

## Rans S6 Coyote II, G-MWRK

<b>AAIB Bulletin No:</b>	<b>12/99</b>	<b>Ref:</b>	<b>EW/C99/7/5</b>	<b>Category:</b>	<b>1.3</b>
<b>Aircraft Type and Registration:</b>	Rans S6 Coyote II, G-MWRK				
<b>No &amp; Type of Engines:</b>	1 Rotax 503 piston engine				
<b>Year of Manufacture:</b>	1991				
<b>Date &amp; Time (UTC):</b>	4 July 1999 at 1355 hrs				
<b>Location:</b>	Near Easingwold, Yorkshire				
<b>Type of Flight:</b>	Private				
<b>Persons on Board:</b>	Crew - 1 - Passengers - None				
<b>Injuries:</b>	Crew - 1 Serious - Passengers - N/A				
<b>Nature of Damage:</b>	Aircraft destroyed				
<b>Commander's Licence:</b>	Private Pilot's Licence				
<b>Commander's Age:</b>	64 years				
<b>Commander's Flying Experience:</b>	387 hours (of which 234 were on type)				
	Last 90 days - None recorded				
	Last 28 days - None recorded				
<b>Information Source:</b>	AAIB Field Investigation				

### History of flight

The aircraft was based at Brighton Airfield, which is 5.5 nm east north east of Selby. An informal agreement was made with another pilot from Brighton to fly to, and meet on the ground at, Bagby Airfield, 2 nm south east of Thirsk. The latter recalled seeing 'RK' behind him at the holding point as he entered the runway to take off from Brighton; no accurate time of take off was available for either aircraft. The last time he saw 'RK' was over the village of Seaton Ross, about 5 nm to the north east of Brighton. He estimated that the aircraft was about 1,000 feet agl and appeared to be turning to head back towards Brighton.

The next reported sighting of an aircraft which fitted the description of 'RK', was to the north of the village of Huby. The observer's attention was drawn by the engine noise, which he described as the rpm increasing and dying away before increasing again. His normal work was with horticultural machinery and he had experience of two stroke engines; his opinion was that the engine was suffering some form of fuel starvation. The aircraft passed over his house in a normal flight attitude, at a height he estimated as about 3 times the height of a house; it appeared to be tracking slightly east of north when it disappeared from his view.

Another witness saw the aircraft fly over her house, about 20 to 30 feet above it, at about 1355 hrs. It had come from the direction of The Hawkhills, about 1 nm south of Easingwold. The wings were rocking from side to side and the engine appeared to be running, although the noise from it was not loud. She observed that the engine went completely quiet as the aircraft passed over the farm buildings adjacent to the house. It then entered a right turn and descended out of sight. A few seconds later she heard a "dull thud". She ran across the farm yard and saw, in a nearby field, a blue and white aircraft in a nose down attitude "with its tail in the air". She immediately ran back to the house and made a '999' call to the police. When she returned to the aircraft the pilot was lying to the right side and was attempting to extricate himself from the wreckage. He appeared to be trapped by his right foot and she was unable to help him free it, so she stayed with him and comforted him until the emergency services arrived.

The emergency call was logged at 1358 hrs, and the police arrival at the site at 1408 hrs; the Fire Brigade and Ambulance Services arrived at 1416 hrs. The pilot had been removed from the wreckage by 1432 hrs and, after initial medical attention at the site, the Ambulance left for York District Hospital at 1458 hrs. The pilot had suffered serious multiple injuries and, four months later, was unable to recall anything about the accident.

### **Meteorology**

The synoptic situation at 1,400 hours showed an area of low pressure centred just to the northeast of Aberdeen , with a light to moderate southwesterly airstream covering the area.

The weather in the Easingwold area was:

Surface wind 210°/8 kt

Visibility 30 Km

Cloud 2 Oktas base 3,500 feet

7 Oktas base 6,000 feet

Temp/Dew Point 20°C/12°C

### **The accident site**

It appeared that the aircraft was attempting to land, however the field in which it had crashed was unsuitable because of its rough, uneven surface and small size. There were also tall trees and buildings on the boundary over which the aircraft made its approach. It had landed nose first with little or no ground run, about 5 metres before the far boundary fence. Beyond the fence there was another field which was ideal in size, shape and surface and it is possible that it was this latter field in which the pilot intended to land. There was little or no wind to affect the direction of the approach.

### **Global positioning system (GPS)**

A Magellan Meridian XL GPS was found in the wreckage and data from its nonvolatile memory was analysed at the AAIB facility. The equipment was designed for marine use and it only recorded data every 10 minutes. It was set to use British Summer Time however, for clarity; the times quoted

below have been converted to UTC. The first position recorded was at 1159 hrs, about 2 nm to the north of Brighton. Two subsequent positions, at 1209 hrs and 1212 hrs were in the airfield area. The next recorded position was at 1245 hrs indicating that the equipment had probably be switched off during the intervening period. Three subsequent positions recorded at 1319 hrs, 1323 hrs and 1337 hrs indicated that the pilot was probably switching the equipment on when he wanted a fix and then off again.

The equipment was left switched on from 1337 hrs and, although only three timed positions were recorded, it was possible to recall the final track onto the display screen. A photograph was taken of the screen and was then re-scaled to produce a map overlay. At 1337 hrs, the aircraft was tracking northeast towards Stillington, where it then turned left to track north west. Shortly after the timed position at 1347 hrs, it began a left turn, around the northern edge of the town of Easingwold to a position to the south of the town, where it was seen by the last witness. The final timed position, at 1355 hrs, was very close to the accident site and, as it was not 10 minutes since the previous one, probably occurred because the equipment was switched off by the impact.

### **Engineering investigation**

The complete aircraft was despatched to the AAIB at Farnborough for examination, whereupon some six gallons of fuel were drained from the fuel tank. The nose of the aircraft was bent upwards at an angle of about 45°, corresponding to its impact attitude. There is little doubt that the aircraft had stalled at a low height and airspeed. One propeller blade had broken but the other blade was pristine, indicating that little, if any power was being generated at impact. In the cockpit, the altimeter had clearly been struck by the pilot's head and, although his seat harness was intact, it is evident that structural distortion had caused the instrument panel to move aft towards him.

Because of the evidence of loss of power, the engine was removed and taken to a specialist Rotax maintenance agent for investigation under AAIB supervision. Although it was potentially in an operable state after some component replacements, it was decided that it would be better to carefully strip the engine. This was done, the carburettors stripped and the magnetoes tested but no reason could be found for the apparent loss of power. Equally so, none of the airframe-mounted components of the simple fuel system were found to be blocked or restricted and, as noted above, there appeared to be sufficient fuel present in the tank.