

**AAIU Report No:- 1999/ 005**  
**AAIU File No:- 19980022**  
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**Aircraft Type and Registration:** G-AWKP, Jodel DR25

**No. and Type of Engines:** Lycoming 180

**Aircraft Serial Number:** N/A

**Year of Manufacture:** 1967

**Date and Time (UTC):** 8th. June 1998, 1120 hours

**Location:** Leperstown, Dunmore East,  
Co. Waterford

**Type of Flight:** Private

**Persons on Board:** Crew 1 Passengers 2

**Injuries:** Crew Nil Passengers Nil

**Nature of Damage:** Aircraft Destroyed

**Commanders Licence:** Private Pilots Licence

**Commanders Age:** N/A

**Commanders Flying Experience:** Total 180 hrs  
Total Last 90 days 13 hrs 15 mins  
Total Last 28 days 4 hrs 30 mins  
Total Last 24 hrs 4 hrs 30 mins

**Information Source:** Air Accident Investigation Unit. Field Investigation. Aircraft Accident Report Form submitted by pilot.

### **Synopsis**

The aircraft departed Little Gransden in the UK at 0740 hours on a Visual Flight Rules (VFR) flight to Waterford Airport in Ireland. The weather en route deteriorated, however, and the pilot elected to continue under Instrument Flight Rules (IFR). The pilot failed to establish on the ILS twice at his destination in Waterford Airport.

During the course of the second go around, the pilot became visual and elected to land in a suitable field, as he considered he had insufficient fuel for additional approaches.

The approach to this field was too high and the pilot landed the aircraft in the next field which was much smaller and steeply uphill. The aircraft came to a stop in a mud heap, having crossed a farm track, just short of some farm out-buildings. There was no fire. All three occupants were uninjured.

### **History of the Flight**

The aircraft departed Little Gransden in the UK at 0740 hours on a VFR flight plan to Waterford in Ireland. It was intended to fly at 3,000 ft. As the flight progressed, bad weather was encountered and the pilot elected to climb to 6,000 ft. and to continue IFR. The route to be followed was - Bedford Castle - Gloucestershire - Brecon - Haverford West - Carnsore Point - Waterford Airport.

When Waterford ATC were advised by Shannon AIS of an international departure message for G-AWKP, on a VFR flight, they expressed concern as the weather at that time, 0825 hours, was not VFR and it was forecast to deteriorate further. The Waterford controller telephoned London ATC FIR, as he was concerned that if G-AWKP continued to Waterford, that by the time he got there Waterford would not be in VMC conditions, and there would probably be no alternatives available. The following METAR was passed to G-AWKP:-

**0830Z, 160 15 KT, 4000 RABR, BKN 010 12/NA Q 1006.**

One hour later the latest METAR was passed to G-AWKP:-

**0930Z, 170 15 KT, 4000 RABR, BKN 008, 12/NA Q 1004**

At 0940 hours Shannon ATC passed an ETA for G-AWKP of 1035 hours, to Waterford. Waterford advised Shannon ATC that conditions at Waterford were not VFR and that Waterford would not accept G-AWKP under VFR.

Shannon advised Waterford that G-AWKP would accept an IFR clearance. At 1020 hours, G-AWKP contacted Waterford and received the 1000 weather, as follows:-

**190 18 C, 28 KT, 8000 RA, FW 003, BKN 005, 13/NA Q 1003**

G-AWKP was cleared for an ARC ILS (Instrument Landing System) approach to Runway 21. At 1048 a new QNH was passed to G-AWKP. However, G-AWKP said he was at 500 ft. and had lost "the beacon". ATC suggested he commence the missed approach procedure. ATC became concerned at the idea of a properly instrument rated pilot not initiating the missed approach procedure until prompted, and requested Shannon radar to try to identify G-AWKP.

At 1057 hours G-AWKP was cleared for another ILS/DME approach. When the pilot of G-AWKP was asked if he had established out-bound, it became clear to Waterford ATC that G-AWKP was not able to fly the procedure. G-AWKP then advised Waterford that he did not have the ILS plate for Waterford.

An attempt was made to vector G-AWKP to the localiser but he was unable to fly the headings passed by radar from Shannon. When asked to climb to 2,500 ft. in order for the Shannon radar to identify him properly, G-AWKP declined saying he had a low fuel contents warning light and was not prepared to climb.

As G-AWKP was in sight of this ground, but not with the airport, Waterford ATC suggested he try a forced landing if he could find a suitable field. Having selected a long field G-AWKP failed to get the approach correct, and over-shot the long field and landed uphill, in the next field. The initial impact marks were approximately 6 m long, made by all 3 wheels. The aircraft then bounced, went through a light electric fence and wooden fence posts approximately 30 m after the initial impact, then through two similar fences approximately 130 m after the initial impact, and came to rest 167 m after the initial impact. The final position of the aircraft was approximately 35 m (100 ft) above the initial impact point, and approximately 65 m (210 feet) above sea level. The track of the landing was approximately 080° T and the aircraft came to rest just short of substantial farm buildings.

The aircraft suffered damage to the leading edge of both wings, due to the impact with 4 wooden fence posts. The undercarriage collapsed and the propeller was severely bent back. This would indicate that the engine was throttled well back before the undercarriage collapsed. There was also damage to the lower engine cowling, the bottom surfaces of the aircraft and the bottom of the rear fuselage. Radio aerials, including the ILS aerial, located under the aircraft, were also damaged. The pilot estimated he had an airspeed of 70 - 75 kts plus a tailwind of at least 30 kts at the point of first impact.

## **Fuel**

The aircraft is equipped with 3 fuel tanks:-

- One in the leading edge wing root of each wing, each of 8.8 imp gallons (40L) capacity, and
- a main tank underneath the rear cockpit seat, of 22 imp gallon (100L) capacity.

The tanks are fed to the engine through a 4 way selector valve (each tank and "OFF" positions). There is a low fuel contents warning light for each tank, and a separate contents gauge for each tank. After the crash, these lights and gauges were found to be functioning. However, they were not checked for calibration because of the nose down and left wing down attitude of the aircraft.

The LH wing fuel tank was found to be completely dry. This tank had suffered impact damage from a fence post and appeared to have a small leak. 5 litres of fuel was recovered from the RH wing tank. This tank contained some more fuel which was impossible to drain because of the nose down attitude of the aircraft, but this remaining amount was estimated at 2 litres. Thus it is estimated that a total of 7 litres of fuel was in this tank at the time of impact. 19 L of fuel was recovered from the main fuel tank.

The main tank drain had been damaged in the accident, and there was evidence of a small leak from the drain area. A fuel sample was taken from the main tank, and appeared to be AVGAS, without any signs of dirt or contamination.

The pilot stated that he had used the wing tanks first. He exhausted the LH tank until the engine misfired and then changed to the RH tank. This occurred over the UK. He changed from the RH tank to the main tank with approximately 8 L remaining in the RH tank. He did not exhaust this tank completely as he was in poor weather at the time. He stated that the low contents warning light on the main tank came on initially approximately 10 to 15 minutes before the crash landing. In this phase of the flight, fuel consumption would be approximately 7.5 imp gallons (33 L) per hour. Consequently, at least 7 L of fuel in the main fuel tank was consumed before the crash. Therefore, there was at least 26 L (19+7) of fuel in the main tank when the warning light came on.

The Flight Manual specifies that the main tank low contents light comes on at 1¼ imp gallons or 8 L. It therefore appears that the switch controlling this light was incorrectly set. The pilot, when questioned after the accident, was unaware of the Flight Manual data regarding the fuel tank levels that activated this warning light.

Because of the small leak from the drain on the main tank, when it was examined the morning after the accident, it is possible that the fuel contents of the main tank may have been more than 19 litres at the time of the accident.

At the time of the accident there was at least 27 litres (19 L in the main tank and 8 L in the RH tank), of fuel in the aircraft, and usable fuel would have been approximately 22 litres. This would equate to approximately 40 minutes duration at normal cruise power settings.

## **Discussion**

The pilot was interviewed some hours after the accident. He stated, when questioned on his instrument flying, that he did not know that his Instrument Meteorological Conditions (IMC) Rating did not apply outside the UK. He had not checked the weather for his route that morning and had no idea of where he was going to land in Ireland if he was unable to land at Waterford. Both alternates on his flight plan were in the UK.

The pilot admitted he had no ILS plate for Waterford and had not flown an ILS since the award of his IMC Rating some three months previously. He had refuelled his aircraft the previous night and locked it in the hangar. He visually checked only one fuel tank before his departure.

The use of a GPS waypoint, located near the airport, resulted in a situation where the aircraft, routing from the UK, attempted to initiate an approach to Runway 21 from a course 60° off the runway heading. This would make capture of the localiser difficult.

## **Conclusions**

1. The aircraft had a valid Certificate of Airworthiness.
2. The pilot was not qualified to operate IFR in Irish airspace.
3. The pilot did not plan his flight to allow sufficient fuel for diversion to a suitable alternate.
4. The pilot did not select an alternate airfield in Ireland.
5. The pilot did not evaluate the weather reports passed to him in the early stages of the flight which should have persuaded him not to cross the Irish sea.
6. When the precautionary landing was commenced there was sufficient fuel for a further 30 minutes flying time.
7. The pilot did not obtain the appropriate weather briefing before commencing the flight.
8. The pilot was using a Global Positioning System (GPS) as his sole source of navigation.
9. The pilot demonstrated that he had neither the skill, knowledge or experience to undertake this flight.
10. The survival of the occupants after the forced landing is a tribute to the robustness of the aircraft.
11. The handling of this emergency by Waterford ATC was excellent and probably averted a disaster.

## **Safety Recommendations (SR)**

No recommendations are sustained by this Report.