an emergency than plungers with verniers fitted.

The Royale ceased production in the mid-seventies, so any likely to find their way onto the secondhand market will be at least 30 years old. They might have retained the original instrument fit, but most, like the example in this 'Buyer's Guide', will be a mixture of old and new.

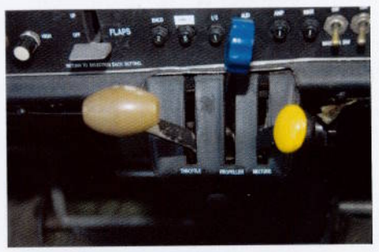
Starting the 200hp Lycoming is standard fuel injection engine procedure, and the unit in this aircraft (recently zero-timed) catches easily and produces a satisfying rumble as the constant speed propeller strobes in the low sunlight. We are parked rather awkwardly and need to make an immediate tight turn through 180° about which I am dubious, but Peter assures me it will be no problem for the Royale. The direct link from the rudder pedals to the nosewheel produce sufficient deflection to execute the manoeuvre comfortably and Peter's smile tells all.

"Expect instrument panels that are a mix of old and new"

Taxiing is like ground-manoeuvring in a PA-28, the wrap-around canopy providing an unimpeded view from left seven o'clock through dead ahead to right four o'clock.

Setting the electrically-operated flaps requires the panel-mounted lever to be moved down from the mid 'off' position until the middle light of three illuminates. This is the takeoff flap position, at which point the lever must be returned to 'off'. If landing flap is required, the lever is once more selected down, until the third light comes on. A little practice on the ground is needed to avoid flipping the lever up and down in an attempt to achieve the required setting.

With a basic weight of 1,790lb, 200 litres of fuel in the tanks and two 190lb chaps sitting at the front, we came to 2,310lb all-up, 340lb short of the maximum of 2,650lb. The fuel system comprises four individually selectable tanks and an electric fuel pump.



Mixture, pitch and power are all controlled with colour-coded levers also coded by shape

NOT EXACTLY BRISK

On takeoff, acceleration is not as brisk as expected, possibly due to some rolling resistance which we had noticed when pushing the aircraft around on the ground. However, the drawback to this otherwise excellent aircraft is its long takeoff run. James Gilbert, flying a brand new one in 1972 noted: 'The HR100 likes to thunder quietly along for several long moments before deciding to fly… if you own one, you want to make a good study of field lengths of places you go to. Stick to proper airfields and watch it on a hot day'.

Some twelve seconds later, after a run of 450 metres we unstick at 70kt following my moderate back pressure on the control column.

Retracting the flaps produces little or no sink, and the Royale accelerates quickly to the 90kt best climb speed. We soon settle into an 800fpm climb, joining the Chipmunk camera ship at 3000ft.

Although the Royale has a fairly long takeoff run, once airborne it does climb well. The book sea level climb rate for a new one back in the 1970s was 1000fpm.

Despite the stability designed into the aircraft for its touring role, the Royale copes well with the formation changes signalled from the Chipmunk. We then break away to have a closer look at the handling capabilities.

In level flight, Peter advises me to set the manifold at, "Eighty-three," (which I assume to be 830 millibars) and the prop lever back to the stop. This latter setting I make cautiously, but sure enough, it produces 2,400rpm, which in turn gives 120kt indicated, Peter's standard cruise setting, at which the Royale ambles along at a comfortable gait.

There is little adverse yaw from the ailerons, so little rudder is needed when rolling the aircraft. With no pillars to get in the ➡

PRE-PURCHASE INSPECTION

Read between the lines

As with any thirty or forty-year-old aluminium and steel aircraft, it's important to look carefully for corrosion. You can't really see inside the structure, but you can read between the lines. Look for a smell of rotting carpet in the cabin (a leaking canopy and a life parked in the open), blistering paint along the seams or around the rivets and rust marks on the engine bearers and undercarriage fittings. A particular problem is a poor quality respray, in which over-enthusiastic paint stripping has removed the undercoats.

You should also regard the engine with some suspicion. Look at the logbook to see when the last overhaul was carried out, take note of the engine hours and look for danger signs – an engine that's reluctant to start, vibrates and an excessive smell of burning oil and clouds of smoke at start up. Ask to see the results of the last compression check.

Examine the propeller and its logbook to see when the next overhaul is due.

The panel fit is worth a good look. Make sure you know which items work and which don't.

All three wheel assemblies are hidden from view by heavy duty spats. The prospective purchaser might ask for them to be removed to check brakes, hydraulic leaks, and tyre creep and to check on the state of the spats. These fibreglass units do tend to deteriorate over time. The underside of the spats should be checked for damage from ground contact.

One 'gotcha' in the Royale is the possibility of sliding the canopy forwards while the oil level inspection panel is open. The canopy needs to be carefully checked in any case, particularly the sliding mechanism, which can give trouble after a lot of use.

There is a rubber bung on each wing upper surface, directly above the undercarriage legs. Ask for this to be removed and look inside the recess it exposes for corrosion. These are good places for water to pool. The gap between the wing trailing edge and the flaps and ailerons is another moisture trap with potential for corrosion.

Have a look at the underside of each flap for possible stone damage. Check the aileron servos for correct function.

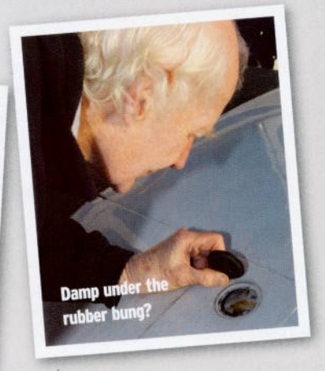
Look underneath the rear fuselage and the rudder for damage from ground strikes on landing. The all-moving tailplane should be checked for excessive play in the bearings. Ensure the servo/trim tabs move correctly.

Peter says his engineers have never found it difficult to obtain spares.

The recent announcement that Robin aircraft is once again being supported (the last company got into difficulties, mainly because of the collapse of Thielert) suggests that this will continue to be the case.


Corrosion between flaps and wings?


Spats ought to be removed periodically


Damp under the rubber bung?


Checking the nosewheel suspension


Carry out an instrument audit