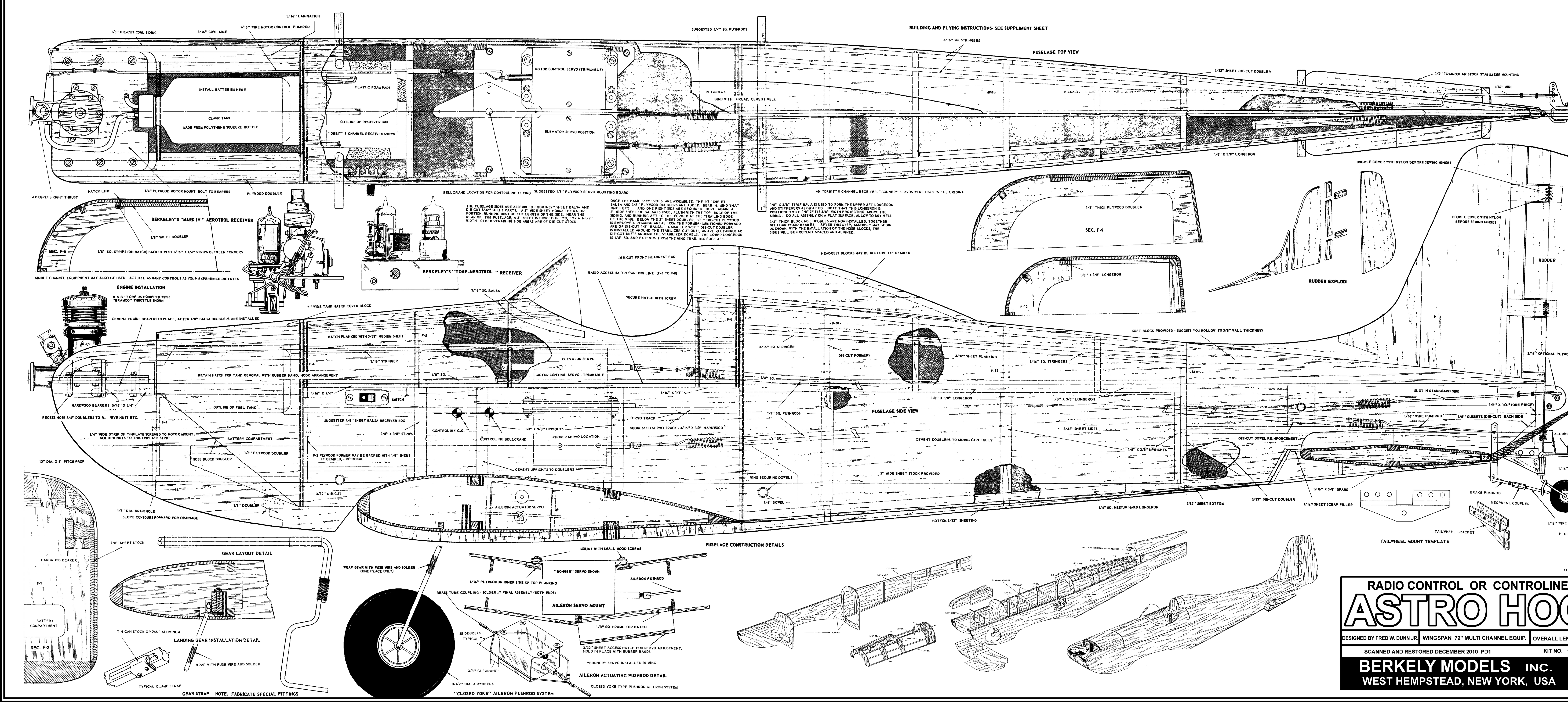

RADIO CONTROL OR CONTROLINE

ASTRO HOG

DESIGNED BY FRED W. DUNN JR. | WINGSPAN 72" MULTI CHANNEL EQUIP. | OVERALL LENGTH 50"

SCANNED AND RESTORED DECEMBER 2010 PD1 — KIT NO. 16-4

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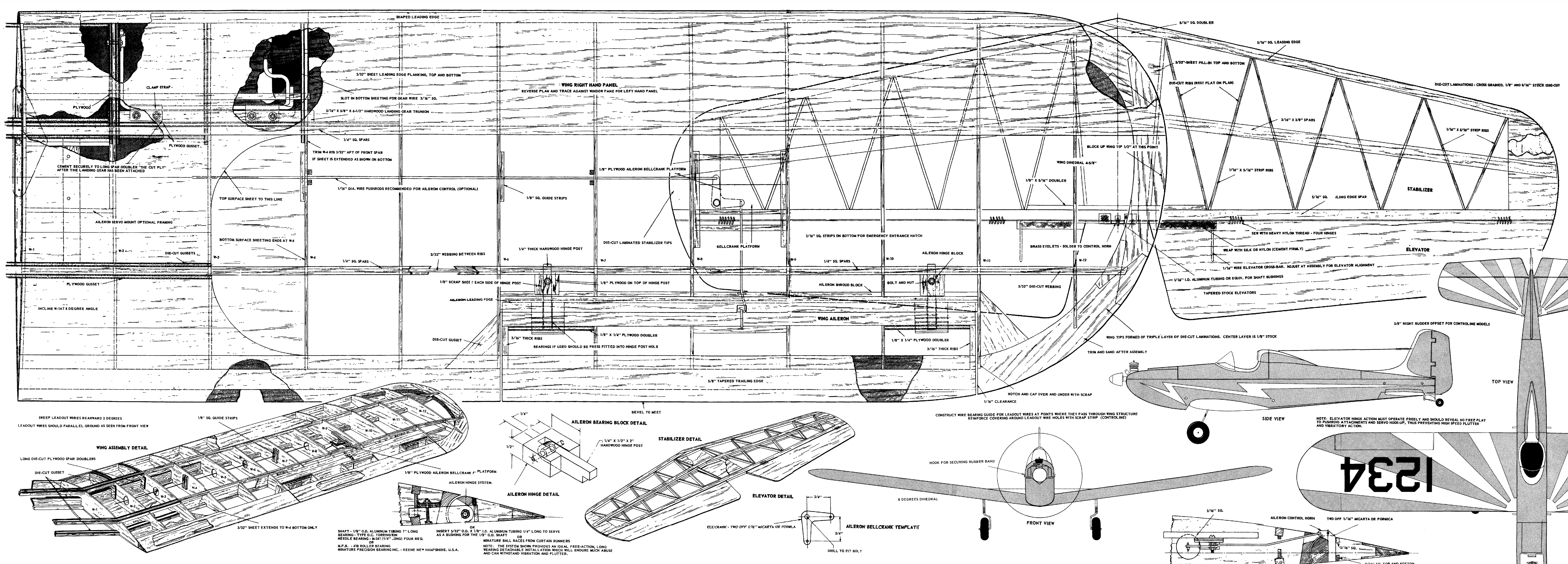
WEST HEMPSTEAD, NEW YORK, USA



ASTRO HOG FLYING INSTRUCTIONS BY FRED DUNN
(Digested from MODEL AIRPLANE NEWS)

Astros, thus far, have been equipped exclusively with multichannel radio gear, due to the fact that multi equipment is in prominent use in the Western States. Other systems may prove to be adequate, but will require development on the part of the user.

Assume then, that we are concerned with a plane which is controllable about the three axes of flight which involves, pitch, roll, and yaw. Pitch is controlled by the elevators, roll by the ailerons, and yaw by the rudder. We are also installing a throttle control switch and will be able to vary the magnitude of thrust, which is our propelling force, So far, we have satisfied the conditions and should be able to make a plane fly by the accepted and long established theories of flight. Now, let's see how the low-winger fits into this picture.

We have learned that high wingers offer excellent stability characteristics; however, it is our desire to create aircraft capable of performing many complex maneuvers such as, slow-rolls, four-point rolls, inverted flight, etc. In order to achieve this, we must make some sacrifice in the normal stability found in many of the conventional designs and compensate for the loss by making use of the additional controls now available.

In the low-winger, we yield lateral stability, but only because we are controlling it by utilizing the ailerons. At the same time, we lower the center of lift, and now it requires less aileron air-loading to produce a high rate of roll. Does this do the trick? Wait until you give your first aileron command to the Astro! You will have the answer in a matter of seconds.

How about rudder response? Heretofore, rudder was used exclusively to make turns of all denominations and when used in the high-winger, it has been depended upon to generate enough force to allow the plane to roll and thereby set up conditions which would simulate a true roll. The maneuver, however, takes on the characteristic of a barrel-roll rather than a true roll around the longitudinal axis of the plane. The low-winger responds much differently.

Due to the lower center-of-lift, coupled with a reduction in lateral area, a rudder command, when applied to the model, will produce a strong yawing force which is very detachable in flight. Some fliers call this Fish-tailing; the net result is sometimes called Dutch-roll. It takes a slightly longer time before a wing tip drops and sets up a good turning attitude. Does this present a serious problem? Definitely, no. On the contrary, this is to be expected and can be of great advantage when used at the proper times such as in a precision wing-over. How then, do you make a smooth turn? By aileron only. A few short pulses and the plane will bank to any desired degree. If properly trimmed, the Astro will fly several complete turns hands-off. When you want to recover, use the same technique and then look at the smile on the judge's face.

You will soon discover the turn can be steepened by using a few taps on the rudder, or you may shallow-out in the same manner, but it is my guess you will begin to ignore the rudder and start to live with those ailerons, It's a new experience and I believe it will have a definite effect on RC flying habits in the future.

How about the rest of the acrobatic maneuvers? You name it, the Astro is right at home up there in the wild blue yonder and is aero-dynamically sound and structurally capable of withstanding any normal abuse. We have pushed the Astro, all the way, and have had no in-flight failures due .to structural deficiency. Many a rough landing has proven the landing gears and related installations will weather the storm.

Outside loops are a cinch. A full-down and hold elevator command will produce a well-rounded maneuver. The loop can be tightened by shifting the CG aft about a quarter of an inch, but don't overdo it or some of the other stunts may begin to offer trouble. Inside loops are much tighter if command is held, but can be opened up by pulsing.

True spins can be a work of art with the Astro. Just as in a real ship, supply some up-elevator to produce a stall, then cram on up-elevator and full rudder and hold (good ole' simultaneous control). The Astro will enter the spin quite rapidly and gyrates at a constant rate while held in. Spin recovery is fast and she drops out with no hesitation after the controls are neutralized. A few taps of up-elevator will bring the nose up to level position; now, just for kicks, hit full-on aileron and watch her do one nice victory roll on the way back up. This is real flying!

For inverted flight, just roll to inverted position and tap on a few short blasts of down-elevator to maintain nose attitude, hit another down and hold for a second, then roll out with those trusty ailerons.

All of the other maneuvers are usually known to all and are easily accomplished using combinations of the controls available. After you have gained confidence in the ship's ability, you will no doubt discover the added thrills which can be had by playing around with the throttle during some of your aerobatics. This is something many fliers seem to overlook, and yet it can add some real spice to your sport flying and makes a big impression on the spectators. Just another touch of realism.

We have had some fine comments in regard to the apparent ease in making landings with the Astro. The plane has proven to be very dependable at low power settings. In slow-flight and during normal glide, she holds a heading very well and has a reasonable rate of descent. Here again, I must emphasize how vital the ailerons become. I find this is one of the best times to use combinations of aileron and rudder and an occasional tap on up-elevator. With the Astro, you will enjoy making landings and thrive on its rapid responses. When making a let-down and rounding out for the touch-down, a few short taps of up, up, up, will be required just prior to making contact with the ground. At this point, the plane becomes very stable and will maintain a heading due to it's strong weather-vaining characteristic. This is very beneficial for touch-and-go landings.

When taxing in high winds, the weather-vaning habits of the Astro, can give trouble. I suggest following a normal prototype procedure. Always come to a full stop before making a turn from upwind, so downwind. Apply only enough power to "creep" around the turn, then chop the throttle back to "idle" and continue slowly to destination. Try some down-elevator when traveling with a tailwind. This will add pressure to the tail wheel and make for better steering.

Now for a word or two about building the Astro. I prefer not to elaborate on this subject since I am a firm believer in the old axiom: "A Picture is worth a thousand words". When building any model, I find it most useful to apply a maximum amount of common sense and good judgment. In recent months I have noticed many new ships showing up with that certain added touch of workmanship, or maybe a clever new gadget, or a fresh approach to an old problem. The number of flights per crack-up seems to be on the increase and many fellows are putting more effort into their ships. The results are usually rewarding. I suggest some uniform grain, medium weight balsa for all basic structures and light balsa for the planked and blocked areas. For all areas requiring curved planking, I recommend you first make a paper pattern developed right from the spots involved. I use a translucent paper such as drawing vellum. You can see through and mark off the proper outlines with pencil. The pattern allows you to cut a sheet of wood to the correct shape without loss of costly materials as a result of trial and error. Sheet balsa will form easily by wetting the outside surface. The wood will have a tendency to curve away from the moistened surface and can be easily hand-formed to fit the curved areas of the fuselage, or wing leading-edge. A slow-drying cement, is very helpful when used in these trouble spots; it will provide more time for pinning and wrapping with rubber-bands.

The plans illustrate the exact configuration used on the most advanced Astro, and no modifications are necessary unless you desire to probe the unknown a little. Total gross weight should not exceed seven lbs. Most Astros, will weigh-in at about six lbs. ten ounces, at birth. You will probably take on an ounce or two after making a few repairs.

MANUFACTURER'S NOTE;

Step-by-step building instructions are not included with this plan as the model is intended for experienced builders. Special notes on building are included on the plan.

The kit includes the complete wood for the airplane as well as the major formed wire parts. Covering material has not been included but BERKELEY silk or nylon is recommenced. Likewise, wheels are not included. By omitting these items which builders usually have on hand, we are able to maintain our low list price on the kit.

BERKELEY MODELS INC, 25 HEMPSTEAD GARDENS DRIVE, WEST HEMPSTEAD, N.Y.

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