Yak 52, LY-ALN

AAIB Bulletin No: 10/96 Ref: EW/G96/08/10 Category: 1.3

Aircraft Type and Registration:	Yak 52, LY-ALN
No & Type of Engines:	1 Vedeneev M-14P radial piston engine
Year of Manufacture:	1980
Date & Time (UTC):	11 August 1996 at 1527 hrs
Location:	Gloucestershire Airport, Staverton
Type of Flight:	Private
Persons on Board:	Crew - 1
	Passengers - None
Injuries:	Crew - None
	Passengers - N/A
Nature of Damage:	Damage to right wing, propeller and engine cowling
Commander's Licence:	Private Pilot's Licence
Commander's Age:	48 years
Commander's Flying Experience:	882 hours (of which 22 were on type)
	Last 90 days - 23 hours
	Last 28 days - 22 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

After receiving clearance to taxi, the pilot was manoeuvring theaircraft from its parked position (by the control tower) and proceedingbetween the fuel pumps to the southern taxiway. Differentialbraking was being used to steer the aircraft. However, upon reachinga 90° turn to the right, the brakes ceased to be effective. The pilot was able to turn the aircraft through approximately30° and applied a small burst of power in an attempt to turnthe aircraft using rudder effect. However, it soon became apparentthat there was insufficient space to make the turn and that acollision with a parked aircraft was inevitable. The Yak collidedwith a Piper Warrior (G-GFCC), engaging the mid section of theright wing.

Aircraft systems such as engine start, landing gear retractionand wheel braking on the Yak are operated pneumatically by compressedair. Air from an engine driven compressor is stored in two sphericalbottles (one main, one for emergency in-flight engine start) whichare always charged

whilst the engine is running. To ensure safetyduring maintenance, the air system may be isolated at the outputside of the tanks. In a frank statement, the pilot said thatprior to taxying the aircraft he had experienced a problem withthe engine tachometer, which did not seem to be working. In orderto investigate the problem he shut the engine down and got outof the aircraft. He then opened the cowlings and, for safetyreasons, isolated the air system. However, after rectifying theproblem with the engine tachometer, the air supply system wasinadvertently left isolated. Unfortunately, the design of thesystem is such that with the tanks isolated, sufficient compressedair remains in the various actuators to enable at least one enginestart to be carried out and to provide residual pressure capableof operating the braking system for a few cycles. A modificationto the system has been proposed which would ensure that no pressurewould be available to any of the services after isolation, andthis is currently being considered by the CAA.