Kolb Twinstar MK3 (Modified), G-MYNY, 21 July 1996

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Aircraft Type and Registration:	Kolb Twinstar MK3 (Modified), G-MYNY
No & Type of Engines:	1 Rotax 582 piston engine
Year of Manufacture:	1994
Date & Time (UTC):	21 July 1996 at 1800 hrs
Location:	Wolds Farm, Wolds Lane, Wolvey, Leicestershire
Type of Flight:	Private
Persons on Board:	Crew - 1
	Passengers - 1
Injuries:	Crew - Minor
	Passengers - Minor
Nature of Damage:	Substantial damage to forward part of pod,
	landing gear collapsed
Commander's Licence:	Private Pilot's Licence
Commander's Age:	44 years
Commander's Flying Experience:	236 hours (of which 28 were on type)
	Last 90 days - 26 hours
	Last 28 days - 8 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and telephone enquiries

The aircraft had just taken off from a grass airfield and climbedto a height of about 800 feet agl when the engine suddenly stopped. The pilot selected a field for a forced landing straight aheadand made a successful touch down, at about 50 mph airspeed, inthe intended field. During the landing run, the aircraft crosseda tractor track; this had a high ramp, formed by tractor wheels,contact with which threw the aircraft back into the air and slewedit some 45° to the right. The aircraft fell heavily backonto the ground and subsequently slid into a hedge where it strucka concealed tree stump. The occupants were able to get out ofthe wreckage unaided.

Immediately after the accident, the pilot checked that the fuelwas selected 'on' and that fuel was present in the carburettors. He also checked that the electrical system was switched on andfunctioning. Later examination of the engine revealed that therear cylinder 'big end' had seized.

Several similar seizures of Rotax 582 engines have been reportedand in an earlier AAIB Bulletin (12/95, page 55) a report on anengine seizure on a Renegade Spirit drew attention to this problem. The text and figure used are repeated in an updated form below.

'Although no statistics appear to be available, the Popular FlyingAssociation advise that there is a history of big-end failureson Rotax 582 engines due to worn bearings. This is particularlythe case for engines installed in heavier aeroplanes and whenused in the training role when extended running at high poweris required. The largest service centre for Rotax engines inthe UK, to which the engine was sent for examination, has devisedan instrument for testing the combined big/little-end bearingclearances which they say has proved extremely effective in predictingfailures before they occur.

Called the 'Cyclone Conrod Bearing Clearance Tester' the deviceis illustrated in Figure 1. Essentially it is a dial gauge mountedon an extension tube which screws into the spark-plug holes andbears on the piston crown at top dead centre. A syringe is usedto suck/blow the piston up and down and the difference in gaugereadings is converted into combined bearing clearance. It isrecommended that this check be performed every 12.5 flight hourswhen the plugs should be removed for inspection in accordancewith the Rotax service schedule. Maximum wear figures are givenwith the instrument but records should also be kept so that anytrend can be detected in advance. It is understood that the PopularFlying Association agree that this device has been effective inpreventing failures of this nature and published an article entitled'KNOW YOUR BIG END WEAR' in the December 95/January 96 editionof their magazine *Popular Flying*.'

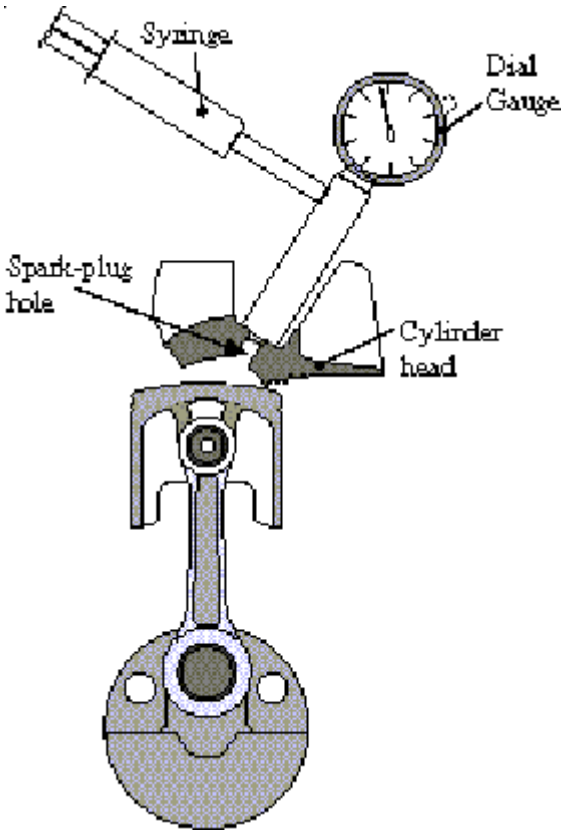

Figure 1 The Cyclone Conrod Bearing Clearance Testerfor Rotax Engines