

**AIRPROX REPORT No 2022159**

Date: 31 Jul 2022 Time: 1412Z Position: 5726N 00149W Location: IVO Cruden Bay

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	S92	Quik 12
Operator	Coast Guard	Civ FW
Airspace	Scottish FIR	Scottish FIR
Class	G	G
Rules	VFR	VFR
Service	Traffic	None
Provider	Aberdeen	NK
Altitude/FL	2300ft	NK
Transponder	A, C, S+	Not fitted
<b>Reported</b>		
Colours	Red, White	Blue, White
Lighting	HISL, Position	Landing
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2300ft	~1300ft
Altimeter	QNH (1018hPa)	QNH
Heading	NK	North
Speed	140kt	NK
ACAS/TAS	TCAS II	Not fitted
Alert	None	N/A
<b>Separation at CPA</b>		
Reported	100ft V/0.5NM H	NK
Recorded	NK	



**THE S92 PILOT** reports that they were flying just north Cruden Bay at 2300ft on a Sunday. They had been warned by ATC that there was possible traffic, which might be a drone, in the area (ATC had a very weak potential contact in an area which is known to show scatter on their radar but prudently chose to advise them anyway). As a precaution, they altered course to the right (further inland) and maintained height to allow separation from what might have been a NOTAM'd drone from Cruden Bay (which was not due to be above 1300ft). The Captain asked the crew to maintain good lookout. A microlight was spotted in their 9 o'clock within 1km and around 100ft above. The microlight was seen to alter course to the right (from its apparent converging heading), but it was too late for the S92 pilot to react. The microlight was not transponding. The pilot opined that, had they not altered course earlier just in case, this could easily have resulted in a different outcome.

The pilot assessed the risk of collision as 'Medium'.

**THE QUIK 12 FLEXWING MICROLIGHT PILOT** reports that they first saw the helicopter 2 or 3 miles ahead on their port side, it was crossing their flight path so they turned to port to remain clear.

The pilot assessed the risk of collision as 'None'.

**THE ABERDEEN CONTROLLER** reports that the [S92 C/S] was inbound to Aberdeen at 4000ft with a casualty and reported that they had to descend slowly due to the casualty. Danger Area 722A, which routes offshore from Cruden Bay, was notified as active but the controller had positive confirmation that the drone would not be operating in it. They had further information on a UAS operating within 0.5NM radius of Cruden Bay up to 1300ft which was passed to the S92 pilot on a Traffic Service. A crossing clearance of D722A was also given to the pilot just in case they needed to avoid Cruden Bay where the drone may have been operating. A non-standard clearance into the zone was given of not above 2000ft (it would usually be not above 1000ft). A primary contact was observed at Cruden Bay, the information

was passed to [the S92 pilot] who then elected to route onshore to remain clear of it. An amended clearance was then given of not above 2500ft for segregation just in case the primary contact was the UAS and taking into consideration that [the S92 C/S] could not easily manoeuvre due to the condition of the casualty. The pilot reported that they had sighted a microlight onshore which had come very close and thought that it was at 2500ft. A non-moving primary contact was observed after the incident. The S92 pilot reported that they would file an Airprox.

## Factual Background

The weather at Aberdeen was recorded as follows:

METAR COR EGPD 311350Z AUTO 10008KT 070V160 9999 SCT042 16/10 Q1017 NOSIG=

## Analysis and Investigation

### NATS Occurrence Investigation

[S92 C/S] was inbound to Aberdeen on a Cat A medical flight from an offshore installation and in receipt of an Offshore Deconfliction Service from the Aberdeen Offshore Radar controller (HELs). At the time of the event a NOTAM was in place to promulgate UAS operations being conducted under VLOS at Cruden Bay up to 1300ft AMSL. The crew of [S92 C/S] had been made aware of this activity by HELs. Also associated with this UAS activity TDA722A was notified as being active.

1406: When [S92 C/S] was 18NM northeast of Cruden Bay, HELs passed information to the pilot on a PSR contact at Cruden Bay advising it was possibly the UAS or possibly radar clutter. In response the pilot advised they would avoid Cruden Bay. By 1408, all PSR contacts in the vicinity of Cruden Bay had faded from all radar sources.

1408:39: HELs changed the service being provided to [the S92] to Traffic Service, in accordance with normal sector operating procedures when the aircraft approaches the coastline. The pilot also informed HELs that they would route onshore.

1411:24 A '+' symbol (PSR-only contact) appeared on the RDP display to the north of Cruden Bay, changing to a single dot a few seconds later and fading altogether approximately 60sec later. This dot was in the 10 o'clock position from [S92 C/S] at a range of approximately 1NM.



Figure 1

1411:36 - The aircraft crossed the coast in the vicinity of Peterhead tracking southwest towards Aberdeen Airport with Mode C indicating 2200ft.

HELs: “[S92 C/S], very faint primary contact just to the north of Cruden Bay but it’s offshore.”

Pilot S92 : “Okay, that’s good news thanks, [C/S] looking.”

HELs: “[C/S] Roger.”

In order to provide the crew of [S92 C/S] with more flexibility to avoid any UAS activity, HELs amended the controlled airspace entry clearance already issued to the crew to enter the Aberdeen CTR not above altitude 2500ft QNH.



Figure 2 - 1412:26

1412:40:

S92: “[C/S] to Radar.”

HELs: “[C/S] pass your message.”

S92: “Yeah, just for your information, there is traffic there, we came quite close to him and he is a microlight.”

HELs: “[C/S] Roger, thank you.”



Figure 3 - Allanshill data



Figure 4 - Perwinnes data

At this time the previous PSR 'dot' displayed on the lower RDP screen had disappeared with no contact or clutter present on either the Allanshill (top RDP display) or the Perwinnes radars.

1413:18 – S92: “[C/S] estimate that microlight height to be [inaudible].”

HELs: “Roger, was that 2500?”

S92: “[C/S] affirm.”

1413:22 - A PSR contact appeared on Perwinnes Radar, in [S92 C/S]'s 6 o'clock position at a range of 2.78NM.

1413:57 – S92: “And Aberdeen Radar, [C/S].”

HELs: “[S92 C/S] pass your message.”

S92: “Just for your information we've decided we're going to file an Airprox for that, it was err, very close.”

HELs: “[S92 C/S] roger, thank you.”

The event occurred in Class G airspace in an area where a significant number of low-level helicopter flights associated with the North Sea oil and gas industry take place, along with general aviation activity from Aberdeen Airport and other local airstrips. Although the North Sea helicopters are always in receipt of a service from Aberdeen ATSU in this area, there is no requirement for other aircraft to contact the unit.

In this area, services to helicopters following the flight profile of [S92 C/S] are normally given a Traffic Service in accordance with CAP774. With no surveillance contact that could be considered as even a potential aircraft, HELs correctly discharged their responsibilities under CAP774 to the crew of [the S92].

At the time of the event a series of UAS flights had commenced from a site at the southern edge of Cruden Bay. The operator of this aircraft conducts flights to offshore oil platforms with Temporary Danger Areas (TDAs) established to provide segregation from other aircraft for the oversea flight segments. On the day of the event TDA722 complex was active and a Danger Area Crossing Service can be issued by HELs provided it is known that the UAS involved is not airborne, which was the case.

In addition to the UAS activity contained within the TDA722 complex, a further NOTAM was in place to warn of possible UAS activity being conducted under Visual Line of Sight (VLOS) rules within 0.5NM of the launch site near Cruden Bay. At the time of the event an agreement was in place between Aberdeen ATC and the UAS operator to inform the duty Watch Manager prior to departing for a flight which would enter TDA722 complex. No similar agreement existed for notification of VLOS activity, with HELs erring on the side of caution and making the S92 crew aware of the potential for UAS operations at Cruden Bay. In response to this information, the crew of [S92 C/S] elected to route onshore and when granted a higher CTR entry clearance altitude by HELs, also remained above the UAS maximum operating altitude of 1300ft.

On the HELs sector, surveillance coverage is available from the Perwinnes PSR/SSR (located 14NM southwest of Cruden Bay) and the Allanshill PSR/SSR (located 17NM northwest of Cruden Bay). Both surveillance systems provide good low-level coverage (less than 1000ft AMSL) in the vicinity of Cruden Bay, although Allanshill does have a slow-speed filter applied to the PSR set at 60kts with an area to the north of Cruden Bay set at 50kts.

On the day of the event a number of brief PSR contacts were displayed on both the Perwinnes and Allanshill radars, but not with the frequency or concentration that would normally result in the service to an aircraft being limited to an SSR-only service. The HELs controller's response to the contacts that were displayed was appropriate.

Following receipt of the Airprox report from HELs, the duty Watch Manager contacted [a local airfield], to enquire if any microlight aircraft based at the airfield were airborne. Later, the Watch Manager was contacted by the pilot of [Quik 12 C/S] who advised it was their aircraft that was the subject of the report from [S92 C/S].

During the discussion with the duty Watch Manager, the pilot of the Quik 12 reported:

- They were conducting a local flight from [departure airfield], to return to the same point.
- The pilot was intrigued by the “drone business” at Cruden Bay and wished to fly to that area to see what it was about.
- The pilot opined they were at around the same altitude as the S92 but were “miles away” and turned right to avoid it.

Conclusions:

HELs provided good information on the potential UAS activity at Cruden Bay, from which the S92 crew elected to re-route slightly further onshore and remain above 2000ft. The pilot of [Quik 12 C/S] was not participating in the ATC service and as such was unknown to HELs. Around the time of the event no surveillance contact that could be attributed to [the microlight] was shown on either the Perwinnes or Allanshill radars as displayed on the HELs RDP screens. As such, HELs was not in possession of any information that could have enhanced the situational awareness of the crew of [S92 C/S] with respect to the presence of [Quik 12 C/S]. The pilot of the Quik 12 reported taking avoiding action, but the crew of [S92 C/S] advised it was too late to make an avoidance manoeuvre by the time they had visually acquired the microlight. With no surveillance contact that can be positively attributed to [Quik 12 C/S] it is not possible to determine distances between the two aircraft, with the pilots' accounts of "miles away" (Quik 12) and "within 1km" (S92) providing a variable picture of this aspect.

### **UKAB Secretariat**

The S92 and Quik 12 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.<sup>1</sup> If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.<sup>2</sup> If the incident geometry is considered as converging then the Quik 12 pilot was required to give way to the S92.<sup>3</sup>

### **Summary**

An Airprox was reported when an S92 and a Quik 12 microlight flew into proximity in the vicinity of Cruden Bay at 1412Z on Sunday 31<sup>st</sup> July 2022. Both pilots were operating under VFR in VMC, the S92 pilot in receipt of a Traffic Service from Aberdeen and the Quik 12 pilot not in receipt of an ATS.

### **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of reports from both pilots, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate operating authorities. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board discussed the event and agreed that the actions taken by both pilots, together with the separation between the two aircraft, had been sufficient to ensure that there had been no risk of collision. Members discussed that whilst the HELs controller only had a PSR contact without any height information, still, by providing the S92 pilot with generic Traffic Information, they had enabled the pilot to take action. Furnished with information that there may have been conflicting traffic, the S92 pilot had taken a precautionary turn and asked their crew to maintain a good lookout, which meant that the Quik 12 had been sighted in time to make an assessment that there had been no need for further avoiding action. Although the Quik 12 pilot had had no prior knowledge about the S92, they had seen the other

<sup>1</sup> (UK) SERA.3205 Proximity.

<sup>2</sup> (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on.

<sup>3</sup> (UK) SERA.3210 Right-of-way (c)(2) Converging.

aircraft at range and assessed that there had been no risk of collision. Members were therefore satisfied that normal safety standards and parameters had pertained and, as such, assigned a Risk Category E.

Members agreed on the following contributory factors:

**CF1.** The HELS controller had only generic situational awareness about the Quik 12, in that they had a PSR-only contact without any height information.

**CF2.** The S92 pilot had generic situational awareness that there was other traffic in the vicinity.

**CF3.** The EC equipment on the S92 was not able to detect the Quik 12.

**CF4.** The S92 pilot had been concerned by the proximity of the Quik 12.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

### Contributory Factors:

2022159				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
<b>Ground Elements</b>				
<b>• Situational Awareness and Action</b>				
1	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
<b>Flight Elements</b>				
<b>• Situational Awareness of the Conflicting Aircraft and Action</b>				
2	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late, inaccurate or only generic, Situational Awareness
<b>• Electronic Warning System Operation and Compliance</b>				
3	Technical	• ACAS/TCAS System Failure	An event involving the system which provides information to determine aircraft position and is primarily independent of ground installations	Incompatible CWS equipment
<b>• See and Avoid</b>				
4	Human Factors	• Perception of Visual Information	Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: E.

### Safety Barrier Assessment<sup>4</sup>

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

#### **Flight Elements:**

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **partially effective** because the S92 pilot was given generic Traffic Information by the controller that there was a PSR-only contact in their vicinity.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because the TCAS II on the S92 could not detect the Quik 12.

<sup>4</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

<b>Airprox Barrier Assessment: 2022159</b>		Outside Controlled Airspace						
<b>Barrier</b>		<b>Provision</b>	<b>Application</b>	<b>Effectiveness</b>				
				<b>Barrier Weighting</b>				
				0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Manning & Equipment	✓	✓					
	Situational Awareness of the Conflicition & Action	⚠	✓					
	Electronic Warning System Operation and Compliance	⊘	⊘					
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Tactical Planning and Execution	✓	✓					
	Situational Awareness of the Conflicting Aircraft & Action	⚠	✓					
	Electronic Warning System Operation and Compliance	✗	✓					
	See & Avoid	✓	✓					
<b>Key:</b>		<b>Full</b>	<b>Partial</b>	<b>None</b>	<b>Not Present/Not Assessable</b>	<b>Not Used</b>		
Provision	✓	⚠	✗	⊘				
Application	✓	⚠	✗	⊘		⊘		
Effectiveness	■	■	■	■		□		