Air Accident Investigation Unit Ireland

FACTUAL REPORT

ACCIDENT

Alexander Schleicher ASW 17, EI-GMB
Alexander Schleicher ASK 21, EI-GLA
Kilrush Airfield, Co. Kildare
10 August 2018

An Roinn Iompair
Turasóireachta agus Spóirt
Department of Transport,
Tourism and Sport

Foreword

This safety investigation is exclusively of a technical nature and the Final Report reflects the determination of the AAIU regarding the circumstances of this occurrence and its probable causes.

In accordance with the provisions of Annex 13[1] to the Convention on International Civil Aviation, Regulation (EU) No 996/2010[2] and Statutory Instrument No. 460 of 2009[3], safety investigations are in no case concerned with apportioning blame or liability. They are independent of, separate from and without prejudice to any judicial or administrative proceedings to apportion blame or liability. The sole objective of this safety investigation and Final Report is the prevention of accidents and incidents.

Accordingly, it is inappropriate that AAIU Reports should be used to assign fault or blame or determine liability, since neither the safety investigation nor the reporting process has been undertaken for that purpose.

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[1] **Annex 13**: International Civil Aviation Organization (ICAO), Annex 13, Aircraft Accident and Incident Investigation.
[2] **Regulation (EU) No 996/2010** of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation.
[3] **Statutory Instrument (SI) No. 460 of 2009**: Air Navigation (Notification and Investigation of Accidents, Serious Incidents and Incidents) Regulations 2009.

AAIU Report No: 2018-021
State File No: IRL00918052
Report Format: Factual Report
Published: 28 December 2018

In accordance with Annex 13 to the Convention on International Civil Aviation, Regulation (EU) No 996/2010 and the provisions of SI 460 of 2009, the Chief Inspector of Air Accidents, on 10 August 2018, appointed himself as the Investigator-in-Charge. Subsequently, the Chief Inspector of Air Accidents, on the 14 August 2018, appointed Howard Hughes as the Investigator-in-Charge, assisted by Clive Byrne, Inspector of Air Accidents, to carry out an Investigation into this accident and prepare a Report.

Aircraft Type and Registration:	**(1) Alexander Schleicher ASW 17, EI-GMB** **(2) Alexander Schleicher ASK 21, EI-GLA**	
Aircraft Serial Number:	**(1) 17031** **(2) 21002**	
Year of Manufacture:	**(1) 1974** **(2) 1979**	
Date and Time (UTC)[4]:	**10 August 2018 @ 15.25 hrs**	
Location:	**Kilrush Airfield (EIKH), Co. Kildare**	
Type of Operation:	**General Aviation**	
Persons on Board:	**(1) Crew - 1** **(2) Crew - 1**	**Passengers - Nil** **Passengers - 1**
Injuries:	**(1) Nil** **(2) Minor**	
Nature of Damage:	**(1) Substantial** **(2) Substantial**	
Commander's Certificate:	**(1) Silver (C) Certificate issued by the Irish Gliding & Soaring Association (IGSA)**	
Commander's Age:	**(1) 68 years**	
Commander's Flying Experience:	**(1) 953 hours, of which 81 were on type**	
Notification Source:	**Member of IGSA**	

[4] **UTC**: Co-ordinated Universal Time. All timings in this report are quoted in UTC; Local time is UTC + 1 hour.

SYNOPSIS

Whilst landing at Kilrush Airfield (EIKH), Co. Kildare, a sailplane, EI-GMB, with one pilot on board, impacted the airfield boundary hedge on final approach to runway (RWY) 29. It subsequently impacted with a stationary sailplane, EI-GLA, which was positioned on the runway threshold awaiting tow. Both sailplanes were substantially damaged. The Pilot of EI-GMB was uninjured. A student positioned in the front seat of EI-GLA was also uninjured; however, an instructor pilot, who was preparing to board EI-GLA, sustained minor facial bruising as a result of evasive action taken to avoid the approaching sailplane.

NOTIFICATION

The AAIU was notified by a member of the IGSA.

1. FACTUAL INFORMATION

1.1 History Of The Flight

The Dublin Gliding Club (DGC) normally conduct gliding operations at their home base of Gowran Grange Airfield, Punchestown, Co. Kildare. However, on 10 August 2018, the sailplanes[5] in question were undertaking a club-organised "*Task Week*"[6] event at EIKH. At 13.38 hrs, the Pilot of a single seater sailplane (EI-GMB) departed from EIKH for general flying. After soaring for approximately 90 minutes, the Pilot commenced a right hand circuit to land back at EIKH on RWY 29. The Pilot completed downwind checks and was aware of other local sailplane traffic in the vicinity and on the ground including the presence of a stationary sailplane positioned on the threshold of RWY 29 at the hedge line.

On turning onto final approach, the Pilot adjusted the sailplane for altitude, descent angle and airspeed, with the airbrakes fully deployed, until satisfied with the approach configuration. The Pilot said that he was conscious of the 20 metre (m) wingspan of the sailplane and that the runway edges were marked with cones, and he was concentrating on ensuring correction for crosswinds and local trees in the vicinity of the runway. On approach to the threshold, the Pilot realised that the sailplane was now too low to clear the boundary hedge at the start of RWY 29. The Pilot attempted to raise the nose in order to clear the hedge. However, in doing so, the tailplane impacted heavily with the top of the hedge.

The Pilot stated that the deceleration from the impact with the hedge resulted in the sailplane pitching nose-down. As the sailplane came through the hedge its main landing gear (MLG) wheel impacted the port wing of another sailplane (EI-GLA) which was stationary and positioned adjacent to the hedge on the threshold of RWY 29. EI-GMB subsequently came to rest on RWY 29 approximately 26 m from the threshold hedge and pointing back in the direction from which it came (**Photo No. 1**).

[5] **Sailplane:** Regulation (EU) No 1178/2011 of 3 November 2011 defines 'Sailplane' as '*a heavier-than-air aircraft which is supported in flight by the dynamic reaction of the air against its fixed lifting surfaces, the free flight of which does not depend on an engine'.*

[6] **Task Week**: An informal fly-in gathering arranged by IGSA clubs.

Photo No. 1: Resting positions of both sailplanes on threshold RWY 29

The Pilot of EI-GMB was uninjured. A student, who was positioned in the single front seat of EI-GLA, was also uninjured. The instructor, who was standing by the nose of EI-GLA, preparing to board the single rear seat, saw the approaching sailplane, ran to the starboard side of EI-GLA and dived onto the ground, sustaining minor bruising (to the side of the face).

The reported airspeed and altitude of EI-GMB at the time of impact between EI-GMB and the hedge were approximately 50 knots (kts) and 10 feet respectively.

The Pilot of EI-GMB reported that the weather conditions were good for the flight with a wind of 6 kts at 300/310 degrees magnetic.

1.1.1 Task Week Event

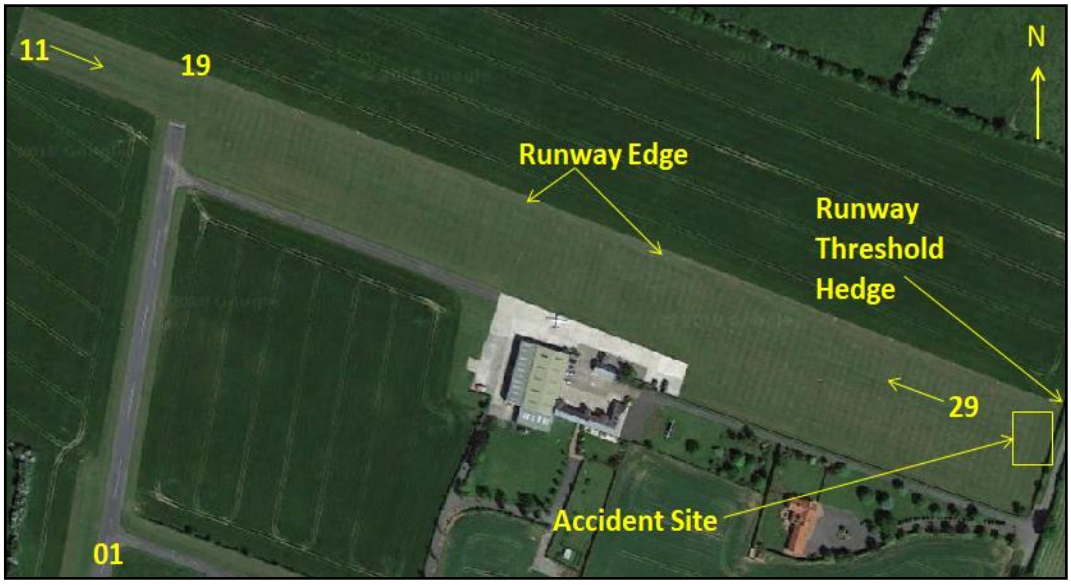
In relation to DGC "*Task Week*" events, the Investigation was informed by the IGSA of the following:

> *'Task Weeks are not referred to in the IGSA Operational Regulations[7] as they are an informal gathering […]. A Task Week is an informal fly-in, usually organised by a club […]. The gathering arranges for detailed daily weather forecasts with some suggested tasks from which the pilot may choose if he so wishes and establishes a co-operative group setting for rigging and retrieves, so necessary for gliding. A Task is a set course, usually with a number of preset turnpoints which the pilot attempts to fly around and then return to base'.*

1.2 Field Investigation

Two Inspectors from the AAIU travelled to EIKH following notification of the accident and commenced an Investigation. A number of witnesses were interviewed, including the Pilot of EI-GMB, who gave a full account of the event. EIKH is an airfield which has separate hard and grass runway surfaces. The hard runway is orientated in a direction of 01/19 and the grass runway is orientated 11/29 (**Graphic No. 1**).

[7] **IGSA Operational Regulations**: IGSA Operational Regulations, 14 August 2014.



Graphic No. 1: Aerial view of EIKH (*Google Earth*)

Both sailplanes were found in their respective resting positions post-accident. EI-GLA was found rotated approximately 100 degrees clockwise from its original orientation on a magnetic heading of approximately 030 degrees. EI-GMB was found to be rotated approximately 190 degrees clockwise from its original direction of flight and on a magnetic heading of approximately 120 degrees some 26 m from the threshold.

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1.3 Sailplane Information

EI-GMB is a single seat ASW 17 model sailplane built by Alexander Schleicher GmbH & Co. The sailplane has a wingspan of 20 m, height of 1.85 m and a fuselage length of 7.55 m. It has an empty weight of 405 kg and a maximum take-off weight of 570 kg. Significant features include a flap arrangement, airbrakes and a conventional horizontal stabilizer. EI-GMB was built in 1974.

EI-GLA is a two-seater ASK 21 model sailplane built by Alexander Schleicher GmbH & Co. The sailplane has a wingspan of 17 m, height of 1.55 m and a fuselage length of 8.35 m. It has an empty weight of 360 kg and a maximum take-off weight of 600 kg. Significant features include airbrakes as well as a T-Tail horizontal stabilizer. EI-GLA was built in 1979.

1.4 Damage to Sailplanes

Both EI-GMB and EI-GLA sustained substantial damage. EI-GMB's starboard horizontal stabiliser was sheared off and its port horizontal stabiliser, although still attached, was severely damaged with traces of hedge present (**Photo No. 2**). In addition, one of the MLG undercarriage doors and the tail skid of EI-GMB were broken off.

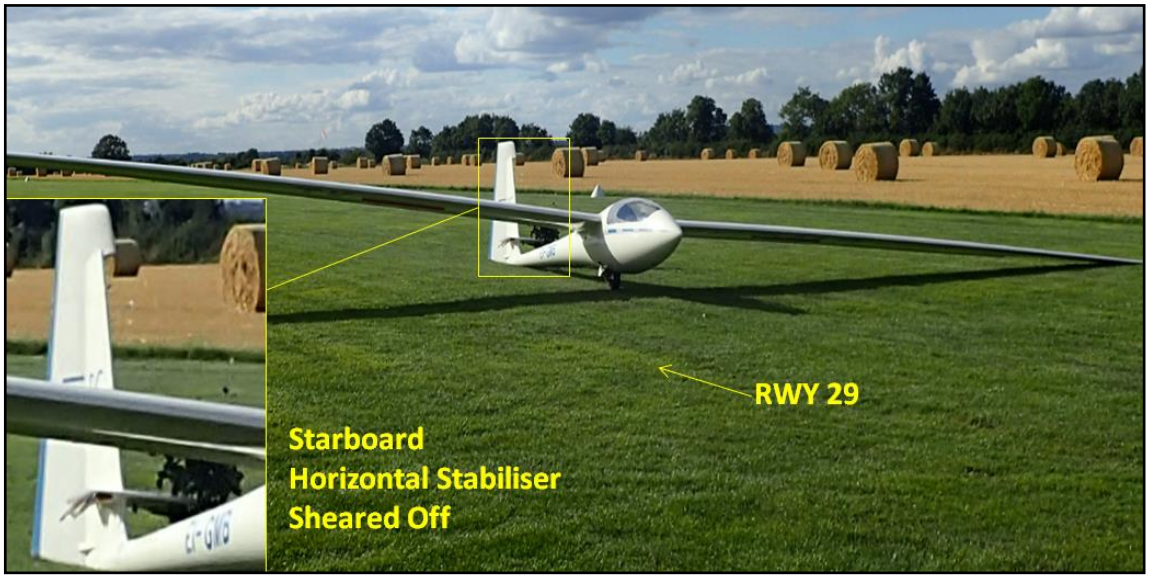

Photo No. 2: EI-GMB resting position post-accident

The impact of EI-GMB with EI-GLA resulted in the port wing of EI-GLA being significantly damaged in two distinct areas (**Photo No. 3**). The port wing was cracked from its leading to trailing edge approximately 6 m from the port wing root. The impact of the MLG of EI-GMB onto the airbrake housing area of EI-GLA, approximately 3 m from the port wing root resulted in the airbrake assembly being damaged and the surrounding skin being perforated in several areas from leading to trailing edge (**Photo No. 4**). In addition, the Pilot was of the opinion that the impact between the two sailplanes caused the rear canopy of EI-GLA to slam closed resulting in it being shattered.

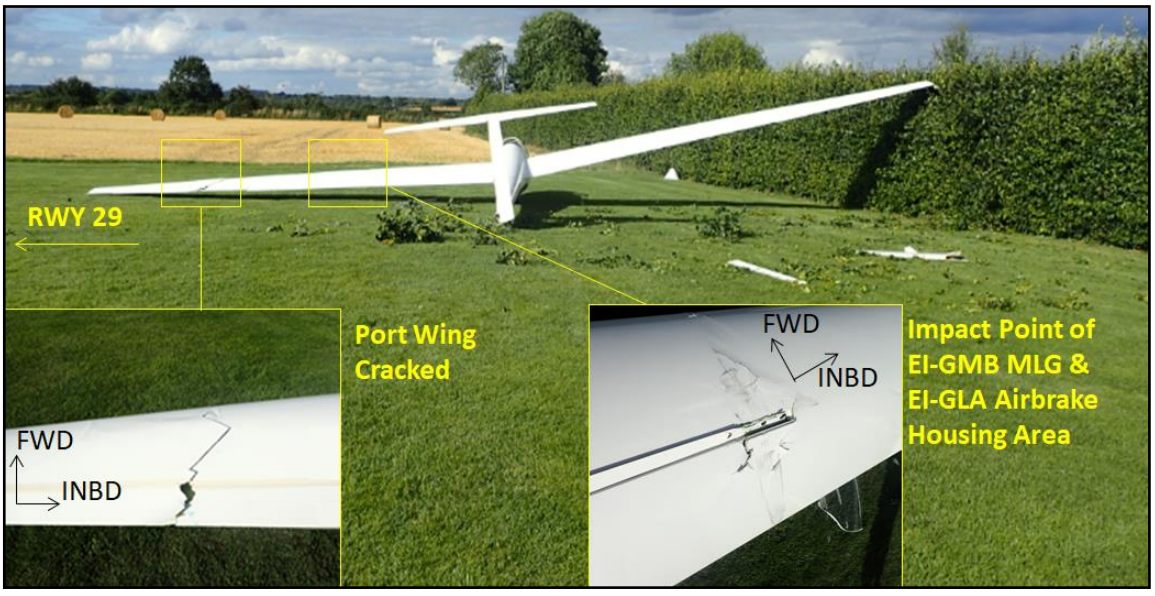

Photo No. 3: EI-GLA resting position post-accident

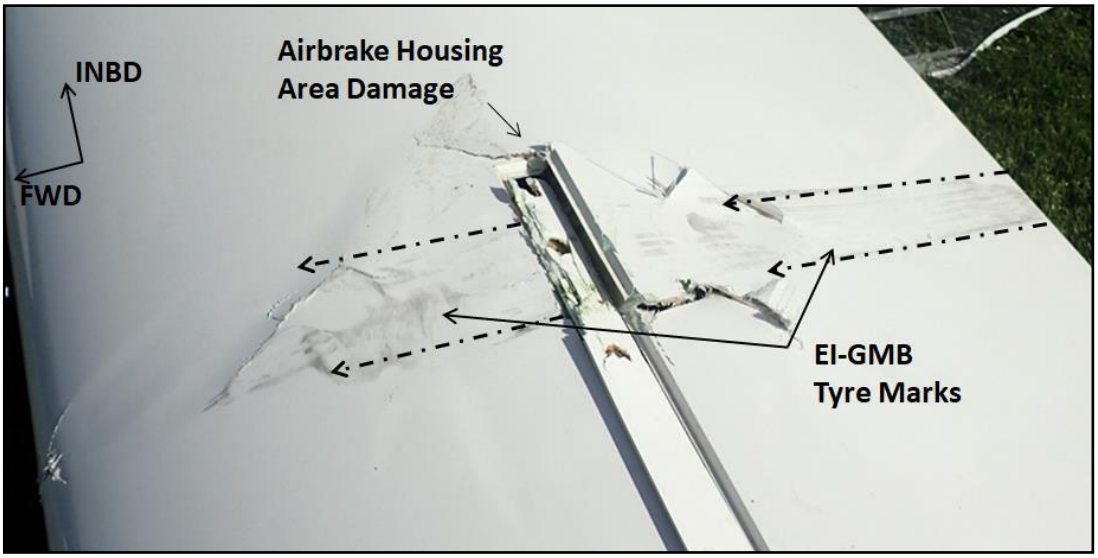

Photo No. 4: Impact point on EI-GLA port wing and damage to airbrake housing area

1.5 Pilot Information (EI-GMB)

Age:	68 years
Certificate:	IGSA Silver (C) Certificate
Total All Types	953 hours
Last 90 Days:	7 hours 10 minutes
Last 28 Days:	1 hour 49 minutes
Last 24 Hours:	1 hour 49 minutes
Total On Accident Type:	81 hours

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Regarding medical fitness to fly sailplanes in Ireland, Section 1.6, 4.34, 6.6 and 8 of the IGSA Operations Manual 2014 refers and outlines the necessary medical requirements based on age as follows:

> *"The standard of fitness required is that required under the Roads Traffic Act for the issue of a licence to drive a Heavy Goods Vehicle".*

The Pilot held a Group 2, Heavy Goods Vehicle (HGV) NDLS[8] medical which was issued in Feburary 2015 and was valid for 5 years which met the requirements in the IGSA Operations Manual. The Pilot informed the Investigation that he had recently aquired prescription bifocal sunglasses which he had used during the subject flight. In addition, the Pilot also said that while he had become acustomed to the use of bifocal sunglasses on the ground he had not used them previously while gliding.

[8] **NDLS:** National Driver License Service.

1.5.1 Sailplane (Glider) Licensing

According to the Irish Aviation Authority (IAA) website gliding in Ireland has been self-regulated since its inception. The introduction of EU Commission Regulation 1178/2011 (The Aircrew Regulation) included Sailplane licensing under EASA's remit. A derogation was availed of by the IAA, last updated in April 2018, and is in place until EASA regulations are amended with an alternative approach which is projected to be not before 2020[9]. Accordingly, the IGSA continue to oversee all aspects of gliding (sailplane) operations conducted in Ireland[9].

According to the IAA's aircraft register[10], both EI-GMB and EI-GLA are categorised as sailplanes. Sailplanes are defined in EU regulation 1178/2011 thus:

> *'a heavier-than-air aircraft which is supported in flight by the dynamic reaction of the air against its fixed lifting surfaces, the free flight of which does not depend on an engine'.*

The IGSA website outlines the various 'licensing' levels and grades currently achievable by sailplane pilots. While the term 'Glider' is used frequently in IGSA documents it is understood that it refers to sailplanes. A Silver (C) Certificate holder can fly without a briefing but is still subject to the approval of the Duty Instructor.

A pilot gains a Silver (C) Certificate when they:

- *Complete a 50 km flight,*
- *Complete a 5 hour flight,*
- *Achieves a height gain of 1000 m.*

1.6 Irish Gliding & Soaring Association (IGSA)

According to the description of its organisation within its IAA-approved Continuing Airworthiness Management Exposition (CAME) and Maintenance Organisation Manual (MOM)[11], the IGSA, which is located at Gowran Grange Airfield, Punchestown, Naas, Co. Kildare, are described as follows:

> *'The IGSA has been managing the Airworthiness of Gliders since it was formed in 1994. Previously the Irish Gliding Association (IGA) held that responsibility. The IGA/IGSA has been operating in an unregulated environment in a self-regulation mode since 1959. Apart from airworthiness, the IGA/IGSA also manages pilot training and standards, instructor ratings and occurrence reporting. The Irish Gliding and Soaring Association (IGSA) is a Private Company limited by Guarantee. It is registered with the Companies Registration office, No 247232. Its members, mostly glider pilots and owners, elect a Council, who constitute the board of Directors, at an Annual General Meeting. The IGSA is headed by a Chairman. The Council consists of a Chairman, President, Secretary, and Treasurer and up to 2 ordinary members. In addition, each affiliated Gliding Club may nominate up to 2 council delegates'.*

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[9] **Sailplane (Glider) Licensing Requirements**: IAA Website, 30 October '2018.
[10] **Current Aircraft Register:** IAA Website, 30 September 2018.
[11] **CAME & MOM**: IAA-Approved IGSA CAME & MOM Issue 1 Revision 8, 15 May 2018.

1.6.1 Dublin Gliding Club (DGC)

The DGC are currently the sole gliding club within the Republic of Ireland that are affiliated to, and subject to, the IGSA regulations. The DGC are located at Gowran Grange Airfield, Punchestown, Naas, Co. Kildare.

1.6.2 Safety Action

Following the subject occurrence, the IGSA Council reviewed their Operations Manual with regard to procedures and guidance for the prepositioning of gliders (sailplanes) on active runways. The IGSA informed the Investigation of their intention to insert an additional regulation at the next revision of the IGSA Operational Regulations, which is scheduled for January 2019. This additional regulation will state:

> *4.10.2: "A glider shall not be positioned for take-off on an active runway unless it [is] safe to do so".*

In addition, the DGC Chief Flying Instructor (CFI) informed the Investigation that the following guidance has been promulgated to all DGC members:

> *'Please bear in mind the need to keep the runway clear at all times for landing aircraft. Gliders must not be parked on the runway and should be positioned on the runway threshold only for immediate launch.*
>
> *The pilot(s) should sit and strap into the glider in the parking area; all pre-flight checks apart from canopy and airbrakes can then be completed before being pushed out onto the runway once the tug has landed (and only if there is no other aircraft in the circuit). If there are not enough assistants to do this, then push the glider out when the tug has landed (again, only if there is no other aircraft in the circuit) and proceed with pre-flight checks and the launch'.*
>
> *'A pilot on approach observing the runway threshold to be occupied (or the runway blocked in any fashion) should adjust the approach and landing to avoid overflying the obstruction. This situation should however be very much the exception. The overwhelming majority of landings should be made onto a clear runway'.*

The DGC CFI is also the IGSA Chief Technical Officer (CTO) who, according to the IGSA Operational Regulations, is responsible for all matters concerning [sailplane] flying. As the DGC are the sole club affiliated to the IGSA, notification to all DGC members also constitutes notification of all IGSA members. In addition, the DGC CFI has informed the Investigation that arising from the accident the DGC's intention is to conduct a series of planned recurrent seminars on the following subjects:

- *Circuit planning*
- *Reference point technique*
- *Approach control*
- *Use of flaps / airbrakes*
- *Wind gradient / wind shear*
- *Flying currency*

2. AAIU COMMENT

The Pilot informed the Investigation that, on reflection, the combination of the relatively reclined position of the ASW 17 sailplane seat and the lower magnified area of the new bifocal lens sunglasses may have contributed to a possible misjudgment of the necessary glide angle to safely clear the hedge at the threshold on RWY 29. Such a misjudgement, combined with the airbrakes being fully deployed on final approach may have reduced the glide range. The presence of a stationary sailplane on the threshold of the active runway served to compound the issue and may have resulted in an additional distraction for the Pilot.

If a sailplane undershoots on approach, the risk of collision between the inbound and stationary sailplane, as occurred in this case, is high. Additionally, the risk to sailplane occupants and aircraft handlers in the vicinity of a stationary sailplane must also be considered. Sailplanes, by their nature, once committed to land are unable to instigate a go-around and unlike powered aircraft, offer no audible cue as to their proximity on approach. Therefore, a clear runway devoid of obstacles is a safety imperative.

The Investigation notes the IGSA's intention to load and complete all pre-flight actions prior to positioning on the threshold for immediate launch. This should address the practice of overflying stationary sailplanes thereby negating the safety issues which led to this accident.

The sailplanes were operating away from their normal airfield of Gowran Grange on a DGC "*Task Week*" event. Robust procedures are necessary in order to ensure the safety of aircraft, their occupants and bystanders at all airfields where sailplanes operate. The Investigation welcomes the proactive approach by the IGSA and the DGC regarding the issuance of additional guidance and procedures as described in section 1.6.2 of this report.

- END -

In accordance with Annex 13 to the Convention on International Civil Aviation, Regulation (EU) No. 996/2010, and Statutory Instrument No. 460 of 2009, Air Navigation (Notification and Investigation of Accidents, Serious Incidents and Incidents) Regulation, 2009, the sole purpose of this investigation is to prevent aviation accidents and serious incidents. It is not the purpose of any such investigation and the associated investigation report to apportion blame or liability.

A safety recommendation shall in no case create a presumption of blame or liability for an occurrence.

Produced by the Air Accident Investigation Unit

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