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George Meyer's home-built aerobatic biplane

Airborne at an indicated 110 m.p.h. cruising speed over the vast Texas flatlands bordering the Gulf of Mexico, George Meyer holds close formation for a flight shot of his trim little biplane

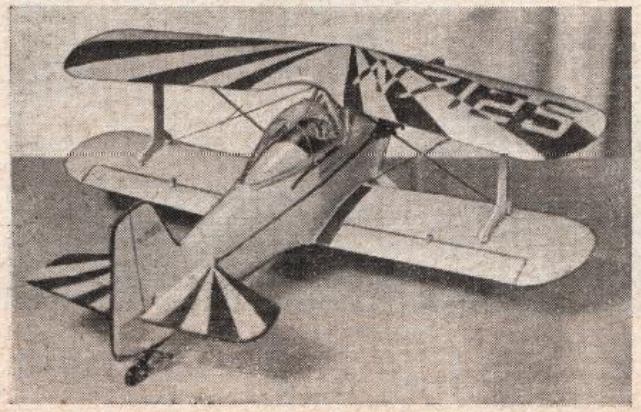
MANY AEROMODELLERS of our acquaintance aspire to constructing their own full-size aeroplanes in some distant date and we do in fact know of a number of modellers who have joined the light plane fraternity and still maintain their interest in our hobby. In the U.S.A. and in France aeromodellers have greater opportunity and certainly more freedom to follow their full-size whims, and it was a feature in that excellent specialist magazine, *Experimenter* (now issued as *Sports Aviation*) that first drew our attention to one modeller's particularly attractive home-constructed biplane built at Corpus Christi in Texas. George Meyer was particularly fortunate having a good aircraft design training through his work in the Experimental Department of Curtiss Wright Aircraft in St. Louis from 1935 to 1940 and following Army service in World War II was able to take advantage of the G.I. Bill of Rights for veterans taking flying lessons and earning his pilot's licence. All this time he maintained a keen interest in aeromodelling and in fact he has been an AEROMODELLER subscriber for many years. Working with prototypes and modification of Naval Service aircraft at Corpus Christi Naval Air Station, Texas, he decided to make his own biplane using the well-known Stearman biplane as a basis.

Home constructors in the U.S.A. are particularly favoured by the amount of information on aerodynamics available through the Department of Documents, Washington, D.C., for example the C.A.A. Manuals 18 and 04, plus papers on airfoils, tail surface design, surface areas and characteristics of wing and tail combinations. With such information, and with his flight engineering experience, George Meyer's Little Toot was started in 1950 as a "rule of thumb" job, and yet when checked over by officials for gravity load, design and balance, he was told that his centre of gravity was within $\frac{1}{16}$ in. of the calculated desired position.

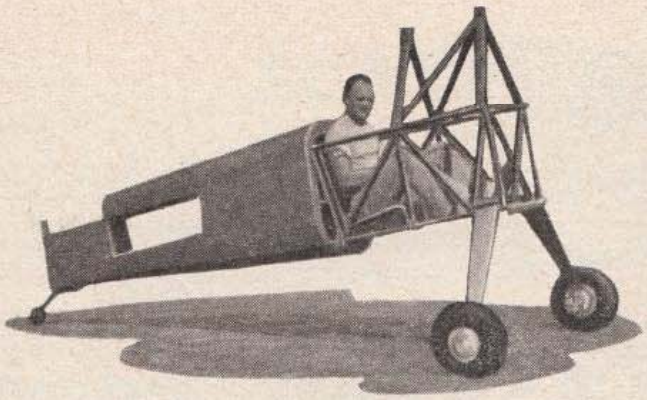
Being an aeromodeller, George first made a 1/24th scale (twice the size of our plan) model of all metal construction, duplicating the projected design in every detail even to the extent of a dummy engine. Not only does this system provide the designer with a good idea of the appearance of the full-size counterpart, but it also enables one to develop constructional details and eliminate unforeseen snags.

The landing gear is the clean cantilever Cessna type with standard Cessna wheel spats. Otherwise the rest of the airframe is strictly own design and the fuselage is a metal monocoque frame from the cockpit aft as will be seen in the photo above. Wings are spruce with $\frac{1}{8}$ in. ply ribs capped by $\frac{1}{2}$ in. x $\frac{3}{16}$ in. spruce and then fabric covered. Power is a 90 horse power Continental flat four and at a later date, George hopes to install a 135 or 150 horse-power Lycoming to give even more exciting performance.

A snappy take-off in about 200 feet, sustained spins, extremely rapid rate of roll and delightful aerobatic performance—said to be even superior to that of the famous Bucker Jungmeister are among its many attributes. Little Toot will stall at 55 m.p.h. and land at the same speed. Its most outstanding achievement came last year when George flew it



Camel cigarette pack offers a size comparison for the all-metal rib-for-rib true scale model built by George Meyer before starting full-size construction. Model is actually twice size of plan opposite, even has dummy engine. Shows the bubble hood now being made to fit Little Toot



George Meyer in the partly built fuselage shows the snug cockpit fit, Cessna landing gear assembly and monocoque rear fuselage. At right, after completing his 2,600 mile round trip to Milwaukee the proud designer/constructor poses with his trophies

1,300 miles from Corpus Christi to Milwaukee for the annual Experimental Aircraft Association Fly-in meeting. Despite awful conditions of rain and fog during the latter part of the journey, the diminutive biplane made the trip in thirteen hours flying time and was so well received that it won three trophies amid stiff opposition. The *Mechanix Illustrated* trophy for the most outstanding achievement in home-built aircraft, second place in the event distance flown to the Fly-in and second place for the most outstanding design. Since returning from Milwaukee, George has been working on a sliding hood for the cockpit as was fitted to his prototype 1/24th scale model. The blueprints are also being modified to incorporate minor changes including an alternate fuselage structure for others who want to make duplicate "*Toots*"

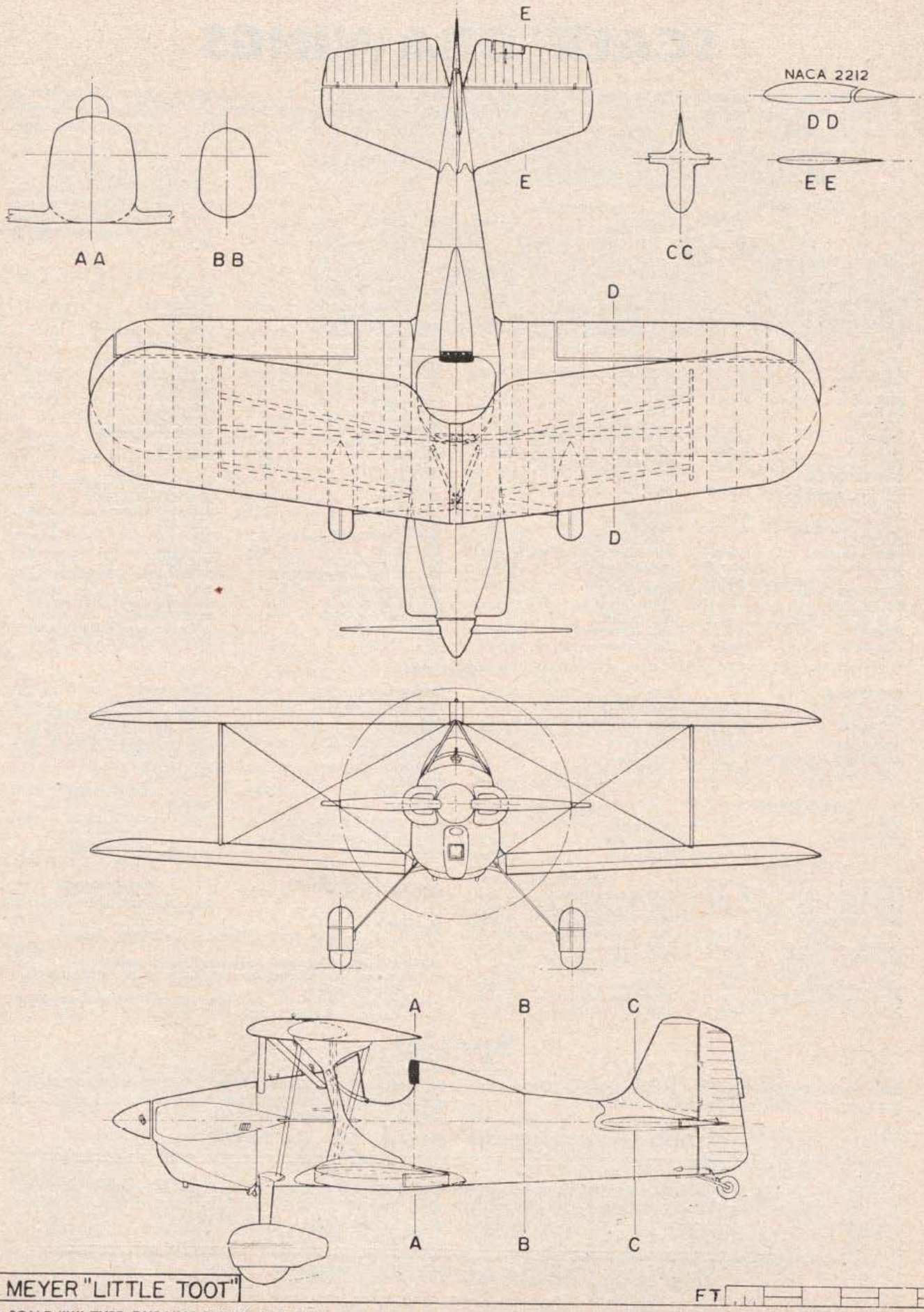
Colour scheme is red and white and for controline stunt we fancy the Little Toot would make a magnificent subject, especially if the ailerons were altered to work as flaps in conjunction with the elevators. Such a model would turn the wheel full circle, returning Little Toot back to the model stage,—who'll be the first to make a full-stunt replica?

Data

Airfoil	N.A.C.A. 2212.
Wing area	123·9 sq. ft.
Power loading...	10·6 lbs./h.p.
Empty weight...	560 lbs.
Wing loading	7·24 lbs./sq. ft.
Useful load	340 lbs.
Gross weight	900 lbs.
Engine	Continental C-90 at 90 h.p.
Stabilizer area...	10·5 sq. ft.
Elevator area	7·25 sq. ft.
Fin area	4·66 sq. ft.
Rudder area	3·47 sq. ft.
Span (both wings)	19 ft.
Length...	17 ft.
Height	6 ft. 7 in.
Tread	6 ft.
Top speed	127 m.p.h. at 2,000 ft.
Cruising speed	110 m.p.h. at 2,200 r.p.m.
Climb to 5,000 ft.	320 secs.

Who could fail to be attracted by the lines of this 19-ft. span biplane with red sunray decor over its bright white finish. Plans for other home-builders are to be available to members of the American Experimental Aircraft Association who want to make the Toot for 90 horsepower engines. Top speed is 127 m.p.h., lands at 55 m.p.h. and is fully aerobatic, stressed to 10G loads

A 2701



GEO. MEYER "LITTLE TOOT"

FT

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