



Hangar 9[®] F6F Hellcat
HAN4075

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HANGAR 9 F-6F HELLCAT

A convincing, 65" span sport scale warbird from ARTF masters Hangar 9



Backbone of the fleet

Considered by many to be the aircraft that finally gave the advantage to the Allies in the Pacific theatre during WW2, the Grumman F-6F Hellcat was another of the world-beating American fighters that used the hugely powerful R2800 Twin Wasp radial engine. Developed from the earlier F4F Wildcat, the 42 feet span and 33 feet long carrier-based Hellcat was only marginally smaller and lighter than the huge P-47 Thunderbolt. For some reason, the Grumman Hellcat doesn't share the glamour of the Mustang, Corsair or Thunderbolt, even though it was the backbone of US Pacific air power in WW2. Its combat service figures are quite remarkable; with over 12,000 produced, this air-

craft helped 306 US Navy pilots to become 'aces' and ended the war with an unmatched 19 to 1 kill ratio.

The model

With a 65" wingspan, the Hellcat is around 1/8th scale and designed for 60- to 100-size two- or four-stroke engines and five-function radio with six servos. A 'Power 60' brushless combination is specified for those that want to fly electric.

As usual for a Hangar 9 product, the model comes well packed and protected in a photo-illustrated box that just shouts out 'buy me'. The quality and presentation of the model's components is equally professional.



The bulky but lightweight fuselage is built up from balsa and ply and incorporates the short fin. Covered with standard *Ultracoat* heat-shrink film in a typical US Navy multi-tone blue and white colour scheme, the insignia and markings are factory applied.

The wings are film covered built-up structures supplied in three pieces. The wing centre section comes with the twist-and-turn retracts, bellcranks and linkages pre-installed. Manual operation shows operation of the units to be both smooth and bind-free. A GRP belly-pan is fitted onto the wing centre section to match the shape of the fuselage. The short outer wing panels have large slots for dihedral braces and incorporate hatches

for the aileron servos.

A few loose items top off the parts count with an excellent hardware pack, a huge and beautifully painted GRP cowl, vac-formed dummy engine, seatback, wheel wells and canopy.

Assembly

A 42-page black and white instruction book is supplied and this gives ample information for the build. I didn't spot any mistakes in the instructions during assembly and would only make the following comments as items to look out for.

Section 1 covers installation of the retract servo. As always, it is important that time is taken to ensure that the mechanical retracts lock in both the up and down positions without stalling the



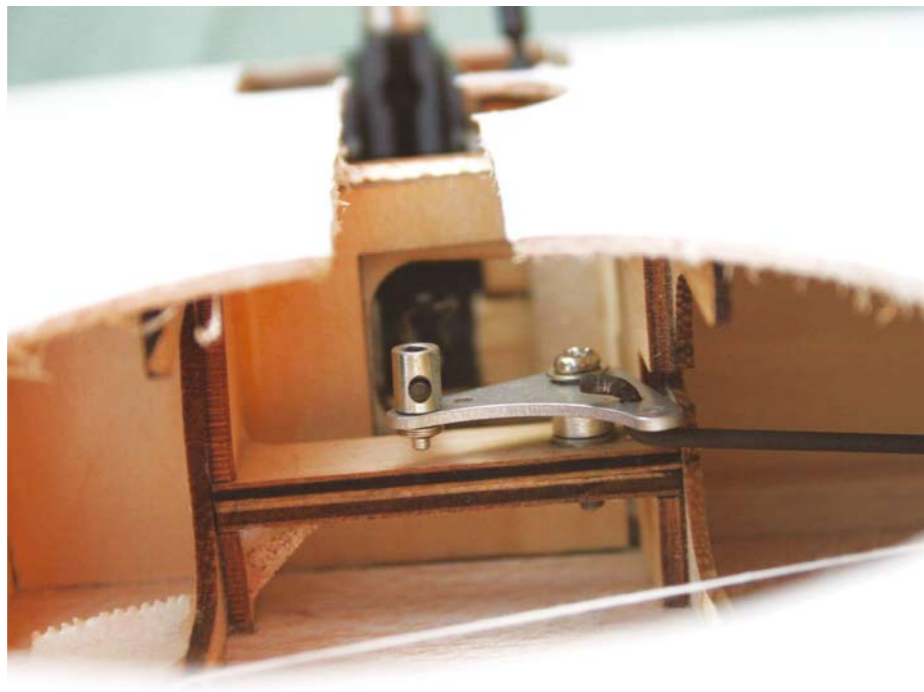


LEFT: 420 c.c. tank has colour-coded vent and feed lines.

BELOW LEFT: Retracts uses wire pushrod and bellcrank for actuation.

BOTTOM LEFT: Simple ball joint linkage provides twist and turn action.

BELOW RIGHT: Clamp connector on aluminium bellcrank allows fine adjustment.



servo. Only glue in the grey wheel wells after you are sure that the retracts operate correctly.

All the control surfaces are hinged with 'hairy hinges'; these are more than adequate for the task and will not pull out if you drill and adequately cyano in place as instructed.

I opened out the exit slots on the aileron servo hatches to allow full movement of the servo arms. Short, stiff linkages are used between the servo and control horn and it was nice to see heat shrink tubing supplied to lock all the links in position.

Slotted aluminium T-bar mounts are

supplied screws with Allen screws from modelfixings.co.uk. Combined with miniature 'O'-rings, they cushion the cowl and prevent crazing. With a big radial engine in the nose the full-size needs a huge opening in the cowl to let cooling air in. With a narrow, single-cylinder engine I only cut enough of the dummy engine



ABOVE LEFT: Ply dihedral braces are cut out to clear retract mechanism.

LEFT: Nice main and tail wheels are included.

ABOVE: Plastic wheel wells are fitted once the retracts are fully set up.



supplied and these allow a wide variety of engines to be installed. With pre-drilled and slotted holes in the firewall, the engine (EVO 100) was quickly bolted in place. With a recess cut in the firewall and lower fuselage, the standard muffler was bolted in place and throttle connected ready to receive the cowl.

A nice feature on the fuel tank was the pre-bent and colour-coded fuel pipes - red for feed and green for vent. I am not keen on fueller valves and fitted a third line for fill. On installation I did note that tank placement was a little high relative to the needle valve.

The cowl is fixed to large hardwood blocks on the firewall and I replaced the

away to allow air to pass directly over the carb. and cylinder. With the inlet area restricted I then had to create an air outlet. An hour spent with saw, Permagnit bar and glasscloth produced ample air exits while a simple baffle directs air over the engine.

The throttle, elevator and rudder servos are fixed onto a loose tray before fixing to bearers in the fuselage. Solid wire pushrods are guided by pre-installed snake outers and this arrangement keeps the tail of the model clear of unsightly servos.

An APC 14 x 6 prop was fitted and after a bit of shopping around, I finally sourced a large domed spinner nut from Moor Models that looked just right. A small piece of blue-covered wood is supplied for use as a radio mast but this was left off because I knew if fitted it would soon be knocked off.

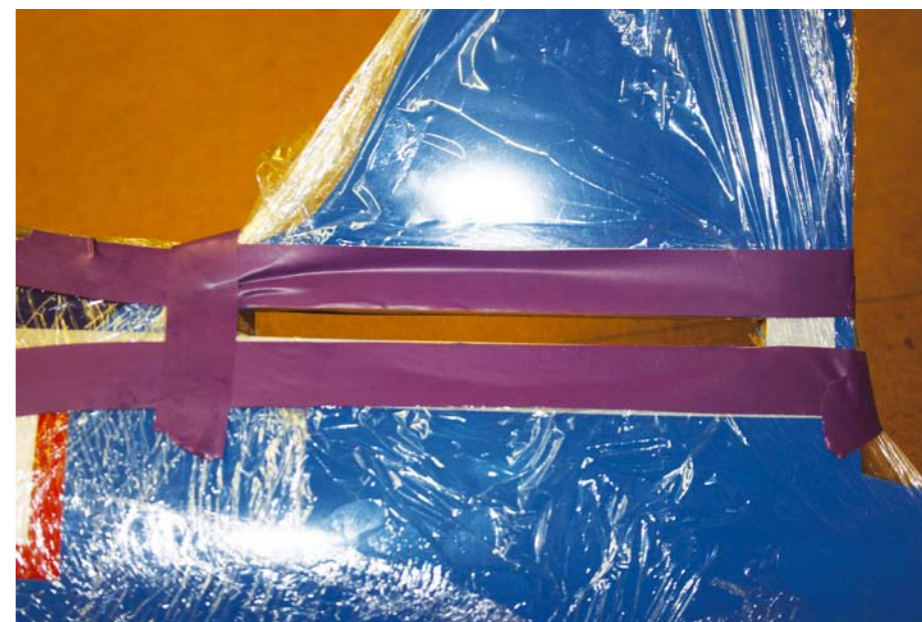
A hole was bored through the rear of the fuselage and the aerial was drawn through and secured with a loop through some fuel tube.

With a simple and stress-free build completed, the Hellcat was balanced inverted at the specified 5.1/4" from the wing leading edge and was very slightly nose-heavy. At 4300 g. dry it was just inside the stated weight range.

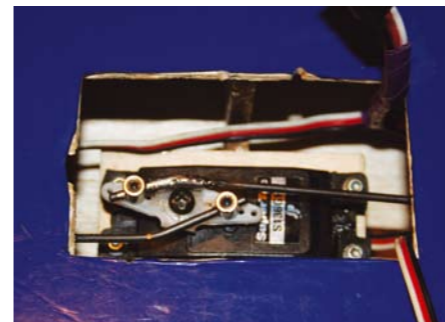
Flying

The brand new EVO 100 had a tank of fuel (14 minutes duration) run through it in the pits to get used to it before the flight, and despite its rich running, had a reliable tickover, quick pickup and plenty of thrust. With ample power available, it was decided to finish off the running-in during the test flights.

Pushing the throttle slowly forward, the Hellcat briskly accelerated down the



TOP: Slot in wing tip for brace. Note Clingfilm and tape to prevent 'epoxy fingerprints'.
ABOVE: Tail slot opened out ready to receive stabiliser.

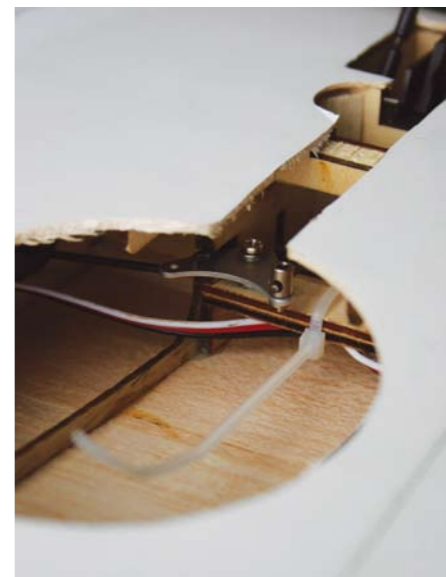


ABOVE LEFT: Retract servo has 190 degree travel with clamp connectors to aid set-up.

ABOVE RIGHT: Rudder, elevator and throttle servos fixed to tray with receiver, battery and switch.

BELOW LEFT: EVO 100 fits neatly on bulkhead with no projections through the cowl.

BELOW RIGHT: Servo extensions tie-wrapped to bellcrank pivot plate to prevent fouling.



ABOVE: Retract doors are held onto legs with clamps. **BELOW:** Short and direct linkages to ailerons.





EVO 100 just visible behind the dummy R2800.



In Brief

The Best bit about this model is ...
The unmistakable Hellcat looks, combined with excellent handling.

I also liked...
Superb presentation, manual and build quality.

Things to watch out for...
1. Take care when setting-up the mechanical retracts, to ensure that gear locks in both up and down positions.
2. Allow adequate cooling air outlet.

Manufacturer should improve...
Nothing major - perhaps white wheel wells instead of grey?

Specification

DISTRIBUTOR:
Helger Flight
MANUFACTURER:
Hangar 9
MODEL:
F-6F Hellcat 60 ARF
TYPE:
Sport scale warbird
RRP:
£TBA
FUNCTIONS:
5 with 6 servos
WINGSPAN:
165 cm (65")
LENGTH:
135 cm (53")
WEIGHT:
3600-4300g claimed, 4300g (9.1/2 lb.) as tested
WING AREA:
770 sq. in.
MOTOR:
75 two-stroke, 100 four-stroke
MOTOR USED:
EVO 100
CONSTRUCTION:
Built-up balsa and ply
COVERING:
Ultracoat heat-shrink film

runway and lifted its tail almost immediately. After just a dozen yards of ground run, air appeared beneath the wheels and she was climbing out nicely. With thirty feet of altitude, the gear was raised and the Hellcat flown around in

smooth open circuits for trimming. Just a single blip of right aileron and down elevator had the model trimmed perfectly ready for some more adventurous behaviour. With a couple of hundred feet of alti-



tude the nose was raised and throttle closed to test the stall. With gentle up elevator, the model just sat nose high, hovering against the headwind. Vigorous application of up elevator made the model drop its nose and recovery was almost instant, with no sign of a tip stall or other nasty traits.

Flown around the field with low level beat-ups along the strip, the Hellcat looks great and proved an easy model for Heather to capture on the camera.

With the throttle wound open, the Hellcat can rip up the sky like a racer and with the EVO 100, can perform huge loops that go from ground level to the cloud base with no sign of slowing down. The low pitch prop provides good braking during dives and landing approaches and allows easy placement on the strip.

Landing is as uneventful as any well sorted sports model, the Hellcat being easy to bring in balanced on elevator and throttle and maintaining control all the way to final touchdown. The retracts did jiggle somewhat on our rough concrete strip (smooth grass would have been easier on the gear) but survived without bending back.

With a couple more test flights completed on the Hellcat's first outing the aeroplane was given a post-flight check to make sure that everything was okay (it was) and was cleaned up and packed away ready for another day.

Conclusion

It is always a pleasure to assemble an aircraft from the Hangar 9 stable. This manufacturer obviously invests consider-

able time and effort in the design, manufacture, development and testing of their products to produce high quality models that go together easily and fly well. At first glance Hangar 9 models may appear slightly expensive compared to the budget alternatives but closer inspection reveals a model of an overall higher class.

The F-6F Hellcat is no exception. It is a well built model that comes with decent mechanical twist and turn retracts fitted, a good quality hardware pack and an instruction manual that is hard to fault. Combined with great looks, excellent paint and covering and sports model flying characteristics the Hangar 9 Hellcat is a winner in my book. ■