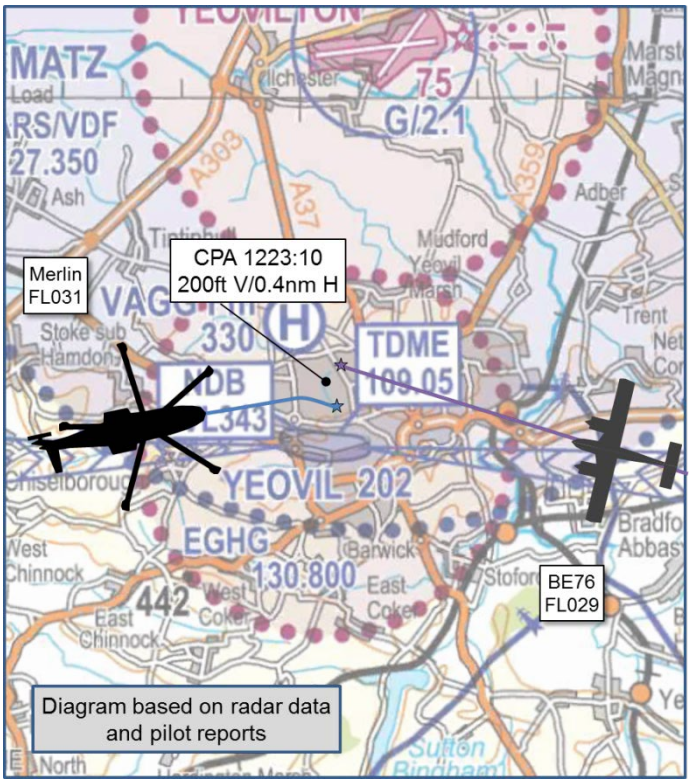
AIRPROX REPORT No 2015217

Date: 14 Dec 2015 Time: 1223Z Position: 5056N 00239W Location: Yeovil Westland

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	BE76	Merlin
Operator	Civ Trg	RN
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	IFR
Service	Procedural	Traffic
Provider	Yeovil Westlands App	Yeovilton
Altitude/FL	FL029	FL031
Transponder	A,C,S	A,C
Reported		
Colours	White, red, gold	Dark Green
Lighting	Nav, strobes	Strobes, Nav
Conditions	VMC	VMC
Visibility	>10km	20km
Altitude/FL	3000ft	3000ft
Altimeter	NK	NK
Heading	275°	090°
Speed	120kt	120kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	100ft V/0.25-0.5nm H	1000ft V/1nm H
Recorded	200ft V/0.4nm H	



THE YEOVIL WESTLAND CONTROLLER reports that he was operating with Tower and Approach bandboxed; the duty runway was 09RH. At 1213 he took a pre-note from Yeovilton ATC detailing a BE76 inbound for an NDB approach. He passed instructions to the Yeovilton controller, clearing the BE76 to the hold at an altitude of 3000ft with a squawk and frequency. When the pilot called on frequency he gave a Procedural Service and the aircraft entered the YVL hold. The controller then turned his attention to looking for a AW109 that was due to join from the West for a PFL. Whilst doing so, he visually observed a Merlin tracking east at approximately 3000ft. He immediately broadcast combined Traffic Information on the Merlin to both aircraft on the App frequency. The BE76 pilot reported that he was visual with the Merlin and that there had been about 100ft separation vertical and 1nm laterally; he subsequently mentioned that he thought he had flown through the Merlin's wake turbulence. The controller telephoned the Yeovilton supervisor to confirm whether Yeovilton were providing a service to the Merlin, and to inform them that it had flown very close to his instrument traffic.

THE BE76 PILOT reports that he was asked to submit a report by Yeovil ATC. He was undertaking a IFR training exercise and was approaching the YVL NDB to take up the hold when he spotted a large military Merlin helicopter tracking west-east approximately along the outbound (eastbound) leg of the YVL holding pattern. He first saw it at a distance of 2-3nm; it was slightly above. He kept the aircraft in sight at all times and felt that avoiding action was not necessary; he continued in the holding pattern. There was minimal risk of collision but he did encounter some rotor downwash/turbulence as he turned outbound in the hold directly behind the Merlin.

He assessed the risk of collision as 'Low'.

THE MERLIN PILOT reports that he had just completed procedural instrument training at Exeter and was tracking inbound to the TACAN at RNAS Yeovilton, in receipt of a Traffic Service. He was handed over to Yeovilton Approach and a Traffic Service was established because he was VMC above the cloud base. He requested vectors for the ILS and was given an easterly heading, south abeam Yeovilton. Traffic Information on an aircraft in the 12 o'clock position was passed a number of times in decreasing distances. He was still not visual with the aircraft so he communicated to ATC that he would be happy to accept a turn or climb to de-conflict because it was likely that the conflicting traffic was in the Yeovil Westland hold. ATC directed the aircraft onto a heading of 130° and, once established on this heading, a civilian aircraft was seen to pass down the port side, slightly lower and at a range of about 1nm.

He assessed the risk of collision as 'Medium'.

THE YEOVILTON APPROACH CONTROLLER reports that the Merlin was under a Traffic Service and was being vectored at 3000ft overhead Yeovil Westland to expedite an ILS against the flow to RW27. The controller saw a 4355 squawk, which was converted on screen to U55HOLD, [indicating to the controller that the aircraft was in the Yeovil Westland hold] approximately 5-7nm SE YVL. Traffic Information was given to the Merlin pilot numerous times and eventually the Merlin was turned onto a heading of 120° to separate. The Merlin pilot did offer to climb, but it was felt that a turn would be better as the Mode C had not been verified by Yeovil. The Merlin pilot called visual, and there was a height separation of 300-500ft indicated on radar.

He perceived the severity of the incident as 'Low'.

Factual Background

The weather at Yeovilton and Yeovil Westland was recorded as follows:

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EGDY 141150Z 12008KT 9999 FEW014 SCT040 BKN070 10/08 Q1013 BLU=
EGHG 141150Z 11006KT 8000 HZ FEW015 SCT025 10/08 Q1013=
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The relative positions of the YVL NDB and RNAS Yeovilton is shown at figure 1.

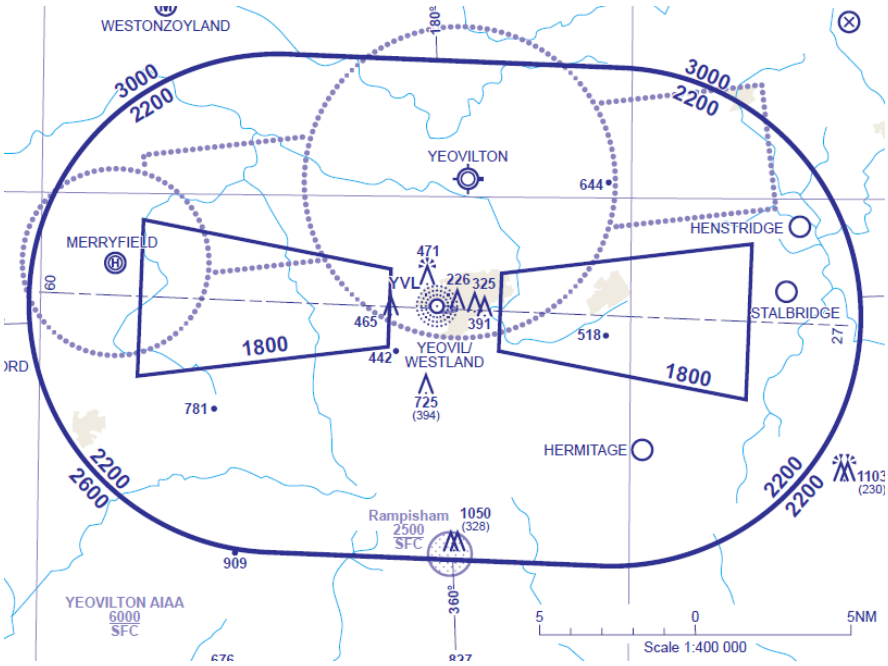

Figure 1 – Extract from the Yeovil Westland ATC Minimum Altitude Chart (UK AIP AD 2-EGHG-5-1)

Analysis and Investigation

CAA ATSI

The Merlin (SSR code 7404) was operating on an instrument training flight and was being radar vectored for an ILS approach to RW27 at RNAS Yeovilton. The Merlin was in receipt of a Traffic Service from Yeovilton Radar. The Yeovil Westland controller reported having taken a pre-note from Yeovilton Radar on the BE76 at 1213 UTC; in response to the pre-note, the Yeovil Westland controller issued an acceptance level of 3000ft at the YVL. Co-ordination relating to the Merlin was not effected and Traffic Information was not passed.

The BE76 called Westland approach at 1220:02 UTC (Figure 2) and reported in the descent to altitude 3000ft. The Yeovil Westland Controller cleared the BE76 to the YVL at 3000ft and instructed the BE76 to report taking up the hold.

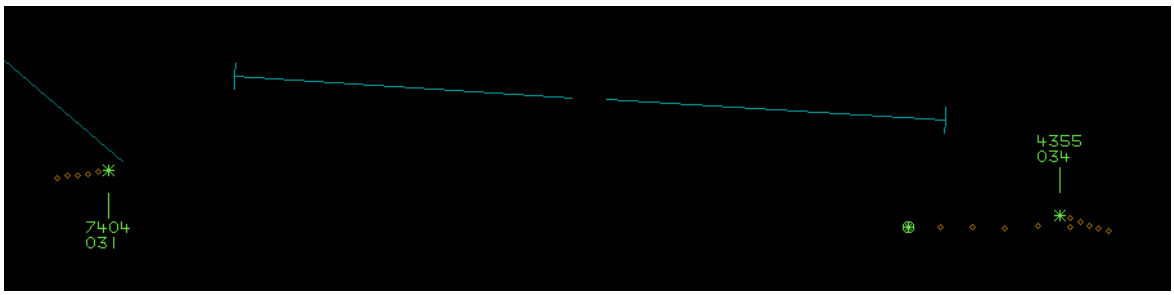

Figure 2 – Swanwick MRT at 1220:02

At 1223:06 the Yeovil Westland controller made a general R/T broadcast, warning of unknown traffic that he had observed routeing through the aerodrome overhead from west to east. He incorrectly identified the Merlin traffic as an Augusta 109 helicopter and estimated it's level to be 2000ft. CPA occurred at 1223:11 (Figure 3) with the Merlin indicating FL031 (altitude 3100ft Yeovil QNH).

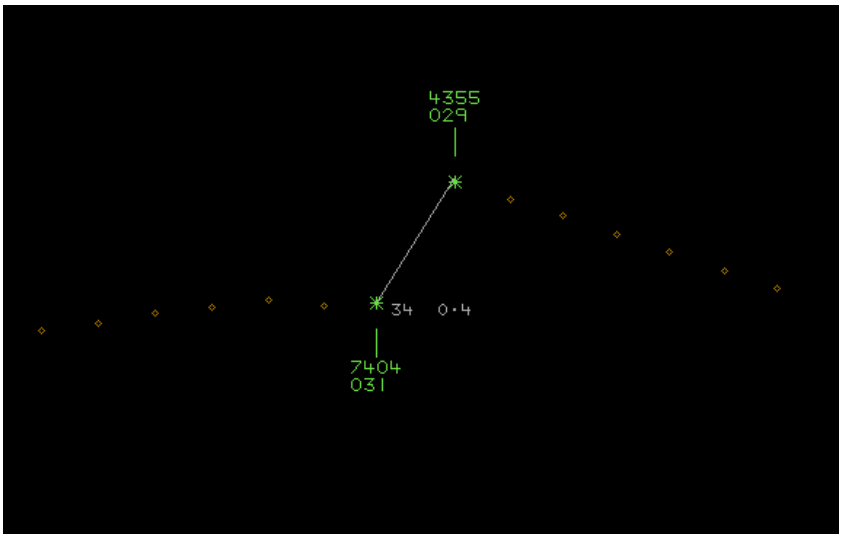

Figure 3 – Swanwick MRT at 1223:11(CPA)

Another helicopter operating in the Yeovil ATZ identified the transiting helicopter as a Merlin. At 1223:25 the BE76 pilot reported entering the YVL hold at altitude 3000ft and advised that they were visual with the Merlin. The BE76 pilot reported that it was at 3000ft, or possibly 100ft above, as the Merlin tracked eastbound. Coincident to this R/T transmission the Yeovil (Westland) Controller was on the telephone to Yeovilton Radar attempting to ascertain whether Yeovilton were working the Merlin. Shortly after the Airprox occurred, the Yeovilton Radar Supervisor confirmed that Yeovilton were working the Merlin.

The Yeovil Westland controller discussed reporting action with the BE76 pilot over the R/T immediately post-Airprox; the BE76 pilot reported that as he turned eastbound in the hold he had encountered wake turbulence as the BE76 passed astern of the Merlin. Yeovil (Westland) Aerodrome and RNAS Yeovilton are both situated within Class G (uncontrolled) airspace; however, Yeovil Westland Aerodrome is situated within RNAS Yeovilton's Military Aerodrome Traffic Zone (MATZ). MATZ are established to provide a volume of airspace within which increased protection may be given to aircraft in the critical stages of circuit, approach and climb-out. They acquire the status of the airspace classification within which they lie; however, additional mandatory ATC requirements are invariably specified for military pilots. In the airspace outside the Aerodrome Traffic Zone (ATZ), observation of MATZ procedures is not compulsory for civil pilots (UK AIP ENR 2.2-12 refers). The central portion of the Yeovilton MATZ, excluding the stubs, is 5nm radius centred on the midpoint of the longest runway, from surface to 3000ft aal.

The Yeovil Westland controller was providing a combined aerodrome and approach procedural service without reference to surveillance information within Class G (uncontrolled) airspace. The Manual of Air Traffic Services Part 1 (Section 1, Chapter 3, Page 1) states, "In Class G airspace, separation between aircraft is ultimately the responsibility of the pilot; however, in providing a Deconfliction Service or a Procedural Service, controllers will provide information and advice aimed at achieving a defined deconfliction minima".

Military ATM

The following transcript is between the Yeovilton Approach controller and the Merlin:

To	From	RTF Content	Time
Merlin	VL APP	{Merlin c/s} traffic right two o'clock one two miles crossing right left ahead eight hundred feet eh correction indicating eight hundred feet below???? Westland's traffic operating up to altitude five thousand feet.	1219:06
VL APP	Merlin	{Merlin c/s}	1219:20
Merlin	VL APP	{Merlin c/s} previously called traffic right two o'clock six miles eh tracking west north west indicating five hundred feet below.	1220:20
VL APP	Merlin	Looking {Merlin c/s}	1220:30
Merlin	VL APP	{Merlin c/s} assess that traffic ah now will pass down your right hand side taking up a more westerly track.	1220:33
VL APP	Merlin	{Merlin c/s} still looking.	1220:40
ALL	VL APP	Yeovil all stations reduced traffic information from all around due to radar suppression.	1221:03
Merlin	VL APP	{Merlin c/s} further traffic right one o'clock one zero miles eh opposite direction three hundred feet below.	1221:09
VL APP	Merlin	Looking {Merlin c/s}	1221:16
VL APP	Merlin	{Merlin c/s} visual with the previously reported traffic.	1221:27
Merlin	VL APP	{Merlin c/s} apologies is that the one in your twelve o'clock or the one passing down your right hand side at two miles?	1221:31
VL APP	Merlin	{Merlin c/s} the right hand side not visual with the one in the twelve o'clock.	1221:34
Merlin	VL APP	{Merlin c/s} roger previously called traffic ahh now right one o'clock ….six miles opposite direction indicating three hundred feet below Westland traffic in the NDB hold.	1221:38
VL APP	Merlin	Looking {Merlin c/s}	1221:53
Merlin	VL APP	{Merlin c/s} previously called traffic twelve o'clock three and a half miles eh crossing right left ahead indicating three hundred feet below.	1222:30
VL APP	Merlin	Looking {Merlin c/s}	1222:41
VL APP	Merlin	{Merlin c/s} happy to accept a climb for Deconfliction if required.	1222:46

To	From	RTF Content	Time
Merlin	VL APP	{Merlin c/s} turn right heading one two zero degrees.	1222:50
VL APP	Merlin	Right one two zero V510.	1222:53
VL APP	Merlin	{Merlin c/s} visual.	1223:01
Merlin	VL APP	{Merlin c/s} roger.	1223:02
VL APP	Merlin	{Merlin c/s} you happy for us to resume zero nine zero?	1223:54
Merlin	VL APP	{Merlin c/s} turn left heading zero six zero degrees.	1223:59
VL APP	Merlin	Left zero six zero {Merlin c/s}	1224:01
Merlin	VL APP	{Merlin c/s} turn right heading ehh zero eight zero degrees descend to height two thousand feet Yeovilton QFE one zero one zero when steady and level cockpit checks report complete.	1225:39

The Yeovilton Approach controller was controlling the Merlin under a Traffic Service and was providing vectors at 3000ft RPS over the YVL (Yeovil Westlands) for an ILS to RW27 at Yeovilton. Traffic Information was called by Yeovilton Approach to the Merlin at 1221:09 (Figure 4).

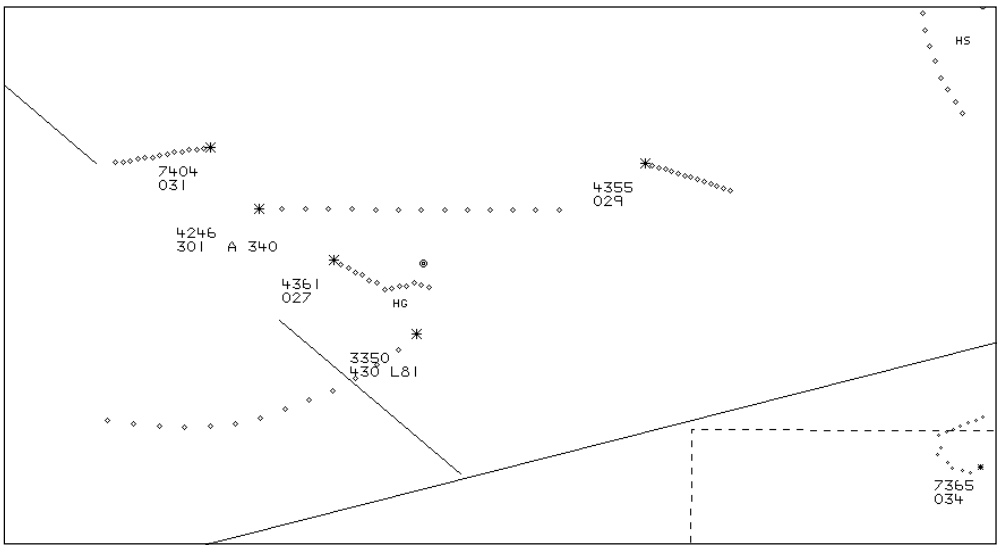

Figure 4: Traffic Information at 1221:09 (Merlin 7404; BE76 4355).

The Yeovilton controller provided an update at 1221:38 (Figure 5).

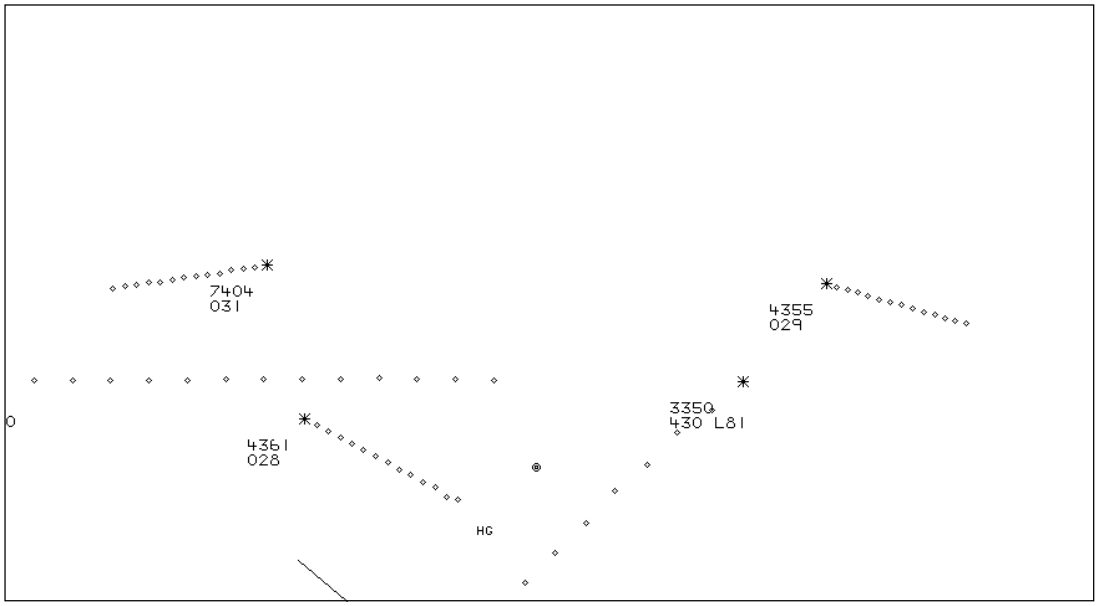

Figure 5: Traffic Information update at 1221:38.

A further update was provided at 1222:30 (Figure 6).

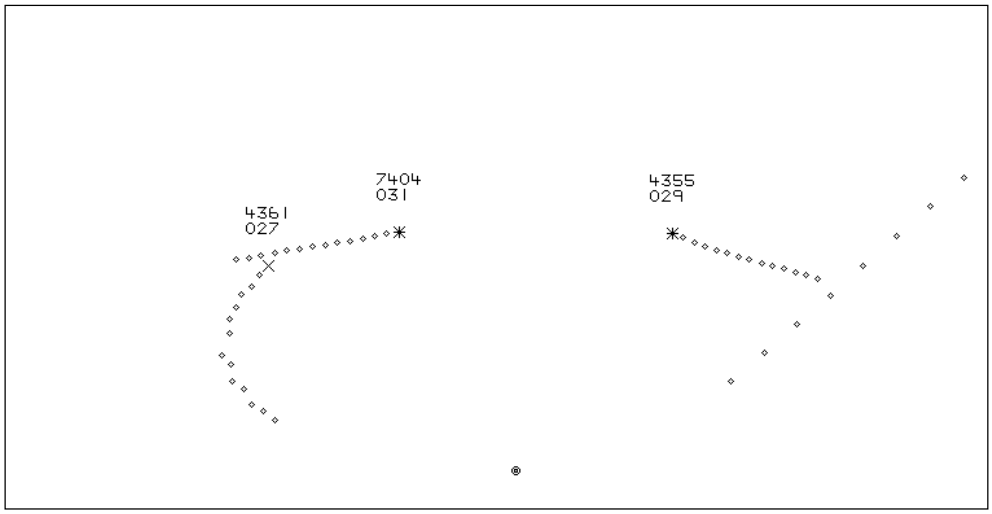

Figure 6: Traffic update at 1222:30.

At 1222:46, the Merlin pilot reported happy for a climb for deconfliction and at 1222:50 (Figure 7), the controller provided a vector onto a heading of 120°.

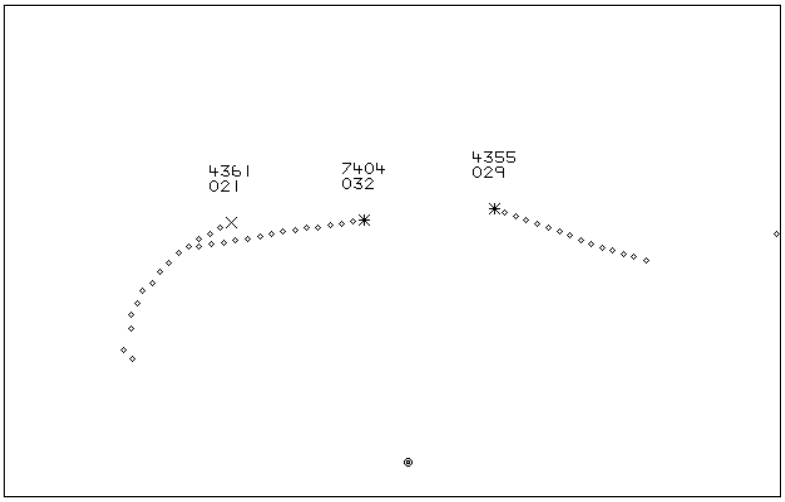

Figure 7: Geometry at the turn onto 120°.

The Merlin pilot called visual at 1223:01and the CPA was estimated at 1223:10 (Figure 8) with 200ft height separation and 0.4nm.

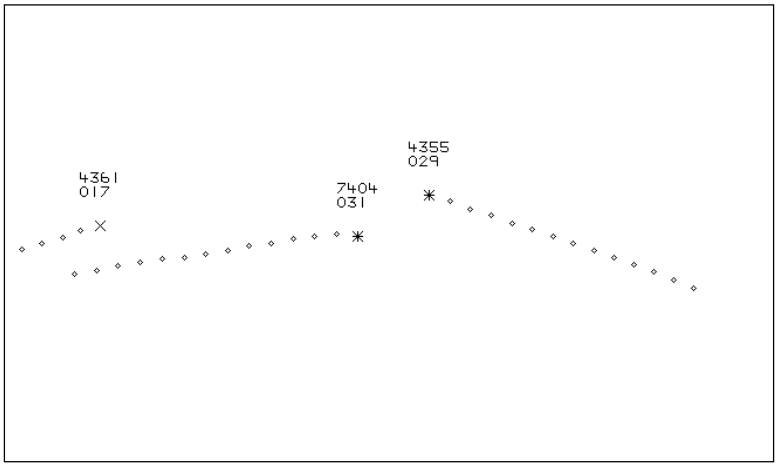

Figure 8: CPA at 1223:10.

Traffic Information was called on numerous occasions and the controller had limited the service due to radar suppression. The crew commented that they were happy for a climb for deconfliction but the controller used a vector to provide lateral separation. The vector provided by Yeovilton ATC provided separation and enabled the Merlin crew to become visual with the BE76.

UKAB Secretariat

The BE76 and Merlin pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard[1]. If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.

CAP774[2] advises that:

> When providing headings/levels for the purpose of positioning and/or sequencing or as navigational assistance, the controller should take into account traffic in the immediate vicinity based on the aircraft's relative speeds and closure rates, so that a risk of collision is not knowingly introduced by the instructions passed. However, the controller is not required to achieve defined deconfliction minima and pilots remain responsible for collision avoidance even when being provided with headings/levels by ATC.

Comments

Navy HQ

At the time of the incident, Yeovilton LARS and APP were both open and manned separately on adjacent consoles. The LARS controller had prenoted and handed the civilian traffic to Yeovil Westland ATC. A system exists at Yeovilton which notifies controllers when Westland's NDB hold is active; this system was active and had been used correctly in this instance. The APP controller worked the Merlin while it was southwest of the MATZ, tracking east, and the Merlin requested an ILS recovery to (non-duty) RW27 necessitating its transit along the southern edge of the MATZ. The conflicting civilian traffic was called, the Merlin offered to climb or take a turn, and the APP controller elected to give the Merlin a turn rather than a climb because the Mode C of the civilian aircraft had not been verified by Yeovil Westland ATC.

Post-event, both Yeovilton and Yeovil Westland felt that an exchange of knowledge between both parties would be beneficial. SATCO Yeovil Westland was invited to brief Yeovilton ATCOs at their next flight safety day, and they discussed Yeovil Westland's procedures, limitations, and the relevance of liaison calls between the two agencies.

Summary

An Airprox was reported when a BE76 and a Merlin flew into proximity at 1223 on Monday 14th December 2015. Both pilots were operating under IFR in VMC, the BE76 pilot in receipt of a non-surveillance Procedural Service from Yeovil Westland and the Merlin pilot in receipt of a Traffic Service from Yeovilton.

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, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The Board first looked at the actions of Yeovilton ATC. The LARS controller had handed over the BE76 to Yeovil Westland and the squawk allocated to it had converted on the Yeovilton radar screen to U55HOLD. ATC members opined that therefore it should have been obvious to the Yeovilton App

[1] SERA.3205 Proximity.
[2] Chapter 3. Traffic Service, Paragraphs 3.3, 3.6.

controller that the Yeovil Westland hold was active at 3000ft. Despite this, the Yeovilton App controller continued to vector the Merlin through the hold at the same altitude as the hold traffic. ATC members noted that an early 20° turn would likely have kept the Merlin out of the way of the BE76, but instead the controller seemed content to just call the conflicting traffic to the Merlin pilot who continued on track. A brief discussion took place about whether, under a Traffic Service, the controller was required to deconflict the two aircraft. Board members noted that although separation ultimately remains the pilot's responsibility, CAP774 clearly states that controllers should take into account traffic in the vicinity when providing vectors and avoid introducing a collision risk[3]. If he had been concerned about the verification of the BE76 Mode C (and so couldn't take vertical separation), ATC members thought that the Yeovilton App controller could easily have called the Yeovil Westland controller to co-ordinate the two aircraft; moreover, he should in any case have been aware that the hold traffic was likely to be at 3000ft, the normal Yeovil Westland hold height. In the end, members noted that it wasn't until he was prompted by the Merlin pilot offering to climb or turn that he took any action to resolve the conflict introduced by his own vectors to the Merlin.

The Board also discussed the part that the Merlin pilot had played in this Airprox. They noted that the controller had called the traffic to him on a number of occasions, the first at a range of 10nm, but also at 6 and 3½nm. The Merlin pilot clearly wasn't initially visual with it, and yet he continued on track. Under a Traffic Service he was responsible for his own separation, and he could either have asked for a Deconfliction Service or simply informed ATC that he was taking avoiding action if he wasn't able to see the traffic. The Board regularly sees the results of inaction by pilots who, despite being given Traffic Information, continue on track until the point of Airprox. That said, the Board noted that, on this occasion, at 3½nm the Merlin pilot did in the end offer to take a turn or a climb, which in turn had prompted the controller to give a heading to keep clear. The point to be made was that neither the controller or the Merlin pilot seemed proactive in avoiding the conflict; the controller seemed to be relying on the Merlin pilot to see and avoid the other aircraft, whilst the Merlin pilot seemed to be relying on ATC to provide deconfliction even though he was not formally under a Deconfliction Service.

The Board praised the actions of the Yeovil Westland controller, who despite not having any radar saw the Merlin and gave Traffic Information on it to his aircraft. They also thought that there was little more that the BE76 pilot could have done, he was established in the hold at 3000ft, saw the Merlin 2-3nm away and kept it in sight at all times. The Board were heartened that Yeovil Westland and Yeovilton ATC had already rekindled previous links as a result of this incident, and that Yeovil Westland had attended Yeovilton's flight safety event to share knowledge; members hoped that this would help the two units to understand much better each other's tasking in future.

In determining the cause of the Airprox, the Board agreed that the Yeovilton controller had vectored the Merlin into conflict with the BE76. Looking at the risk, although in his report the BE76 pilot had been more concerned by the downwash than the proximity of the other aircraft, the Board noted that the radar separation was closer than he had estimated, at 200ft and 0.4nm. They thought that although there had not been an actual risk of collision because the BE76 pilot had the Merlin in sight at all times, normal safety standards had not pertained because the Merlin pilot had been given avoiding action which had increased the separation. The Board therefore agreed that the risk was Category C; timely actions had been taken to prevent the aircraft colliding.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The Yeovilton controller vectored the Merlin into conflict with the BE76.

Degree of Risk: C.

[3] CAP774 Chapter 3. Traffic Service, Paragraphs 3.3, 3.6