

INCIDENT

Aircraft Type and Registration:	Piper PA-28-180 Cherokee, G-AYEE	
No & Type of Engines:	1 Lycoming O-360-A4A piston engine	
Year of Manufacture:	1970	
Date & Time (UTC):	28 November 2006 at 1915 hrs	
Location:	Oxford Airport	
Type of Flight:	Training	
Persons on Board:	Crew - 2	Passengers - None
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Impact damage to nosewheel oleo, engine mount and right wing leading edge and additional damage to the fuselage due to electrical arcing, plus impact damage to three electrical power cables	
Commander's Licence:	Commercial Pilot's Licence	
Commander's Age:	31 years	
Commander's Flying Experience:	2,100 hours (of which 1,640 were on type) Last 90 days - 195 hours Last 28 days - 53 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

A private pilot and an instructor were conducting a night circuit training exercise. During a practice flapless approach, with the trainee acting as handling pilot, the aircraft descended below the correct approach path. It struck a set of power lines about 50 ft agl situated about 0.5 nm from the runway. The instructor took control, went around and subsequently carried out a successful landing at the airfield.

History of the flight

The qualified private pilot was undertaking training to obtain a night rating and was familiar with the airfield. Early in the evening the instructor briefed the private

pilot (the trainee) for the intended night circuit exercise before flying with a different student for an hour. After a short break the instructor then took off again at 1820 hrs with the trainee for the exercise. Runway 19 was in use and the trainee was acting as handling pilot.

The trainee flew five normal circuits during which various emergency scenarios were discussed. The trainee then flew two flapless circuits. This training was accomplished without incident and the instructor stated that he was confident in the trainee's abilities.

The trainee then commenced a further circuit with the

intention of carrying out another flapless approach. An aircraft ahead in the circuit caused the trainee to extend the downwind leg before turning onto base leg and commencing the approach. The instructor stated that when the aircraft was approximately 400 metres from the threshold, he became aware of some power cables ahead which the aircraft then struck in the area of the nosewheel. The instructor immediately took control of the aircraft and commenced a go-around whilst declaring a "MAYDAY" to ATC. After conducting a handling check overhead the airfield to check for normal control response and handling qualities, the instructor flew a circuit and low go-around to allow the AFRS an attempt at visually inspecting the aircraft using spotlights. They could not see any damage and the instructor rejoined the circuit. He then briefed the trainee for an emergency landing before commencing a final approach to the runway. The aircraft touched down normally and the instructor was able to taxi it clear of the runway without assistance before shutting down the aircraft.

A subsequent inspection revealed the aircraft's nose landing gear had struck power wires causing minor impact damage to the oleo, the engine mount and the leading edge of the starboard wing. There was also visible damage on various points of the fuselage caused by electrical arcing.

Runway description

Runway 19 has threshold and runway lighting but no approach lighting. It is equipped with Precision Approach Path Indicators (PAPI) set for an approach angle of 3.1° and the threshold crossing height is 50 ft. A set of electrical power lines, approximately 50 ft high, run perpendicular to the approach path about 0.5 nm from the runway threshold.

Analysis

In order to hit the power lines the aircraft must have been considerably below the correct approach path. The trainee had extended the downwind leg and had, as a result, turned onto finals further from the runway than during his previous flapless circuits. He could, therefore, have either adjusted the point at which he started his descent or altered his initial descent rate to ensure that he did not become low on the approach. It appears likely that the trainee did not compensate adequately for the extended circuit when making his final approach and neither he nor his instructor realised just how low the aircraft had become during the approach.

The increased pitch attitude of the flapless approach may have masked the pilots' view of the threshold and runway lights; it may also have changed the apparent runway aspect. The previous flapless approach was carried out with the PAPI lights off but they had been switched on for the incident approach. The PAPI lights would have enabled both pilots to judge accurately their glidepath all the way down finals until the landing flare.

Because this was the trainee's first night circuit training exercise, the instructor would normally have been particularly alert to the aircraft's three-dimensional position. However, at the time of the accident, he and the trainee had completed nearly an hour of continuous circuits and the instructor had also flown circuits continuously for about an hour during his previous flight. He stated that he had confidence in the trainee's abilities and so it is possible that he was not monitoring the aircraft's position as diligently as he otherwise would.

The situation might have been averted had the instructor introduced more variety into the training flight by having the trainee leave and re-join the circuit occasionally.