

# Fakeout

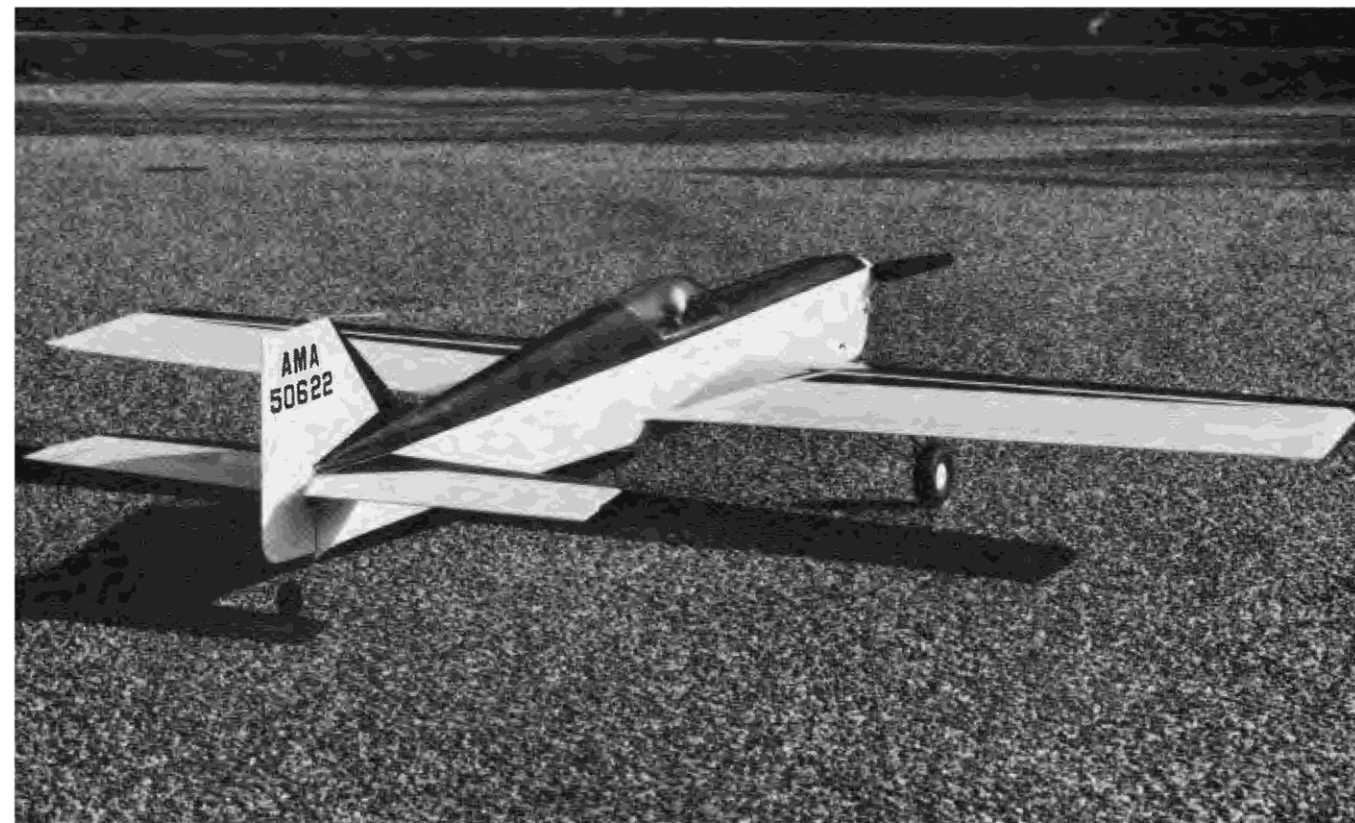
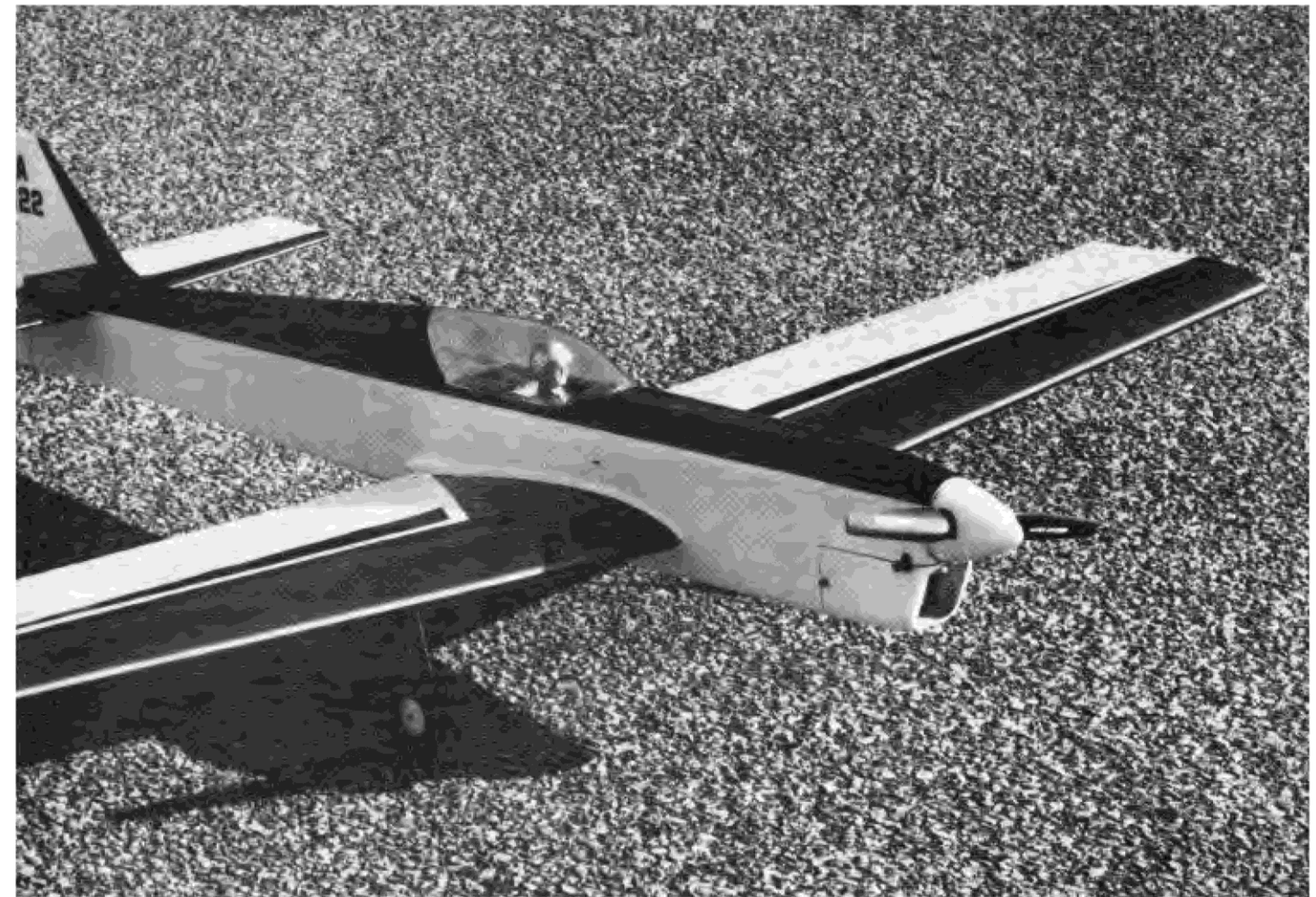
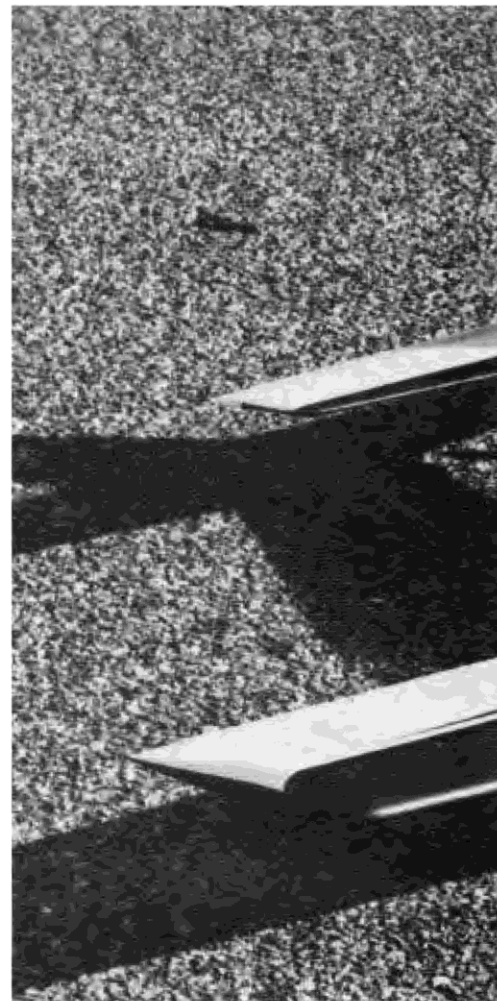
By Dom Palumbo

This 40 size sport pattern ship flew right off of the doodle pad. An agile design.

While talking to a friend on the phone one day, I (inevitably) began doodling on a scratch pad placed conveniently by the phone for important messages. My doodles usually wind up having wings, a tail, etc., and, depending upon the length of a given conversation, as many as three or four complete isometric views of airplanes can fill the page before I'm done. The general lines of the "Fakeout" were developed on (what I consider to be) one of my better doodling exercises. As a matter of fact, I was so pleased by the appearance of my impromptu creation that after hanging up I ran to the drawing board to further pursue things in the way of a model design. My thought process as the configuration began to quantify itself is de-

scribed in the following text.

Because my preference is for sport aerobatics and pattern type flying, the airplane would have full aerobatic capability. I also prefer to fly airplanes in the .40-.45 glow engine size category for economical reasons. Hence, the airplane should weigh no more than about five pounds, and should have a wing loading in the 20-25 ounce per square foot range. A wing area of 550 square inches (minus tips) would, therefore, be suitable. A conservative taper ratio of .75 (tip/chord/root/chord) and an aspect ratio (span squared/average chord) of 5.5 were selected, leading to a root chord of 11.5 inches and a tip chord of 8.5 inches (rounded to the nearest half inch for simplicity). The wing planform would have a straight trailing edge so



Fakeout may have gotten its name on the spur of the moment, but some thought went into its design. This sport ship flies with the best of 'em. It's aerobatic.

as to maximize the dihedral effect of leading edge sweep and there by minimize the amount of "built-in" dihedral required. This consideration is important from the viewpoint of having good inverted flight characteristics. The old standby 64A01Z fully symmetrical airfoil was plotted up next, and a nose moment (distance from leading edge to spinner) of 9.5 inches and tail moment (distance from leading edge to rudder post) of 32.5 inches were selected based upon previous experience with this size airplane. A 20% horizontal stab having 40% span and 12% vertical stab completed the basic flying surface design. These would be solid 1/4 inch balsa sheet contoured to a general symmetrical airfoil shape for fabrication simplicity.

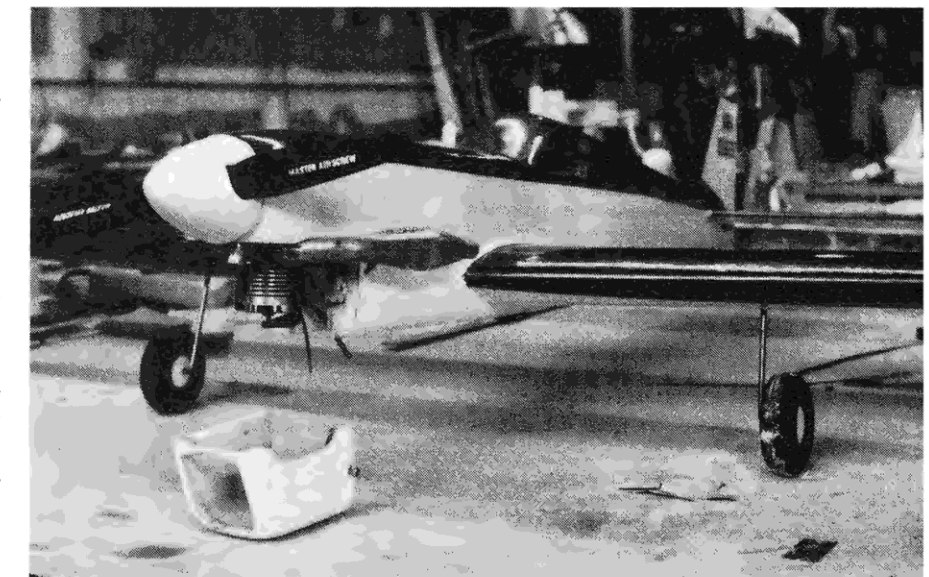
The basic fuselage lines were formed so as to completely enclose my Enya .45, while allowing for easy access and a nice streamlined appearance. The midwing, high stab configuration agreed with my isometric doodle as did the turtledeck/cockpit merging and high thrust line. Total fuselage side area and fore-to-aft area distribution were developed iteratively to achieve a design which would have good to excellent knife-edge flight characteristics. Conventional landing gear was chosen (over the more commonly used tricycle gear) so as to achieve minimum drag and weight of the gear components.

By the next day I was cutting wing ribs and in a couple of weeks the completed airframe sat fully assembled on my work bench. Time to decide on a color scheme. Painting is not only "not my bag", but is also more time consuming and a heavier approach than plas-

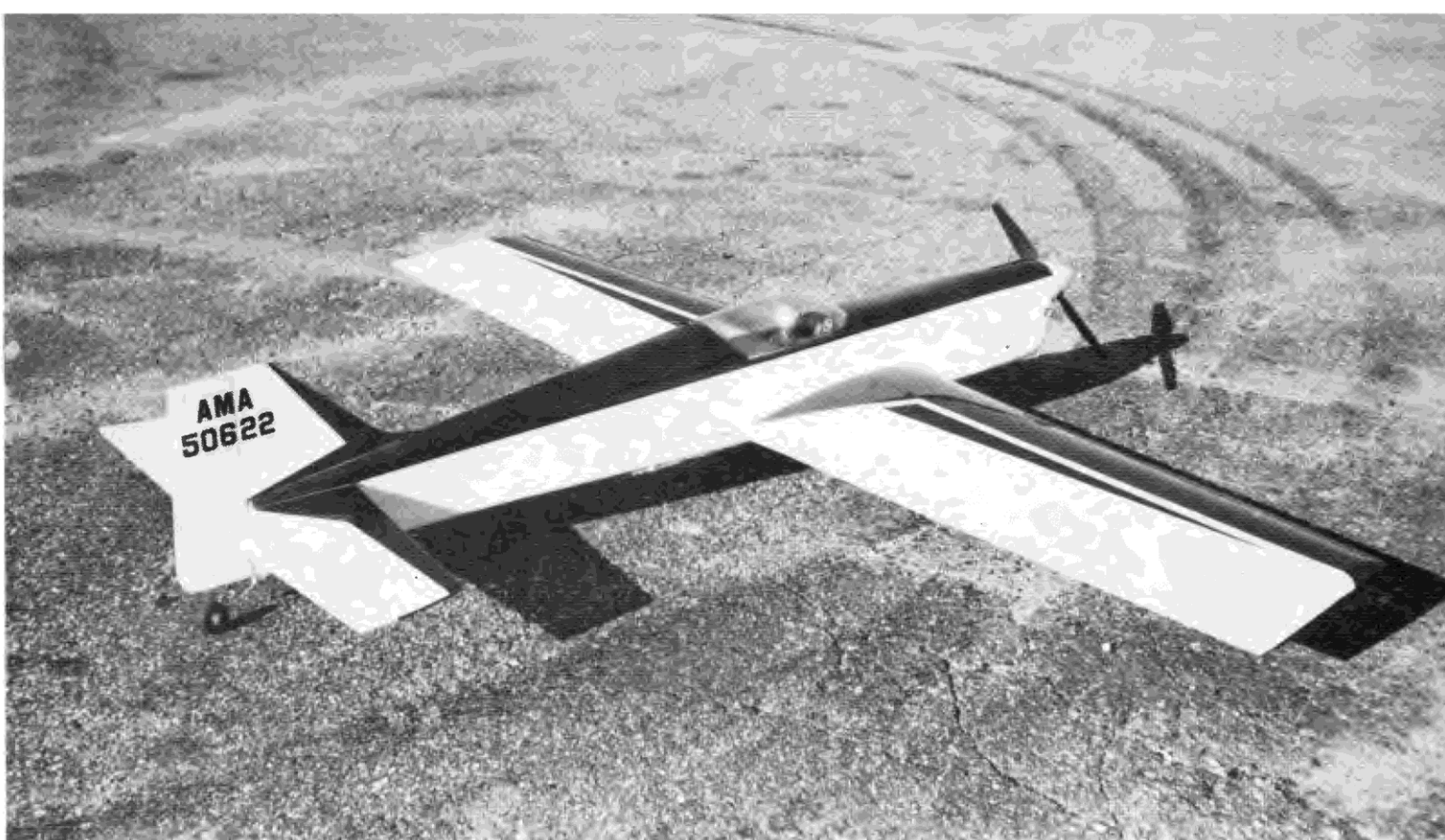
tic film finishes. I was anxious to get in the air and had some MonoKote™ and Solarfilm™ left over from a previous project, so white and metallic green in a simple but effective geometric design were used. Some black MonoKote trim was also used for highlight.

I arrived at the flying field with the usual maiden flight jitters and still had not come

up with a name for my creation. Inquiries from other fliers at the field forced me to come up with something on the spur of the moment and the name "Fakeout" was the only thought I could muster up. In that split second of reasoning I figured that the airplane looked real enough to actually be a model of a full size version and might indeed



Cowled-in engine is reminiscent of a C/L stunter (above). Careful work will allow a neat cowl with plenty of ventilation for the engine. Note wing mounted landing gear. Wide track for easy ground handling.



fake out some observers in this sense.

After the usual preflight I set the Enya .45 up slightly on the rich side and made my take-off run with every intention of taking it nice and easy on the first flight. All of that changed as I began to get more confidence in the flight capabilities of the "Fakeout" and after a few mock landing approaches to get a feel for the glide and sink rate I opened her up and bored proverbial holes in the sky in every imaginable attitude. A gallon of fuel later I knew I had a winner of an airplane, having executed every AMA pattern maneuver I could think of to the best of my ability as a pilot. The airplane simply flies very well and although it is not what I would call easy to fly (primarily because of its speed and sensitivity to control inputs), it is a suitable subject for those of you who have flown fully aerobatic airplanes before.

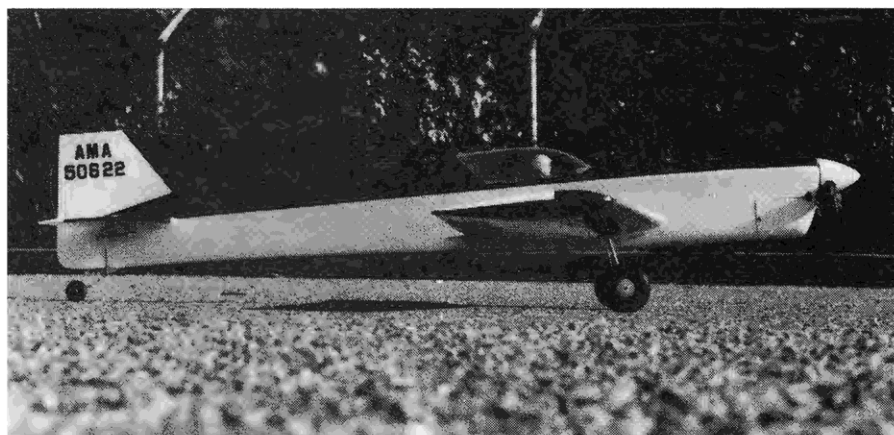
### Construction

Construction is very straightforward so I will not bore you with lots of detail here. The conventional built-up wing structure can, of course, be substituted by a foam wing if you have the capability to cut cores. The wing will accommodate retracts if you so desire.

I used a clear canopy molded over a shaped block on my prototype, but a shaped balsa block is easier and just as effective from a distance if properly highlighted when painted. The all up weight of my prototype is 4 pounds 11 ounces with Enya .45 power and Aerosport radio.

Be sure to position the fuel tank as shown on the plan because inverted engines are very sensitive to fuel tank location, having a tendency to load up at low and intermediate speeds if the tank is too high relative to the carburetor. Also note that rear exhaust engines will require some modification to the firewall in order to pass the pipe through and down so the exhaust exits beneath the wing. Happy flying!

FLYING MODELS



Profile view shows that Fakeout has been influenced by a number of different planes (above). Looks a little like a C/L stunter. Clean lines and neat paint scheme give Fakeout a racy, lean look (below). A trim ship.

