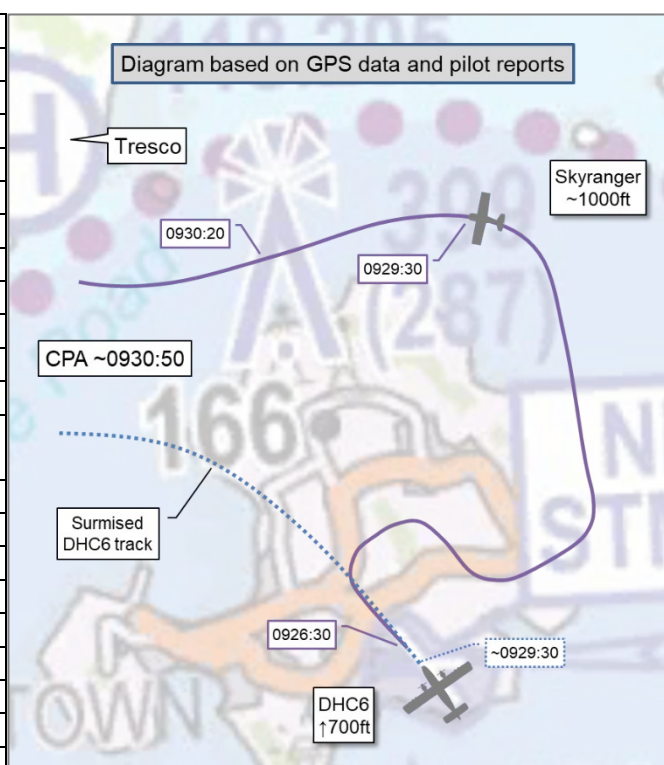


## AIRPROX REPORT No 2022118

Date: 22 Jun 2022 Time: 0931Z Position: 4955N 00618W Location: Isles of Scilly

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	DHC6	Skyranger
Operator	CAT	Civ FW
Airspace	St Mary's ATZ	St Mary's ATZ
Class	G	G
Rules	VFR	VFR
Service	ACS	ACS
Provider	Scillies Tower	Scillies Tower
Altitude/FL	NK	NK
Transponder	A, C, S+ <sup>1</sup>	A, C <sup>2</sup>
<b>Reported</b>		
Colours	White, red, blue	White
Lighting	Anti-col, position, landing, taxi	Not fitted
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	500-700ft	1000ft
Altimeter	QNH (NK hPa)	QFE (NK hPa)
Heading	321°	NK
Speed	100kt	70kt
ACAS/TAS	TCAS I	PilotAware
Alert	Unknown	None
<b>Separation at CPA</b>		
Reported	300ft V/0.5NM H	500ft V/1000m H
Recorded	NK	



**THE DHC6 PILOT** reports that an ultralight aircraft, that was about 2ft from touching down on RW32, was instructed to go around by ATC, with no further explanation of the reason for the go-around. The ultralight pilot was instructed to orbit at the end of right downwind RW32. In the meantime the DHC6 pilot was cleared to backtrack RW32. Once they were on the threshold ready for departure, they were informed by ATC about the traffic orbiting at the end of right downwind for RW32. They confirmed they were visual with the traffic and that it would pose no factor to their departure. At approximately 500ft, after departure, they spotted an aircraft in the 1 o'clock position, closing in and about to cross their departure track. By the time they had reacted they were at approximately 700ft; they levelled off and made a left turn away from the traffic. They made ATC aware of their actions and observations and it became apparent that it was the ultralight traffic that was instructed to orbit at right downwind RW32.

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

**THE SKYRANGER PILOT** reports conducting a flight into St Marys. The Tower controller offered a circuit of the island which they took and then flew into the ATZ from the south with no issues. As they approached they heard that there was a 'twin' waiting for departure on the strip so they checked with the Tower whether they would like an expedited landing which they affirmed, if possible. The Skyranger pilot was on approach, with a brisk crosswind but a good approach, aiming to touch-down about a third of the way along the runway and about to touch down, when the Tower controller instructed them to go-around and confirm receipt of the order. The pilot confirmed and went round. This was the first time they had ever been asked to go-around and they stated it 'threw them' somewhat because they were not sure of the reason for the go-around. The pilot stated that this was not an excuse but flying into an 'ATZ/big airport' and executing a go-around was unusual for a microlight pilot. The controller gave

<sup>1</sup> The aircraft did not appear on radar at the time of the Airprox but transponder modes were confirmed later in its flight.

<sup>2</sup> The aircraft did not appear on radar at the time of the Airprox but transponder modes were confirmed earlier in its flight.

instructions for the climb-out and they performed these, however, they believe they misheard the instructions because after climb-out they cleared 'the zone' to the north to execute a rejoin to the circuit, but they should have climbed out and re-joined the circuit to the right for a downwind and repeat landing. They believe they were 'thrown' by the first circuit and approach being left-hand and then the go-round being right-hand. They did not believe that there was any risk of collision with the other aircraft, however, 'it was not ideal airmanship'. The other aircraft was on hold for the runway when they passed so must have backtracked the runway when they performed a go-around. It then took-off so passed to the left and below. The controller advised the other pilot that they could continue to the east once past and the Skyranger pilot spoke to the controller, who advised that they should be on a right-hand circuit 'as instructed'. When they landed, they immediately called the Tower controller to offer apologies for any extra workload caused to the controller or to the other pilot.

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

**THE ST MARY'S CONTROLLER** reports that the Skyranger pilot was instructed to go-around into the right-hand circuit for RW32 because the aircraft was positioned too high on final approach. Traffic was joining from the west so the Skyranger pilot was asked to orbit at the beginning of the downwind leg. The DHC6 pilot was given Traffic Information on the orbiting Skyranger and take-off clearance. The Skyranger pilot was instructed to continue downwind right-hand for RW32. They lost sight of the Skyranger whilst the DHC6 was rolling and so asked the Skyranger pilot to report their position. The VDF showed a QDM of 173°, which was passed to the departing DHC6 pilot, who reported levelling at 700ft and then routed via Tresco (west of the usual climb-out) before joining the northern route. The Skyranger pilot was asked to confirm their intentions, left-hand or right-hand downwind as instructed.

## Factual Background

The weather at St Mary's was recorded as follows:

METAR SPECI 220930Z 02012KT CAVOK 18/14 Q1014 =

## Analysis and Investigation

### CAA ATSI

An Airprox occurred when a DHC6 and a [Skyranger] came into proximity in the RW32 climb-out lane at St Mary's Airport. The DHC6 was a scheduled passenger flight, the pilot was in the initial stages of the climb-out and was expecting to turn right and route to the east. The [Skyranger] pilot had been instructed to orbit at the start of the right-hand downwind leg RW32 (to the east of the climb out lane), after having been instructed to go-around from a previous attempted landing from the left-hand circuit.

ATSI had access to reports from the pilots of both aircraft, an initial report from the controller and an investigation report from St Mary's unit management. The area radar recordings were reviewed for the relevant period; however, the event was not displayed on the area radar due to the poor low-level coverage in this location. St Mary's RTF recordings were reviewed; the traffic situation became complex and the RTF loading was high in the period leading up to the Airprox. To provide the Board members with a comprehensive view of the traffic levels and complexity, the RTF exchanges from all aircraft on frequency in the lead-up to the Airprox have been included in this report.

At 0903:00 the [Skyranger] pilot called the St Mary's controller and requested a Basic Service. The controller responded, "*RW32 in use, surface wind 020 degrees 12 knots, OAT +17, QNH 1013*" and a Basic Service was agreed. The pilot provided an accurate readback and advised the controller that their ETA would be around 20 minutes. The controller asked the pilot if they were maintaining altitude 2000ft, and the pilot confirmed their current level was 2100ft. The controller asked the pilot to report any change in level and instructed them to report 11 miles to run to the islands.

At 0903:40 the controller passed Traffic Information to the [Skyranger] pilot on a same direction EV97, and the pilot responded that they believed this to be their comrade who was around 5 miles behind them.

At 0907:30 the [Skyranger] pilot reported 11 miles to run and was instructed to report at St Martins Head VRP. The pilot was asked if they would like to route around the islands prior to joining the circuit, and the pilot confirmed that they would like to do this, if it would fit in with their agreed PPR time. The controller responded that they'd see what the traffic was like at the time (a map of the islands that were used as reporting points can be found in the analysis section of this report).

At 0908:40 the EV97 pilot called the controller and requested a Basic Service. A Basic Service was agreed, the controller passed the airfield details, which were read back by the pilot. The pilot was instructed to report before any change in altitude (from 2000ft) and to report 11 miles to run to the islands. The controller passed Traffic Information on the [Skyranger] ahead and advised that the [Skyranger] pilot had just reported 11 miles to run to the islands, was at 2000ft with an ETA of minute 30, and that they were likely to overhaul the [Skyranger]. The ETA calculated from the initial RTF call from the [Skyranger] pilot at 0903:00 plus 20 minutes would have resulted in an ETA of minute 23. This may have resulted in the controller believing that the two microlights were closer to each other than they were.

At 0909:10 the controller turned their attention to a DA40 pilot requesting taxi instructions from the grass parking area, who was instructed to conduct their power checks in their present position and report ready for departure.

At 0912:50 the pilot of a helicopter on the ground at Tresco heliport checked-in with the controller and advised that they were lifting from Tresco for Penzance and climbing to altitude 1000ft. The controller passed Traffic Information on the opposite direction [Skyranger] and the EV97 and advised that one had reported at 11 DME four minutes previously (the [Skyranger]), that the other was approaching 11 DME (the EV97) and that both were at 2000ft. The pilot advised that they'd copied the traffic. The controller confirmed that there was no other reported traffic to affect the helicopter's climb to 1000ft. The controller then passed reciprocal Traffic Information to the [Skyranger] pilot and the EV97 pilot and both pilots acknowledged the helicopter traffic. The [Skyranger] pilot had already reported 11 miles to run and the EV97 pilot had been instructed to report 11 miles to run; this is not 11 DME. The DME in use is located at Land's End and 11 miles to run to St Mary's equates to 17 DME from the Land's End VOR.

At 0913:20 the [Skyranger] pilot reported at St Martins Head at 2000ft, and the controller instructed the pilot to continue around the islands in an anti-clockwise direction and report overhead the island of St Agnes.

At 0914:00 the controller requested the distance to run to the islands from the EV97 pilot, and they responded that they were 9.7 miles to the north. The pilot was instructed to report at St Martins Head VRP. The EV97 pilot had missed the report at 11 miles to run.

At 0914:20 the [Skyranger] pilot reported visual with the departing Tresco helicopter and requested to descend to altitude 1500ft. The controller advised that there was no reported traffic to affect the descent to 1500ft.

At 0914:50 the controller advised the Tresco helicopter pilot that the opposite direction [Skyranger] pilot had them in sight, was descending to 1500ft and was routeing around the islands. The helicopter pilot advised that they had copied the traffic and were now level at 1000ft. A Basic Service was agreed.

At 0915:50 the DHC6 pilot requested engine start, for departure to Land's End, at altitude 1000ft. Engine start was approved, and the airfield details passed.

At 0917:00 the DA40 pilot reported power checks complete and ready for taxi. The pilot was instructed to turn left and taxi across the access track to the south, to hold on the grass parking area. The controller asked what level the pilot required on departure, and they responded with 3000ft.

At 0917:50 the EV97 pilot reported 2 miles to run to St Martins Head and requested descent to altitude 1500ft. The controller passed Traffic Information on the [Skyranger] (ahead) as having reported at St Martins at time 0913 and advised that the [Skyranger] pilot had descended to altitude 1500ft, was routing around the islands, and should be approaching St Agnes. There was no response from the EV97 pilot.

At 0918:30 the DA40 pilot requested an anticlockwise tour around St Mary's, this request was quickly changed to clockwise, to route via St Martins. The controller responded that they would see what they could do, subject to traffic. The pilot was then issued with instructions to enter and backtrack RW32 and cross RW27.

At 0918:50 the controller returned to the EV97 pilot and advised them that there was no reported traffic to affect their descent to altitude 1500ft and asked the pilot to report at the island of Samson, if they were familiar with it. The pilot advised that they were not familiar and that they had now reached St Martins VRP. The controller asked the pilot if they would be routing inside or outside the archipelago. The pilot advised that they could do either, and the controller asked them to route to the north and to report at Round Island, the most northerly lighthouse. The pilot responded, "wilco".

At 0919:00 the DHC6 pilot requested taxi instructions and was instructed to, "taxi to the holding point RW32 via er, correction hold position". The pilot read back hold position.

At 0920:00 the controller asked the [Skyranger] pilot for a position report and the pilot confirmed that they were approximately half a mile from St Agnes. The pilot was instructed to report ready to join. The pilot asked if they could join for left base 32 and the controller replied, "affirm, join and report left base RW32 I've got one to get away ahead of you." The pilot responded, "OK I'll take my time and you get your one off." The controller passed the QFE, and the pilot read this back.

At 0920:10 the DA40 pilot was instructed to line up RW32 and hold position, and this was read back by the pilot.

At 0920:20 the DHC6 pilot was instructed to taxi to the holding point for RW32 via Alpha and RW14. The pilot asked the controller to say again, and the controller responded, "taxi to the holding point on RW32 located on 09, via Alpha and 14." The pilot sounded confused and read back, "taxi to the holding point RW32 via er, Alpha and RW09." (The Aerodrome layout with the taxi route taken is included in the analysis section of this report).

At 0920:40 the Tresco helicopter pilot reported at 17 DME (from the Land's End VOR) and the controller acknowledged.

At 0920:50 the EV97 pilot reported at Round Island and the controller responded, "roger next passing west abeam Tresco."

At 0921:10 the DA40 pilot reported holding on the runway and ready for departure. The controller responded, "hold position, there's one backtracking to an intermediate holding point." The pilot responded with hold position.

At 0922:00 the DA40 pilot was instructed to, "hold position, after departure right turn, climbing to altitude 3000 feet er, I'm going to have to get you on a direct route sir." The pilot responded, "understand, right turn climbing 3000 feet."

At 0922:40 the controller passed Traffic Information to the DA40 pilot, *“traffic in vicinity of Tresco is an EV97 last reported 1500 feet, should be working Tresco.”* The pilot responded with their callsign and was cleared for take-off.

At 0922:50 the EV97 pilot reported west abeam Tresco and was instructed to, *“report at St Agnes, the most south-westerly island with the white lighthouse in the centre.”* The pilot responded, *“report at St Agnes.”*

At 0923:40 the controller asked the [Skyranger] pilot for a position report, and the pilot responded that they had just joined left base, 3NM from the field. The pilot was instructed, *“continue approach, now number one.”* The pilot read back, *“continue approach.”*

At 0924:00 the DHC6 pilot was instructed to, *“hold position, just got one to get in before I can get you away.”* The pilot read back, *“hold position.”*

At 0924:05 the [Skyranger] pilot asked the controller if they would like them to expedite and asked if the controller had someone waiting. The controller responded, *“if able”*. The pilot replied, *“expediting.”*

At 0924:10 the Tresco helicopter pilot reported changing frequency to Land’s End Tower and the controller acknowledged.

At 0925:30 the [Skyranger] pilot reported, *“turning final for RW32”* and the controller responded, *“surface wind 040 degrees 10 knots, RW32 cleared to land.”* The pilot read back the wind and the landing clearance.

At 0926:20 the EV97 pilot reported overhead St Agnes and the controller responded, *“join left base RW32, number 2 for arrival, number 3 overall, with a Twin Otter to depart ahead.”* The pilot responded, *“join left base 32, understand I’m number 3.”*

At 0926:30 the controller instructed the [Skyranger] pilot to *“go around, I say again go around acknowledge”*, the pilot responded, *“go around.”* The controller instructed the pilot, *“right-hand circuit and orbit left at the beginning of the downwind leg.”* The pilot read back, *“right-hand circuit and orbit left at the beginning of the downwind leg.”* The controller included their reasoning for this decision within their report, which was because they believed that the [Skyranger] was too high on the approach. They chose a right-hand circuit for the [Skyranger] because they were concerned about the EV97 joining the left-hand circuit from the west.

At 0926:50 the DHC6 pilot was instructed to *“backtrack line-up RW32”*, this was read back by the pilot.

At 0927:40 the controller advised the [Skyranger] pilot, *“er you can maintain level altitude 1000 feet if you wish”*, and the pilot responded, *“roger we’ll maintain 1000 feet.”* Note: it would appear from the GPS track provided by the [Skyranger] pilot, that they did not take up the left-hand orbit after receipt of this instruction, they coasted out to the east of St Mary’s and tracked northbound.

At 0928:10 the pilot of a BN2 requested engine start for departure to Land’s End at altitude 1000ft. Engine start was approved, and the airfield details passed.

At 0928:20 the controller made an all-stations broadcast, *“new QNH 1014.”* There was no response from the pilots.

At 0928:30 the controller passed Traffic Information to the DHC6 pilot on the [Skyranger], *“traffic orbiting to the east of the field at 1000 feet is a microlight.”* The pilot responded, *“yeah visual with that traffic.”* The pilot was then passed the surface wind and cleared for take-off RW32 climbing to altitude 1000ft on QNH 1014. Note: referring to the GPS track provided, the [Skyranger] pilot was

not orbiting to the east of the field as expected, they were northeast of the airfield and still tracking northbound.

At 0929:00 the controller passed Traffic Information to the [Skyranger] pilot, *“traffic rolling RW32, a Twin Otter climbing altitude 1000 feet eastbound.”* The pilot replied, *“copied the traffic and will maintain lookout.”* The controller responded, *“when ready, turn downwind RW32, report before turning base, number 2 for arrival, number one is an EV97 on left base.”* The pilot responded, *“will report turning downwind 32, number 2 on arrival.”* Note: referring again to the GPS track provided, the pilot was still offshore to the northeast of the airfield and the pilot subsequently turned westbound toward the RW32 climb out lane.

At 0929:20 the EV97 pilot reported left base RW32, and was instructed to continue approach, report final number 1 for RW32 and advised that there was a Twin Otter to depart ahead. The pilot responded, *“continue approach 32 left, visual with the Otter.”* The controller passed the QFE, and the pilot read this back.

At 0930:00 the BN2 pilot on the Apron requested taxi when able and was instructed to hold position.

At 0930:20 the controller asked the [Skyranger] pilot to report their position and the pilot responded, *“just crossing the airfield, have visual with the Otter climbing out.”* The controller turned their attention to the DHC6 pilot and advised them that the [Skyranger] was displaying a VDF bearing to the field of QDM 173°. The DHC6 pilot responded, *“levelling off at 700 feet for that GA traffic.”* The controller acknowledged. Note: the controller was likely to have been looking toward the start of the right-hand downwind leg for the [Skyranger], and when they couldn't gain sight of it, chose to pass the VDF bearing to assist the DHC6 pilot.

At 0930:30 the EV97 pilot reported final and was cleared to land.

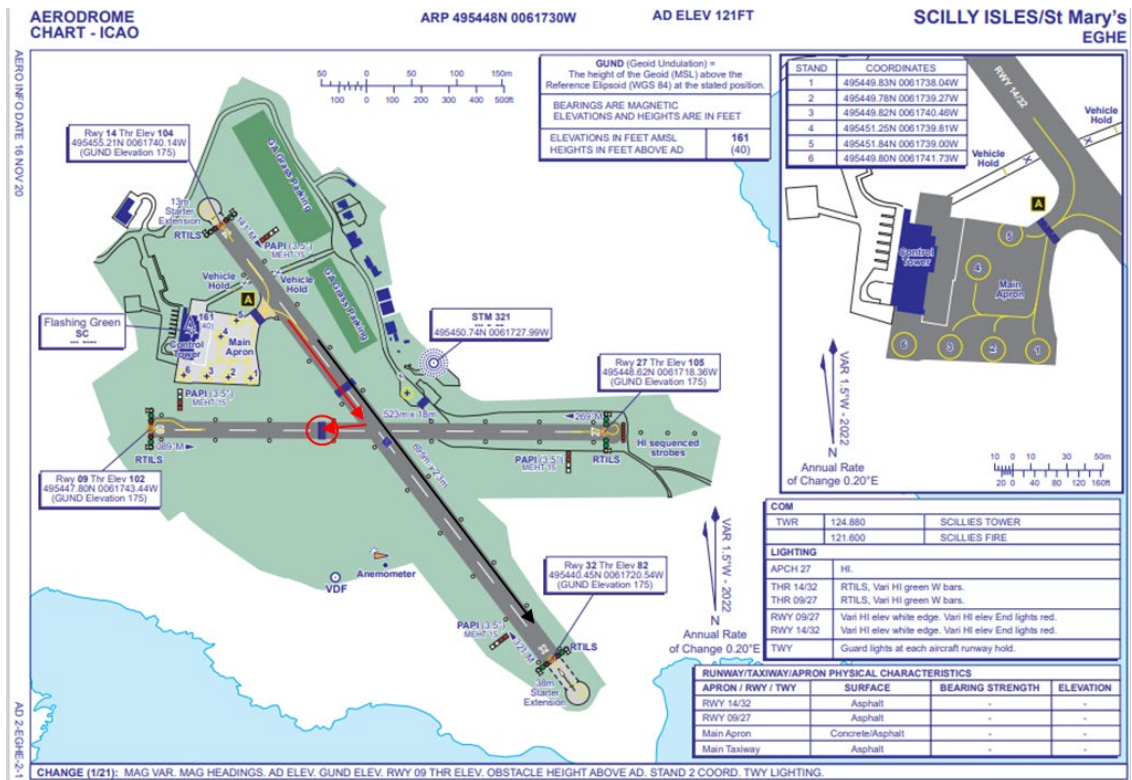
At 0930:50 the controller asked the [Skyranger] pilot to report their intentions. The pilot responded, *“to join downwind for 04, sorry 32.”* The controller responded, *“confirm left downwind or right downwind as instructed?”* The pilot confirmed, *“I believe right downwind.”*

Note: CPA is likely to have occurred around this time.

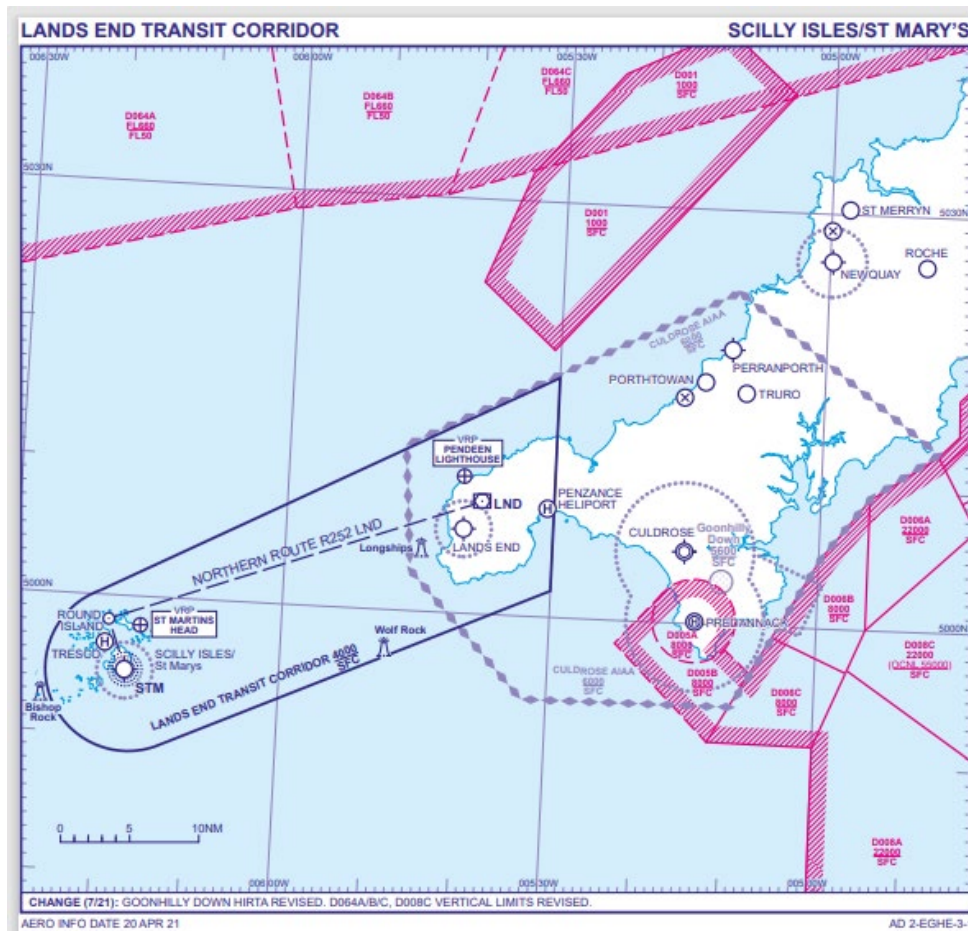
Analysis

Relevant UK AIP Entries:





Taxi route and intermediate holding point of the DHC6 (in red). Taxi route of the DA40 (in black).



Map (orientated with north at the top) detailing the position of each of the islands that were used as reporting points.



The ETA for the [Skyranger] as communicated during the initial RTF exchange with the controller, was 0923:00.

At 0907:30 the [Skyranger] pilot reported 11 miles to run. Based on this report the ETA was more likely to have been around 0915:00. The pilot was then offered a route that would allow an anticlockwise tour of the islands prior to landing.

When the EV97 pilot checked-in with the controller just over a minute later, the controller advised them that there was a [Skyranger] ahead of them, with an ETA of 0930:00.

When the Tresco helicopter pilot made initial RTF contact, the controller advised them that the [Skyranger] had passed 11 DME (4 minutes previously) and the EV97 was approaching 11 DME. The DME utilised within the Land's End Transit Corridor is located at Land's End. Eleven miles to run to St Mary's (as reported by the [Skyranger] pilot) equates to 17 DME (from the Land's End VOR).

At 0917:00 the DA40 pilot reported ready for taxi instructions; the DA40 pilot was instructed to hold on the grass parking area. At this point, the [Skyranger] pilot was passing St Agnes and would [have been] heading toward left base RW32, with the DHC6 pilot calling for taxi instructions imminently. It wasn't clear what the controller's plan was at this point, however it would have been prudent to issue the DA40 pilot with line-up and subsequent take-off instructions. When this opportunity was missed it resulted in a bunching of departures and arrivals, and a subsequent delay to the DHC6 departure of 10 minutes.

The controller then immediately entered into a lengthy RTF exchange with the EV97 pilot, passing Traffic Information on the [Skyranger], which was 5 minutes ahead and 500ft below. The controller was of the belief that the ETA for the [Skyranger] was minute 30 and this may have resulted in them thinking that the EV97 was catching them up. The reporting positions and times would indicate that the EV97 remained 5 minutes behind the [Skyranger] throughout.

When the DA40 pilot was eventually issued with their line-up clearance, the controller went back to the EV97 pilot, advised them that there was no reported traffic to affect their descent and then entered into another very lengthy RTF exchange with the pilot, which eventually resulted in the pilot



being asked to extend their routing to the north of the islands. The controller may potentially have been trying to delay the arrival of the EV97 to allow the DA40 to depart, the [Skyranger] to land and the DHC6 to depart ahead of their landing.

When the DHC6 pilot reported ready for taxi, the controller started to issue line-up instructions and then realised that the runway was occupied by the DA40 and instructed the DHC6 pilot to hold position. The DHC6 pilot was subsequently issued with taxi instructions to an intermediate holding point on RW09 via the runway in use.

At 0924:00 the DHC6 pilot was instructed to hold position at the intermediate holding point (on RW09) and advised that there was one to land ahead of their departure. The [Skyranger] pilot heard this transmission and asked the controller if they wished them to expedite. The controller did not put pressure on the pilot to expedite, they responded with *"if able"*. The [Skyranger] pilot confirmed that they were expediting.

At 0926:30 the controller instructed the [Skyranger] pilot to go around. As reported in the unit investigation report, this decision was taken due to the controller believing that the [Skyranger] was too high on final approach. The pilot was subsequently instructed to turn downwind right-hand and take up a left-hand orbit at the start of the downwind leg. The reason given for this instruction was that the controller was concerned about the EV97 pilot who would be joining the left-hand circuit from the west. Given the wind direction and speed and the proximity to the climb out lane, a more suitable place to orbit might have been at the midpoint or end of the right-hand downwind leg. The [Skyranger] pilot did not take up the orbit as instructed. They continued eastbound until they were offshore and then turned northbound.

The DHC6 pilot was passed Traffic Information on the holding [Skyranger] and reported having it in sight prior to being issued with their take-off clearance. Reciprocal Traffic Information was passed to the [Skyranger] pilot. The [Skyranger] pilot did not report visual with the departing DHC6 at this point. In their subsequent report they stated that during the go-around they had seen the DHC6 holding on the ground.

The [Skyranger] pilot had joined on a left-base for RW32 and had subsequently been instructed to go-around into the right-hand circuit and then orbit left at the start of the downwind leg. The pilot stated in their report that having previously flown a left-hand circuit, they were a bit thrown by this. When the controller asked the pilot to confirm their intentions, after the Airprox had occurred, the pilot sounded confused.

After the instruction to orbit left at the start of the right-hand downwind the leg, the [Skyranger] pilot was instructed to continue downwind when ready. This may have been the point at which the pilot started to cross the climb out lane towards the start of the left-hand downwind leg.

The controller stated in their report that they had momentarily lost sight of the [Skyranger] as the DHC6 was departing and had asked the [Skyranger] pilot for a position report. The pilot responded that they were just crossing the airfield, with the DHC6 in sight. The controller then passed the QDM of the [Skyranger] to the DHC6 pilot. The DHC6 pilot responded that they were stopping their climb at 700ft to avoid the [Skyranger]. The DHC6 pilot subsequently reported that they had also initiated an avoiding action turn to the left.

## Conclusion

Whilst done with good intent, the controller offered the [Skyranger] pilot a tour of the islands prior to landing. The offer may have been made based on an incorrect ETA of 0930 and the assumption that this could be easily accommodated. The EV97 pilot subsequently followed the route taken by the [Skyranger] pilot and this, together with the helicopter lifting from Tresco when the microlights were in the vicinity, created a substantial increase in traffic complexity and RTF workload. The level and detail of the Traffic Information being passed to the EV97 pilot may also indicate that the controller was concerned about the potential for the EV97 to overtake the [Skyranger] ahead. This appeared to take up a disproportionate amount of the controller's attention.

There was a missed opportunity to depart the DA40 as soon as the pilot reported ready for departure, and this together with the [Skyranger] and EV97 pilots' tour of the islands, resulted in bunching of the departing and arriving traffic, and ultimately a short delay to the DA40 departure and a 10-minute delay to the DHC6 departure.

When the [Skyranger] pilot eventually commenced their approach, the controller believed that the aircraft was too high on final approach. The RW 32 landing distance available is 603 metres. The controller acted decisively and correctly in accordance with this belief and instructed the pilot to go around into the right-hand circuit, and then hold in a left-hand orbit at the start of the downwind leg. The [Skyranger] pilot completed the go around but did not take up the orbit, they coasted out east of St Mary's, turned northbound and subsequently crossed the RW32 climb-out lane from east to west, coming into proximity with the DHC6 as it was climbing out.

## UKAB Secretariat

The DHC6 and Skyranger 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>3</sup> An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation<sup>4</sup>. The aircraft were below the level at which surveillance could provide a track so neither appeared on radar replay at about the time of CPA, but the Skyranger pilot supplied a GPS track log of their flight.

## St Mary's Airport Incident Investigation

The St Mary's Airport Incident Investigation found the following causal factors:

- 1) Priority given to GA Microlight inbound over CAT DHC6 outbound.
- 2) Safe, Orderly & Expeditious flow of air traffic was not totally assured.
- 3) Integration between aircraft departing and circuit traffic was not totally assured.

Made the following observations:

1. With [Skyranger C/S] being given priority inbound who reported '3 miles' from the airfield, slow moving on a left base, over a DHC6 taxiing for departure appear[s] to have maybe put some pressure on the [Skyranger] pilot as they overheard the ATCO instructing the DHC6 to hold position (at an intermediate holding point) due to inbound traffic; as they asked if the ATCO wished for them to expedite. The ATCO response was 'if able' with no positive instruction or request given for this action.

It is assumed that by expediting, the [Skyranger] ended up too fast on final approach as they were instructed to Go-Around due being unsafely positioned as they had passed the intersection having still not touched down.

2. When [Skyranger C/S] was sent around and this was acknowledged, the ATCO immediately gave instructions to take up a right-hand circuit and orbit left at the beginning of the downwind leg which was read back correctly.

Traffic information was passed to the DHC6 now lined up for departure and they acknowledged being visual with the orbiting aircraft as was the ATCO at the time.

As the ATCO monitored the take-off roll they lost sight of the [Skyranger] and the ATCO requested a position report which was garbled, however gave a VDF bearing to the ATCO who passed this as QDM bearing to the field of 173 degrees. The DHC6 acknowledged this and levelled off at 700 feet. The [Skyranger] was passed traffic information on the DHC6 who reported being visual with the departing traffic. It is not known if the DHC6 sighted this traffic either visually or on TCAS or if they chose their actions based on the ATCO's information.

3. Orbiting at beginning of downwind leg/crosswind

Due to the size and nature of the runways and circuit at St. Mary's, orbiting at the start of a downwind leg/end of crosswind has a potential for aircraft in an orbit mistaking the opposite end of the runway which may have been the case with the [Skyranger] as when their intentions were requested they stated to join

<sup>3</sup> (UK) SERA.3205 Proximity.

<sup>4</sup> (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

downwind RWY04 which they corrected. This along with the excessive go-around instructions given to the [Skyranger] earlier may have given cause for information overload and disorientation within the circuit. Throughout the day, multiple GA aircraft attempted approaches to incorrect RWY's.

And identified the following 'lessons learned':

- a) Excellent use of VDF to aid situational awareness of the ATCO.
- b) Information Overload during critical phases of flight must be carefully considered unless an emergency situation.
- c) RTF Delivery Speed and Phraseologies.
- d) Circuit Orbit procedures were discussed. It is far easier to track aircraft if they continue downwind or are possibly placed in an orbit mid-point downwind or base leg, this would ensure segregation from departing traffic.
- e) Circuit direction: dependant on runway in use, placing aircraft to the west of the airfield is a safer option allowing for additional time and composure of all parties without rushing.
- f) Overall Traffic Management and the need to slow the traffic movements down without compromising expedition especially bearing in mind the compactness of the aerodrome and its associated airspace around the archipelago.
- g) Making use of ATCA's [assistants] where possible as an extra set of eyes for the ATCO.

## Summary

An Airprox was reported when a DHC6 and a Skyranger flew into proximity at St Mary's Airport at about 0931Z on Wednesday 22<sup>nd</sup> June 2022. Both pilots were operating under VFR in VMC, both in receipt of an Aerodrome Control Service from St Mary's Tower.

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

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS track data, a report from the air traffic controller 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.

Board members first discussed the pilots' actions and agreed that the DHC6 pilot had acted entirely correctly by turning away from the Skyranger, although, given the separation at CPA and their having visual contact, members did not agree that the risk of collision was 'High'. For their part, the Skyranger pilot was operating in an environment that they were not used to and, it seemed to the Board, became confused as to the required course of action. Having said that, the Board felt that the Skyranger pilot's actions had not introduced a risk of collision but that they had inadvertently positioned themselves into conflict with the departing DHC6. Members felt that an element of the Skyranger pilot's confusion was caused by the late go-around instruction without amplifying information as to the reason why. A GA pilot member stated that a go-around instruction at that stage could introduce significant risk to the pilot, faced with an unexpected instruction at a high work-load and critical stage of flight. Members agreed that an ATCO performed a vital safety role but that it was for a pilot to assess their approach and an ATCO to question it if warranted. Turning to ground element aspects, the Board thought that the controller had acted on the basis of their expectation of the Skyranger pilot taking up a left-hand orbit at the start of right downwind for RW32, whereas the Skyranger pilot had in fact, after turning right downwind, then turned left to track to the east and then to the north (**CF1**). Members thought that their losing sight of the Skyranger was key and that this had been as a result of their workload whilst handling the other traffic movements on and around the airfield (**CF2**). Consequently, the controller had inaccurate situational awareness on the Skyranger's position (**CF3**) and cleared the DHC6 to depart. Although the controller could reasonably have assumed that a correct read-back implied that a pilot had assimilated an instruction, in this case the Skyranger pilot's lack of experience with an Aerodrome Control Service provided by an ATCO within an ATZ resulted in them not assimilating the instructions to turn downwind and orbit (**CF5**, **CF6**), despite reading them back correctly. The Board felt that the complexity and amount of RTF traffic had overloaded the Skyranger pilot (**CF4**). Members noted that the degree of control within the Land's End Transit Corridor was above that which would be expected in other class G airspace and as such, that due allowance should be made for those who may not be

accustomed to that specific environment. For their part, the Skyranger pilot positioned themselves to the north to 'rejoin' the circuit left-hand downwind for RW32 but lacked sufficient situational awareness (CF7) to realise that their track would result in a conflict with the outbound DHC6. It was unfortunate that the Skyranger TAS did not provide information on the DHC6 (CF8), members thought, because the DHC6 was too low to receive a transponder surveillance interrogation and hence did not respond to provide a signal for the Skyranger TAS. The DHC6 pilot did not report that their TCAS I provided information or alert when the Board would have expected it to do so (CF9). However, it appeared that each pilot saw the other aircraft in good time and, despite the Skyranger's position and track causing alarm to the DHC6 pilot (CF10), that there was no risk of collision.

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

### Contributory Factors:

2022118				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
<b>Ground Elements</b>				
<b>• Situational Awareness and Action</b>				
1	Human Factors	• Expectation/Assumption	Events involving an individual or a crew/team acting on the basis of expectation or assumptions of a situation that is different from the reality	
2	Human Factors	• Task Monitoring	Events involving an individual or a crew/team not appropriately monitoring their performance of a task	Controller engaged in other tasks
3	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
4	Human Factors	• Traffic Management Information Provision	An event involving traffic management information provision	The ANS instructions contributed to the Airprox
<b>Flight Elements</b>				
<b>• Regulations, Processes, Procedures and Compliance</b>				
5	Human Factors	• Use of policy/Procedures	Events involving the use of the relevant policy or procedures by flight crew	Regulations and/or procedures not complied with
<b>• Tactical Planning and Execution</b>				
6	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
<b>• Situational Awareness of the Conflicting Aircraft and Action</b>				
7	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>				
8	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
9	Human Factors	• Response to Warning System	An event involving the incorrect response of flight crew following the operation of an aircraft warning system	CWS misinterpreted, not optimally actioned or CWS alert expected but none reported
<b>• See and Avoid</b>				
10	Human Factors	• Incorrect Action Selection	Events involving flight crew performing or choosing the wrong course of action	Pilot flew close enough to cause concern

Degree of Risk: C.

### Safety Barrier Assessment<sup>5</sup>

<sup>5</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

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

**Ground Elements:**

**Situational Awareness of the Confliction and Action** were assessed as **partially effective** because the Tower controller lost sight of the Skyranger and became unsure of its position.

**Flight Elements:**

**Regulations, Processes, Procedures and Compliance** were assessed as **partially effective** because the Skyranger pilot did not take up the left-hand orbit on right downwind, as instructed.

**Tactical Planning and Execution** was assessed as **partially effective** because the Skyranger pilot did not assimilate their clearance and positioned in such a way that they crossed the RW32 departure lane.

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **partially effective** because the Skyranger pilot did not have situational awareness with regard to their position in relation to the RW32 departure lane.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because the DHC6 transponder was too low to be interrogated by a ground-based radar and so did not alert the Skyranger’s EC and the TCAS I was not reported as having alerted on the Skyranger.

<b>Airprox Barrier Assessment: 2022118</b>		Outside Controlled Airspace						
Barrier	Provision	Application	Effectiveness Barrier Weighting					
			0%	5%	10%	15%	20%	
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Manning & Equipment	✓	✓					
	Situational Awareness of the Confliction & 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>								
	Full	Partial	None	Not Present/Not Assessable	Not Used			
Provision	✓	⚠	✗	⊘	⊘			
Application	✓	⚠	✗	⊘	⊘			
Effectiveness								