AAIB Bulletin No: 2/95 **Ref: EW/C94/11/4** **Category: 1.3**

Aircraft Type and Registration:	Reims Cessna F182Q Skylane, G-LIGG	
No & Type of Engines:	1 Continental O-470-U piston engine	
Year of Manufacture:	1978	
Date & Time (UTC):	20 November 1994 at 1616 hrs	
Location:	Near High Salvington, West Sussex	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 2
Injuries:	Crew - Fatal	Passengers - 1 Fatal 1 Serious
Nature of Damage:	Aircraft destroyed	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	54 years	
Commander's Flying Experience:	426 hours (of which 405 were on type) Last 90 days - 8 hours Last 28 days - 7 hours	
Information Source:	AAIB Field Investigation	

History of the flight

On Thursday 17 November, the aircraft flew from its base at High Wycombe to Shoreham with the pilot and a male passenger on board. The aircraft was refuelled and a female passenger joined the original occupants for the onward flight to Drachten in the Netherlands. The aircraft remained at Drachten until Sunday 20 November when it was flown to Lelystad where it landed at 1127 hrs. The intention was to fly from there to Shoreham with the same three occupants.

The weather for UK airfields was available either from the Schiphol Meteo service direct or via the ATC controller at Lelystad; it was not displayed on a notice board or video display unit. The pilot did not ask the controller for the weather and the forecaster on duty at Schiphol that morning did not recall dealing with a request for weather for the south east of England. A person, thought to be the male passenger, telephoned Shoreham ATC at 1159 hrs; the conversation was recorded. He said that he was flying to Shoreham from Holland and asked for the weather. The ATC assistant read the current

weather to him as: "--- 210°/15 GUSTING 25 KNOTS 10 KILOMETRES SCATTERED 1,800 FEET THEN BROKEN AT SOMETHING LIKE 4,000 FEET." A second person, thought to be the pilot, then came onto the line and having confirmed the visibility and runway in use, asked what time "SUNDOWN" was; he was told 1639 hrs.

The aircraft was refuelled with 174 litres of Avgas 100LL and the pilot filed a VFR flight plan to Shoreham; the routing was via Koksy, Dover and Lydd. The Lelystad controller recalled that the pilot occupied the front left seat, a male passenger the front right seat and a female passenger the rear right seat. The aircraft departed at 1311 hrs.

At 1516 hrs the pilot called London flight information service and reported that he was 6 nm east of Dover at 1,500 feet amsl. This was acknowledged and it was suggested that he called Manston for a radar service. The pilot called Manston at 1519 hrs and was given a radar information service (RIS). The controller pointed out that the minimum safe altitude for the planned route was higher than 1,500 feet and as he would only be able to provide a limited radar service from below at that altitude, he asked the pilot if he could accept a climb. The pilot said that he could and was cleared to 2,500 feet. When the aircraft reached that altitude the pilot told the controller that he was "STILL IN CLOUD" and the controller cleared a further climb, at the pilots discretion but not above FL50. The aircraft climbed to 4,500 feet and the pilot reported that he was still in cloud. At about 1540 hrs, the pilot was asked which agency he would like to work next. He replied that he would try Gatwick; the controller advised that he would be on the edge of their cover and may be asked to "ROUTE SLIGHTLY INLAND". He also suggested Dunsfold Radar when in the Seaford area.

At 1542 hrs, in his initial report to the Gatwick Director, the pilot said that he was "--- 24 MILES NOW TO THE EAST OF MIKE ALPHA YANKEE (Mayfield VOR) TRACKING MIKE ALPHA YANKEE ON 270 WE'RE 3,500 FEET ---". He requested a RIS, however, the controller was only able to offer a flight information service (FIS). At 1550 hrs, the pilot reported that he had descended to 2,500 feet. At 1600 hrs, the aircraft passed north of the Mayfield VOR and turned south west towards Shoreham. The pilot told the controller that he was "---TRACKING FOR SHOREHAM NOW FROM MIKE ALPHA YANKEE STILL 2,500 FEET IN CLOUD---WHAT IS YOUR CLOUDBASE". When told that it was 8 octas at 600 feet, he said that he would call Shoreham for their weather. The controller acknowledged this and asked him to call her back once the information had been obtained.

The pilot made his first call to Shoreham at 1604 hrs, however, he was still on the Gatwick frequency and it was about two minutes later that he made contact with Shoreham ATC. Over this period the aircraft turned right onto a north westerly track and crossed the direct track from Mayfield VOR to Shoreham. The following exchange took place with the Shoreham controller:

G-LIGG	"--- THE INTENTION WAS TO LAND AT YOUR FIELD WE'RE PRESENTLY 8 MILES FROM THE MIKE ALPHA YANKEE AND INBOUND --- ON THAT RADIAL TO YOU WHAT'S YOUR CLOUDBASE."
SHOREHAM	"--- CONFIRM ARE YOU STILL VFR OR ARE YOU NOW FLYING IFR ---."
G-LIGG	"--- WE'RE ACTUALLY IN CLOUD AND WE'VE BEEN ON GATWICK RADAR ---."
SHOREHAM	"--- ARE YOU IFR OR VFR."
G-LIGG	"--- WE FILED VFR BUT THE CLOUDBASE WAS DOWN BELOW THE SECTOR SAFE ALTITUDE I HAD NO OPTION BUT TO WITH MANSTON TO GO INTO CLOUD."
SHOREHAM	"ROGER UNDERSTAND YOU ARE NOW FLYING IFR THE SHOREHAM WEATHER SURFACE WIND 250 DEGREES AT 12 KNOTS THE VISIBILITY 2,000 METRES IN DRIZZLE THE CLOUD BROKEN AT 400 FEET OVERCAST AT 700 FEET QFE AND QNH 1018 AND RUNWAY IN USE 21."
G-LIGG	"RUNWAY IS 21 I HAVE THE CLOUDBASE COPIED WHERE YOU'VE OBVIOUSLY GOT 400 FEET IT DOESN'T SOUND TOO GOOD YOU'VE GOT DRIZZLE WE'RE GOING BACK TO GATWICK AND WHEN WE GET THERE WE'LL HAVE A LOOK AND SEE WHAT ITS LIKE."

The exchange ended at 1607:30 hrs, and the aircraft, which was now about 3.4 nm north west of the direct track from Mayfield VOR to Shoreham, turned left to track south west again.

At 1608 hrs, the pilot called the Gatwick Director again, apprised her of the Shoreham visibility and cloudbase, and said "--- I'M NOT EVEN SURE IT'S SAFE TO COME IN ON THAT BUT WE'LL WAIT TILL WE GET OVER THE SEA AND THEN GET DOWN - SEE WHAT WE CAN SEE." The controller asked where he intended to divert if he had to and was told Biggin Hill or Southampton; she said she would get the weather for him. The aircraft continued on a mean track of about 230°M and the controller passed both weather reports to the pilot; Biggin Hill was no better than Shoreham but the visibility at Southampton was 6 km and the cloud was broken at 500 feet and overcast at 900 feet. At 1613 hrs, he acknowledged receipt of the reports and added "--- IT LOOKS AS THOUGH IT'LL BE SOUTHAMPTON BUT I'LL JUST SEE WHAT I CAN SEE AT SHOREHAM FIRST THEN I'LL COME BACK TO YOU." This was the last recorded transmission from G-LIGG. At 1613:05 hrs, the aircraft passed about $1\frac{3}{4}$ nm north of Shoreham Airport, and turned right onto a track of about 280°M.

Several witnesses in the area reported seeing or hearing a light aircraft flying in a westerly direction; it sounded normal but was at very low level. One of the witnesses was returning to his car which was in a car park to the north west of the village of High Salvington when he saw the wingtip and flashing red light of an aircraft pass him heading west "at tree top height". Shortly afterwards he heard the sound of an impact. He went immediately to his car and telephoned the police; the call was logged at

1617 hrs. A police mobile unit was despatched at 1620 hrs and arrived at the site at 1627 hrs. Direct access to the site was difficult and a rendezvous point (RVP) was established in the car park. The survivor was brought to the RVP at 1707 hrs for transfer to hospital.

The search and rescue S61N helicopter, based at Lee-on-Solent, was scrambled and made four attempts to approach the accident site; each approach had to be aborted as cloud and rain prevented adequate visual references being obtained.

Radar plot of the aircraft's track

A plot of the aircraft's track was derived from recorded secondary returns from the Pease Pottage radar head (see Appendix A); no height information was available. The first return recorded was at 1543:30 hrs and the plot from this time shows the aircraft tracking towards the Mayfield VOR in a somewhat erratic manner. At no time did it establish on a steady inbound radial and what should have been a track change in the overhead of about 30° left was a turn, north of the beacon, through more than 100°. Again the aircraft failed to establish on a steady radial; major deviations were noticed when the pilot was communicating with ATC. The mean track from 1608 hrs to 1613 hrs approximates to that from Mayfield VOR to Shoreham, but is displaced about $1^1/_2$ nm to the north west. The last radar return recorded was at 1615:27 hrs and the aircraft ground speed over the previous 5 minutes had averaged about 100 kt.

Wreckage and impact information

The aircraft collided with trees at an altitude of 440 feet amsl in Clapham Wood on rising ground south of the crest of a low spur on the southern edge of the South Downs. The wings were rapidly broken up and detached by collisions with trees and the fuselage continued through the trees in a direction of 306°M for 230 feet. The cabin section, with the engine still partially attached, came to rest on its right side against some dense vegetation and with the rear fuselage folded over on top of it. There was no fire.

A number of massive frontal impact marks were evident on the airframe wreckage and the distance of travel of the fuselage through the trees showed that the aircraft had had a high forward speed at impact. Both wing tanks had been ruptured by frontal impacts and their bulged distortion showed that there had been a large amount of fluid in each, some fuel being recovered from the right wing tank. Clean fuel was also recovered from the carburettor bowl and the main jet was found to be clear. The propeller had detached and one blade had been released from the hub. Both blades were heavily bent forward and distorted and their condition was consistent with power being transmitted through the propeller at impact.

Meteorology

An aftercast supplied by the Meteorological Office at Bracknell indicated that there was a moist south westerly airstream over the area ahead of a weak cold front lying between Stansted and Bournemouth. Visibility was around 2,000 metres, in occasional drizzle and the cloud covered hill tops. The wind at 2,000 feet was 260°/25 kt and at the surface was 250°/15 kt where the temperature was +14°C and the dewpoint +13°C.

At 1,500 feet amsl, the aircraft was probably flying in VMC from the time it left Lelystad until it climbed shortly after coasting in at Dover at about 1520 hrs. The 1450 hrs METAR for Manston, which is about 12 nm north of Dover, was:

Surface wind	200°/16 kt
Visibility	7,000 metres in Haze
Cloud	Broken base 1,200 feet
	Overcast base 1,800 feet
Temp/Dewpoint	14°/12°
QNH	1016 mb

Over the next hour the weather remained largely the same except the cloudbase which lowered becoming overcast at 1,100 feet with patches at 900 feet.

Gatwick ATC

Although she could identify no specific reason for her apprehension, the controller acting as Gatwick Director was concerned about the progress of G-LIGG and went out of her way to give the pilot as much assistance as possible. She was confident that this would not detract from her prime task and if traffic levels had increased a console and appropriate staff were available to relieve some of her workload, thus ensuring no diminution of the quality of service provided.

Pilot's flying experience

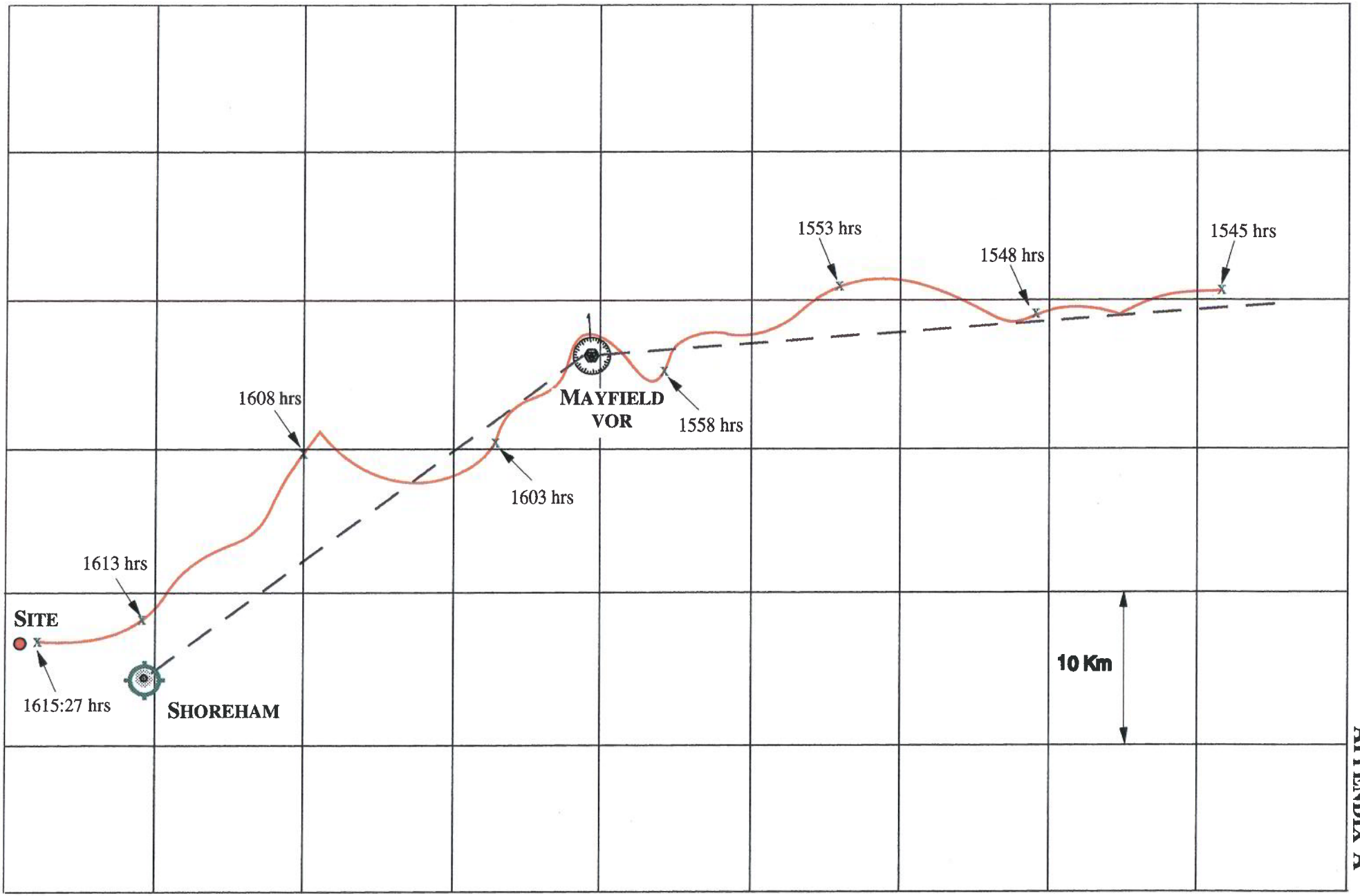
The pilot gained his PPL in June 1985 and passed his IMC rating in September 1987. The rating was last renewed on 4 June 1990 and no further instrument flying was logged after that flight; the pilot's total logged instrument flying was 4 hours actual and 11 hours simulated.

Medical and pathology

The male passenger survived the accident; he suffered severe injuries to the head and body but was able to leave hospital 17 days after the accident. Because of his injuries and the traumatic experience he had been through, his recall of the event was extremely limited. The pilot and the female passenger died from injuries received during the impact.

Post-mortem examination of the pilot and reference to his previous medical history revealed no pre-existing condition which was considered to have contributed to the accident.

AIRCRAFT TRACK PLOT FROM PEASE POTTAGE RADAR



Scale - 1:250,000

APPENDIX A