

ACCIDENT

Aircraft Type and Registration:	Gulfstream American GA-7, G-TANI	
No & Type of Engines:	2 Lycoming O-320-D1D piston engines	
Year of Manufacture:	1979	
Date & Time (UTC):	14 January 2007 at 1600 hrs	
Location:	Stapleford Airfield, Essex	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Damage to fin and rudder	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	70 years	
Commander's Flying Experience:	1,667 hours (of which 1,095 were on type) Last 90 days - 20 hours Last 28 days - 5 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

The aircraft was on the final approach to Runway 22L at Stapleford aerodrome. Although the pilot's forward vision was impaired when flying towards the setting sun he could see the runway and two aircraft that were ahead of him. When the aircraft was approximately 2 km from the threshold of Runway 22, its fin struck the earth wire suspended between two electricity pylons. Despite damage to the fin and rudder the aircraft landed without further incident.

History of the flight

The pilot had planned to fly to France and back with a friend. He left Elstree that morning and flew to Stapleford aerodrome, where he collected his friend, and then flew to Le Touquet. After lunch, they departed Le Touquet

at about 1520 hrs to return to Stapleford where the pilot intended to leave his friend before returning to Elstree. He was familiar with Stapleford, having operated into the aerodrome on many occasions. The weather was good throughout the flight with a light south-westerly wind and CAVOK conditions. Approximately 5 nm from Stapleford the pilot contacted 'Stapleford Radio' and was passed the landing information. He joined overhead the aerodrome for a left-hand circuit, descending from 2,200 ft to a circuit altitude of 1,200 ft on the airfield QNH.

The runway in use at Stapleford was Runway 22L, which is 1,077 metres long, 46 metres wide and has an asphalt surface: the airfield elevation is 185 ft amsl. A line of

pylons supporting electricity power cables is located 2 km north-east of the threshold for Runway 22. The pylons are 140 ft high, with the top of the pylons up to 395 ft amsl. A single earth cable is suspended from the tops of the pylons, below which are the main electricity power cables. The distance between the earth cable and the upper power cables is 21 ft. The presence of the power line is promulgated in the UK AIP and the aerodrome flight guide. The map at Figure 1 shows the proximity of the pylon line to Stapleford aerodrome. The distance of the pylons from the runway threshold means that their height falls below that required for any form of illumination.

Having turned onto the downwind leg, the pilot lowered the landing gear and the first stage of flap adjusting engine power to fly at 100 kt. The pilot was aware of two other aircraft, one on the final approach and another which was approaching Stapleford from the north. In order to ensure adequate separation from these aircraft he extended his downwind leg. At approximately 2 nm he turned onto the base leg keeping the other two aircraft in sight. During the base leg the pilot lowered the second stage of flap and reduced power to descend to 1,000 ft for the turn onto the final approach.

When the aircraft was established on the final approach the pilot selected the third stage of landing flap. He reduced the airspeed to 85 kt and adjusted the power to achieve a normal rate of descent. The runway was visible but the setting sun impaired his forward vision. However, he could see that the first aircraft was about to touch down and he heard the aircraft ahead transmit that he was going around. Almost immediately there was a loud bang, the cause of which was not apparent to the pilot. The aircraft responded normally to the flight controls and the pilot continued his approach, notifying Stapleford Radio of the situation. After landing, the

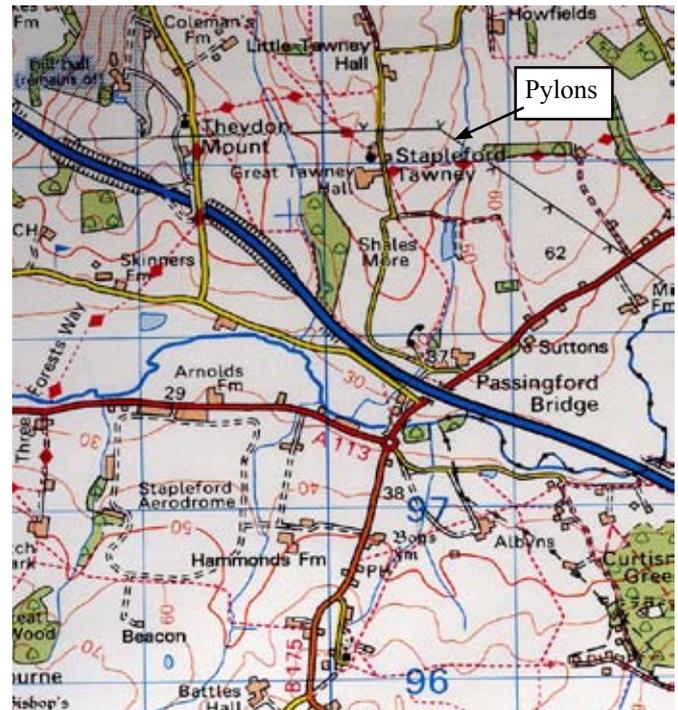


Figure 1

pilot taxied the aircraft clear of the runway but was instructed to stop and shut down by the radio operator who could see the damage at the rear of the aircraft. The Rescue and Fire Fighting Service deployed but both persons on board vacated the aircraft unassisted through the normal exit.

An external inspection of the rear of the aircraft showed extensive damage to the fin and rudder. The aircraft had passed between the earth wire and the electrical power cables suspended between the pylons. The top of the fin had contacted the earth wire.

Previous accident

On 26 December 1994 a Robin 100 was returning to Stapleford from a short navigation exercise. The surface wind was from 220° at 15 kt and Runway 22 was the active runway. The circuit was busy and the pilot of the Robin extended the downwind leg to accommodate other landing traffic. Witnesses on the ground thought

that the aircraft was low on the approach but in a constant descent attitude. The aircraft struck the power cables to the north-east of the aerodrome and broke up; all four persons onboard were fatally injured. Other pilots flying at the same time commented on the difficulty in seeing Runway 22 in the bright winter sun.

Analysis

The pilot had used Runway 22 at Stapleford on many occasions previously and was aware of the power line to the north-east. On this flight he had extended the downwind leg to ensure separation from the two aircraft

ahead of him. This placed his aircraft further beyond the power line than was normal. However, he then applied his usual speeds, aircraft configuration and power settings, as if he was flying a normal circuit. By adopting this profile and a normal descent rate the aircraft became low on the approach path and struck the earth wire. The combination of the low sun affecting the pilot's forward vision and the need to monitor the other traffic were distractions that consumed much of the pilot's attention. There were clearly similarities between this event and the previous tragic accident.