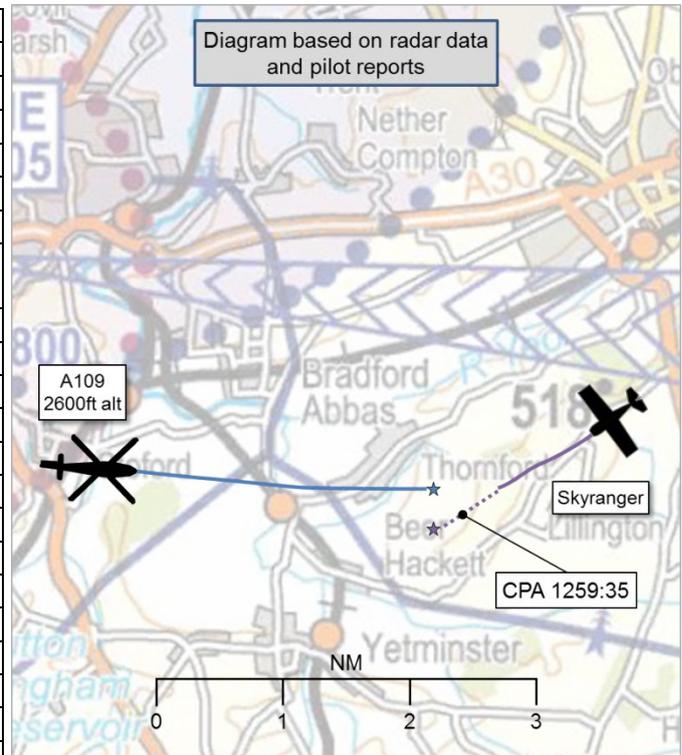


**AIRPROX REPORT No 2016001**

Date: 6 Jan 2016 Time: 1300Z Position: 5054N 00233W Location: South of Yeovil

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	A109	Skyranger
Operator	MoD ATEC	Civ Pte
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	VFR
Service	Basic	Basic
Provider	Westland Approach	Westland Approach
Altitude/FL	2141ft	NK
Transponder	A, C, S	Not Fitted
<b>Reported</b>		
Colours	White/Blue	White/Blue
Lighting	Strobe/Landing	NK
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2600ft	2780ft
Altimeter	QNH (986hPa)	QNH (997hPa)
Heading	97°	NK
Speed	100kt	NK
ACAS/TAS	TCAS I	Not fitted
Alert	None	N/A
<b>Separation</b>		
Reported	100ft V/100m H	Not Seen
Recorded	NK	



**THE A109 PILOT** reports that he was positioning for an NDB/DME RW27 approach to Yeovil/Westland in accordance with the published alternate procedure (extended downwind of the hold pattern). The aircraft was at 3000ft in a SCT cloud layer from 1500ft to 3000ft (Yeovil QNH), in the hold, with the IRE in the LHS as Pilot Flying (PF) without any goggles or hood. He observed that the visibility from the A109E cockpit is poor cross-cockpit and poor directly forward and above due to the cockpit structure. The RHS pilot was the Pilot Monitoring (PM) also without any form of instrument visor or goggles. The crew heard a microlight (believed to be a three-axis high-wing microlight) talking to Westland informing them they were airborne out of Henstridge and routing to Dunkeswell at 2000ft. Yeovil repeated this information to the A109 pilot which was acknowledged. The RHS PM decided to complete some checks as the aircraft left 3000ft in the descent for 2000ft in accordance with the procedure, with the intention that he would look up again as the aircraft reached 2600ft. The TAS equipment was on and working correctly. The LHS pilot scanned up and right past the central vertical windscreen strut as the aircraft reached 2600ft and saw the microlight at 1 o'clock, 100ft above and pass 100m down the right-hand side of the aircraft. No avoidance action was observed, and none was taken due to the late spot. The RHS pilot looked up and saw the aircraft at the same moment – he had been head down for 10 seconds completing his checks.

He assessed the risk of collision as ‘High’.

**THE SKYRANGER PILOT** reports that he was routing from Henstridge to Dunkeswell; on making contact with Westland Approach, they routed him to the South of Yeovil ATZ. He did not see or take any evasive action on another aircraft during his flight. He had subsequently spoken to the passenger in a microlight that departed ahead of him on the same route; the passenger said they saw a greyish helicopter and made a course correction to give spacing, this helicopter continued and only veered away at the last moment. [UKAB note: the A109 Airprox helicopter was white/blue, not grey].

## Factual Background

The weather at Yeovil was recorded as follows:

METAR EGDY 061250Z 26005KT 9999 FEW012 09/06 Q0997 BLU NOSIG

## Analysis and Investigation

### CAA ATSI

The A109 (SSR code 4355) was flying the NDB (L)/DME alternate (racetrack) approach procedure (Figure 1) for Runway 27 at Yeovil (Westland) Aerodrome. The A109 was in receipt of a Basic Service from Westland Approach. At the time of the Airprox the A109 was beacon outbound in the procedure.

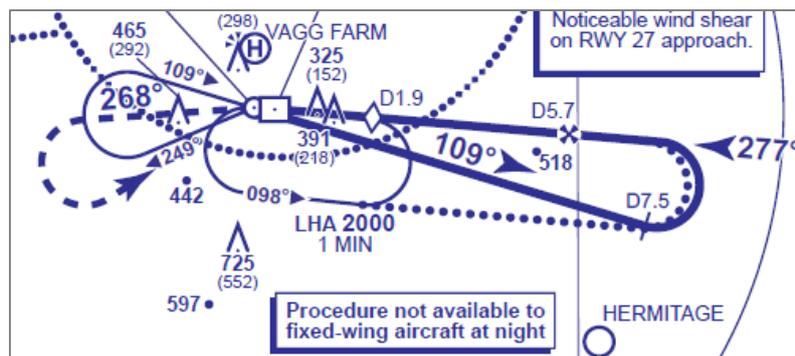


Figure 1: Yeovil/Westland NDB (L)/DME Approach RW27 (UK AIP AD 2-EGHG-8-6)

The Skyranger was routing from Henstridge to Dunkeswell and was in receipt of a Basic Service from Westland Approach. Due to the Skyranger not being equipped with a transponder, it was not possible to positively identify the aircraft using the recorded surveillance data. However, an intermittent, slow moving primary radar contact was observed which appeared to emanate from Henstridge Aerodrome and tracked to the south of Yeovil (Westland) Aerodrome.

In the Skyranger pilot's written Airprox report he makes reference to being "in a party of two Microlights". This other Microlight departed from Henstridge ahead of the Skyranger and was not in contact with Westland Approach during the time period 1245-1316 UTC. The Skyranger pilot also stated in his written report that he'd later spoken to the passenger in the other Microlight who had observed a "greyish helicopter" that had possibly taken avoiding action against them.

At 1245:02, the A109 pilot called Westland Approach and was cleared by the Yeovil (Westland) controller to the YVL at altitude 3000ft. The Yeovil (Westland) controller asked the A109 pilot what type of Air Traffic Service was required, the choice of a Basic or a Procedural Service was offered, to which the A109 pilot requested a Basic Service. At 1252:06, the A109 pilot requested to fly the alternate (Racetrack) procedure. This procedure involves extending the outbound leg of the hold on a track of 097°, descending to not below altitude 2000ft. At YVL DME 7.5, aircraft flying the alternate procedure are to turn left and establish on the extended Final Approach Track and, when established, continue as per the main procedure. At 1255:33, the Yeovil/Westland controller cleared the A109 for the approach. At 1256:52, the A109 pilot reported beacon outbound in the procedure.

At 1257:47, the Skyranger pilot called Westland Approach requesting a Basic Service. The Skyranger pilot reported his altitude as 1500ft, Yeovil QNH, and requested a climb to 2000ft. At 1258:26, the Yeovil (Westland) controller instructed the Skyranger pilot to remain clear of both the Yeovil ATZ and the instrument let-down area, he passed traffic information on the A109, and instructed the Skyranger pilot to report south-abeam. The Yeovil (Westland) controller also

passed the Portland Regional QNH of 992hPa. At 1258:45, the Skyranger pilot acknowledged the instruction and the Traffic Information.

At 1259:03, the Yeovil (Westland) controller passed traffic information on the Skyranger to the A109 pilot. Figure 2 shows the primary radar contact at 1259:23, 0.9nm east of the A109 and 1.4nm south of the Runway 27 extended centreline tracking west-southwest. It was not possible to accurately calculate CPA due to the primary radar contact fading in and out of radar coverage at the time the Airprox occurred. Figure 3 shows the relative positions of the A109 and the primary radar contact at 1259:25 when the contact faded from coverage. The primary contact briefly came back into coverage at 1259:32 but the track was inconsistent, and the primary radar return erratic and intermittent.

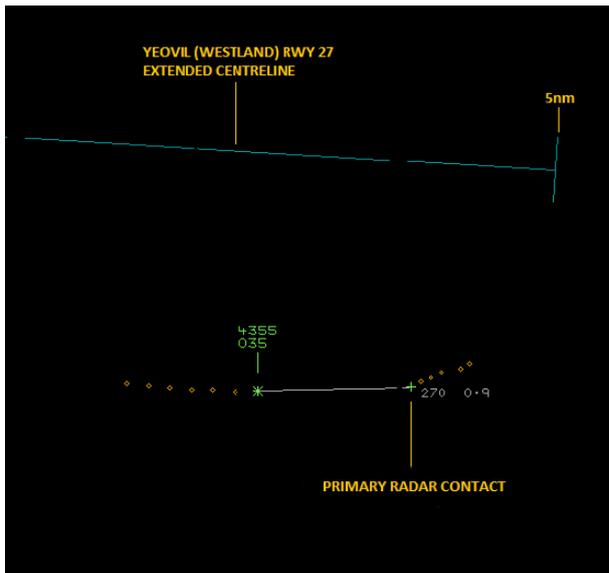


Figure 2: Swanwick MRT at 1259:23

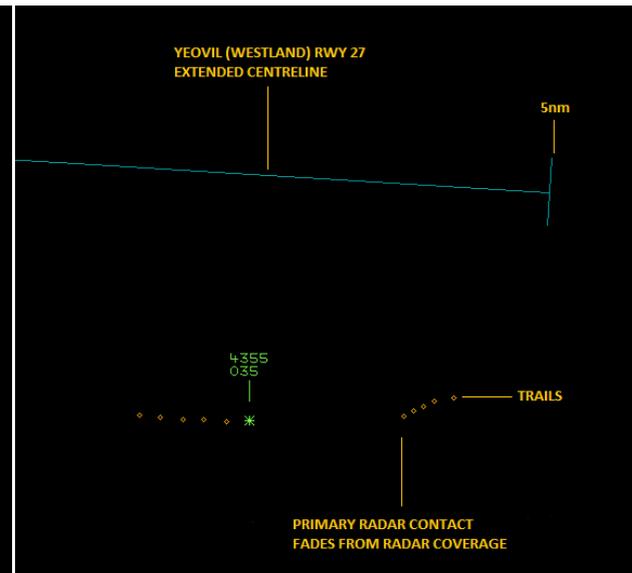


Figure 3: Swanwick MRT at 1259:25

At 1300:35, the Skyranger pilot requested a climb to 2500ft, to which the Yeovil (Westland) controller instructed the Skyranger pilot to maintain VFR and to report south abeam.

The A109 pilot reported the Airprox to the Yeovil (Westland) controller at 1301:04, he described the conflicting traffic flying over the A109 at 2500ft. At the time the Airprox was reported on the R/T, the A109 was descending in the procedure and indicating FL026, which equates to altitude 2141ft (Yeovil QNH). In his subsequent written report, the A109 pilot gave the minimum horizontal and vertical separation at the time of the Airprox as 100m and 100ft.

The Yeovil (Westland) controller was providing a Basic Service to both aircraft in Class G airspace. A Basic Service relies on the pilot avoiding other traffic, unaided by controllers/FISOs. The provider of a Basic Service is not required to monitor the flight (and) pilots should not expect any form of traffic information from a controller/FISO. (CAP774, Chapter 2, Para 2.1 & 2.5).

### UKAB Secretariat

The A109 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>1</sup>. If the incident geometry is considered as converging then the Skyranger pilot was required to give way to the A109<sup>2</sup>. Figure 4 shows a screenshot of the area radar returns trail at 1259:36, shortly before the A109 pilot reported the Airprox at 1301:04.

<sup>1</sup> SERA.3205 Proximity.

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

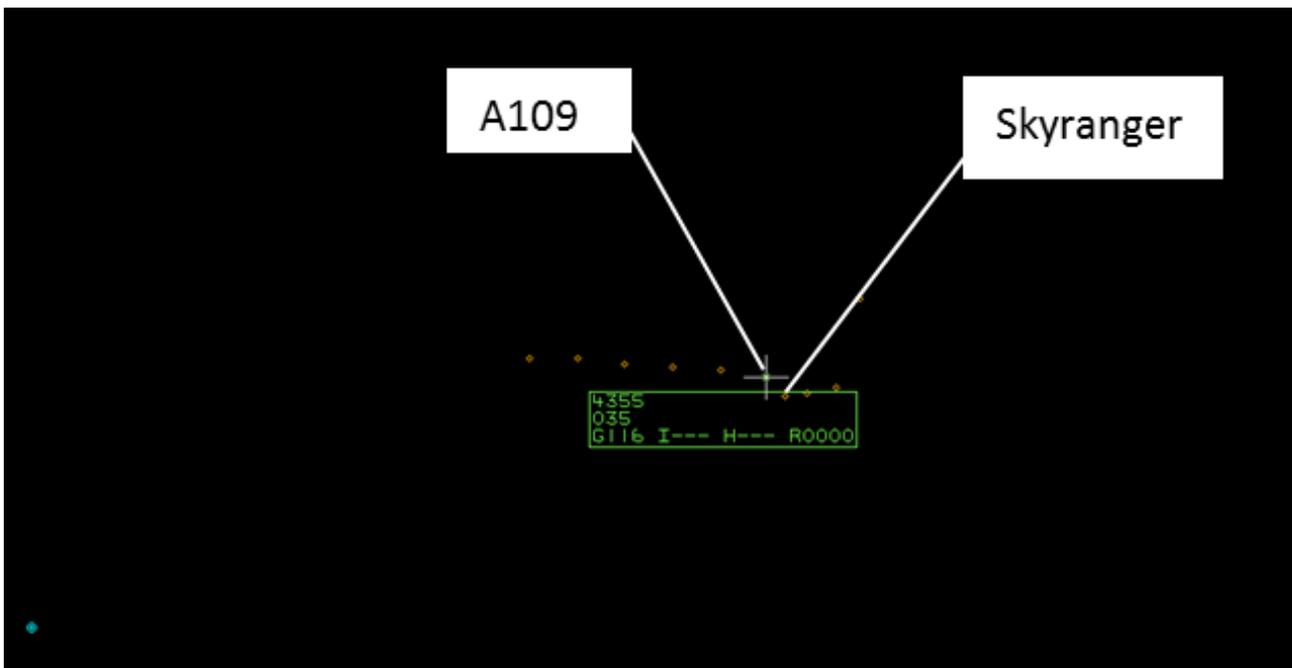


Figure 4: Area radar Screenshot

## Comments

### HQ Air Command

A number of barriers to MAC were absent in this incident: TCAS/TAS warnings were unavailable due to the Skyranger not being equipped with a transponder; an appropriate Air Traffic Service for the weather conditions was also unavailable for the same reason; a Basic or Procedural Service were the only options offered to the A109 pilot because the controller did not have a radar; and lookout was severely compromised due to limitations of the A109 cockpit coupled with the prevailing cloud structure. The A109 was following a published procedure having received clearance from the controlling agency and had also received a degree of Traffic Information on the Skyranger. However, it is unclear whether the TI issued to either aircraft included the fact that the opposing traffic was changing altitude – this is vital information in the generation of an accurate mental model of the air picture. Inevitably, the pilots had to rely on lookout to detect and avoid potential conflicting traffic and in this case neither pilot saw the other aircraft until very close to CPA. The main lesson to be drawn from this is that if the weather is ‘marginal VMC’ (which appears to be the case from the pilot reports) then means of conflict detection other than lookout assume a greater degree of importance – if these other means are unavailable then it may be more prudent to discontinue the exercise until conditions become more favourable.

## Summary

An Airprox was reported when an A109 and a Skyranger flew into proximity at 1300 on Wednesday 6<sup>th</sup> January 2016. Both pilots were operating under VFR in VMC and both were in receipt of a Basic Service from Westland.

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

Information available consisted of reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings and reports from the appropriate ATC authorities.

The Board first discussed the actions of the Skyranger pilot and how much the local weather had played a part in his thinking. They wondered whether he was close to the limits of VMC within the cloud layers as reported by the A109 pilot, and whether the Skyranger pilot would have been better

served by requesting a Traffic Service from Yeovilton rather than the non-radar Basic Service with Westland; the Board strongly felt that the Traffic Service would have been the better option.

Turning to the A109 pilot, members wondered why he had opted for a Basic Service from Westland, rather than a Procedural Service. Although this would not have afforded the A109 pilot any greater level of protection against the Skyranger (who was not under a Procedural Service), they believed this would have been more sensible due to the cockpit workload and may have prompted Westland or Yeovilton to coordinate to a greater degree to provide information on traffic in the area. Pilot members were concerned that the A109 RHS PM had chosen to conduct head-in checks as the aircraft descended despite having been given Traffic Information on the Skyranger. They highlighted the fact that both pilots in the A109 were at that point head down in the cockpit and believed that, if the pilots had prioritised their tasks, one could have maintained a reasonable lookout while the other was carrying out the head down tasks; especially with the known visual restrictions from the A109 cockpit.

The Board also talked about the level of control that the Westland ATCO had given the Skyranger pilot. They identified two occasions where the Skyranger pilot asked to climb, and ATC members opined that this indicated that the pilot was clearly trying to remain VMC and probably required assistance in doing so as he avoided the airfield's pattern of traffic. Although the ATCO asked the Skyranger pilot to remain clear of the instrument let-down area and to report south abeam Yeovil, the Board questioned whether the Skyranger pilot would necessarily have known where the instrument let-down area was, or have known to have remained away from the downwind leg of the Alternate NDB/DME RW27 procedure with this instruction. Whilst the Board did not go so far as to include this as a contributory factor, they did feel that the Westland ATCO's RT was somewhat ambiguous and therefore open to individual interpretation.

Taking into account the very late sighting of the Skyranger by the A109 crew, the Board agreed that the cause of the Airprox was effectively a non-sighting by the A109 pilot and a non-sighting by the Skyranger pilot. Turning to the risk, members noted that the A109 pilot had said that there was no time to take any avoiding action due to the 'late spot'; based on this, the projected radar plots, and the reported separation, the Board agreed that providence had played a major part and that a serious risk of collision had existed; they assessed the risk as Category A.

### **PART C: ASSESSMENT OF CAUSE AND RISK**

Cause: Effectively a non-sighting by the A109 pilot and a non-sighting by the Skyranger pilot.

Degree of Risk: A.