

Renegade Spirit, G-MZIP

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Category: 1.4

Aircraft Type and Registration:	Renegade Spirit, G-MZIP	
No & Type of Engines:	1 Rotax 532 piston engine	
Year of Manufacture:	1989	
Date & Time (UTC):	13 July 2002 at 1814 hrs	
Location:	Near Cumbernauld Airport	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - Minor	Passengers - Serious
Nature of Damage:	Aircraft destroyed	
Commander's Licence:	Private Pilots Licence with Assistant Flying Instructors Rating	
Commander's Age:	39 years	
Commander's Flying Experience:	321 hours (of which 115 were on type)	
	Last 90 days - 45 hours	
	Last 28 days - 19 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot plus subsequent enquiries	

The pilot and his passenger, also a qualified pilot, were undertaking a dawn to dusk flight and had departed the aircrafts home base near Winchester early on the morning of the accident. Their route had taken them north via various refuelling stops through Wales and the Lake District, and after approximately nine hours flying, they had landed at Cumbernauld Airport near Glasgow.

The weather at Cumbernauld that afternoon was good with a light north-westerly wind and good visibility. The aircraft was fully refuelled and after about an hour on the ground the pilot and his passenger departed for Oban, their final destination.

Both the ground power check and the takeoff were normal. However, on climbing through approximately 700 feet above airfield level the aircraft lost power and the pilot could not maintain

altitude. He checked the fuel and switches for correct selection but could see no obvious problem. The engine continued to run but as he was still unable to maintain altitude, the pilot decided to carry out a forced landing which, due to the nature of the surrounding terrain, he was forced to make up-slope on a hillside straight ahead. He attempted to raise the nose as much as possible on landing but due to the lack of engine power and the rising terrain, the aircraft impacted the ground in a nose-down attitude.

Once the aircraft had come to rest the pilot switched off the engine, switches and fuel before getting out of the rear cockpit suffering from bruising. He then helped his passenger out of the front cockpit and dragged him clear of the aircraft. His colleague had suffered two broken legs, but the pilot was eager to get him away from the aircraft as the fuel tanks had ruptured during the impact. The pilot had not had time to put out a distress call on the radio so he used his mobile telephone to contact Cumbernauld Airport to report the accident and seek assistance. This was quickly rendered by a Robinson helicopter which landed near the accident site. The site was about half a mile from the nearest road and it took the emergency services approximately 30 minutes to arrive. The injured passenger was then transferred to hospital by air ambulance.

A subsequent strip examination of the engine revealed it to be well maintained and in good condition. There was, however, a build up of carbon whiskers on the spark plug electrode in the number one cylinder, sufficient to short it out and prevent it sparking. Once cleaned the spark plug worked normally. The engine has only two cylinders, each with one spark plug (single ignition). Consequently, with one ineffective spark plug, the engine would have been operating at half power which was insufficient to keep the aircraft airborne, particularly at relatively high weight.

This accident demonstrated that the onset of whiskering can be rapid but the phenomenon is rare. Moreover, its effect can be negated by the adoption of a dual ignition system and regular maintenance. The Rotax 532 engine has now been superseded by the Rotax 582 engine which has a dual ignition system.