

Topsy Nipper T.66 RA45 Series 3, G-AVXD

AAIB Bulletin No: 10/2003	Ref: EW/G2003/04/17	Category: 1.3
Aircraft Type and Registration:	Topsy Nipper T.66 RA45 Series 3, G-AVXD	
No & Type of Engines:	1 Volkswagen 1834 (ACRO) piston engine	
Year of Manufacture:	1967	
Date & Time (UTC):	19 April 2003 at 1745 hrs	
Location:	Denhead of Gray, Near Dundee, Scotland	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Damage to nose wheel, canopy and propeller	
Commander's Licence:	Basic Commercial Pilot's License	
Commander's Age:	35 years	
Commander's Flying Experience:	577 hours (of which 0 were on type)	
	Last 90 days - 65 hours	
	Last 28 days - 17 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by AAIB	

As this was the pilot's first flight in this type of single seat aircraft he was briefed by an experienced Topsy Nipper pilot and was confident that he was conversant with the operation of the aircraft systems. The aircraft had been refuelled to full (31 litres) prior to the flight and this was confirmed by the other pilot. The flight was to include general handling and basic aerobatic manoeuvres.

After a normal start up and takeoff the pilot completed a number of handling exercises, including stalls, in order to familiarise himself with the aircraft. After approximately 20 minutes he carried out routine checks, which included the application of carburettor heat, a check of engine indications and confirmation of fuel contents. He then carried out a loop followed by another series of checks. A second loop was then flown. As the aircraft passed the inverted position and as the throttle was being reduced, the engine lost all power, although the propeller continued to rotate. The pilot immediately rolled the aircraft to an erect attitude and carried out the engine failure drill as he headed towards Dundee Airport. He attempted every combination of fuel selection, magneto selection, and throttle position but the engine would not restart. As the aircraft descended through 3,000 feet the pilot transmitted a distress call and prepared to carry out a forced landing. His choice of a suitable landing site was limited for he could no longer reach Dundee Airport. A field was chosen and an approach made into wind and parallel to tractor tracks on the rough surface. The aircraft, held off the ground for

as long as possible, landed in a fully stalled condition. After a short ground roll the nose leg dug into the soft earth and the aircraft pitched forward coming to rest in an inverted position. The pilot, who exited uninjured through the broken canopy, considered that he was saved from serious injury by the four point harness fitted to the aircraft.

This aircraft has one fuel tank fitted in the nose between the engine and the wing spar. Fuel contents indication is by means of a clear plastic sight gauge visible in the cockpit. The fuel selector has three positions, 'AERO', 'MAIN' and 'OFF'. When 'AERO' is selected fuel is supplied from the fuel tank via a 'flop tube' to allow inverted flight. The handling notes prohibit aerobatic manoeuvres with the fuel tank contents below half full (i.e. 15 litres). With the fuel selector on 'MAIN', fuel is taken from a sump at the base of the fuel tank. This is designed to minimise the unusable fuel.

When the maintenance organisation retrieved the aircraft from the accident site the fuel selector was found in the 'AERO' position. The fuel tank had not ruptured in the impact and only approximately 10 litres of fuel was recovered from the fuel tank. Furthermore there was no evidence of any fuel having leaked out at the accident site. The engine was run subsequently by the maintenance organisation without any problem.