No: 10/89 **Ref: EW/G89/08/02** **Category: 1c**

Aircraft Type and Registration:	Stolp Starduster Too SA300, G-BPKS
No & Type of Engines:	1 Lycoming IO-360-B1A piston engine
Year of Manufacture:	1980
Date and Time (UTC):	9 August 1989 at 1653 hrs
Location:	Sywell Airfield, Northampton
Type of Flight:	Training
Persons on Board:	Crew - 1 Passengers -None
Injuries:	Crew - None Passengers -N/A
Nature of Damage:	Propeller blades, right lower mainplane and flying wires damaged
Commander's Licence:	Private Pilot's Licence
Commander's Age:	40 years
Commander's Total Flying Experience:	204 hours (of which 9 were on type)
Information Source:	Aircraft Accident Report Form submitted by the pilot and AAIB telephone inquiries

The pilot flew in the Sywell local area for 35 minutes, practicing slow flying, stalls and forced landing descents, before returning to Sywell Airfield to conduct touch-and-go landings on Runway 25. No problems were encountered on the flight until climbing out from the fourth touch-and-go. At 200-250 feet agl major power loss was experienced. This reportedly occurred just as the pilot slightly coarsened the propeller pitch, a normal procedure to prevent the engine from overspeeding. Re-selection of full fine pitch did not cause the engine speed to increase and the aircraft began descending at around 500 feet/minute.

The pilot selected two fields, separated by a hedge, for a forced landing, transmitted a Mayday RT call and attempted to find the cause of the problem. He found that by gently opening the throttle from closed he could obtain short bursts of almost full power. The aircraft was levelled at around 25 feet agl, at which point there was a flash and a violent yaw to the right and the pilot realised that the aircraft had struck a power cable that he had not sighted. This proved to be an 11 kV power line whose failure caused electrical power supply failure on the airfield and prevented the control tower from receiving the latter part of the Mayday.

It proved possible for the aircraft to continue flying, very low, using short bursts of power obtained by

gently pumping the throttle, and the aircraft made a successful emergency landing on Runway 33 with no further damage.

Subsequent checks showed that the engine behaved normally, until the throttle was opened beyond the 1700-1800 rpm setting. At this point the engine misfired and died to a rough idle. It was found that the flexible hose connecting the air cleaner to the engine had detached from the air cleaner, and it was believed that no clamp had been fitted at this point. The hose consisted of a single fabric tube, approximately 2 feet long, with a spiralled internal wire to maintain the circular section of the hose when internal pressure was less than external pressure. The wire was stabilised by a string wound tightly around the outside of the hose between the wire spirals. A number of turns of the wire at the engine injector system end of the hose had been deformed, apparently during hose fitment, and were found partially displaced from their normal position between sucessive turns of the external string. It was reported that this damage was not apparent when the hose was attached normally. However, tests after the accident showed that with the air cleaner end of the hose detached and allowed to drop down in the engine bay, the damaged portion of hose twisted and partially collapsed, causing severe throttling of the airflow to the engine. In this condition the engine symptoms leading to the accident were duplicated. With the hose in a normal condition the engine ran normally.