

# Robinson R66 arrives for Heliflite Pacific

**ROBINSON** R66 Turbine serial number 0015 has arrived for Heliflite Pacific at Ardmore. With well over 100 orders on the factory, obtaining such an early build number is testament to the relationship Heliflite's Australian parent has with the Robinson Helicopter Company who received FAA certification for the R66 in October 2010.

The history of Robinson's R22, R44, and tremendously successful design approach needs no explaining in New Zealand (321 out of 777 helicopters on our register are Robinson's). Such is the world wide appetite for the brand, that the R66 Turbine

has been eagerly anticipated by everyone who wasn't competing with it. It's not necessarily a coincidence that shortly before the R66 became a reality, Bell Helicopter announced they were ceasing production of their venerable 206 model.

ZK-HAG, as the new R66 has been registered, is due to fly as KiwiFlyer goes to print so in this issue we describe the aircraft's development and some of its features. A full flight report will follow in our June/July issue.

### The Exterior

The R66 may look like an R44 from a distance, but the closer you get, the less resemblance there is. Although it is the same length from rotor tip to tail, the R44 stands 8 inches taller and nearly 8 inches wider than the R44 and the cabin is actually almost 10 inches wider than a Bell 206B.

Cosmetically, the door windows now sweep down to line up with the lower windshield and with the extra width on

hand, there is no longer a need for bubble windows to help provide shoulder room.

Gone are the fuel fillers atop the fuselage which are now concealed behind a hinged panel. As well as helping to streamline the fuselage, this system also provides a point of difference to the visually similar R44 which should therefore

As with the R44, passenger views are outstanding, particularly when compared to a Bell 206 or H500 cabin. Also as with the R44, air conditioning is an optional extra.

Controls are standard Robinson T-bar, but pedals are now adjustable fore and aft as well as being spaced further apart and therefore more comfortable than the R44.

The instrument panel includes new gauges to monitor the turbine engine and an upper annunciator panel instead of multiple separate warning lights. A nine hole panel and separate pilot's avionics console are available as accessories.

### The Engine

The Rolls Royce RR300 turboshaft engine is a derivative of the RR250 series specifically designed for the R66. Capable of 300 shaft horse power, it is derated to 270shp for a 5 minute takeoff rating and to 224shp for maximum continuous operation. It weighs 172lb and is installed at a 37 degree angle, helping to make space for the baggage compartment below.

Starting is straight forward. Turn the igniter switch to enable, press and release the start button (latched so you don't need to hold it), wait for the N1 gauge to read 12%, push in the fuel valve, and listen to the wonderful noise of a turbine engine coming to life. If the MGT (Measured Gas Temperature) gets too high, pull the fuel control back out to cut fuel (the starter will automatically continue to draw in cool air).

An engine monitoring unit continuously records gas generator/compressor rpm, turbine rpm, engine torque, and measured gas temperature.

prevent accidental mis-fueling.

There is also a small horizontal stabiliser at the base of the tail which deals with airflow issues that arose from the wider cabin design. The rotor head is familiar, having the same low maintenance teetering design as on the R44. As would be expected, the R66 meets the latest FAA crashworthiness specifications.

Most notable is the baggage compartment accessible from a hinged door beneath the engine. The 18 cubic feet and 300lb capacity can accommodate 3 or 4 suitcases or a couple of sets of golf clubs.

### The Interior

The interior keeps to the theme familiar for all Robinson pilots, except there is so much more space. Rear passengers gain an inch of legroom over the R44. There are three separate seats with the centre seat positioned slightly forward which helps shoulders overlap slightly for wider set people.



The R66 being run up outside Heliflite at Ardmore. It was due to fly just after this issue of KiwiFlyer went to print.



The R66 is virtually identical in length to it's R44 sibling. The big difference is an extra 7.5 inches of width, providing significantly more shoulder room up front and of course, space for a fifth seat in the back. Leg room gains an extra inch over the R44. Cabin layout is the same, with an uninterrupted view for rear passengers.

The centre rear seat is set slightly forward which allows shoulders to overlap if required. Compare the view to a JetRanger cabin at right.



### Performance and Specifications

The R66 has a Vne of 140kts and a cruise speed of 120kts.

Fuel capacity from a new bladder fuel system is 275 litres for a range of approximately 325nm.

Hover performance in or out of ground effect is over 10000 feet.

The R66 has a maximum gross weight of 2700lb, an empty weight of 1280lb and with maximum fuel, a passenger and baggage weight of 927lb. Of notable comparison to the R44 is the empty weight – the R44 Raven II is 1500lb which is 220lb more than the R66 (Lycoming 540's aren't exactly feather-light).

### Maintenance

As with the R22 and R44, the R66 has been designed to have low operating costs and be maintenance friendly. No scheduled maintenance is required between 100 hour inspections. Time between overhaul is 2000 hours or 12 years for the airframe and all lifed components have service lives of at least 2000 hours. Something new for Robinson owners will be the engine start cycle limit before overhaul which is 3000 start cycles (or, as with the rest of the aircraft, 2000 hours of operation, whichever occurs first). The aircraft has a 2 year or 1000 hour limited warranty.

### Availability

By the time you read this, Heliflite's R66 will be available for demonstrations. Contact Brett Sanders on 09 299 9442 or 021 748 984 to make a booking. We at KiwiFlyer are certainly looking forward to our turn.

**Captions: 1 & 2.** Long wished for by R44 owners, an 18 cubic foot baggage compartment will accommodate 300lb of suitcases, golf clubs, etc. **3.** The fuel filler is concealed behind a hinged panel, helping to streamline the fuselage. **4.** The RR300 engine was specifically designed for the R66. **5.** Sight glasses for oil level checks are illuminated by LED's. **6.** The traditional Robinson console; note the annunciator panel at top and the turbine N1, N2, MGT and torque gauges. **7.** The rear view. **8.** Individual rear seats times three, with standard Robinson restraints.



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