AAIB Bulletin No: 12/93 **Ref: EW/C93/10/6** **Category: 1.3**

Aircraft Type and Registration:	Nord NC854S, G-KERC
No & Type of Engines:	1 Continental A65 piston engine
Year of Manufacture:	1958
Date & Time (UTC):	23 October 1993 at 1610 hrs
Location:	High Cross Airstrip, Hertfordshire
Type of Flight:	Private
Persons on Board:	Crew - 2 Passengers - None
Injuries:	Crew - 1 Serious, 1 Minor Passengers - N/A
Nature of Damage:	Landing gear collapsed, engine bay deflected upwards, fuselage upper longerons broken
Commander's Licence:	Private Pilot's Licence
Commander's Age:	33 years
Commander's Flying Experience:	225 hours (of which 3 were on type) Last 90 days - 6 hours Last 28 days - 3 hours
Information Source:	AAIB Field Investigation

The aircraft had just been acquired by a group, and two members had collected and flown it to High Cross airstrip earlier in the afternoon. During the flight to High Cross, the pilots had performed some stalls with partial power applied and discovered that the aircraft recovered quickly, with little height loss, under these conditions. The runway at High Cross is grass and was dry on the day of the accident.

After the aircraft landed it had been inspected by members of the group and refuelled from jerrycans. It was then decided that one of the group members would take a familiarisation flight with one of the two pilots who had effected the delivery flight acting as commander from the right seat. It was agreed that the commander would conduct the take off and hand over to the other pilot in the left seat when the climb had been established. The crew were using a portable intercom system and wearing headsets.

After starting the engine the aircraft was taxied to the holding point where the new pilot was familiarised with the cockpit layout. The aircraft was then lined up for take off but held at this point, for about 5 minutes, while the crew waited for the engine oil temperature to increase into the green

sector of the gauge. The engine speed was increased to 1,500 RPM to assist this rise in temperature. When the commander was satisfied that the oil temperature was satisfactory, he selected a final application of carburettor heat and then opened the throttle for take off. He observed 2,200 RPM and thought that the engine sounded normal.

After a slightly longer than expected ground run, the aircraft became airborne and quickly established in a climb at 600 feet per minute and 60 mph. Shortly after handing control to the new pilot, the commander noticed that the speed had decayed to 50 mph, although the attitude had not changed. The commander reminded the pilot of the risk of stalling. He continued to monitor the attitude, which remained constant, and airspeed, which continued to decay. At a height of about 150 to 200 feet agl, the nose of the aircraft started to 'waver' and the commander took control, lowered the nose below the level of the horizon, and then began to ease the column back smoothly in a similar manner to the technique used to recover from the practice stalls performed earlier in the day. He had been unaware of any change in engine note.

The commander realised that he had the column on the aft stop and the aircraft was still very steeply nose down. The aircraft continued to descend to the ground in this attitude and crashed, on the right edge of the runway. The members of the group who had been observing the take off from the ground all noticed that the engine note appeared to change as the aircraft entered a stall and fell from their sight, behind a small wood.

Examination of the aircraft wreckage showed that the aircraft had struck the ground whilst steeply nose down, slightly right wing low and with a very high rate of descent, the fuselage structure collapsing axially forward in the cockpit zone and with the tail deforming downwards. The appearance of the wooden propeller was consistent with the engine having been turning, but not producing much power at impact. An examination of the engine showed that there had been no pre-impact mechanical failure and that the magnetos and fuel pump still operated, and there was still a considerable quantity of fuel in the tank. All cylinders had satisfactory compression and the plugs were found to be in good condition and unfouled. Examination of the carburettor float bowl revealed no evidence of there having been any water contamination of the fuel, nor any blockage of the jets. It was not possible to determine the position of the fuel cock (which is situated on the left side of the central console) at the time if impact.

The weather recorded at Stansted, 10 miles east-north-east of High Cross, at the time of the accident was; Wind - 020/20 kt, Visibility - over 10 km, Cloud, Scattered at 2400 feet, Broken at 4500 feet, Temperature 8.5°C and Dew Point 2°C.