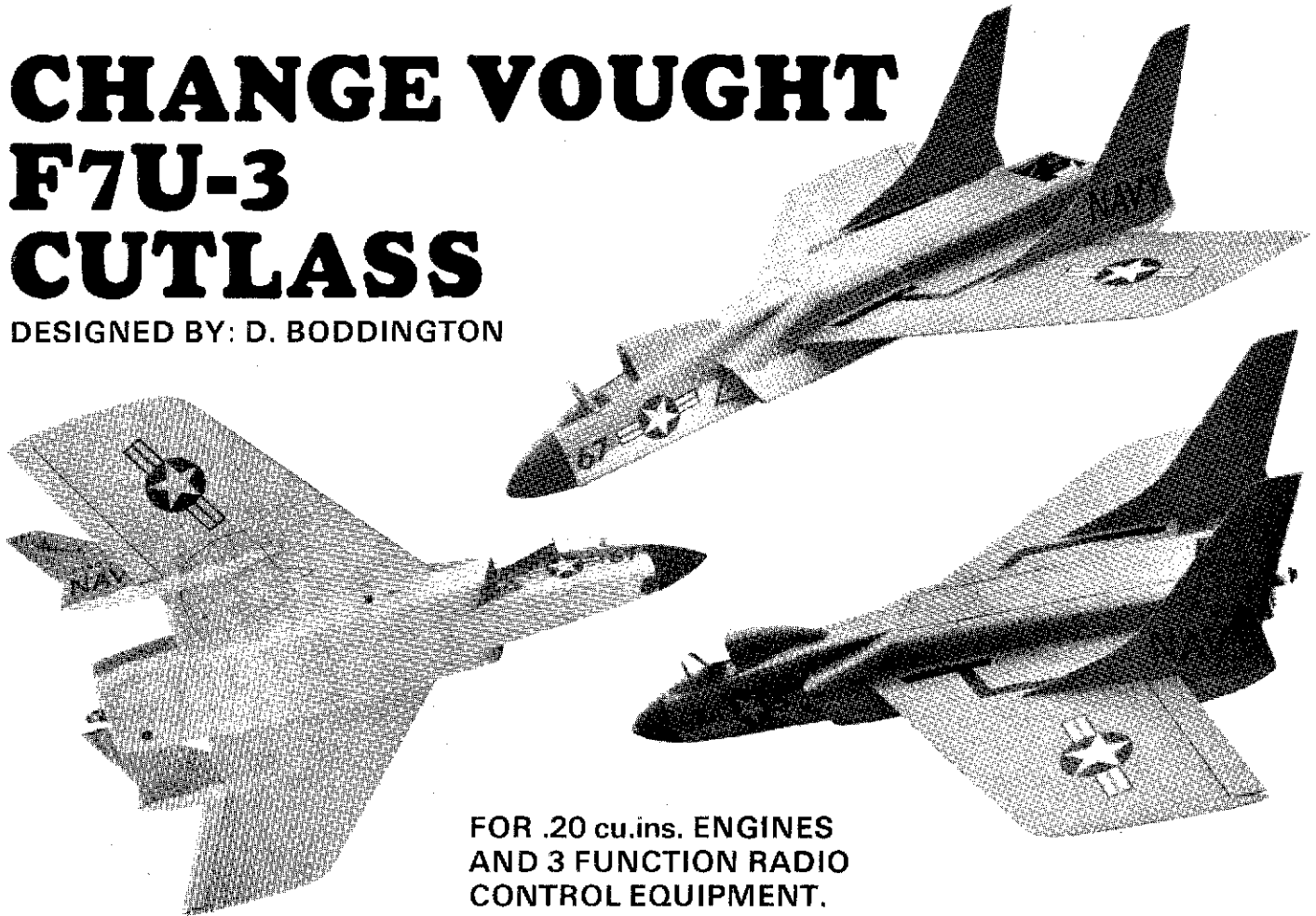


# CHANGE VOUGHT F7U-3 CUTLASS

DESIGNED BY: D. BODDINGTON



FOR .20 cu.ins. ENGINES  
AND 3 FUNCTION RADIO  
CONTROL EQUIPMENT.

THE 1950s were an exciting time for the development of jet fighter aircraft and aircraft designers throughout the world were experimenting with radically new designs of all shapes and configurations. One of the strangest aircraft to reach production status was the *Chance Vought 'Cutlass'* designed for the American Navy for carrier operation. Their first efforts at producing a jet fighter were not auspicious, the F6U *'Pirate'* turned out to be slower than their piston engined F4U *'Corsair'*! In the late fifties they had tremendous success with the *'Crusader'* and the *'Cutlass'* fitted in between these two jet designs; being too late to see service in the Korean war and obsolete by the Vietnan conflict.

Bedevilled with engine problems during the initial stages and having a poor safety record, the *'Cutlass'* was not an unqualified success (sometimes referred to as the *'Gutlass Cutlass'*) but it did notch up a few

notable 'firsts'. It was the first tailless jet aircraft in service in the USA, the first of the Navy swept wing fighters and the first to incorporate twin jet engines with after-burners.

Chance Vought's may well have been influenced in the design of the *'Cutlass'* by some of the German WW2 projects of Messerschmitt and Lippisch, but the eventual layout was very much their own concept. A number of fatal accidents during test flying – and panic ejections by service pilots unused to different control reactions at slow speeds led to the aircraft having a somewhat dubious standing amongst Navy pilots. By the end of its service life it was generally well accepted and considered to be a rugged aircraft (momentary readings of +16g and -9g being recorded) and it coped well with the transition from gun armament to missiles. No flaps were fitted to the *'Cutlass'* and full span leading edge slats were employed for

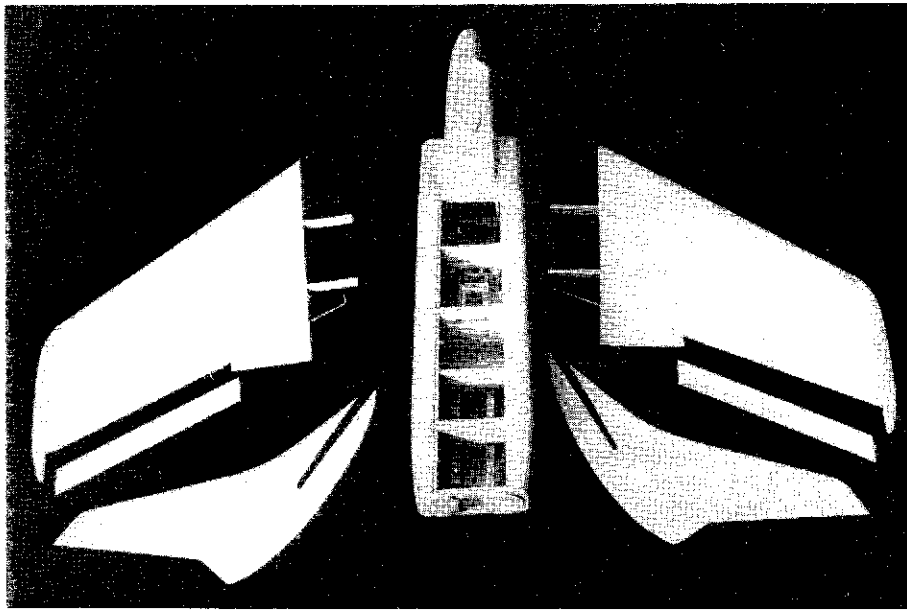
slow speed landings. Although the *'Cutlass'* will not be remembered as a classic jet fighter of its period it was a genuine attempt at producing a carrier borne aircraft, of non-conventional design with a substantial improvement of performance over its predecessors – it only just failed to do this.

## The Model

A glance at scale three views of the *'Cutlass'* will quickly show you that this R/C model definitely comes into the "sports" scale category. No attempt has been made to accurately reproduce the air intakes and exhaust outlets or to keep to true wing and fin thicknesses. Simplified construction has been incorporated, i.e. sheet wings and rounded box fuselage, so that the building time is relatively short; commercial items such as the canopy and transfers are not precisely to scale but are near enough to give the flavour of the aircraft. Truth to say, the *'Cutlass'* is such a unique aircraft that even this semi-scale version will be instantly recognisable and it does at least possess all of the character of the prototype. So, if you feel like trying something different – and there are not too many scale flying wing, twin finned, pusher models around – have a go at this all sheet *'Cutlass'*.

## Fuselage

The two obvious differences between this model and conventional types are the combined elevator and ailerons (aillevators) and the pusher engine. Fitting the engine at the rear only gives problems relating to the balance position of the model – you may have to add some nose weight – you will also require an 8in x 6in pusher propeller and a 'dummy' silencer for the 20 size engine. Aileron/elevator mixing is taken care of by a



was used on the prototype model.

simple aileron servo sliding mechanism, you could arrange to perform these functions electronically if you preferred. Cut out the fuselage sides and formers and glue  $\frac{3}{8}$ " triangular strip to the fuselage sides, plus the  $\frac{3}{8}$ " sheet doublers to the engine bay. Mark the positions of the formers on the fuselage sides and glue formers F1 to 4 to the front sides, F3 fits into the slots cut in the sides.

Assemble the aileron servo slider, it consists of a 3 mm plywood servo plate with  $1\frac{1}{2}$ " lengths of 12g brass tube bound and epoxied to the top edges. Cut lengths of 12g pianowire to extend through formers F5 and 6 and slide the servo plate onto the pianowire rails, the connection to the elevator servo is made by an adjustable clevis, short length of threaded rod (cycle spoke) and a crimp type solder tag.

When you are satisfied that this unit operates smoothly the rods can be epoxied to formers F5 and 6, at the correct spacing. Glue formers F5 - 9 to the rear sides, slide in the  $\frac{3}{8}$ " sq beech engine bearers and epoxy. All bearers should be predrilled before fitting. Fit the aileron torque rod cross support (F11) to former F7 and the fuselage sides and add the  $\frac{1}{4}$ " sq spruce top hatch supports to formers F4, 6 and 8. Join the front and rear sections of the fuselage, letting in the servo bearers at the same time; the sides are supported on a flat surface during this operation. Glue  $\frac{3}{8}$ " intake blocks between F3 and 4 and the  $\frac{1}{4}$ " x  $\frac{3}{8}$ " hatch support rails in position followed by the  $\frac{1}{8}$ " upper and lower sheeting. Fit the nose block and scrap block fairings for the canopy and round off the fuselage corners. A 9in Micro-Mold canopy (E-V29)

## Wings and Fins

Construct the wing panels from  $\frac{1}{2}$ " x 4" medium soft sheet with  $\frac{3}{16}$ " x  $\frac{1}{4}$ " hard leading edge and  $\frac{1}{2}$ " sq medium trailing edge. Glue the  $\frac{1}{4}$ " x  $\frac{3}{8}$ " and  $\frac{1}{4}$ " x  $\frac{1}{2}$ " hard balsa wing joiners in position, the  $\frac{1}{2}$ " tips and  $\frac{1}{4}$ " root fairings - installing the aileron torque tube rod at the same time. Spot glue the  $\frac{1}{4}$ " x  $1\frac{1}{4}$ " ailevators to the rear spar and razor plane and sand the panels to a flat bottomed aerofoil section.

The fins were constructed from a lamination of a .4mm plywoodcore and 3/32" balsawood each side; if .4mm plywood is unavailable the fins could be made from firm, light 3/16" balsawood with a 3/16" x  $\frac{1}{4}$ " spruce member running the full height through the centre of the fin.

Cover all parts of the airframe before assembling them. The prototype model was tissue covered, doped and filled. There is no dihedral on the wing, the ailevator torque rods are positioned with the ends horizontal to feed through the slots in the fuselage and the clevises added when the wings are joined to the fuselage.  $\frac{3}{8}$ " triangular fillets may be added to the underside wing/fuselage joint for additional wing security. Epoxy the ailevator torque tubes to crossmember F11. The ailevators should be hinged in position before the fins are fitted otherwise it is difficult to fit them onto the aileron rodcrank.

## Finishing

Keep the battery and servo as far forward as possible, if the lead on the battery permits it could be positioned between F2 and 3 (line the interior with foam during construction). Fit all of the radio equipment and check the

operation thoroughly. The ailevators should be set with the trailing edges about  $\frac{3}{16}$ " up in the neutral position. The top of the fuselage around the engine may be sheeted in, or an ali. cowl fitted, but remember to leave access to the silencer. Silencer pressure is recommended for the fuel tank - a flat type 3-4oz tank will fit over the bearers - as it will give a more positive fuel supply to the engine.

All of the 'Cutlass' F7U-3s had metallic finishes originally but these were later painted to a white undersurface and light grey upper surfaces. Standard Navy markings were applied, the Micro-Mold transfer sheet T133 give a reasonable resemblance, with added figures, to this scheme. Earlier, Mak 1, 'Cutlasses' were painted blue overall, apart from the natural metal tailcones. Painted wing walks, panel line and squadron markings will add to the decorative effect of the model. You can go easy on the fuel proofing of the model, the only area likely to be contaminated by fuel and exhaust gasses is the very rear of the fuselage. Check the balance of the model (remember to include for fuel in the tank) and add ballast in the nose block if necessary.

## Flying

Choose a fellow modeller to launch the model who is not of a nervous disposition and has large hands! Large hands to be able to hold the rear of the fuselage, and not nervous because of the propeller rotating at the rear! Launching pusher aircraft is not as fraught as it may seem. Support the nose with the left hand, hold the rear of the fuselage around about F6 to F7, run and launch firmly and flat. Your fingers will not be shredded by the nylon whisk, - *honest!*