AAIB Bulletin No: 7/94 **Ref: EW/G94/05/13** **Category: 1.3**

Aircraft Type and Registration:	Grumman AA-5B Tiger, G-BDRB
No & Type of Engines:	1 Lycoming O-360-A4K piston engine
Year of Manufacture:	1975
Date & Time (UTC):	16 May 1994 at 0540 hrs
Location:	Wing Farm, Warminster, Wiltshire
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 2
Injuries:	Crew - None Passengers - None
Nature of Damage:	Damaged beyond economic repair
Commander's Licence:	Private Pilot's Licence with IMC Rating
Commander's Age:	42 years
Commander's Flying Experience:	322 hours (210 of which were on type) Last 90 days - 14 hours Last 28 days - 6 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

The airstrip at Wing Farm is designated 09/27. The published length is 500 metres and it slopes uphill to the west (about 1.8%); the airfield elevation is 420 feet amsl. The pilot reported that, at the time of the accident, the grass was long and wet and the surface wind was less than the forecast 080°/10 kt; he found it difficult to assess the direction and thought that there was no windsock available. The owner of the airfield reported that there were two windsocks at Wing Farm; the main one was at the western end and there was a smaller one at the eastern end. He estimated that the grass was about 3 inches long and confirmed that the ground was wet. There were surface undulations because the normal ploughing direction had been north/south when the field was under cultivation. The pilot's decision to use Runway 27 for takeoff was influenced by the fact that there were trees and buildings at the eastern end of the strip.

The take-off run appeared to progress normally and the pilot considered that the airspeed reached at the mid-point of the runway was satisfactory. However, as the runway end approached, he realised that the aircraft was not accelerating and would not achieve take-off speed. With insufficient runway

remaining to bring the aircraft to a halt, he maintained full power and attempted to clear the hedge at the far end of the strip; the tail hit the top of the hedge and the aircraft pitched forward and crashed into the adjacent field. The occupants were all wearing lap and diagonal upper torso restraint and escaped without injury.

The aircraft weight at takeoff was estimated as about 2,220 lb; the maximum was 2,400 lb. On a dry, hard surface the still air take-off distance to 50 feet would have been about 365 metres. If the various basic factors, recommended in the CAA Aeronautical Information Circular 90/1991, were added the distance would be about 520 metres for the conditions prevailing, assuming no wind; a 5 kt tailwind would increase this to about 620 metres. This figure would be increased by any deviation from the normal operating technique and by environmental factors such as the pitching induced by the aircraft traversing runway undulations. Under certain conditions, particularly on a wet, grass runway, the aircraft may stabilise at an airspeed below that required for lift-off; early recognition of this condition would allow the takeoff to be aborted with sufficient runway remaining to stop the aircraft.