

Aircraft type and registration: Gardan GY-80 180 G-AWAC (light single engine fixed wing aircraft)

Year of Manufacture: 1966

Date and time (GMT): 10 November 1984 at 1300 hrs

Location: RAF Valley, Anglesey

Type of flight: Private (pleasure)

Persons on board: Crew — 1 Passengers — 1

Injuries: Crew — None Passengers — None

Nature of damage: Minor damage to the propeller tips

Commander's Licence: Private Pilot's Licence

Commander's Age: 40 years

Commander's total flying experience: 400 hours (of which 180 were on type)

Information Source: Aircraft Accident Report Form and correspondence with pilot

As the aircraft was joining downwind at Caernarfon following an uneventful flight from East Midlands Airport, the speed was reduced to 105 mph and the wheels were lowered in the normal manner. The aircraft undercarriage mechanism is manually operated by means of a rotating handle in the cockpit, which incorporated a reversible ratchet mechanism. The flaps are mechanically connected to the undercarriage so that, when the wheels are lowered, the flaps deploy automatically to a fixed deflection of approximately 20°.

The undercarriage deployed normally with no unusual restrictions being felt through the mechanism, but as it did so the aircraft rolled slightly to the right, which the pilot corrected with aileron. As the pilot looked towards his passenger to check that his feet were clear of the rudder pedals, he noticed that the starboard outer flap section was buckled in two places and had not deployed correctly. The ratchet was reversed and the undercarriage and flaps were retracted, which restored the aircraft to stable flight. The flap section was seen to retract to its normal position, but there remained two small kinks in the upper surface normal to the trailing edge. As the crosswind at Caernarfon was approaching 15 kt, the pilot diverted to RAF Valley.

Because the undercarriage could not be lowered independently of the flaps, its deployment would have involved potential handling problems resulting from asymmetric flap. The pilot therefore decided to land with the undercarriage and flaps retracted. After approximately 60 minutes of handling trials and practice approaches, a smooth wheels up landing was made on runway 19. The undercarriage arrangement is such that all 3 legs retract rearwards, leaving the lower portion of the wheels and tyres protruding from beneath the aircraft's lower surfaces with the wheels aligned fore and aft. As a consequence, the touchdown was made on the slightly protruding wheels and the only damage suffered by the aircraft was some minor bending of the propeller blade tips.

Subsequent examination of the flaps revealed that the outboard region of the starboard flap leading edge had become distorted as a result of foreign object damage. Consequently, as the flaps were extended, this region of the flap leading edge fouled the flap shroud at the wing trailing edge and, because the actuating rod is located further inboard, the resulting loads caused the flap to twist and buckle, preventing full deployment on that side.