

INCIDENT

Aircraft Type and Registration:	Bell 206B Jet Ranger III, G-BTHY
No & Type of Engines:	1 Allison 250-C20 turboshaft engine
Year of Manufacture:	1977 (Serial no: 2290)
Date & Time (UTC):	19 February 2017 at 1045 hrs
Location:	Sandwich Bay Estate, Kent
Type of Flight:	Commercial Air Transport (Passenger)
Persons on Board:	Crew - 1 Passengers - 4
Injuries:	Crew - None Passengers - None
Nature of Damage:	Damage to front and side windscreens, main rotor pitch change links, vertical fin and a main rotor blade
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	45 years
Commander's Flying Experience:	6,800 hours (of which 350 were on type) Last 90 days - 118 hours Last 28 days - 17 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB

Synopsis

The helicopter was flying at 700 ft agl when it encountered and severed a recreational kite line. The pilot was not aware of the contact and continued the flight. Subsequently, damage to several parts of the helicopter was discovered after shutdown. The kite flying activity had not been notified to the CAA, so no NOTAM had been issued.

History of the flight

The pilot was carrying out a series of sightseeing flights, operating from a helicopter base at Manston disused airfield, Kent. The first flight departed to the south of Manston, along the coast at Sandwich Bay to Dover, before turning inland towards Canterbury and then back to Manston. For the first part of the flight the pilot flew at altitudes of between 700 ft and 1,000 ft amsl, before climbing to 1,500 ft amsl approaching Deal. As he was flying along the coast at around 700 ft, he noticed a kite very close by and took avoiding action. He was not aware of any contact and continued the flight, landing back at Manston after approximately 25 minutes.

The pilot then carried out a second flight in the same area. As he was flying along the coast north of Deal, towards Manston, at 1,500 ft amsl he noticed a number of kites in the sky at levels which he estimated to be above 1,000 amsl.

Finally there was a short (third) flight in a different direction, after which a person assisting with the loading and unloading of the helicopter noticed a scuff mark on the windscreen. He pointed it out to the pilot and the helicopter was shut down for investigation. Further damage was discovered to the right forward door screen, the main rotor pitch change links, one rotor blade and the vertical fin. As a result, the helicopter was grounded for a maintenance inspection.

Location

The location where contact with the kite line most likely occurred was on the coast in Sandwich Bay, to the north of Deal. Inland, the terrain consists of low lying coastal plain and sand dunes. There is public road access to the beach and high level kite flying activity has been observed in the location, both on the day of the incident and on previous occasions. Online footage of activity at the same location shows a number of people flying kites with 700 m line spools. Adapted power drills and winches are used to wind in the lines after flying.

Aircraft examination

A damage report for the helicopter was obtained from the maintenance organisation. One main rotor blade showed abrasion damage and a small incision to the leading edge. The blade was removed and repaired at a maintenance facility. Two main rotor pitch links required overhaul, and scratches and an incision to the tailfin, which were within limits, were repaired and repainted. Windscreen and side window scratches were also within limits and were polished out.

No kite line was recovered so it was not possible to test the material's substance or breaking strength.

Meteorology

The weather conditions were clear, with a westerly wind of 8 kt, good visibility and few clouds at 4,000 ft.

Organisational information

The operator of the helicopter carries out charter flights and organised sightseeing tours in the local area around Manston and NOTAMs are routinely checked before flight. None were applicable to the area on the date of the incident flight.

The pilot had flown sightseeing tours on behalf of the operator on a number of occasions and was familiar with the routes. He had not previously observed kite flying activity. After landing and inspecting the damage, he reported the incident and notified the local Coastguard SAR helicopter facility at Lydd Airport of the hazard. Later that day, two of the operator's personnel visited the beach location where the kites were being flown and advised the people flying them that they were causing a risk to aircraft.

Other information

Air Navigation Order 2016 Article 92 (c), which is applicable to kites, states:

'A relevant aircraft which is launched, moored, tethered or towed must not be operated—

(a) in such a manner as to—

(i) represent a hazard to other airspace users; or

(ii) without the permission of the CAA, result in any part of the relevant aircraft whilst it is being launched or towed, or its tether, mooring or towing equipment, extending more than 60 metres above ground level'

Permissions for exceptions to Article 92 of the ANO can be obtained through the CAA. On receipt of an application, the location of the activity is checked with regards to the surrounding airspace and the activity's impact on that airspace. Special conditions may be imposed for a permission to be granted, such as attaching streamers to the line to aid conspicuity, and a NOTAM will be issued.

Evidence from the nature of the damage to the helicopter and photographs taken at the probable kite flying location suggest that the kite string was coated with an abrasive substance. In a number of other countries, kite fighting is a competitive sport where the objective is to cut the string of an opponent's kite. To facilitate the cutting action, the upper parts of the kite string may be coated with an abrasive substance.

There is evidence that a number of different coastal locations in the United Kingdom are used for kite flying at heights above 60 m but the activity is not being notified. The AAIB reported on another incident in June 2016, in which a light aircraft was also damaged when it came into contact with kite string¹.

Discussion

The evidence indicated that the helicopter encountered a kite at high level. The kite was not being flown in accordance with Article 92 of the ANO and the activity had not been notified. It was subsequently discovered that the helicopter had suffered damage to its airframe and components, although the damage was repairable. However, the potential exists for the result of such an encounter, on aircraft and/or its occupants, to be more severe.

Footnote

¹ AAIB Bulletin 11/2016 - available at: <https://www.gov.uk/aaib-reports/aaib-investigation-to-zenair-ch-601xl-zodiac-g-exxl> [accessed 20 March 2017]

Safety actions

The operator has advised its pilots of the potential hazard of high flying kites and the need to avoid areas where they suspect the activity is taking place.

The CAA has been advised of the activity and an investigation is being conducted. The incident has also been reviewed by the CAA Safety Risk Panel.