

Sikorsky S61N Sea King, G-BFFJ

AAIB Bulletin No: 10/2004	Ref: EW/G2004/04/25	Category: 2.1
INCIDENT		
Aircraft Type and Registration:	Sikorsky S61N Sea King, G-BFFJ	
No & Type of Engines:	2 General Electric CT58-140-2 turboshaft engines	
Year of Manufacture:	1978	
Date & Time (UTC):	20 April 2004 at 0820 hrs	
Location:	Airborne over Cornwall	
Type of Flight:	Public Transport (Passenger)	
Persons on Board:	Crew - 3	Passengers - 19
Injuries:	Crew - None	Passengers - None
Nature of Damage:	None	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	59 years	
Commander's Flying Experience:	12,250 hours (of which 8,000 were on type)	
	Last 90 days - 180 hours	
	Last 28 days - 60 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

The helicopter was returning from the Scilly Isles and making an approach to Penzance when the crew initiated a go-around due to poor in flight visibility. They elected to divert to St Mawgan, where the weather was marginally better, even though there was insufficient fuel on board to divert with the required reserves. They subsequently landed at RAF Portreath having seen it through a gap in the clouds while they were en route to St Mawgan.

History of flight

The crew reported for duty at Penzance (PZE) at 0630 hrs to fly a scheduled return flight to the Scilly Isles (ISC). Actual meteorological observations at PZE gave a visibility of 10 km with clear skies. The unofficial weather passed to them from ISC was similar. The only forecast weather available that was valid for the duration of their return flight was for St Mawgan. This included a 30% probability of 500 metres visibility in fog patches with scattered cloud at ground level. The crew also had available the UK Low Level Forecast Form 215. This detailed the possibility of isolated areas of fog and stratus cloud with a base at sea level and tops at 1,500 feet.

After consulting the company fuel tables, the crew decided to depart PZE with 1,400 lbs of fuel on board; 50 lbs above than the minimum VFR fuel required for the return flight. As they prepared to depart the crew were passed the official meteorological report for ISC which gave a visibility of 10 km and a cloudbase of 400 feet. They decided however, to leave the fuel load unchanged.

The crew departed PZE at 0728 hrs and landed at ISC 22 minutes later after carrying out a cloudbreak procedure. During the turnaround they were advised that the weather at PZE had deteriorated somewhat with a visibility of 4,500 metres and broken cloud at 500 feet. They decided not to uplift any more fuel and departed ISC at 0759 hrs with 1,000 lbs of fuel remaining. This was sufficient to return to PZE without an allowance for a diversion.

During the cruise they were advised that PZE weather had deteriorated further but, as the weather was similar to that at ISC and above the minima for their intended approach, they elected to continue to their destination. The crew prepared for their approach but believing that the weather was sufficient to preclude a missed approach they did not brief their go-around intentions.

When they reached the missed approach point and did not have the required visual references they carried out a go-around and elected to divert to St Mawgan. The cloudbase there was broken at 200 feet; their minimum for landing. As they passed RAF Portreath, en-route to St Mawgan, the crew observed a break in the cloud cover. Considering their fuel state and the St. Mawgan weather they decided to land on the helipad there. The helicopter landed at RAF Portreath at 0834 hrs with 425 lbs of fuel remaining.

Fuel Minima

Using the criteria laid down in JAR-OPS 3 Subpart D, paragraph 3.295 (Selection of Heliports), the company defines the use of VFR fuel as the acceptable minimum when PZE visibility and cloudbase are not less than 4,000 metres and 600 feet respectively. This does not incorporate an element of fuel for diversion to an alternate. This incident occurred at a weekend and at a time of day when several of the normal forecasts are not available. Therefore, as there was no meteorological forecast available for PZE, it was for the crew to decide, consulting other sources of weather information, whether VFR fuel was acceptable. It is worthy of note that it is possible to uplift fuel at ISC. This however, requires the engines to be shutdown significantly adding to the normal planned turnaround time.

Discussion

The amount of fuel carried departing PZE is dependent not only on ISC weather but also on the crew's appreciation of the possible weather conditions at PZE for their return. At the time of the incident there was no PZE forecast available thus the crew were required to interpret the St Mawgan and UK low level weather forecasts in addition to the PZE and ISC actual weather reports, in order to make their decision. Although both weather forecasts included a small probability of fog, the actual weathers were excellent and the commander commented that this had influenced the crew's decision to take VFR fuel. Even though a subsequent weather report described deteriorating conditions, the crew felt it unlikely that the weather would deteriorate below approach limits given such short transit times. During the turnaround at ISC, they had an opportunity to uplift more fuel knowing that PZE weather had now fallen below VFR fuel limits. Their decision not to however, was based on the time it would take to refuel, the effect this would have on the day's schedule and the fact that the reported weather conditions were still above their approach minima.

Follow up action

Following this incident the company implemented the following:

1. Crews are to be informed, by the most expedient means, whenever the PZE weather falls below VFR limits and of any fog warnings received at PZE.

Sikorsky S61N Sea King, G-BFFJ

2. Official meteorological observations are to be received by PZE no later than 30 minutes before scheduled departure times.
3. Particularly on the first flight of the day, crews are not to embark passengers at PZE until an official ISC actual weather has been received and crews determine that the appropriate amount of fuel is carried. On days where weather may be a factor, company operations are to advise crews as to the amount of extra fuel that may be carried with regard to the planned payload.
4. The company PZE weather decision flowchart has been withdrawn to encourage crews to study the requirements contained in the company operations manual.

The company has also officially requested from the Meteorological Office that a Terminal Aerodrome Forecast service for PZE be commenced and proceedings to that effect are now underway.