

13 November 2013
FOIA reference: F0001702

Dear XXXX

I am writing in respect of your recent request of 22 October 2013, for the release of information held by the Civil Aviation Authority (CAA).

Your request:

“Under the Freedom of Information Act please provide details of all near misses recorded in airspace around Bristol Airport since January 1st 2012. Please give information about how far each aircraft was from each other in nautical miles and vertical feet, and details of what happened and what action was taken”.

Our response:

In assessing your request in line with the provisions of the Freedom of Information Act 2000 (FOIA), we are pleased to be able to provide the information below.

The UK Airprox Board’s (UKAB) primary objective is to enhance flight safety in the UK, in particular in respect of lessons to be learned and applied from Airprox occurrences reported within UK airspace.

The UKAB has checked its database for all Airprox incidents matching the criteria of your request. As your request did not specifically give a distance in relation to Bristol Airport, we have carried out a search within a 25nm radius of Bristol Airport since 1 Jan 2012.

The results show that there were four incidents meeting this criteria. We have therefore, attached the following information:

- An Excel spreadsheet which outlines the details of each event (see attachment 1(a key to the categories used can be found below)).
- A map depiction showing where they were (see attachment 2).
- The four subject reports (see attachments 3-6).

The search found no recorded Airprox incidents in close vicinity to Bristol Airport since 1 Jan 2012.

For future reference it might interest you to know that all such reports, including the attached four, are freely available on the UKAB website www.airproxboard.org.uk

Civil Aviation Authority

Aviation House GW Gatwick Airport South Crawley West Sussex England RH6 0YR www.caa.co.uk
Telephone 01293 768512 rick.chatfield@caa.co.uk

If you are not satisfied with how we have dealt with your request in the first instance you should approach the CAA in writing at:-

Mark Stevens
External Response Manager
Civil Aviation Authority
Aviation House
Gatwick Airport South
West Sussex
RH6 0YR

mark.stevens@caa.co.uk

The CAA has a formal internal review process for dealing with appeals or complaints in connection with Freedom of Information requests. The key steps in this process are set in the attachment.

Should you remain dissatisfied with the outcome you have a right under Section 50 of the Freedom of Information Act to appeal against the decision by contacting the Information Commissioner at:-

Information Commissioner's Office
FOI/EIR Complaints Resolution
Wycliffe House
Water Lane
Wilmslow
Cheshire
SK9 5AF

www.ico.gov.uk/complaints.aspx

Should you wish to make further Freedom of Information requests, please use the e-form at <http://www.caa.co.uk/foi>.

Yours sincerely

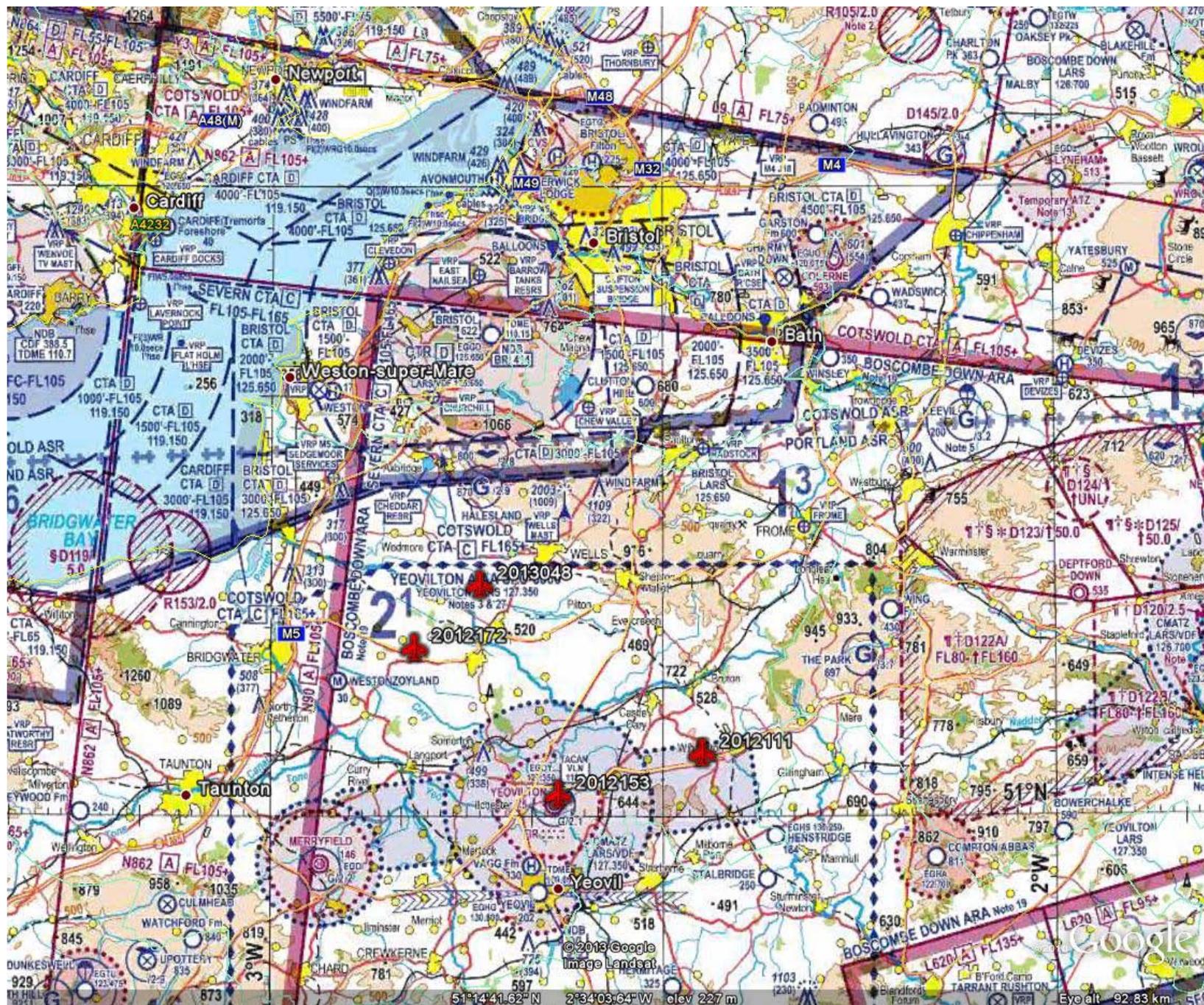
Rick Chatfield
Information Rights and Enquiries Officer

CAA INTERNAL REVIEW & COMPLAINTS PROCEDURE

- The original case to which the appeal or complaint relates is identified and the case file is made available;
- The appeal or complaint is allocated to an Appeal Manager, the appeal is acknowledged and the details of the Appeal Manager are provided to the applicant;
- The Appeal Manager reviews the case to understand the nature of the appeal or complaint, reviews the actions and decisions taken in connection with the original case and takes account of any new information that may have been received. This will typically require contact with those persons involved in the original case and consultation with the CAA Legal Department;
- The Appeal Manager concludes the review and, after consultation with those involved with the case, and with the CAA Legal Department, agrees on the course of action to be taken;
- The Appeal Manager prepares the necessary response and collates any information to be provided to the applicant;
- The response and any necessary information is sent to the applicant, together with information about further rights of appeal to the Information Commissioners Office, including full contact details.

Airprox Risk Categories	
A	Risk of collision: An actual risk of collision existed.
B	Safety not assured: The safety of the aircraft was compromised.
C	No risk of collision: No risk of collision existed.
D	Risk not determined: Insufficient information was available to determine the risk involved, or inconclusive or conflicting evidence precluded such determination.

Airprox No	latitude	longitude	altitude	Assessed Risk Category	Aircraft 1 Type	Aircraft 2 Type
2012111	5103N	00227W	02000	C	LYNX A.H MK I	HERCULES C130
2012153	5101N	00238W	01000	C	SEA KING, S-61 (MIL MODELS)	CHEROKEE / WARRIOR / ARROW
2012172	5108N	00249W	02400	C	LYNX HAS/HMA MK8	DUCHESS 76
2013048	5111N	00244W	00200	A	LYNX HAS/HMA MK8	LYNX HAS/HMA MK8



©2018 Google
Image Landsat
51°14'41.62"N 2°34'03.64"W elev 227 m

Eye alt 92.83 km 500

AIRPROX REPORT No 2012153

Date/Time: 26 Sep 2012 1907Z (Night)

Position: 5101N 00238W (O/H RW09
Yeovilton - elev 75ft)

Airspace: Yeovilton ATZ (Class: G)

Reporting Ac Reported Ac

Type: Sea King Mk4 PA28

Operator: HQ JHC Civ Club

Alt/FL: 1000ft↑ 1500ft
QFE (994hPa) (QNH)

Weather: VMC CLBC VMC CLOC

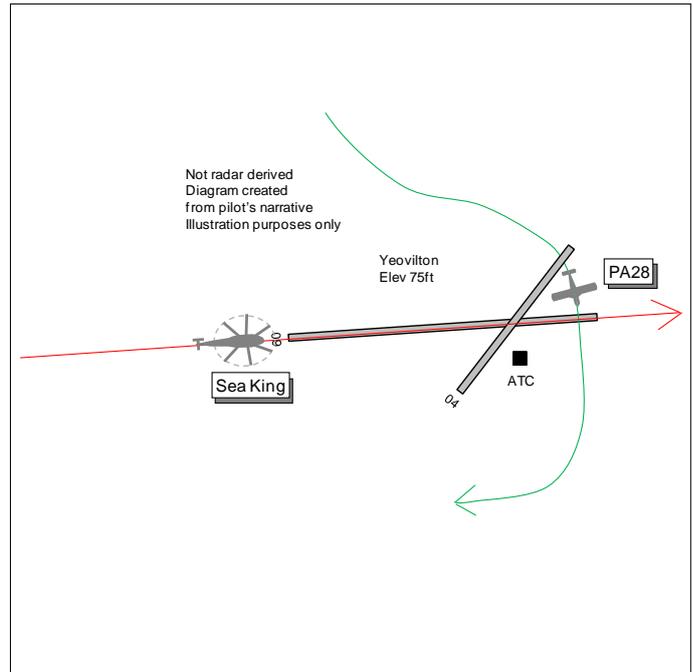
Visibility: 10km 20km

Reported Separation:

100ft V/400m H 1200ft V/1350m H

Recorded Separation:

NR



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE SEA KING PILOT reports flying a training flight using NVDs inbound from Poole HLS and in communication with Yeovilton Approach on UHF Channel 3, squawking 0222 with Modes S and C; TCAS was not fitted. The visibility was 10km flying 1000ft below cloud in VMC and the helicopter's red HISLs and flashing dim nav lights were switched on. Approaching decision height on a PAR approach and during the overshoot they saw traffic [the PA28] in their 9 o'clock to the N of their position. They initially thought the other ac may pass down their LHS and continue on its track. However, passing the RW09 midpoint approaching 1000ft QFE 994hPa heading 090° at 90kt they saw the other ac approach in a banking R turn from the N and cross the duty RW across their flightpath <500m ahead; they estimated the separation as 400m horizontally and 100ft vertically at the CPA. The ac continued its banked turn as it passed down their RHS. No avoiding action was taken as they were visual with the ac throughout. They had not heard the traffic on the Tower frequency or permission for the traffic to cross the duty RW. He assessed the risk as medium. Clearly the time for the ac to pass from L to R was a matter of seconds and had their helicopter been slightly higher or R of track and not visual with it then there would have been a high risk of collision.

THE PIPER PA28 PILOT reports flying a local night training sortie from Yeovilton, VFR and in receipt of a BS from Yeovilton Approach on 123.3MHz, squawking an assigned code with Modes S and C. The visibility was 20km in VMC and the ac's nav and red anti-collision beacon were switched on. The sortie was to complete the student's Night Rating Training, having completed cct training and solo ccts the previous evening. The flight was flown as a consolidation night NAVEX with initial tracking of the BRI NDB to the NW then tracking the EX NDB to the SW, followed by a reversal of the route with transfers to the appropriate ATSUs en-route. On return to Yeovilton, APP was contacted to the S of Merryfield; a BS and squawk were obtained and their intentions were passed to return to the A/D to land. An E'ly track was established towards Street [8nm NW of Yeovilton] at altitude 3000ft, with a lowering cloud base to the S in the vicinity of the A/D. The cloud base was scattered at around 4000ft with limited cloud at their altitude. Passing S abeam Street, he told his student to request an overhead rejoin at 1500ft at about 7.6 DME and he was aware of the appearance of a lower cloud-base to the S. The controller's response was, "RW09 Right Hand", therefore a track was established to route direct to the aerodrome O/H in a cruise decent aiming to join O/H at 1500ft QFE. Passing 2800ft in descent at 95kt, traffic was noted in their 2 o'clock at a similar level to the S of the AD tracking L to R, which he pointed out to his student. He also noted the cloud layer as being further S and above their level from the reflection of urban lighting. APP

then passed TI, "PAR traffic Sea King in your 2 o'clock RW09", which the instructor initially connected with the traffic he had just spotted below them. APP then directed them to, "make yourself No2". After a period long enough for him to discuss the traffic situation with his student, suggesting that the contact at about 2000ft was possibly been vectored onto a RH base-leg for RW09, he was content with this situation to join O/H into a RH downwind leg. However, APP then advised, "Sea King 1200ft on PAR"; this traffic was then identified by his student in their 2-3 o'clock at about 2.5nm. The instructor judged this would put them onto a reciprocal heading and possibly O/H the PAR traffic if he turned to starboard to join downwind LH for RW09 at this late stage. Therefore, he elected to continue O/H at 1500ft as he judged this would keep them clear of the traffic while maintaining good visual contact. At this point, as they were approaching the O/H at 1500ft just to the W of the intersection of RW04/09, they started to turn to the L to cross over the upwind end of RW09, whilst he remained visual with the traffic as it approached the threshold of RW09, whereupon APP advised, "Sea King conducting missed approach". Consequently, he instructed his student to take up a S'ly track to clear the overshoot; during this period he - the instructor - had continuous visual contact with the Sea King round to his starboard aft quarter just off the tailplane at the point the Sea King crew executed their overshoot at about 50ft. He estimated separation as 1200ft vertically and 1350m horizontally at the CPA. The helicopter passed behind, tracking at R angles to their track, assessing the risk as none. Once S of the C/L he directed his student to descend onto the downwind leg and when they were established mid-downwind at 800-1000ft QFE they heard the Sea King crew report an Airprox as he passed through their 3 o'clock. APP then switched them over to TOWER on 120.8MHz and a normal landing was completed. Taxying back to S dispersal he was requested to contact the DATCO on the landline.

UKAB Note (1): The Yeovilton METAR was: - EGDY 261850Z 36007KT 9999 FEW012 SCT020TCU BKN045 12/10 Q0995 WHT TEMPO 4000 SHRA FEW012 BKN018CB GRN=

UKAB Note (2): Sunset was 1801Z.

THE YEOVILTON APPROACH RADAR CONTROLLER (APP) reports whilst the Sea King was conducting a PAR to RW09 at range 5nm the PA28 flight under a BS requested an O/H join from 6nm NW of the aerodrome. After informing the ADC of the intentions he told the PA28 pilot about the radar traffic and instructed him to report when visual. The pilot reported visual when the Sea King was at 4nm at which point he told the PA28 pilot to make himself No2 to the radar traffic. He received confirmation from the pilot that he would make himself No2. On low approach the Sea King pilot called and APP instructed the pilot to climb to 2000ft. At this point he was unaware that the PA28 was crossing O/H at 1500ft QFE directly in front of the Sea King and still on the Approach frequency thus without permission to cross the Duty RW. Having thought the PA28 flight was already with Tower, owing to the ac being in the cct, he immediately instructed the flight to contact Tower for further instructions.

THE YEOVILTON DUTY AIR TRAFFIC CONTROL OFFICER (DATCO) reports that he was in the Visual Control Position (VCP) when the ADC was informed by APP that the PA28 pilot was conducting an O/H join for visual ccts to the duty RW09. The ADC stated that APP had advised him that the PA28 flight was told to make themselves No2 to the Sea King PAR traffic. As both ac were under the control of APP, he was confident that all deconfliction measures had been considered. The Sea King flight, through Talkdown, was given clearance by ADC to conduct a low-approach. Although he and the ADC observed both ac visually and on the Hi-Brite ATM, it was hard to ascertain the height of the PA28. The PA28 continued to close to the O/H from the NW and cross O/H the RW ahead of the Sea King, which was executing its low-approach and was climbing straight ahead on RW track. The PA28 pilot only free-called the ADC on VHF when the ac turned downwind and was then given instructions to join by the ADC. He made an 'open comment' to the ADC that it did not look right, explaining that if the Sea King crew had executed a Missed Approach because they were in IMC, then the ac would have been potentially climbing up through the joining ac's level. He was then informed by APP that the Sea King crew had queried if an ac had flown through the O/H about 0.25nm in front of their helicopter at a similar height. The PA28 pilot was asked to contact the DATCO on landing. He then informed the Duty Flying Supervisor (DFS) of the occurrence who made note to handover to Lt Cdr Flying and the oncoming DFS the next morning. The PA28 pilot

telephoned; he informed the pilot of the occurrence and asked why he did not join No2 to the PAR traffic. The PA28 pilot informed him that it is a Station Flying Club procedure to conduct O/H joins; however, he did inform the PA28 pilot that as a military A/D ATC do not conduct this procedure because of ac conducting IFR climbouts or missed approaches. He asked the pilot what height he was when he turned downwind, to which he replied, "1500ft QFE". The PA28 pilot had attended the night flying brief held in ATC prior to this sortie. Later, the DATCO was contacted by one of the Sea King pilots, who wanted to know what had happened; he explained what he thought had occurred from a VCP perspective, but also explained that APP was already in the process of raising the DASOR for the incident. He informed me that he would talk to the Sea King Capt and they would consider their options regarding submitting an Airprox or not. The PA28 pilot was informed that a DASOR would be raised.

UKAB Note (3): The radar recording does not capture the Airprox. The Sea King fades from radar at 1905:17 approximately 4nm from touchdown RW09 with the PA28 4nm NW of Yeovilton tracking SE'ly in the Sea King's 10 o'clock range 4nm. The PA28 continues towards the O/H fading at 1907:00 with 1.5nm to run.

THE YEOVILTON FLIGHT SAFETY INVESTIGATION reports the incident occurred in the Yeovilton visual cct during a period of Station night flying. At no stage during the instrument approach had the Sea King crew been given TI or advised that the PA28 was joining the visual cct via the O/H. APP had informed the ADC of the PA28's O/H join [1903:45] and that the pilot was visual with the Sea King making a GCA [1905:13]. The PA28 pilot was instructed to make himself No2 to the GCA traffic and acknowledged the instruction [1904:58]. The PA28 pilot reported conducting a visual O/H join and descending to 1500ft QFE and was visual with the Sea King during the approach. The PA28 had descended on the deadside before turning crosswind, crossing the Duty RW and turning to position late downwind RW09 RH. Transfer of control between APP and ADC was late (once the PA28 was established downwind) therefore ADC had not passed cct information to the GCA controller as part of the standard clearance issued at 3nm for the Sea King to low approach. Consequently the Sea King crew had no knowledge of the ac in the visual cct. APP had stopped monitoring the PA28 on radar as he believed the ac was under ADC's control and at no stage during the recovery of the 2 ac did the APP consider that a confliction to their flight profiles might occur. Thus the APP did not impose a climb-out restriction in the event of a missed approach procedure being initiated or attempt to de-conflict the ac. The ADC observed the PA28 approaching the aerodrome and contacted the APP to question whether the PA28 pilot was visual with the Sea King but the ADC did not request that the PA28 flight be transferred to the Tower frequency. When recovering visually, the O/H join method is not a recognised procedure at Yeovilton and the Yeovilton Aviation Orders (YAvOs) clearly state that O/H joins are not permitted due to there being a limited deadside. However, further investigation revealed that the Yeovilton Flying Club (YFC) Order Book 2010, which supplements YAvOs, contravenes this rule as the recommended join in VFR conditions when the aerodrome is open is to be an O/H join at 2500ft. Several factors led to this incident occurring. VFR night flying in the UK is a relatively new procedure (8Jun2012) and ATC is unfamiliar with the integration of Flying Club ac and Station based ac at night. The PA28 pilot requested a VFR join via the O/H as per YFC Order Book; this procedure is not authorised at Yeovilton as stipulated in YAvOs. APP approved this procedure and attempted to sequence the ac by asking the PA28 pilot to report visual and make themselves No2. The PA28 pilot reported initiating a descent to height 1500ft, which is 1000ft below that recommended in the YFC Order Book, and reported visual with the Sea King. APP's attention was then diverted to other ac on frequency and he lost SA, stopped monitoring the PA28's flightpath and subsequently believed the flight to be under the control of the ADC. The PA28 flight continued inbound and remained on the Approach frequency; the pilot reported late downwind to land, which was when the APP realised the frequency error and told the pilot to continue with Tower. The ADC and DATCO, having been passed TI from APP believed that the PA28 would sequence behind the Sea King by converting to a straight-in approach/L base flight profile in the No2 position. Whilst they could see the PA28 approaching the cct it was difficult for them to assess accurately the ac's position and intentions. At no stage were the Sea King crew passed TI or warned of the PA28's proximity.

Five recommendations were made: -

1) Alignment of YAvOs and YFC FOB. The PA28 pilot requested a procedure not authorised by YAvOs while the aerodrome was open for normal operational flying, during a period of night flying. This alignment is to ensure that procedures in YAvOs are not overruled by the lower level orders on the YFC FOB. Although this relates specifically to methods of rejoining the aerodrome whilst open for normal operations and ATC is manned, in order to ensure thoroughness all orders should be reviewed with YAvOs being the primary document. – Action completed 3/12/2012. The YAvOs and YFC have been aligned.

2) Recognition of unusual situation during low arousal. The progression of events from the approval of the PA28 pilot's request for an O/H join, to the point where the PA28 crossed the path of the overshooting helicopter, resulted from lack of SA by the ADC. Although visual with the PA28, clearly no contact had been established and this should have been questioned in a more robust manner as the situation developed. All controllers should be rebriefed on taking appropriate actions in the event of recognising an unusual circumstance that could lead to an unsafe situation developing, particularly during periods of low arousal such as during night flying. Action completed 10/12/2012. The results of the originating report have been highlighted to all ATC staff through formal training briefs (conducted 3 x weekly) and informally through Watch Leaders. Other ATC Incident reports have been promulgated for wider awareness and this has included populating the ATC crewroom with Accident/UKAB reports.

3). Competency of controller requires to be assured. APP did not impose a robust method of recovery for the PA28 in order to ensure separation from the Sea King conducting an IFR approach. The APP requires a period of retraining before acting in a solo capacity as APP/Director.

4). Review mixed operations of YFC and Station based ac during night flying. The PA28 pilot requested a procedure not authorised by YAvOs while the aerodrome was open for normal operational flying, during a period of night flying. Action completed 3/12/2012. Occurrence Review Group accepted that continued mixed operation could continue.

5). Review YAvOs 0211 – Fixed-wing recoveries. The progression of events from the approval of the PA28 pilot's initial request for an O/H join, to the point where the PA28 crossed the path of the overshooting helicopter, resulted in lack of SA by the ADC. Although visual with the PA28, clearly no contact had been established and this should have been questioned in a more robust manner as the situation developed. Fixed-wing recoveries are to be reviewed and re-written clearly defining that O/H joins are not permitted when Yeovilton is open or at night. The fixed-wing community operating at Yeovilton are to be involved in the review. Action part completed 30/01/2013. Amendment written, awaiting incorporation into YAvOs.

HQ JHC comments that whilst the closest reported proximity was 100ft V/400m H this could have been an incident with a far worse outcome. JHC welcomes the recommendations made by the investigation, which when enacted should greatly reduce the likelihood of another occurrence of this type. This incident highlights this challenges of integrating GA VFR traffic at night at a military aerodrome (albeit by a military civilian flying club ac) with military traffic undergoing IFR operations at night and should be highlighted across the MOD/GA aviation community to further educate those involved with flying at night of the potential issues of night VFR traffic with IFR/military night flying. Particularly with regards to ensuring that MOU's and local flying club FOB are updated to ensure compliance with the local military flying orders.

NAVY COMMAND comments that the Sea King was conducting a PAR recovery to Yeovilton in contact with the Approach controller and the PA28 from the Yeovilton Flying Club conducted a joining procedure that was not iaw YAvOs, of which they are required to be familiar, which resulted in it crossing the path of a the Sea King conducting a PAR approach. Although the PA28 pilot maintained VFR separation with the overshooting Sea King, a sequence of events in the build up to the incident contributed to the Sea King crew perception that the PA28 was too close. These included the PA28 pilot requesting a procedure that should not have been approved by the APP, who furthermore did

not take positive control of the joining PA28 or sequence it against his own IFR traffic. A subsequent delay in transferring the PA28 flight to Tower frequency further exacerbated the issue resulting in reduced SA for the ADC who therefore did not pass the required TI to the Sea King crew who were operating on the GCA frequency. This Airprox would most likely to have been averted if SOPs had been followed by both the PA28 pilot and the APP.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequencies, radar video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The initial factor which started the evolution to the Airprox was the disconnect between the YAvOs and the YFC FOB. The PA28 pilot was expecting to carry out an O/H join iaw YFC FOB; however, this procedure was not permitted in the YAvOs. Nevertheless, this request by the PA28 pilot, instead of being refused by the APP, was approved. The APP then did not apply positive control to the PA28 flight by issuing instructions to ensure both ac were deconflicted. This resulted in the PA28 flying into conflict with the Sea King on a go-around, which was the cause of the Airprox.

The Sea King crew was undoubtedly concerned when, without any TI, they saw the PA28 approaching from their L and then manoeuvre to pass over the upwind end of the RW ahead of their projected flightpath from L to R. APP had not transferred the PA28 flight to the Tower frequency which would normally occur with about 5nm to run and would lead to the ADC passing TI on cct traffic to the PAR approach traffic with its clearance when this requested by the PAR controller at 3nm. The ADC was initially concerned when he saw the PA28 approaching but his fears were allayed when he was told by APP that the PA28 pilot was visual with the Sea King and would position No2. The PA28 pilot, having been given TI on the Sea King and seen it, was told to "make yourself No2"; he judged that, at that late stage, a R turn to position downwind LH would have placed his ac closer to the helicopter. He elected to continue towards the crosswind position and then realised that the Sea King was commencing an overshoot so he told his student to track to the S to clear the C/L of the RW. Although this incident had had the potential for a more serious outcome, Members agreed that because the PA28 pilot had maintained visual contact with, and separation from, the Sea King throughout and because the Sea King crew also observed the PA28 crossing ahead, any risk of collision had been effectively removed.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The Yeovilton APP allowed the PA28 flight to carry out an O/H join, contrary to YAvOs, and fly into conflict with the Sea King on a go-around from PAR.

Degree of Risk: C.

AIRPROX REPORT No 2012172

Date/Time: 28 Nov 2012 1025Z

Position: 5108N 00249W
(RNAS Yeovilton 320°/10nm)

Airspace: Yeovilton AIAA (Class: G)

Reporting Ac Reported Ac

Type: Lynx Mk 8 Beech 76

Operator: RN Civ Trg

Alt/FL: 2100ft 2000ft
RPS (1008hPa) RPS (1008hPa)

Weather: VMC CLBC VMC CLBC

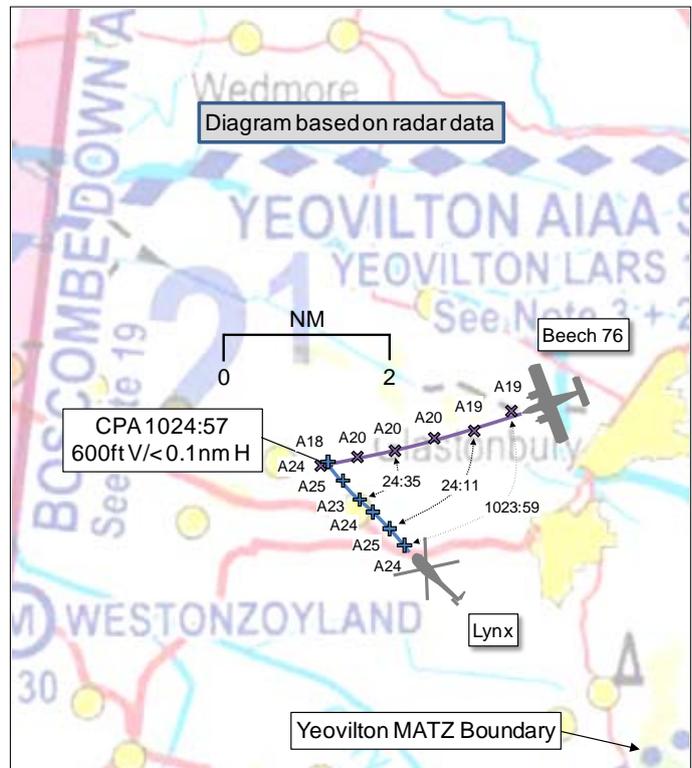
Visibility: 25km 10km

Reported Separation:

100ft V/0ft H 100m V
500-1000m H

Recorded Separation:

600ft V/<0.1nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE LYNX MK 8 PILOT reports conducting a partial Air Test following ac maintenance. He was operating under VFR in VMC, 400ft below cloud, in receipt of a BS from Yeovilton APP [234.300MHz]. The grey camouflaged ac had navigation and anti-collision lights selected on. The SSR transponder was selected on with Modes A and C. The ac was not fitted with a Mode S capable transponder or an ACAS. He stated that, immediately after 'setting up' to test one of the engines, heading 335° at 100kt and altitude 2100ft, he saw a white and red/orange coloured, low-wing, twin-engine 'civilian' ac in his R 3 o'clock position on a closing course. He immediately assessed there was no risk of actual collision so elected to remain 'straight and level'. Approximately 1-2sec later the conflicting ac, which also remained straight and level, passed directly below him with 100ft V separation.

He assessed the risk as 'High'.

He stated that cockpit workload was moderate but did require both crew to look inside to verify switch selections. He also stated that he had elected not to take a TS, based on the level of RT traffic on Yeovilton APP frequency.

THE BEECH 76 PILOT reports instructing a CPL VFR navigation exercise. He was PNF in the R seat, with PF, the student, occupying the L seat. He was operating under VFR in VMC, 500ft below cloud, the PF being in the process of establishing a BS with Yeovilton LARS. The white and red ac had navigation and strobe lights selected on, as was the SSR transponder with Modes A and S. The ac was not fitted with an ACAS. The PF had descended from altitude 2500ft to altitude 2000ft due to weather ahead when the Instructor saw a Lynx helicopter in his L 10 o'clock position at a range estimated at 10km. He considered that the student was 'late in asking for a BS from Yeovilton' but that, as an instructor, he sometimes had to 'sit and watch to see how long it takes'. He stated that 'they were always N of Yeovilton' but that they were also in the Yeovilton AIAA. He assessed the student lookout as 'poor', that it was safe to maintain track of approximately 270° at 135kt and that, being on the R, he had right of way, albeit that both parties had to be visual to 'implement this'. When he deemed it unsafe to continue he took control and descended to avoid the Lynx, which he lost sight of but judged had passed behind.

He assessed that there was no risk of collision.

[UKAB Note(1): The RNAS Yeovilton weather was reported as follows:

METAR EGDY 280950Z 34011KT 9999 FEW010 SCT025 OVC030 06/01 Q1016 BLU NOSIG

METAR EGDY 281050Z 35011KT 9999 FEW010 SCT025 OVC030 06/01 Q1016 BLU NOSIG]

THE LYNX SQUADRON OCCURRENCE MANAGER reports that the Airprox occurred because of a lack of SA. He stated that crews are being strongly encouraged to request an ATS commensurate with the weather conditions and task in hand.

THE YEOVILTON APPROACH CONTROLLER reports that the Lynx pilot, positioned approximately 15nm N of the A/D, was in receipt of a BS. He was in the process of handing over two separate ac, positioned approximately 15nm S of the A/D and under TSs, to a fighter control agency when the Lynx pilot transmitted that he would like to report an Airprox. He then observed a contact in the vicinity of the Lynx, at a similar level. This contact then descended and was seen to change squawk to a Yeovilton LARS squawk. Shortly after the incident the Lynx pilot upgraded his ATS to a TS.

[UKAB Note(1): The Yeovilton APP RT Transcript is reproduced below:

To	From	Speech Transcription	Time	Remarks
VL App	[Lynx C/S]	Approach, [Lynx C/S]	10:26:10	
[Lynx C/S]	VL App	[Lynx C/S], Yeovil Approach, standby	10:26:12	
Freddie	VL App	Own navigation, squawking one seven six one	10:26:14	Landline Call resumed
VL App	Freddie	Contact	10:26:17	
Freddie	VL App	Climbing flight level one six zero, traffic service	10:26:18	
VL App	Freddie	Climbing flight level one six zero, traffic service, Amber one identified, contact Freddie channel eight, back up channel nine	10:26:20	
Freddie	VL App	Channel eight, back up channel nine, roger, Approach	10:26:27	
Amber 1	VL App	Amber one, contact Freddie channel eight, two four zero decimal four	10:26:31	
VL App	Amber 1	Amber one, channel eight	10:26:40	
Amber 1	VL App	Amber one, back up channel nine	10:26:42	
VL App	Amber 1	Copied	10:26:44	
[Lynx C/S]	VL App	[Lynx C/S], Yeovil Approach, pass your message	10:27:26	
VL App	[Lynx C/S]	[Lynx C/S], I'd like to report an Airprox, I've got a position, height and details for you	10:27:27	
[Lynx C/S]	VL App	[Lynx C/S], roger, standby	10:27:38	
[Lynx C/S]	VL App	[Lynx C/S], Yeovil Approach, go ahead	10:27:48	
VL App	[Lynx C/S]	Yeah, err, we were at two thousand one hundred feet, one double oh eight set, in position north five one zero eight decimal six, west zero zero two four nine decimal two at ten twenty five exactly local, a, err, twin engine, white aircraft, flew directly underneath us, about a hundred foot separation. Our track three three zero, he was tracking south westerly	10:27:51	
[Lynx C/S]	VL App	[Lynx C/S], roger, many thanks, I have the details.	10:28:25	
VL App	[Lynx C/S]	Roger, we'll give you a ring when we get back	10:28:28	
[Lynx C/S]	VL App	[Lynx C/S], roger.	10:28:30	

]

THE YEOVILTON LARS CONTROLLER reports that [the subject Beech 76] free-called Yeovilton LARS [127.350MHz] and requested a service. He agreed a BS and issued a squawk. He was then asked by someone else in [the subject Beech 76] to 'standby' because they were avoiding a conflicting ac. He looked at the radar display and noticed a 7000 conspicuity code in the vicinity of a recognised Yeovilton APP squawk. Once [the subject Beech 76] was established in a 'safe area', he was then asked to repeat his last message.

[UKAB Note(2): The Yeovilton LARS RT transcript is reproduced below:

To	From	Speech Transcription	Time	Remarks
VL Lars	[Be76 C/S]	Yeovilton Radar, [Be76 C/S fragment], err, [Be76 C/S fragment], err, request MATZ penetration.	10:23:52	
[Be76 C/S]	VL Lars	[Be76 C/S], Yeovil Radar, pass your message.	10:24:00	
VL Lars	[Be76 C/S]	[Be76 C/S], err, Beach Seventy Six, from Bournemouth to Bournemouth we are, err, north of Bridgewater to err west of Bridport, err, currently, err, south of err Wells, err, one, err, two thousand err feet, QNH one zero zero eight, request MATZ penetration.	10:24:04	
[Be76 C/S]	VL Lars	[Be76 C/S], roger, squawk zero two four four, basic service, Portland regional is one zero zero eight.	10:24:37	
VL Lars	[Be76 C/S]	Say again, sorry, [Be76 C/S], just descending for the Lynx.	10:24:46	
[Be76 C/S]	VL Lars	Roger	10:24:50	
VL Lars	[Be76 C/S]	Clear of the Lynx, say again please, [Be76 C/S].	10:24:53	
[Be76 C/S]	VL Lars	[Be76 C/S], roger, squawk zero two four four, Portland regional one zero zero eight.	10:25:56	
VL Lars	[Be76 C/S]	Zero two four four, [Be76 C/S]	10:25:02	

]

HQ NAVY COMMAND comments that this Airprox occurred between two ac operating VFR in receipt of a BS from Yeovilton ATC, albeit two different controllers. The Beech 76 had not yet been identified as they had only just called the LARS controller and the Approach controller had prioritized his attention to the TS ac under his control. This meant that no warning of proximity was passed to either ac, however both saw each other in time and avoided a collision. Both crews report 'mission focus' by being either 'eyes in' the cockpit or allowing the student pilot to have rein, and the Lynx Squadron Occurrence Manager states that crews are encouraged to request the most appropriate ATS. Collision was averted by the sighting of both ac, albeit somewhat late by the Lynx crew.

[UKAB Note(3): RoA, Rule 8 (Avoiding Collisions) states:

(1) Notwithstanding that a flight is being made with air traffic control clearance it shall remain the duty of the commander of an aircraft to take all possible measures to ensure that his aircraft does not collide with any other aircraft.

(2) An aircraft shall not be flown in such proximity to other aircraft as to create a danger of collision.

...

(4) An aircraft which is obliged by this Section to give way to another aircraft shall avoid passing over or under the other aircraft, or crossing ahead of it, unless passing well clear of it.

(5) ..., an aircraft which has the right-of-way under this rule shall maintain its course and speed.

...

RoA Rule 9 (Converging) states:

...

(3) ..., when two aircraft are converging in the air at approximately the same altitude, the aircraft which has the other on its right shall give way.

RoA Rule 11 (Overtaking) states:

(1) ..., an aircraft which is being overtaken in the air shall have the right-of-way and the overtaking aircraft, whether climbing, descending or in horizontal flight, shall keep out of the way of the other aircraft by altering course to the right.

(2) An aircraft which is overtaking another aircraft shall keep out of the way of the other aircraft until that other aircraft has been passed and is clear, notwithstanding any change in the relative positions of the two aircraft.

...]

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequencies, radar photographs/video recordings and a report from the helicopter operating authority.

The Board first considered the actions of the two pilots. The JHC Member opined that the Lynx pilot knew the air-test would involve more than normal in-cockpit activity and consequently that his lookout would be degraded, exacerbated by the Lynx Mk 8 only having flying controls for the single pilot. He would therefore have been better served by using a TS or DS. Planning for this level of service would have been a useful part of his pre-flight preparation, especially with regard to risk mitigation, and may even have led him to make the decision that provision of such a service was an essential requirement to undertake the air-test. Turning to the Beech 76, a civilian Pilot Member commented that an instructor did have to give his student time to complete procedures that were necessarily limited in tempo by the student's inexperience, but the dividing line between achieving a valuable learning exercise and continuing to the detriment of safety could be a fine one. Some pilot Members opined that the Beech 76 instructor had taken control too late to avoid the Lynx by a margin sufficient to avoid causing the Lynx pilot concern. Both pilots were operating in class G airspace and had equal responsibility to 'see and avoid'. The Beech 76 instructor correctly assessed that he had right of way, but the Board emphasised that both pilots were responsible for collision avoidance. In this case the Beech 76 pilot had achieved collision avoidance but it was felt that he would have been better served by not passing almost directly beneath the Lynx.

It was apparent from the radar recording that the 2 ac were separated by some 600ft at the CPA. Nevertheless, the Lynx pilot was sufficiently concerned to file an Airprox. The Board opined that the Lynx pilot's concern was due to his late sighting and consequent surprise at the proximity of the Beech 76 and that the Beech 76 instructor had taken effective and timely action to avoid a collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Late sighting by the Lynx pilot.

Degree of Risk: C.

AIRPROX REPORT No 2013048

Date/Time: 4 Jun 2013 2310Z (Night)

Position: 5111N 00244W
(11.5nm NNW Yeovilton)

Airspace: NRR 2 (Class: G)

Reporting Ac **Reported Ac**

Type: Lynx(1) Lynx(2)

Operator: RN RN

Alt/FL: 200ft agl 200ft agl

Weather: VMC CLOC VMC CLOC

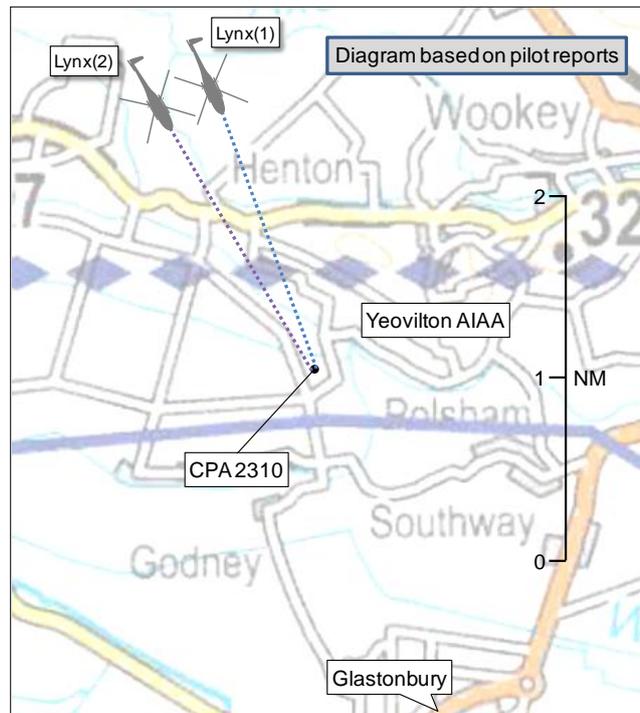
Visibility: 10km 25km

Reported Separation:

20ft V/50ft H NK

Recorded Separation:

NK



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE LYNX(1) PILOT reports conducting a night, low-level NVG navigation exercise at 200ft agl. The grey camouflaged ac had steady bright navigation lights and flashing red anti-collision beacon selected on, as was the SSR transponder with Modes A, C and S. The ac was not fitted with ACAS. The crew were operating under VFR, in VMC, with a BS from Yeovilton APP. The handling pilot was seated in the RH seat, with an instructor occupying the LH seat. Whilst heading about 150°, at 80kt, and prior to crossing a 200ft power line, the instructor observed another Lynx ac, subsequently identified as an ac from the same squadron, vertically displaced above by 20ft and offset to the R, approximately 50ft away on a marginally converging heading. The other ac appeared to be at a slightly faster speed. On sighting, the instructor intervened by taking control of the ac and rapidly altered course to the L, maintaining level flight. The RH seat pilot then reaffirmed his intention to cross the pylon and the instructor initiated a climb to clear it. The instructor contacted the other Lynx pilot on a squadron discrete frequency and ascertained that he had not seen the Lynx to his LH side.

The instructor highlighted that his field of view was restricted due to the use of NVG, and that the ac were on converging headings, approaching from either side of a ridge line; he stated that during the squadron's night-flying brief the Lynx sorties had planned to deconflict by time through a known point of route crossing. During ac start-up Lynx(1) was delayed by 15min due to an ac unserviceability. Once airborne, about 5min prior to the incident, the Lynx(2) pilot had visually identified Lynx(1) before their routes separated, and had estimated that a time deconfliction still existed.

He assessed the risk of collision as 'High'.

THE LYNX(2) PILOT reports flying the latter stages of a NVG sortie. The grey camouflaged ac had navigation and anti-collision lights selected on, as was the SSR transponder with Modes A and C. The ac was not fitted with ACAS. The crew were operating under VFR, in VMC, with a BS from Yeovilton APP. He had completed 1hr of NVG exercises at RNAS Merryfield and was near the end of a 20min low level NVG navigation exercise to the N of RNAS Yeovilton, heading about 160° at 90kt, when he was contacted by a fellow squadron pilot, in Lynx(1), on the squadron discreet frequency. He was told that they had flown within 50ft of each other on a slowly converging heading whilst lining up to cross a 200ft electricity pylon approximately 3nm N of Glastonbury. After further lookout, neither Lynx(2) crew member was able to acquire the other ac but they ascertained that the Lynx(1) pilot was visual with them and that he was astern, remaining clear.

He stated that, as the authoriser of both sorties, he was aware of the route Lynx(1) would be flying, and had discussed planned deconfliction at the night flying brief with the Lynx(1) pilot, who was due to launch 15min before him. Lynx(1) experienced a technical problem during start-up, resulting in a request for a delay to T/O time over the squadron discreet frequency, which he granted, noting that Lynx(1) would now be in the same vicinity as him by the end of the sortie, and that he needed to 'keep a sharp lookout for them'. He became visual with Lynx(1) about 10min before the incident, passing him to the N of their route, which was a longer route than his. He noted again that Lynx(1) would not be far behind him as their tracks merged, and again spoke [in cockpit] about keeping a 'close lookout for them'. He did not see them for the remainder of the sortie.

THE YEOVILTON APP CONTROLLER reports that Lynx(1) departed Merryfield to the N to conduct a low level navigation sortie under a BS. Lynx(2) departed Merryfield approximately 20min later on a low-level navigation sortie, also under a BS. Shortly after departing Merryfield each ac disappeared from radar coverage and reappeared on an intermittent basis. On completion of their sorties, both ac returned to Yeovilton for visual recoveries. Neither pilot reported an incident on frequency at any time during the sortie. At the reported time of the incident, an ATS was being provided on 2 separate frequencies. He noted that there is no Supervisor present during night flying.

THE RN INVESTIGATION summary reports that this was a very serious incident that could potentially have ended with fatalities. The overriding contributory factor was deemed to be the complexity of low-level NVG operations and the associated restricted field of view. More could be done to mitigate risk of collision in this environment and ensure operation to Tolerable and ALARP principles. The following points were worthy of note:

Deconfliction: The implementation of CADS at Yeovilton has already gone some way to addressing the issue of deconfliction in time and space although, in this specific case, it would have made no difference to the outcome of the incident. Both ac Commanders believed that they had deconflicted sufficiently in the planning stages, and one had seen the other within 10 minutes of the incident; no CADS information could have provided this real-time update.

Although an associated Occurrence Review Group (ORG) agreed in spirit with the majority of the RN investigation recommendations, it was felt that, even had they been implemented, some would not have reduced the likelihood of this incident occurring. For example, even if Merryfield had been open 24 hours, had the landing lamp been on, had a brighter anti-collision light been fitted (notwithstanding additional anti-collision lights) nothing changes the fact that both Aircraft Commanders remained content with their deconfliction arrangements despite the subsequent delay in Lynx(1)'s departure. In a dynamic and ever-changing environment, deconfliction in the planning stages, whilst essential (and improved through use of CADS), will never be 100% effective when impacted by external factors, and will never replace the necessity for a thorough lookout. Better and more regular use of low-level common frequency is one method of improving situational awareness and assisting in directing lookout towards potential areas of confliction.

Equipment Improvements: The ORG agreed that the most effective way to improve lookout in the low-level NVG environment is to make system improvements. Wider field of view NVGs would naturally contribute to improved aircrew peripheral vision. Whilst this requires an equipment upgrade, such systems are available today and arguably would have enabled the crews, in this case, to have seen each other at a much earlier stage.

Collision Avoidance or Traffic Warning Systems are widely used on both civilian and military ac types, and are considered an effective tool in directing aircrew lookout to sources of potential danger. Whilst they may have limitations in the low level environment, it is likely that this Airprox would not have occurred had such a system been installed in the Lynx Mk8.

RN Command commented that this incident served as a salutary reminder of the need to retain an effective de-confliction plan and maintain a good lookout for other ac, especially at night and whilst using NVD. Both crews' lookout scans narrowed as they focussed on crossing the wires at approximately the same point. One of the QHIs sighted the other ac, albeit extremely late and only

just in enough time to manoeuvre away and avoid collision, the crew of which at no time saw how close they had come. Whilst ATC have reported that they were providing ATS on 2 separate frequencies, both of the Lynx were in receipt of a BS on the same frequency from the same controller. At no point was an Airprox declared on this frequency and reporting action only commenced the next day. Whilst the ac were painting intermittently on radar, they were not both being tracked at the same time and the controller had no indication of their relative proximity.

Collision was avoided by a very late sighting by one of the aircrew and his quick reactions to take control from the PF. There were no barriers left after this. In this instance it is probable that an ACAS would have aided their situational awareness and assisted their lookout.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, 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 members were initially briefed by the RN Ops Member on the background and detail surrounding the incident. It was apparent that both crews were aware of potential confliction before T/O, and had incorporated a deconfliction plan into their sorties based on time separation. It was also apparent that the delayed T/O of Lynx(1) had negated this plan and the Board therefore firstly considered the sortie planning aspects.

Both aircraft were being operated from the same squadron facilities, with the crews able to communicate a mutual deconfliction plan to each other for their respective sorties. Based on achieving set T/O times, this deconfliction plan crucially did not appear to incorporate any other contingent mitigation such as ATS, timed waypoint or RT coordination in the event of a subsequent deviation from plan. The Board recognised that the crews were conducting operational training using devices which only gave restricted peripheral vision. Notwithstanding the fact that anti-collision and navigation lights had been left on and should therefore be highly visible to night-vision devices or the naked eye if within line-of-sight, the Board considered that relying on such visual methods alone in areas of hilly or ridge terrain was not sufficiently effective to address multiple contingencies. In this case the Board felt that the crews placed a degree of over-reliance on deconfliction being achieved by separate T/O times and visual lookout, whereas the actual hazard of the common pylon crossing point was not explicitly deconflicted. The only remaining barrier of 'see and avoid' was compromised by the limited field of view of NVG, the crews' necessary prioritisation of lookout towards the pylons for their imminent crossing, and the fact that they had approached each other from opposite sides of a ridge line and therefore could not have achieved an early visual sighting.

The Board agreed that the cause of the Airprox was a late sighting, and non-sighting, by the Lynx pilots; lack of an effective deconfliction plan was a contributory factor. Members also opined that in this case the safety margins were reduced so far below normal that the situation had only just stopped short of actual collision. The Board agreed that the safety barriers pertinent to this Airprox were 'aircrew rules and procedures', 'visual sighting', 'aircrew action' and 'SA gained from RT'. It was concluded that the barriers were minimally effective, so the Airprox was allocated a score of 20 on the Event Risk Classification Matrix.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A late sighting and non-sighting by the Lynx pilots.

Contributory Factor(s): Ineffective deconfliction plan.

Degree of Risk: A.

ERC Score: 20.

AIRPROX REPORT No 2012111

Date/Time: 17 Jul 2012 2310Z (Night)

Position: 5103N 00227W
(8nm E Yeovilton)

Reporter: Yeovilton TC

Airspace: Yeovilton MATZ (Class: G)

1st Ac 2nd Ac

Type: Lynx C130 Hercules

Operator: RN HQ Air (Ops)

Alt/FL: 2000ft >250ft
QFE (1018hPa) RPS (1018hPa)

Weather: IMC (Night) VMC CLBL

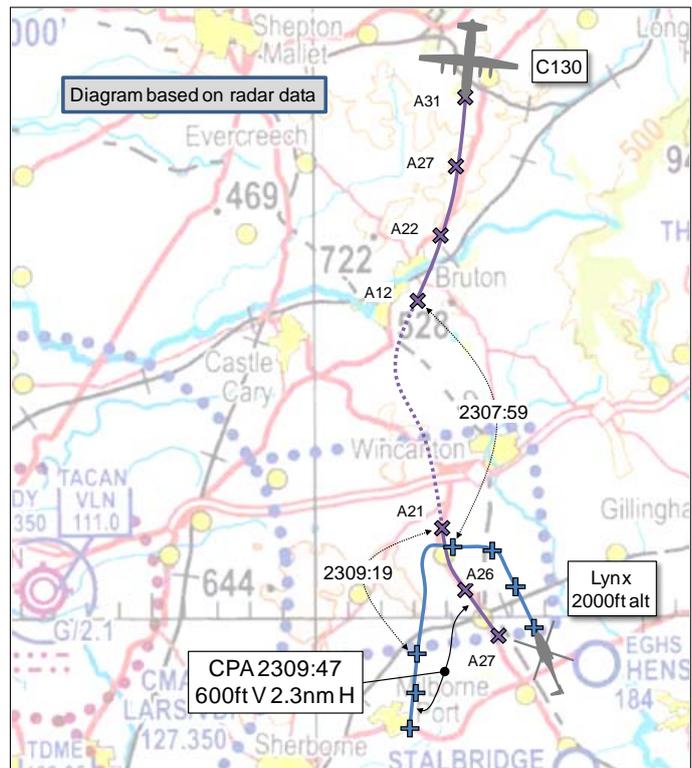
Visibility: 0km 10km

Reported Separation:

NK >1nm

Recorded Separation:

600ft V/2.3nm H



CONTROLLER REPORTED

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE RNAS YEOVILTON APP CONTROLLER reports that he was the night supervisor, located in the Radar Room. A Lynx helicopter was conducting a PAR to RWY27 under IFR in IMC, with a DS from Yeovilton TDN [282.050MHz]. The weather was reported as 9000m in mist with cloud BKN at 2000ft and wind 260° at 6kts. When the Lynx was at 9nm [from touchdown] he observed a 'fairly fast moving contact', squawking 7001 and 'indicating 3000ft'. The contact was observed to head S from a position 14.5nm NE of Yeovilton, straight towards the Lynx. He attempted to call the unknown ac on both 234.300MHz (Yeovil APP) and 127.350MHz (Yeovil LARS) but received no reply. When the unknown ac was about 10nm N of the Lynx he issued avoiding action, via the PAR controller, for the Lynx pilot to 'maintain 2000ft [height, QFE 1018hPa] and turn L immediately to heading 120°'. The unknown ac continued to head straight towards the 8nm point on the PAR approach track, whilst descending, and the avoiding action was reissued as an immediate R turn to heading 190° along with instructions to re-contact Yeovil APP. Due to the unknown ac's greater speed, the two contacts converged with less than 0.5nm separation, he thought, 'within the same level as observed on Mode C'. Because of the rapidly unfolding situation, and with only two controllers on duty (APP and PAR controllers), both of whom were involved with the avoiding action, there was no opportunity to attempt to raise the unknown ac on UHF Guard frequency. He 'monitored the ac on radar' and, at 0022L, the Lynx pilot reported that the unknown ac in question appeared to be large and fast moving and that he believed it was a C130.

He assessed the risk as 'Very High'.

[UKAB Note(1): The weather for RNAS Yeovilton was reported as follows:

METAR EGDY 172318Z 19006KT 9000 BR FEW020 BKN045 14/14 Q1021 BLU BECMG SCT020 WHT]

THE LYNX PILOT reports that he was established on the PAR to RWY27. The SSR transponder was selected on with Modes A and C and a discrete squawk. The ac was not fitted with Mode S or an ACAS. He was operating in IMC, under IFR, with a DS from Yeovilton TDN. As he was

approaching the initial descent point at altitude 2000ft [QNH 1018hPa], TDN issued avoiding action turns, initially on to heading 120° and then on to heading 190°, against unknown traffic N of him, tracking S at a similar height. The traffic was tracking through the Yeovilton MATZ stub but was not in RT contact with Yeovilton. He was transferred back to Yeovilton APP, on a DS, as the TDN controller lost radar contact but APP was unable to maintain 3nm separation. Shortly thereafter, he was advised that the conflicting traffic had cleared to the SE.

He assessed the severity of the occurrence as 'High'.

[UKAB Note(2): In a subsequent conversation with the Lynx pilot he stated that he was instructing a student crew, whilst seated in the rear of the ac. Following the TI calls he donned his NVG in an attempt to gain visual contact with the conflicting traffic but was unable to do so as he was in IMC.]

THE LYNX SQUADRON DUTY AUTHORISER reports he had noted that 2 x C130 were booked in to Night Rotary Region (NRR) 2 but with no route details. A NOTAM detailed entry timings for the 2 x C130 but they took the form of a block booking of 7 NRRs, all with the same entry time. He checked the Centralised Aviation Data Service (CADS) and noted that the 2 x C130 were shown as routing from their home base to the Salisbury Plain Training Area (SPTA) but with no further route detail. The C130 Sqn was contacted but he was informed that the crews were not available as they were not yet on duty for their planned night flying. Additionally, he was informed that the C130 Sqn block-booked areas, with the final decision on routing being made on the evening of the sortie.

THE C130 PILOT reports that he spoke with the Lynx crew by phone after the incident. It was agreed that safety of flight had not been compromised and therefore he did not feel obliged to submit an Airprox. He was informed some weeks later, after his return from Operations, that a controller Airprox had been filed and he then submitted the information he could recall through the Station FSO.

THE BRIZE NORTON STATION FSO reports the following, made after consultation with the Hercules crew and agreed 'by a representative' of the crew as an accurate reflection of events.

The [C130] crew were conducting low-level NVG training on a sortie that included operations over a number of 'dummy DZs', operating autonomously under VFR and IFR, using NVG, with the ac navigation and 'Grime' lights selected on. The SSR transponder was selected on with Modes A, C and S; the ac was fitted with TCAS and the RPS was set [1018hPa]. An approach reference for one of the DZs was located approximately 6.5nm E of Yeovilton, underneath the E [MATZ stub], with the DZ itself located approximately 1.5km W of the village of Stalbridge [10nm ESE of Yeovilton]. The crew planned to fly to the DZ at low-level [250ft MSD], transiting underneath the E'ly Yeovilton MATZ stub as they did so. They approached from the NE, through intermittently marginal Wx conditions. The Lynx helicopter was seen in the crew's L 11 o'clock at a range estimated at 4-5nm, they thought; however, at a position under the Yeovilton E'ly MATZ stub, the Wx deteriorated below minima and the ac captain executed a low-level Wx abort, iaw SOPs, which took them through the MATZ stub. The crew maintained visual contact with the Lynx helicopter during the Wx abort, which moved from the L 11 o'clock to the L 10 o'clock position and appeared to turn away from their track, they thought. Although the crew noted the proximity of the Yeovilton MATZ, they believed that the A/D was closed and that the MATZ was therefore inactive. Hence they did not attempt to establish RT contact with any Yeovilton agency. The crew also reported that TCAS was fitted but was 'working only intermittently' during the sortie and was not operating at the time of the incident. The crew did not perceive this event as an Airprox.

The Brize Norton Station FSO commented that this event raised a number of concerns and that investigation was ongoing. It was unclear why the crew thought the airfield would be inactive; the BINA entry is unambiguous on this point. The intermittent nature of the TCAS serviceability was also under investigation. The crew's perception of severity had been changed from the original submission of 'High' to one of 'Low', in order to reflect that the crew did not at any stage perceive this event as an Airprox.

The Brize Norton Station FSO further commented on why the C130 crew believed Yeovilton A/D to be shut. Yeovilton routinely closed at the end of the normal working day and reopened at a later time to cater for night flying and it would appear that the co-pilot phoned the station during this hiatus. It was further established that Yeovilton regularly operates night flying on 3 nights per week and, while they get the details of other flying activity that may affect them they do not, as a matter of course, promulgate their own flying activity. They would, however, expect ac transiting in their vicinity to contact them.

THE RNAS YEOVILTON DSATCO reports that, based on the findings of the RAF Brize Norton investigation there was no further action required to resolve this matter. Essentially, the C130 crew assumed that Yeovilton was closed and flew through the MATZ without clearance. Having seen the Lynx, the C130 crew remained visual at all times and were content that there was no risk of collision. However, they subsequently did not contact Yeovilton ATC, which was a cause for concern.

HQ NAVY COMMAND comments that it was disappointing to see that an assumption was made that Yeovilton was closed and therefore no attempt was made to call the unit when flying in such close proximity. This was fundamentally flawed and resulted in an infringement of the MATZ whilst station-based traffic was conducting an IFR recovery in IMC under a DS. Yeovilton routinely conduct Night Flying every Monday, Tuesday and Wednesday with Thursday used as a reserve night. This Airprox occurred on a Tuesday and the default assumption should have been that the airfield would be open. C130s have been operating in this area for many years and in my own experience of several tours at Yeovilton they have normally called on the ICF to alert the unit of their position. Had that been done on this occasion, the Airprox is unlikely to have occurred. It is understood that the C130 procedures have been reviewed and the correct NOTAM and CADS action has now been resumed. Several barriers to safety failed on this occasion, including an intermittent unserviceability to TCAS; notwithstanding the recorded separation achieved, this incident has served to highlight these failings.

HQ AIR (OPS) commented that they echo the concerns of the RAF Brize Norton SFSO and hoped that the Occurrence Safety Investigation (OSI) made recommendations that would prevent a repeat of this situation. In addition, it was disappointing to note that, although the Lynx Sqn Authoriser tried to use CADS to highlight any possible conflicts, the lack of detail on the Hercules task meant this barrier to MAC was not effective in this case.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included a report from the pilot of one ac and an 'agreed narrative' from the pilot of the other, radar video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The Board first considered the degree of pre-flight coordination between RAF Brize Norton and RNAS Yeovilton. It was established that previous coordination had been achieved by a NOTAM, in this case the C130 Sqn, detailing the planned route Way Points (WPs) with location and timing. However, the constraints of the NOTAM required the C130 crew to fly the route to within ± 5 nm of the planned track and to within ± 15 mins of each planned WP arrival time. It was felt that this imposed an onerous degree of restraint to the requirement to achieve effective operational training; indeed a degree of restraint that prevented effective operational training in many instances. Additionally, other airspace users were often confronted with a NOTAM consisting of dozens of WPs, along with their associated data, against which it was often impractical to achieve deconfliction. Consequently, it was decided to undertake a one year trial whereby C130 crews would submit an area NOTAM, with entry and exit times to low flying areas, rather than a specific route. The Board agreed that whilst this undoubtedly increased flexibility for the C130 crews, to a large degree it removed any effective deconfliction from within the areas. The Military Low Flying Advisor commented that deconfliction had now reverted to the previous NOTAM system pending a review of procedure. It was also noted that at least 2 opportunities to achieve additional deconfliction had been missed and that personnel from both RAF Brize Norton and RNAS Yeovilton had attempted to coordinate with the other, to no

avail. The Board expressed disappointment that neither organisation had sufficiently robust processes in place to capture and act on these attempts at coordination, especially in light of routine night flying at RNAS Yeovilton and the regular use of adjoining low flying area by C130 crews.

The Board then considered deconfliction action carried out on the night. It was agreed that neither crew was best served by the failure to achieve meaningful deconfliction before flight but the Board felt that on this occasion the onus of responsibility fell to the C130 crew. Some Members opined that routeing under the E stub of the RNAS Yeovilton MATZ amounted to poor planning, albeit understandable given the C130 crew's mistaken belief that Yeovilton was shut, and that they would have been better advised to attempt RT contact with Yeovilton as they neared the MATZ in marginal Wx conditions. In the event it was the C130 crew's climb into the Yeovilton MATZ stub without clearance that caused the Airprox.

The Board was unable to reconcile a disparate element of the reports, namely that the C130 crew maintained visual contact with the Lynx having aborted from LL due to the Wx but that the Lynx pilot was unable to establish visual contact with the C130 using his NVG. It was felt that this may have been a combination of the limited field of view of NVG, the dynamic environment of the helicopter changing heading whilst the Lynx pilot was attempting to scan along a line of bearing, given by Yeovilton APP TI, and the variable Wx conditions.

Additionally, The Board agreed that the information required to conduct an accurate analysis of this incident had not been satisfactorily captured as evidenced by the lack of an Airprox report from the C130 pilot. The Board Secretariat noted that a total of 8 Defence Aviation Safety Occurrence Reports (DASOR) were associated with this incident. The MAA Advisor stated that whilst the elements concerned had all provided meaningful and valuable data, some had not carried out Airprox reporting in accordance with the relevant MAA regulations and that this error would be followed up.

Finally, the Board considered the disparate risk assessments from the Yeovilton APP Controller and the C130 crew. A Military ATC Member stated that this was probably due to an incorrect assessment of the miss-distance by the APP Controller as he looked across at the PAR scope and saw the contacts converging but without fully appreciating the non-linear scale of the display. The Board agreed that the available radar information strongly indicated a CPA of the order of 2.3nm and that consequently safety margins were not 'much reduced below the normal'.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The C130 crew penetrated the Yeovilton MATZ without clearance.

Degree of Risk: C.