ACCIDENT

Aircraft Type and Registration:	Aeronca 7AC Champion, G-TECC
No & Type of Engines:	1 Continental Motors Corp C85-12 piston engine
Year of Manufacture:	1946
Date & Time (UTC):	26 July 2008 at 1215 hrs
Location:	East Side of Coningsby, Lincolnshire
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - None Passengers - None
Nature of Damage:	Landing gear collapsed, damage to cowlings and lower engine bay and windscreen, right wing strut bent through 90 degrees and some damage to the right wing
Commander's Licence:	Private Pilot's Licence
Commander's Age:	56 years
Commander's Flying Experience:	1,516 hours (of which 556 were on type) Last 90 days - 78 hours Last 28 days - 14 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

In performing a forced landing in a field, following a complete loss of engine power in flight, the aircraft touched down on a transverse ridge, causing the landing gear to collapse.

History of the flight

Prior to the flight, which was planned to be of approximately 2½ hours duration, both the main tank (fuselage mounted) and the auxiliary (wing) fuel tanks were filled and topped off with AVGAS.

Approximately 1¾ hours into the flight, which had been without incident in good conditions at an altitude of 1,200 ft, the fuel cock was opened to transfer fuel from the left wing to the main tank. Some 15 minutes later, with the main tank fuel gauge registering approximately 3/4 full, the fuel cock was closed and almost immediately, without vibration, rough running, or any other warning, the engine stopped. Carburettor heat had been applied regularly throughout the flight as part of the FREDA airmanship checks, the most recent application being some 10 minutes before the loss of power.

A field of pasture, with cows grouped in one section, was selected in preference to alternatives with standing crops or in proximity to power lines. Whilst trimming

for best glide speed, the pilot made a single short call on the RAF Conningsby Radar frequency but, on receiving no response, concentrated on landing the aeroplane. On short final approach to the field, the pilot manoeuvred around some cows and turned slightly to align better with the longest landing upslope the field offered. The aircraft felt somewhat nose heavy on touchdown, and the landing gear collapsed. After coming to rest, the pilot was able to vacate the aircraft through the main cabin door. Police, paramedics, and fire crews attended the scene, the latter arriving apparently in response to a report of an aircraft crashing near buildings containing asbestos.

When the pilot inspected the landing area subsequently, it was found that the touchdown had coincided with a transverse ridge and that the landing gear had collapsed at this point. The carburettor, breather pipe and air box were found on the ground nearby, a short distance from the ridge.

The pilot reports that the farmer whose field it was, and who had previously allowed it to be used as a base for crop dusting operations, had remarked to her that he had heard her aircraft overhead and noted nothing untoward until the engine stopped.

The weather conditions at the time of the accident were reported as good, with light variable winds, a visibility of greater than 10 km in slight haze, and scattered/ broken cloud at 1,500 ft. The temperature/dew point was reported as 25°C/16°C.

The engine had been overhauled and 'zero timed' at the last Annual Inspection, and a newly refurbished carburettor fitted some 120 hours prior to the accident. The pilot considered carburettor icing as a possible cause, but noted that there had been no rough running prior to the stoppage. Carburettor icing charts show that at the temperature and dew point in question, severe carburettor icing should be expected at glide power but not at cruise power. She also considered fuel contamination a possible cause of the stoppage, or a vapour lock, noting that the engine was running on AVGAS.

Subsequent examination of the engine by the owner revealed evidence from the exhaust stacks and spark plugs that the engine had been running with a very lean fuel/air mixture, although she reported that there had been no indication in flight of abnormally high oil temperature. Further inspection of the engine showed that the hose connecting the air intake duct to the No 3 cylinder to the inlet manifold, did not properly cover the end of one of the ducts, Figure 1.

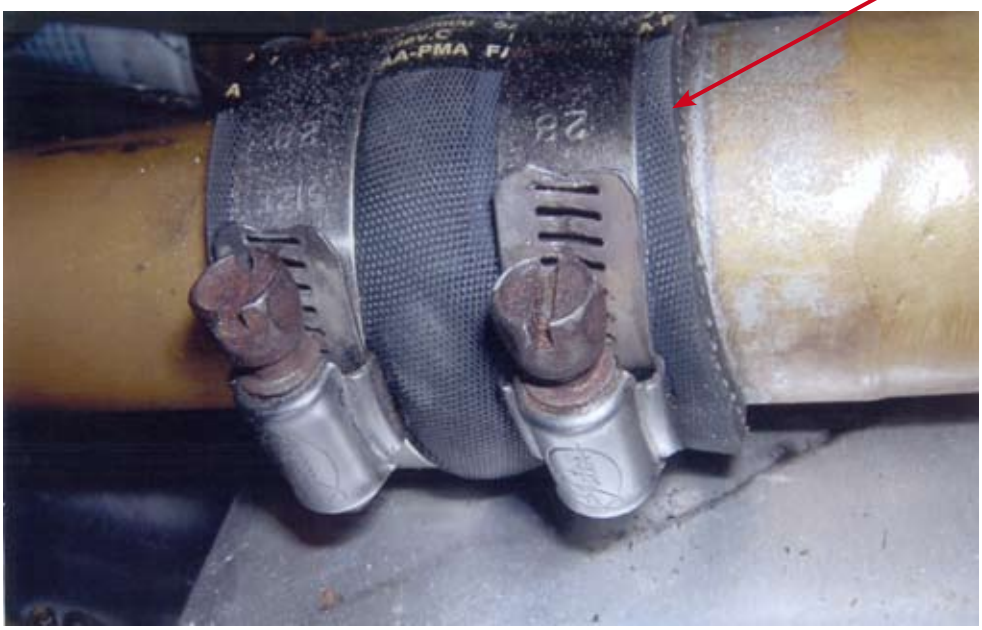
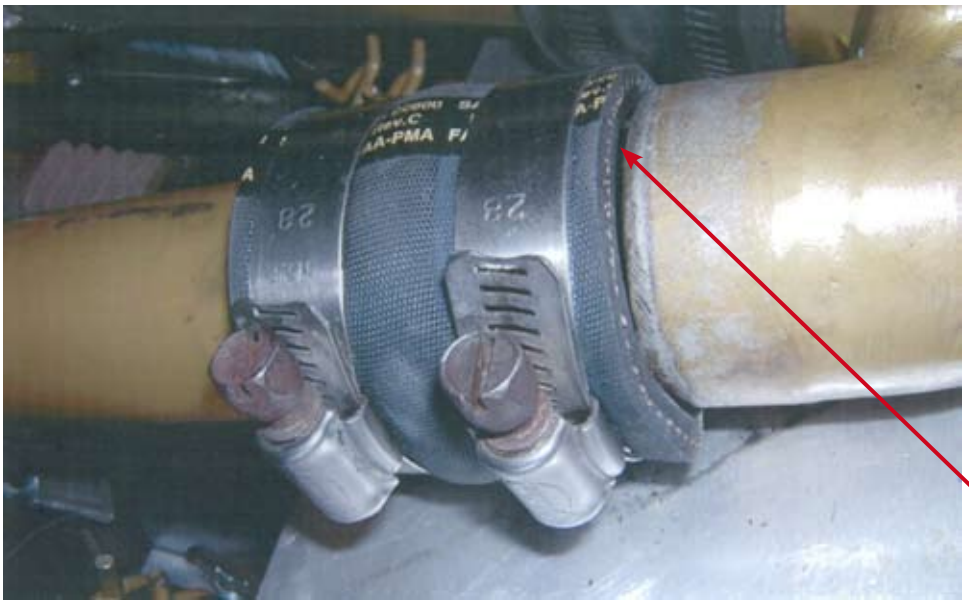


Figure 1



Hand pressure was sufficient to open up a significant gap between the hose and duct, Figure 2. It was possible, therefore, for air to be entrained through the joint and affect the mixture entering the engine, should the gap have opened whilst the engine was running.

Figure 2