ASK 21 Glider, BGA No FWQ

AAIB Bulletin No: 10/98	**Ref: EW/C98/7/1 Category: 3**
Aircraft Type and Registration:	ASK 21 Glider, BGA No FWQ
No & Type of Engines:	None
Year of Manufacture:	1992
Date & Time (UTC):	2000 hrs on 3 July 1998
Location:	The Long Mynd, Shropshire
Type of Flight:	Private (Air Experience)
Persons on Board:	Crew - 1 - Passengers - 1
Injuries:	Crew - None - Passengers - None One person fatally injured on the ground
Nature of Damage:	Minor to left wing leading edge 2 feet from the tip
Commander's Licence:	Glider Pilot's Certificate with air experience instructor's rating
Commander's Age:	49 years
Commander's Flying Experience:	282 hours on gliders Last 90 days - 26 hours Last 28 days - 2 hours
Information Source:	AAIB Field Investigation

An evening of air experience flying for a group of 13 people had been arranged by a local gliding club situated on The Long Mynd in Shropshire. The group arrived at the club house early in the evening and were briefed on the forthcoming events by the Instructor-in-charge. Eleven of the group had decided to fly, but two ladies declined the opportunity. Those who were to fly became temporary members of the club. After the briefing the group, less the two ladies, were lead by the instructor in a convoy of cars along a gravel track to the launch point. At the launch point the group were given a further briefing on operations and glider safety. The two ladies, who had walked unescorted to the launch site along the track, arrived after the briefing.

Throughout the evening the group were flown in the front seat of two gliders on flights each lasting approximately 15 to 20 minutes. The pilot involved in the accident had flown four flights that evening and was on his fifth and last flight. Throughout the evening he had been landing at the south end of the airfield but the pilot decided that his final landing was to be made on the 'Vega

Strip', close to the club house, so that at the end of its landing run the glider would be close to the club hangars.

The aero-tow for his final flight was routine, with the glider casting off above the cloud tops but close to a gap in the clouds. After three minutes soaring above cloud the glider descended through the gap and flew for the remainder of its 17 minute flight below the cloud. The pilot was wearing sunlight sensitive prescription glasses and stated that, although the lenses had been affected by the sunlight above the cloud, they had returned to their normal transparency before landing.

The pilot carried out a right hand circuit turning onto finals at 500 feet. As he lined up on the final approach he stated that he saw two people. They seemed 'stationary and not in a dangerous position' in relation to the Vega Strip. He noticed them several times during his landing scan but was not aware of their position at touchdown. The front seat passenger stated that she saw her two friends below on the track but did not mention this to the pilot. She was hoping that her friends would turn to look at the glider so that she could wave but they did not do so. When the glider was on the ground and as it approached the ladies the front seat passenger called to the pilot "Look there are my friends". A few seconds later she felt a 'thump'.

The glider landed beyond the threshold of the Vega Strip aligned in the centre. As it did so the pilot also felt and heard a thump. He thought it had come from the landing gear or had been caused by a stone. When the glider came to a stop he got out to inspect the landing gear and immediately became aware of two ladies on the track, one standing and one lying down. He suddenly realised that the thump he felt had been due to the glider hitting one or both of the ladies. He ran towards them to check the situation and as he approached he realised that one of them had been fatally injured.

The airfield

The airfield is crossed at its southern end by several public rights of way. A bridle path known as the 'Port Way' bisects the airfield in a north/south direction (see diagram below). The footpaths and bridleways located on the airfield and adjacent lands are served by safety signs which communicate clear instructions and information regarding the hazards associated with the airfield activities. Programmed remedial work is constantly carried out by the club to replace and repair signs that are damaged or vandalised.

The track to the launch site running adjacent to the 'Vega Strip' however is not a right of way, it does not have any signs associated with it but it is sometimes used mistakenly by members of the public as they walk along the edge of the Long Mynd escarpment.

During the evening the two ladies had gone for a walk to enjoy the scenery. Before they set off from the launch point a club member had advised them to stay clear of the landing area in use at the time. They heeded his advice and walked on a lower path (the Starboard Way) to rejoin the gravel track at a position partway between the clubhouse to the launch point. It is believed that the lady who was to be fatally injured repeated this circular walk alone; her friend having decided not to accompany her a second time. Towards the end of the evening, as the ladies returned to the clubhouse, they walked back along the gravel track. The lady killed in the accident had therefore walked along the track four times that evening but only once in a northerly direction, towards the club house, with her back to the glider approaching the hitherto unused 'Vega Strip'.

The collision

The Vega strip runs, for part of its length, parallel to the track used by the ladies. The lady was struck at a point where the left wing of the glider, which was landing centrally on the strip, completely overhanged the track. The track surface is slightly lower than the strip resulting in the glider's wing tip, with a slight degree of right bank applied, passing over the track at a height of 1.65 metres (5 feet 5 inches). The ladies involved in the incident were 1.72 metres (5 feet 8 inches) and 1.62 metres (5 feet 4 inches) tall respectively with the shorter of the two standing closer to the strip (see diagram).

The left wing of the glider passed over the head of the shorter lady hitting the taller lady in the back of the head causing an instantaneous fatal injury. The point of impact on the glider was measured as being 0.6 metres (24 inches) from the left wing tip slightly below the mid point of the leading edge radius. The glider was aligned with the middle of the landing strip and the ladies were, as far as could be ascertained, walking in the middle of the track. The glider was travelling at an estimated 35 kt (40 mph) at the time of the collision.

The surviving lady stated that she and her companion were in conversation throughout their walk. She did not hear the approaching glider and was not aware that her companion had heard it either. She only became aware of the glider after her companion had been hit and was seen to tumble through the air and fall to the ground some 5 metres ahead of her.

Club members handbook

The gliding club members' handbook includes entries on 'Rights of Way across the Airfield and Relations with the Public' as well as procedures to be used concerning 'The Airfield and Motor

Vehicles'. It includes details on hazardous areas associated with the different winch positions and includes a paragraph stating that members should stop at the entrance gate and proceed to the club house only when they are satisfied that they understand what operations are in progress.

The handbook also includes a paragraph which states:

> *'We welcome to the club house members and visiting members, their guests and partners. We also welcome members of the public inquiring about gliding or wishing to book flights or courses. Our signs say as much. We also invite groups and individuals to the club from time to time. Such people should be given every assistance and advised regarding safe movement about the airfield'.*

Follow-up action

A Health and Safety Officer from the local district council, in co-operation with the AAIB, surveyed the airfield. All footpaths and bridleways serving the airfield and surrounding land were inspected for the provision of suitable and sufficient safety signs. Compliance by the club with the 'Health and Safety at Work Act 1974' and associated legislation was also examined. This means, in practice, that all the tasks that make up the work carried out by the club must be assessed as to whether the hazards involved, that could affect the health and safety of employees or anyone else, are controlled to an acceptable level.

It was found that all points of public access were served by signs that communicated clear instructions and information regarding the hazards associated with the airfield activities. Furthermore, programmed remedial work to replace and repair signs which had been damaged or vandalised was constantly undertaken by the club. The signs however did not comply with British Standard (BS) 5378 in that they did not display black text on a yellow background. The local district council Safety Officer therefore recommended that club remedy this situation by procuring signs that conformed to the British Standard.

The Safety Officer further recommended that the club initiate a written health and safety policy showing the club's organisational 'chain of command', responsibilities, systems and lines of communication and accountability for policy implementation. The club were also to initiate arrangements showing standards, procedures, instructions, rules, risk assessments and other measures necessary for policy implementation.

Immediately following the accident, and before the survey by the local Safety Officer, the club introduced the following measures:

(a) Use of the 'Vega' strip was to be prohibited except for use during a genuine emergency landing. Notices to this effect were to be displayed in the club house and standard underlined white 'X's were to be displayed at the thresholds of the strip.

(b) Persons visiting the club and requiring access to the airfield, whether flying or not, were to be accompanied to the launch point by a club member, briefed on their conduct at the launch point, advised who to contact for advice and accompanied to the club house on their return.

(c) All visitors requiring access to the airfield were to be handed a short safety briefing sheet.

(d) The instructing team present during evening group trial lessons was to include a full or assistant rated instructor and a least 4 club members were to be included in the ground team.

(e) Signs explaining that the track adjacent to the 'Vega' landing strip is not a permitted route for visiting drivers and directing them to the car park/club offices were to be erected.

(f) A sign was to be erected at the main gate explaining that all visitors must report initially to the club office on arrival.

(g) A system of 'Operational Notices' was to be introduced so that all club members would be made aware of new information. These notices were to be displayed in a prominent place in the club house as well as being included in the Member's and Visitor's handbooks.

(h) The future use of the 'Vega' strip was to be reviewed along with the relation between the 'strip' and adjacent metalled track.

(i) The club was to continue to review and update information and warning signs in use on the various public and permissive ways that cross the airfield.

(j) The club would continue to discourage the public from entering and crossing the airfield other than on the recognised public and permissive routes.

Conclusion

Adequate signs and safety measures were in place to inform and protect members of the public walking close to or crossing the gliding site using the public rights-of-way. The signs, albeit in a format which did not conform to British Standard BS 5378, were clear and unambiguous. The lady involved in the accident, who was a member of a group invited to participate in the gliding club's activities, however, was not on a right-of-way at the time of the accident. She had walked along the track adjacent to the 'Vega Strip' several times that evening and believed that, in following this

track, she was clear of the glider landing area. She had not been briefed otherwise. The track did not have, and did not need to have, any signs warning of the hazards associated with the gliding activities. The lady had been informed earlier that evening to walk clear of the southern area as that was the landing area in use at the time. She had not been escorted during her excursions and was not escorted by any member of the club at the time of the accident. She had no reason to believe that she was in danger from landing aircraft. Neither she, nor her companion, were aware of the glider's approach prior to the collision.

The glider pilot, although in the rear seat of the cockpit, had a clear view of the landing area and that part of the track ahead of him. The light conditions were such that the ladies were visible from the cockpit, and had been seen by the front seat passenger. The pilot, however, saw two people at some point during the approach in a position he judged to be clear from danger. He was not aware, even after the collision, that the wing of his glider had hit one of the ladies until the landing was complete and he was out of the aircraft.

Safety recommendation

98-55 It is recommended that the British Gliding Association (BGA) should publicise the circumstances surrounding this accident and ensure that all UK gliding clubs have or set up adequate policies and procedures that ensure a safe ground environment and where appropriate that they comply with the relevant Health and Safety legislation.