

AIRPROX REPORT No 2013014

Date/Time: 14 Mar 2013 1059Z

Position: 5114N 00048W (2.5nm SSW
Farnborough - elev 238ft)

Airspace: ATZ/LFIR (Class: G)

Reporting Ac Reported Ac

Type: PA28 C182

Operator: Civ Trg Civ Trg

Alt/FL: 2000ft 1600ft
QNH (1017hPa) QFE (1002hPa)

Weather: VMC CLNC VMC CLBC

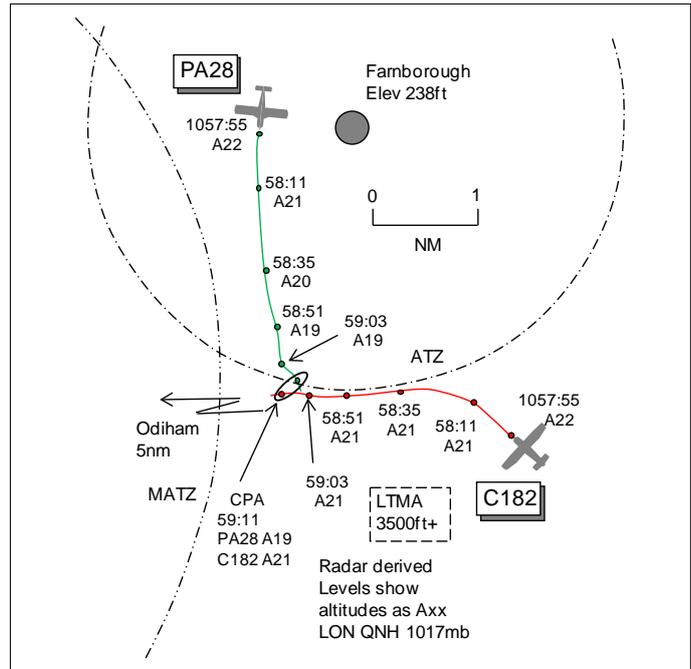
Visibility: 30km >20km

Reported Separation:

Nil V/<0.5nm H 200ft V/1nm H

Recorded Separation:

200ft V/0.2nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE PA28 PILOT reports flying a dual CPL training sortie from Bournemouth, with the student (HP) in the LH seat, VFR and in receipt of a BS from Farnborough LARS W on 125.25MHz, squawking 0430 with Mode C. The visibility was 30km in good VMC and the ac was coloured blue/white with anti-collision and nav lights switched on. They had just departed the Blackbushe cct and flown through the Farnborough ATZ, passing W of the O/H, as requested by ATC. Heading 180° at 100kt level at 2000ft QNH 1017hPa the student was finalising diversion planning as they overflew Farnham [4nm S Farnborough]. He, the instructor, saw another ac, a high-wing single-engine type, about 0.5nm away and called out "traffic 11 o'clock same level L to R – turn L now". The student turned immediately and a few seconds later they passed behind a Cessna by <0.5nm at approximately the same level. The Cessna did not appear to change heading or height at any time. He assessed the risk as high.

THE PA28 COMPANY'S CFI comments that the reporting pilot is a very experienced commercial instructor. In this very busy area of airspace, despite a very good service offered by Farnborough Radar, all of their instructors and students are briefed to keep a very good lookout whilst operating in this area.

THE C182 PILOT reports acting as Commander/Examiner with another pilot operating as P1S on an IMC rating revalidation flight and in receipt of a TS from Odiham Approach on 131.3MHz, squawking an assigned code with Mode C. The visibility was >20km flying 2000ft below cloud in VMC and the ac was coloured white/black/red with anti-collision beacon and strobe lights switched on. Odiham Approach was vectoring them for a LH radar cct for an ILS/DME approach to RW27. Whilst on base leg, TI was given on traffic to the N but nothing was seen. Further TI was passed when they were on a closing heading and still nothing was seen. When established on the LOC about 6DME heading 275° at 110kt and 1600ft QFE 1002hPa further TI was passed on traffic to the N of them crossing R to L at a similar level. He briefed the HP to be prepared for him to take control of the ac for any avoiding action. Whilst he scanned the area to the N he saw a low-wing, single-engine ac approximately 1nm away and 200ft below making a L turn to pass behind their ac. He informed Odiham Approach that they were visual with the other ac and that it was turning to avoid them. He was unaware which ATSU the conflicting ac was working or what coordination had taken place. He assessed the risk as low.

THE FARNBOROUGH LARS W CONTROLLER reports that during a busy period he was asked to call Odiham. Odiham asked about his 0430 squawk, the PA28, tracking S and he informed them that it was at 2000ft. Odiham mentioned that they had a 3650 squawk on an ILS. The PA28 flight was under a BS routing to the W of Farnborough outside the Odiham MATZ to avoid Farnborough ILS traffic. The Odiham controller did not ask for any coordination regarding the PA28.

THE ODIHAM PAR CONTROLLER reports a U/T Approach controller was being screened on RAD/DIR while a C182 was conducting ILS approaches to the duty RW under a TS in BLUE Wx conditions. The C182 was on base leg heading 360° when an ac tracking S through the Farnborough ATZ was observed and was called by the RAD U/T controller. The C182 was established on the LOC at 7nm with the conflicting traffic still tracking S at a similar level. This traffic was called 3 times by the RAD U/T controller at various ranges. He was listening on the RAD frequency awaiting a handover for an ILS monitor of the C182. The C182 pilot called "visual" with the other ac at approximately 0.5nm and said he would turn to avoid but then didn't as the other ac started to turn away first. Both ac were seen on the PAR display as being <0.25nm apart at a similar level.

ATSI reports that the Airprox occurred at 1059:10 UTC, 2.5nm SSW of Farnborough on the boundary of the Farnborough ATZ, between a C182 and a PA28. The Farnborough ATZ comprises a circle radius 2.5nm, centred on the midpoint of RW06/24 and extending to a height of 2000ft above aerodrome level (elevation 238ft); except that part of the circle situated N of the M3 Motorway.

The C182 was operating VFR on a local flight to and from Lasham and was conducting an ILS approach to Odiham RW27 as part of an IMC re-validation with an examiner. The C182 was in receipt of a TS from Odiham Approach on frequency 131.3MHz.

The PA28 was operating VFR on a CPL training flight and was departing the visual cct at Blackbushe, returning to Bournemouth via Midhurst. The PA28 was in receipt of a BS from Farnborough LARS(W) on frequency 125.25MHz. The UK AIP, page AD 2.EGLF-6 (13 Dec 2012), states:

'Pilots wishing permission to transit the Farnborough ATZ should in the first instance attempt to obtain that permission from Farnborough ATC on 125.250MHz during the notified operating hours of that frequency.'

At the time of the Airprox a Farnborough inbound was being provided with a Surveillance Radar Approach (SRA) to RW24 and in addition the Odiham RTC RW27 had been notified as being active. A Memorandum of Understanding (MoU) exists between Odiham and Farnborough. Paragraph 4.8, states:

'Odiham Radar Training Circuit.

Odiham are to inform Farnborough when Odiham RTC is active and when activity ceases. In order to integrate with Farnborough arrivals and departures, Odiham Director's traffic in the Runway 27 radar training circuit will routinely operate at or below 1600ft QFE (2100ft Farnborough QNH) when east of a line North/South through Odiham.'

CAA ATSI had access to the RT recording of Farnborough LARS(W), the area radar recording, written reports from the 2 pilots, the Farnborough LARS(W) controller report together with the Farnborough unit report. The workload and traffic levels of the LARS(W) controller were assessed by CAA ATSI as medium-heavy.

(Note: The CAA transcription unit reported that, due to a line fault believed to be at the Odiham end, the quality of incoming calls from Odiham was poor. An earlier call was reported as unreadable. Farnborough had earlier reported the fault to Odiham.)

The Farnborough METAR is provided:

EGLF 141050Z 36007KT 9999 SCT020 04/M02 Q1017=

Odiham had previously notified Farnborough Approach that the Odiham RTC was active with an ac squawking 3650. This had been notified to the LARS(W) controller.

The PA28 flight was departing the visual cct at Blackbushe and contacted Farnborough LARS(W) at 1055:32 reporting, "(PA28 c/s) is a Piper Warrior from er Bournemouth to Bournemouth currently erm departing the circuit at Blackbushe heading towards Midhurst and we're on er altitude two thousand feet." The controller replied, "(PA28 c/s) Q N H one zero one seven er Basic Service squawk zero four three zero." This was acknowledged correctly and the controller responded, "(PA28 c/s) transit the Farnborough A T Z is approved to the west of the threshold please there's an S R A at six miles for runway two four". The PA28 pilot acknowledged, "er transit to the west of the er overhead and er copied traffic (PA28 c/s)".

The PA28 turned to enter the Farnborough ATZ at an altitude of 2000ft and changed squawk at 1056:54 as it tracked S'yly 2nm NNW of Farnborough. The C182 was 5nm SSE of Farnborough squawking 3650 tracking N at an altitude of 2100ft and on L base for the Odiham ILS RW27. For illustrative purposes the ATZ for each aerodrome has been overlaid below (figure 1).

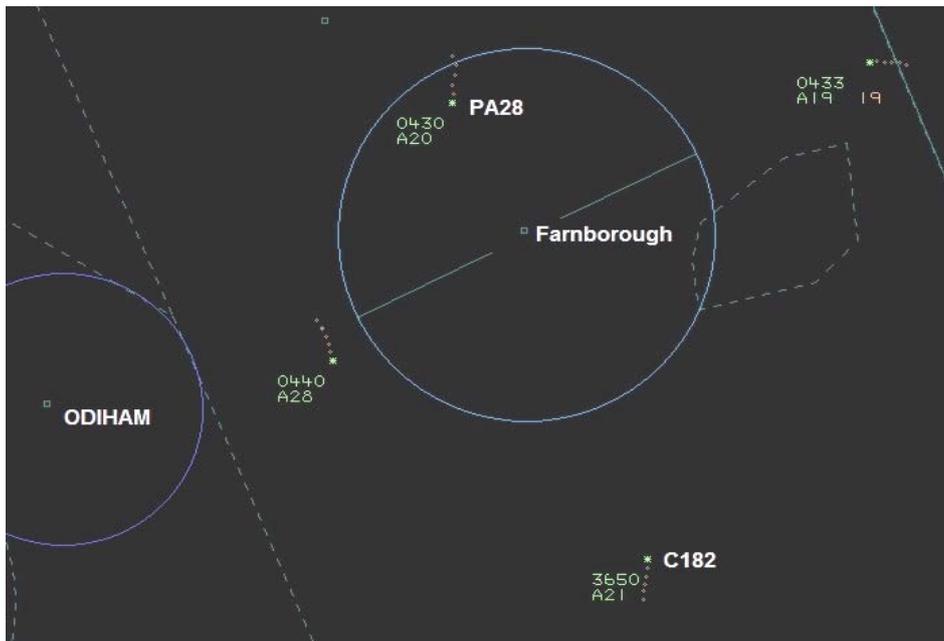


Figure 1 – Area MRT radar at 1056:54

The Farnborough controller's workload increased. A call was received (1057:32) from Fair Oaks regarding a VFR departure and during the conversation another flight contacted LARS(W). At the same time (1057:40) Farnborough Approach answered a call from Odiham Approach requesting TI on the 0430 squawk. The Farnborough Approach controller was conducting an SRA and advised Odiham that LARS(W) would call them back.

At 1058:04, the C182 (2200ft) had turned onto a heading to intercept the Odiham RW27 LOC and the PA28 was passing 0.9nm SW of Farnborough (2200ft). The distance between the 2 ac was 3.4nm.

At 1058:12, LARS(W) contacted Odiham and asked, "I hear you want to know about the zero four three zero" and Odiham replied, "Yes, he's continuing on that track is he"; LARS(W) responded, "Yeah, he is, he's a Warrior". Odiham acknowledged, "He's a Warrior", and LARS(W) responded "OK". Odiham stated, "Ours is just established on the ILS." LARS(W) again responded, "OK." Odiham ended the call at 1058:34 reporting, "Odiham Approach." The LARS(W) controller was then busy with other traffic and the RT was continuous until after the Airprox.

The 2 ac continued to converge and at 1058:48, the range between them was 1.3nm with a vertical separation of 100ft.

At 1059:10 the distance between the ac had reduced to 0.2nm (CPA). Radar showed that the PA28 had turned L followed by a R turn to pass 0.2nm behind the C182 at 1059:14 (figure 2).

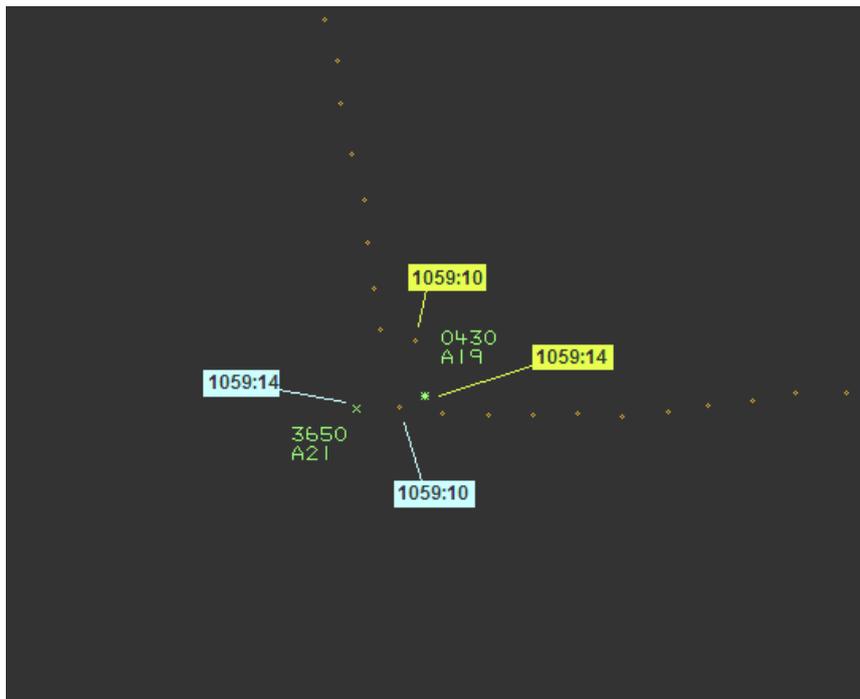


Figure 2 - Area MRT radar recording at 1059:14

At 1110:52, the PA28 pilot reported changing to Solent on 120.22MHz and LARS(W) instructed the PA28 flight to squawk 7000.

Later the Farnborough ATSU indicated that the LARS(W) controller would have notified or coordinated with Odiham had the PA28 routed through the Odiham MATZ. The Farnborough Manual of Air Traffic Services (MATS) Part 2, APR-33, paragraph 5.2.1 (3), states:

- ‘Coordination for aircraft wishing to transit the Odiham MATZ is required:
- If the aircraft is non-transponder equipped and identified to Farnborough.
 - Whenever the Odiham instrument pattern is active.
 - When other Odiham traffic indicates a potential confliction.
 - For any aircraft wishing to penetrate the Odiham ATZ.

Farnborough ATSU reported that the LARS(W) frequency was extremely busy and there was IFR traffic inbound to Farnborough. It was therefore likely that the LARS(W) controller had prioritised protecting the Farnborough traffic and was coordinating with Approach at the time. The LARS(W) controller had assessed the risk to the PA28 under a BS as a lower priority and with more time, generic advice or a warning may have been passed.

When the range between the 2 ac was 3nm, the Odiham controller asked LARS(W) if the PA28 was continuing on present heading. This was confirmed by the LARS(W) controller but no coordination was requested by Odiham. The C182 was being vectored by Odiham on a TS and was passed 3 warnings by the Odiham controller. The Farnborough/Odiham MoU, paragraph 3.4 states:

‘...Notwithstanding the definitions given within these documents and the limitation on the need for tactical coordination given within this LoA, timely, effective coordination will be the basis for the safe operation of ATC.’

MATS Pt1, Section 1, Chapter 10, Page 3, Paragraph 5.2, states:

'Outside controlled airspace, controllers are individually responsible for deciding whether they need tactical coordination, and to initiate such requests as appropriate. Therefore, unless specified in MATS Part 2, controllers should not rely on other controllers to initiate tactical coordination.'

The LARS(W) controller was prioritising a busy workload and there was no requirement to monitor the PA28 on a BS. The LARS(W) controller had advised the PA28 to route W of Farnborough due to the inbound SRA traffic. The PA28 was in transit through the Farnborough ATZ and may not have been aware that the Odiham RTC was active. Nevertheless the PA28 pilot remained responsible for his own separation using 'see and avoid'. CAP 774, Chapter 2, Page 1, Paragraph 1 states:

'A Basic Service is an ATS provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights. This may include weather information, changes of serviceability of facilities, conditions at aerodromes, general airspace activity information, and any other information likely to affect safety. The avoidance of other traffic is solely the pilot's responsibility.

Basic Service relies on the pilot avoiding other traffic, unaided by controllers/FISOs. It is essential that a pilot receiving this service remains alert to the fact that, unlike a Traffic Service and a Deconfliction Service, the provider of a Basic Service is not required to monitor the flight.'

Paragraph 5:

'Pilots should not expect any form of traffic information from a controller/FISO, as there is no such obligation placed on the controller/FISO under a Basic Service outside an Aerodrome Traffic Zone (ATZ), and the pilot remains responsible for collision avoidance at all times. However, on initial contact the controller/FISO may provide traffic information in general terms to assist with the pilot's situational awareness. This will not normally be updated by the controller/FISO unless the situation has changed markedly, or the pilot requests an update. A controller with access to surveillance-derived information shall avoid the routine provision of traffic information on specific aircraft, and a pilot who considers that he requires such a regular flow of specific traffic information shall request a Traffic Service. However, if a controller/FISO considers that a definite risk of collision exists, a warning may be issued to the pilot.'

The PA28 and C182 flew into close proximity whilst operating in Class G airspace, where the pilot ultimately remains responsible for their own traffic avoidance. The C182, in receipt of a TS was passed 3 warnings by the Odiham controller. The LARS(W) controller's workload was high and there was no requirement to monitor, or pass a warning to the PA28 on a BS. The PA28 pilot sighted the C182 and resolved the conflict by turning to pass behind.

BM SPA reports that this Airprox occurred 5-6nm E of Odiham at 1059:10 between a C182 and a PA28. The C182 was operating VFR, conducting radar vectored ILS approaches to Odiham in receipt of a TS from Odiham RAD. The PA28 was operating VFR on a CPL training sortie and was in receipt of a BS from Farnborough LARS W.

All heights/altitudes quoted are based upon SSR Mode C from the radar replay unless otherwise stated.

The Airprox was reported by the Odiham Talkdown controller. RAD was operating 'bandboxed' with DIR and manned by a trainee, who was already endorsed in the DIR position, and an instructor. At the time that this report was completed, the unit had not provided an occurrence report from RAD; however, the unit did conduct an investigation that was based on interview with the RAD trainee and instructor. Analysis of the radar replay and tape transcript determined that the C182 was the only ac in receipt of an ATS from RAD throughout the incident sequence; consequently, BM SPA contends that taskload and complexity for RAD were low.

Prior to the start of the incident sequence, at 1036:27, Odiham RAD had contacted Farnborough APP to advise them that the C182 was joining the Radar Training Circuit (RTC) “*squawking 3-6-5-0...for 2 approaches to Runway 2-7*” which was acknowledged by Farnborough. This liaison call was in accordance with the MoU between Farnborough and Odiham which states that ‘Odiham are to inform Farnborough when the Odiham RTC is active’.

The incident sequence commenced at 1057:33 as RAD instructed the C182 flight to “*...turn left heading three one zero degrees, report localiser established*” which was acknowledged by the C182 pilot. At this point, as depicted in Figure 1, the PA28 (SSR 3A 0430) was 5nm NW of the C182 (SSR 3A 3650).

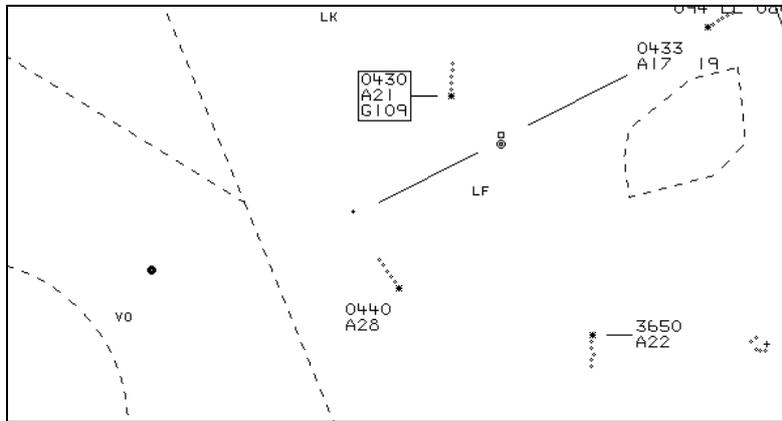


Figure 1: Incident geometry at 1057:33

Immediately after the C182 pilot acknowledged the turn, at 1057:44 Odiham RAD rang the Farnborough LARS landline, which was answered by Farnborough APP. Odiham RAD requested, “*traffic information, overhead Farnborough squawking zero four three zero*” and Farnborough APP advised that they would, “*get LARS to call you.*” The landline call was then terminated.

The Farnborough-Odiham MoU specifies that:

- a. SSR 3A code 0430 is utilised by Farnborough LARS W for transit traffic.
- b. There are 2 direct landlines between Odiham and Farnborough, each with a distinct function; one is to be utilised for ‘coordination and information requests in respect of Farnborough APP traffic’ and the other is to be used for ‘coordination and information requests in respect of Farnborough LARS W traffic’.

Immediately after terminating the landline call to Farnborough APP, at 1057:55 RAD provided TI to the C182 flight on the PA28, advising, “*(C182 c/s) as you turn, traffic North, three miles, tracking south, similar height.*” Figure 2 depicts the incident geometry at this point, placing the PA28 3.8nm NW of the C182. The C182 pilot acknowledged the TI stating that they were “*good V-M-C, looking, nothing seen.*” At 1058:10, RAD provided updated TI on the PA28 to the C182 pilot, advising that the “*...previously reported traffic now North, 2 miles, tracking South, similar height*”, which was acknowledged. The position report element of the TI was again inaccurate, in that the PA28 was 3nm NW of the C182.

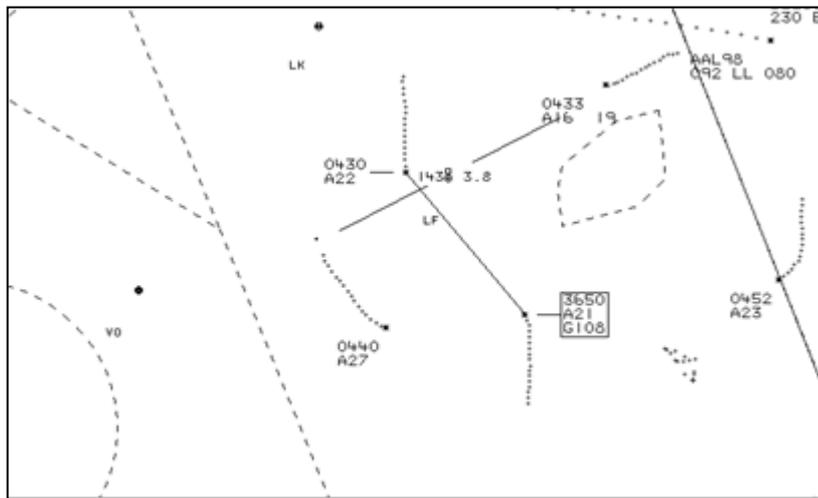


Figure 2: Incident Geometry at 1057:55.

CAP774 Chapter 3 Para 5 Guidance Material states that:

‘Controllers shall aim to pass information on relevant traffic before the conflicting aircraft is within 5NM, in order to give the pilot sufficient time to meet his collision avoidance responsibilities and to allow for an update in traffic information if considered necessary’.

Immediately after receiving the C182 pilot’s acknowledgement of the updated TI, at 1058:20 Odiham RAD answered a landline call from Farnborough LARS W who initiated the liaison by asking RAD, “...you wanted to know about the zero four three zero?”. RAD replied, “Yeah, is he just continuing on that track is he?” LARS W stated, “Yeah he is, he’s a Warrior.” Radar followed-up, “He’s a Warrior?” and LARS W asked “Okay?” Radar then added, “Oh, he’s (the C182) just established on the I-L-S” and LARS W replied, “Okay.” Radar then terminated the landline call at 1058:28.

At 1058:33, RAD provided a further update of the TI to the C182 flight, describing the PA28 as, “...now right one o’clock, one and a half miles, tracking South, similar height”, which was acknowledged; Figure 3 depicts the incident geometry at this point, placing the PA28 2nm NW of the C182.

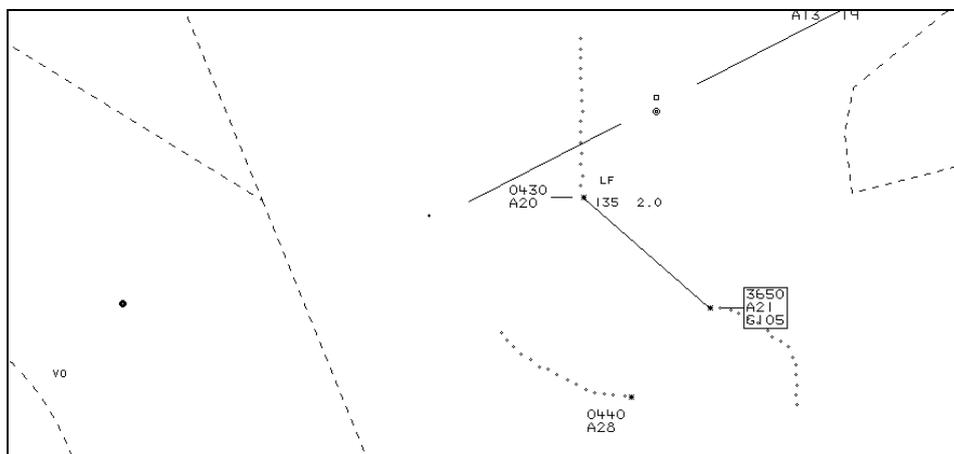


Figure 3: Incident Geometry at 1058:33.

RAD provided a further update to the TI at 1058:50, advising the C182 pilot that the PA28 was, “...now right one o’clock, half a mile (radar replay shows 1.1nm), crossing right to left, similar height.” Immediately after this transmission ended, the C182’s pilot advised Radar at 1059:00, “(C182 c/s) in fact, yep, got him now and err I’ll avoid”, which was acknowledged by RAD. At this point, the PA28 was 0.7nm NW of the C182, tracking SSE’ly, indicating 2000ft; the C182 was tracking W’ly established on the LOC, indicating 2100ft. Figure 4 depicts the incident geometry at this point. At 1059:04, the C182 pilot advised Radar that the PA28 was, “...just passing us to the right, he’s going

behind, well clear.” The radar replay shows that at this point the PA28 was 0.3nm NW of the C182, maintaining a SSE’y track indicating 1900ft. The PA28 can then be observed making a hard turn to port at 1059:10, passing 0.2nm NE of the C182 and indicating 200ft below. This point represents the CPA, 5.6nm E of Odiham.

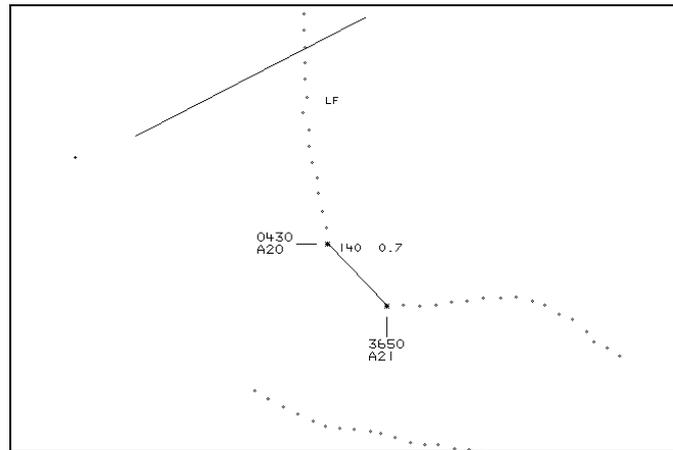


Figure 4: Incident Geometry at 1059:00.

Based upon the PA28 pilot's report, they sighted the C182 immediately prior to initiating the L turn observed on the radar replay at 1059:10, with the radar separation according with the pilot's assessment of less than 0.5nm.

The unit's investigation determined that, given that the C182 was within the RTC and that the trainee RAD already held a DIR endorsement, the instructor was not monitoring the trainee controller throughout the incident sequence.

The statement by the C182 pilot at 1059:04 describing the PA28's avoiding action indicates that there is a timing discrepancy of 4-6sec between the radar replay and the Odiham RT transcript. However, it has not been possible to determine this conclusively and, given the minor nature of the discrepancy, it has no bearing on the determination of cause. Moreover, given the relative speeds involved, it makes little difference to the separation that existed at the point that the C182 pilot visually acquired the PA28.

The incident occurred following RAD's instruction to the C182 pilot to turn onto the LOC at 1057:33 into conflict with the PA28; it was caused by an error in RAD's scan of the surveillance display, which did not detect the PA28 prior to issuing the turn. Whilst RAD then provided TI on a number of occasions during the remainder of the incident sequence, the original error was compounded by the inaccurate TI passed by RAD to the C182 pilot at 1057:55 and 1058:10. Whilst BM SPA acknowledges that the trainee held a DIR operating endorsement, a further contributory factor to the incident was the instructor's error in judgement in permitting the trainee to operate unsupervised.

The unit has raised concerns over the passage of the PA28 through the Odiham RTC, at cct height, whilst in receipt of an ATS by Farnborough LARS W. BM SPA has some sympathy with Odiham's concerns; however, the PA28 was in receipt of a BS and the onus was on Odiham RAD to effect coordination with Farnborough, if required, and to ensure that they did not 'knowingly introduce a risk of collision'. That said, given the level of cooperation required by the proximity of the 2 units and that Farnborough APP were advised of the activation of the Odiham RTC, it would be a reasonable expectation for LARS W to have passed some form of warning to the PA28's pilot; however, this information was not available to BM SPA and will be determined by ATSI.

OUTCOMES

ATM STANEVAL conducted an 'Intervention Workshop' for the members of the Odiham Training, Examination and Standards teams, to provide guidance on how to recognise the requirement to intervene and how to carry out that intervention.

BM SPA, in conjunction with the ATM and ASACS Force Commands, will issue guidance on the requirement for controllers tasked with training or examining controllers to maintain vigilance, irrespective of the extant operating endorsements held by the trainee/examinee.

The unit's investigation has made a number of recommendations relating to the supervision of controlling staff and the content of the unit training package.

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 authorities.

Members noted that there was ample opportunity for either ATSU to have taken action to have prevented this Airprox. Well over 20min prior to the CPA, Odiham RAD had contacted Farnborough APP informing them that the Odiham RTC to RW27 was active with the C182 and passing the ac's squawk code. It was unclear if this information was passed on to the LARS(W) controller but Members thought that it could have been issued to the PA28 pilot as generic TI owing to the subject ac's conflicting flightpaths; there is no onus on the controller to pass specific TI to pilots when under a BS. It was just after the Odiham RAD controller had turned the C182 flight, under a TS, onto a closing heading to intercept the LOC that RAD noticed the PA28 and telephoned Farnborough. Whilst awaiting a call back from LARS(W), Odiham RAD passed inaccurate TI twice to the C182 pilot before LARS(W) telephoned. However, the opportunity was missed to effect coordination and establish a deconfliction plan as only TI was exchanged between the controllers before termination of the call. LARS(W) then became busy and did not monitor the PA28's progress whilst Odiham RAD did not to take action to break the conflict, instead electing to pass further TI to the C182 pilot. After receiving this updated TI, the C182 pilot saw the PA28 at about 1nm and stated that he would avoid. Meanwhile, the PA28 instructor saw the C182 in their 11 o'clock and, although having right of way, told his student to turn L to pass behind. This sighting appears to be simultaneously with that by the C182 pilot who, on seeing the PA28's turn, decided to continue on the ILS. These visual sightings and actions taken had ensured that any risk of collision had been removed. However the Board unanimously agreed that the Airprox was the result of the Odiham RAD vectoring the C182 into conflict with the PA28.

In assessing the effectiveness of the safety barriers remaining, the Board agreed that the ATC barriers had not been completely effective. Although the PA28 pilot was under a BS which worked as required and the C182 pilot's SA was good from the increasingly accurate TI given by RAD that eventually cued the pilot's acquisition of the PA28, RAD vectoring the C182 into conflict with the PA28. However, both pilots saw each other's ac at about the same time and the PA28 pilot took positive action to remove any risk of collision. As the incident occurred within Class G airspace where pilots are responsible for maintaining their own separation through see and avoid, the pilots' sightings and actions were effective safety barriers and the Board assigned an ERC score of 2.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Odiham RAD vectored the C182 into conflict with the PA28.

Degree of Risk: C.

ERC Score: 2.