No: 8/89 **Ref: EW/G89/04/21** **Category: 1c**

Aircraft Type and Registration:	Piper PA28-161, G-BFNI
No & Type of Engines:	1 Lycoming O-320-D3G piston engine
Year of Manufacture:	1978
Date and Time (UTC):	14 April 1989 at 1630 hrs
Location:	Barn Farm, Horton-Cum-Studley
Type of Flight:	Training
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	All 3 landing gears broken off, damage to both wings, engine bulkhead, fuselage skins, stabilator and flaps.
Commander's Licence:	Student Pilot
Commander's Age:	33 years
Commander's Total Flying Experience:	38 hours (all of which were on type)
Information Source:	Aircraft Accident Report Form submitted by the pilot and subsequent discussions with the pilot, Chief Flying Instructor and Chief Engineer.

The pilot reported that he had been carrying out practice forced landings (PFL). He had completed several PFLs during the flight but this was the first simulated engine fire. He stated that he closed the throttle at 3000 ft, selected carburettor heat on and simulated the actions required for the engine fire drill. He then assumed that the fire had not extinguished, selected 40° flap and carried out a spiral emergency descent at 95 kts, during which he decided upon a suitable field. At 1500 ft he assumed the simulated fire to be extinguished. He reduced speed to 75 kts. and retracted the flaps. He also momentarily applied power to warm the engine. The pilot then simulated the usual PFL vital actions and turned onto final approach. At 700 ft agl he initiated a go-around, selecting full power, carburettor heat to "off" and flaps to 25°. The engine failed to respond. In subsequent discussion, the pilot agreed that he may have opened the throttle somewhat rapidly. The pilot re-cycled the throttle lever and checked that the electric fuel pump was on. He checked that the mixture was fully rich and re-selected carburettor heat, but the engine still did not respond and eventually stopped. The aircraft landed heavily in a soft field. The pilot switched off the fuel and electrical system before vacating the aircraft.

The aircraft sustained substantial damage to the landing gear and also damage to the lower wing skins, flaps, fuselage, firewall and stabilator. After recovery, the engine was connected to a fuel system rig

for test purposes. It started and ran normally, although the slow running mixture was somewhat rich. This was attributed to distortion of the air induction system in the impact. The fuel system was examined for contamination but none was found. The engine had been investigated in the past due to a tendency towards momentary rough-running as the throttle was advanced.

An aftercast of the weather in the area at the time of the accident was obtained and was as follows:

Nil weather, 20 km visibility, 2 to 3 oktas cumulus base 3500 ft, 4 oktas stratocumulus base 4000ft. At 3000 ft the temperature was 2°C and the relative humidity (RH) was 60%. At 2000 ft the temperature was 5 °C, RH 55%, and at 1000 ft 8°C, RH 58%.

When plotted on a carburretor icing chart, the above conditions fell within the areas designated "Icing - glide and cruise power" and "Serious icing at glide power".

The aircraft was fuelled with Avgas 100LL, DERD 2485