

ACCIDENT

Aircraft Type and Registration:	YAK-52, G-IMIC	
No & Type of Engines:	1 Ivchenko Vedeneyev M-14P piston engine	
Year of Manufacture:	1989	
Date & Time (UTC):	1 December 2009 at 1500 hrs	
Location:	Seething Airfield, Norfolk	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Damage to propeller, lower cowling, wingstep and tailskid	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	62 years	
Commander's Flying Experience:	593 hours (of which 72 were on type) Last 90 days - 7 hours Last 28 days - 1 hour	
Information Source:	AAIB Field Investigation	

Synopsis

The aircraft was making an approach to Seething Airfield, when the pilot's attention was diverted by an aircraft backtracking the runway and he forgot to lower the landing gear. A minor malfunction of the flap operating light distracted him from his final check of the landing gear position and the aircraft landed with the wheels still retracted.

A review of wheels up landings by both YAK-50 and YAK-52 aircraft, compared with other single engine aircraft types with retractable landing gear, revealed that there has been a disproportionate rate of wheels up landings involving YAK aircraft in the UK. No specific reason for this could be identified, so action has been

taken by the CAA and YAK operators to make pilots more aware of the hazard.

History of the flight

The aircraft flew uneventfully in the Yarmouth area for approximately 10 minutes before the pilot decided to return to Seething Airfield, Norwich. The weather conditions were good, with a light and variable wind. As the pilot neared the airfield, he could not hear any indications of traffic on the airfield's radio frequency, so he decided to fly a straight-in approach to Runway 24. The aircraft was positioned on long finals and the pilot reduced speed and began to configure the aircraft for landing. The pilot reported that, as he reached for the

landing gear lever to lower it, he heard another aircraft report that it was backtracking Runway 24. The pilot lowered the nose of his aircraft to enable him to see the other aircraft and, once it was clear of the runway, he slowed his aircraft to 170 kph and lowered the flaps. The pilot heard the pneumatic flaps operating but noticed that the 'flaps down' light did not illuminate. He considered recycling the flaps but, given the benign weather conditions, the short distance left to go to the runway and that the aircraft was stable at 150 kph, he decided to continue and land. The pilot realised that the landing gear was not extended just before the aircraft touched the runway. It quickly came to a stop and the pilot, who was uninjured, vacated the aircraft normally. There was no fire.

The pilot concluded that the reason he did not lower the landing gear was that he had allowed himself to become distracted by the other aircraft and the minor malfunction with the 'flaps down' light.

Previous YAK-50 and YAK-52 wheels up landings

A search of the CAA database revealed that, in the period between October 1995 and this accident, there had been 9 wheels up landings involving YAK-50s and 13 wheels up landings involving YAK-52s. Of these, five were attributed to system failures, leaving 17 wheels up landings that were probably attributable to human factors. In June 2010 there were 22 YAK-50s and 57 YAK-52s on the UK register.

An analysis of wheels up landing events from the CAA database revealed that there had been a significant number of wheels up landings on YAK 50s and YAK 52s compared with other single engine aircraft with retractable landing gear. Due to the limitations of the data it was not possible to make a direct numerical comparison per flying hour, or per flight.

Further investigation

The CAA hosted a meeting which was attended by the AAIB and several members of the UK YAK flying community. The meeting reviewed the YAK wheels up landings. Accidents occurred to both experienced and inexperienced pilots and no specific reason could be identified as to why the YAK wheels up landing rate was so much higher than for other aircraft.

A large proportion of aircraft that have retractable landing gear are fitted with a 'gear not down' warning device. The device activates a horn or a flashing light when the landing gear is not extended and other parameters (eg flap position, airspeed or throttle settings) indicate that the aircraft may be about to land. While such systems have not totally prevented any wheels up landings, they do appear to have reduced the rate. Modifications for embodying such systems in YAK aircraft are available but, as they are not part of the aircraft standard specification, most UK registered YAKs do not have these systems fitted.

The operators explained that the insurance companies had become aware of the problem and that their premiums were likely to increase. For their part, the insurance companies had indicated that they might give discounts on aircraft that had modifications embodied which helped to alleviate this type of occurrence. However, the operators were concerned that the CAA should not mandate any such modification.

The CAA's analysis concluded that the consequences of a wheels up landing are mitigated by the architecture of the landing gear design, to the extent that these incidents did not represent an unsafe condition (as defined in EASA Part 21, AMC (Acceptable Means of Compliance) 21A.3B(b)). Accordingly, the CAA felt that mandatory Airworthiness Directive action,

to restore an acceptable level of safety, was not necessary.

Other ways of trying to reduce the rate of wheels up landings were discussed and it was agreed that raising pilot awareness of the problem was probably the most effective way to begin. Owners would also be made aware of the availability of ‘gear not down’ warning systems and the insurance benefits of fitting them.

Safety action

It was agreed that, in order to try and reduce the rate of wheels up landings involving UK YAK aircraft, YAK operators would use their forums to increase YAK pilots’ awareness of the problem. The CAA also agreed to produce information for all UK YAK owners and publish an article on operations involving General Aviation aircraft with retractable landing gear. The AAIB would continue to monitor the rate of wheels up landings in YAK aircraft.