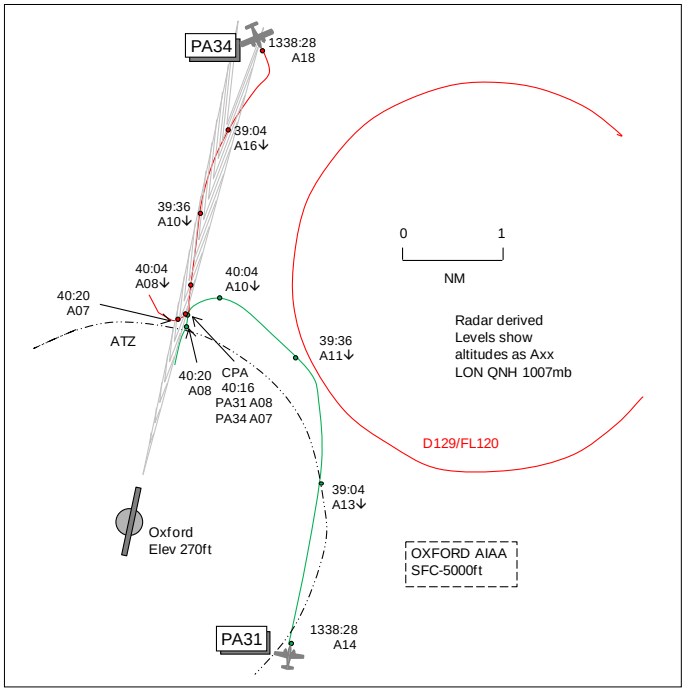
AIRPROX REPORT No 2011062

Date/Time:	22 Jun 2011 1340Z	
Position:	5152N 00118W (2nm FIN APP RW19 Oxford - elev 270ft)	
Airspace:	Oxford AIAA/ATZ (*Class: G*)	
	Reporting Ac	*Reported Ac*
Type:	PA31	PA34
Operator:	Civ Comm	Civ Trg
Alt/FL:	800ft↓ QNH 1006mb	↓ QNH 1006mb
Weather:	VMC CLBC	VMC CLBC
Visibility:	>10km	>10km
Reported Separation:	50ft V/1-200ft H	100ft V/50m H
Recorded Separation:	100ft V/0·1nm H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE PA31 PILOT reports inbound to Oxford IFR and in communication with Oxford Tower on 133·425MHz, squawking with Modes S and C. He had previously spoken with, and obtained a service from, Approach in the CPT area and he positioned for a LH downwind join. He was told there was no other cct traffic. He reported downwind, he thought, and was requested to report final for RW19. Once he had turned final descending through 1000ft QNH at 120kt he heard Tower request the position of another ac; at this point he was 2·9nm DME I-OXF. The other ac's pilot replied 2DME and so realising a potential conflict he immediately called, "PA31 c/s also at 2 DME" although at this point he was 2·3DME. He could see no other ac ahead or to the sides so he broke slightly to the L of the extended C/L and then he could see a PA34 below his starboard wing by approximately 50ft and 100-200ft away. He had not heard the PA34 flight call at the IFR reporting point of 4DME. He assessed the risk as high.

THE PA34 PILOT reports flying a dual local training sortie from Oxford VFR and in communication with Oxford Tower 133·425MHz squawking with Modes S and C. Heading 194° at 105kt and 2 DME RW19 Tower called his attention to a PA31 that was on final ahead. The I/F screens were obscuring his view of the ac but on leaning forward he saw the PA31 about 50m ahead and slightly to the L and 100ft above. He immediately turned R and, when clear, climbed away to reposition onto final. He assessed the risk as low.

THE OXFORD ADC reports the PA31 was inbound IFR on a downwind join and when the pilot 'checked in' on frequency he was informed that there was no cct traffic and was instructed to report final No 1. The PA34 was operating VFR whilst conducting an NDB approach to RW19 and after the pilot reported base turn complete with Approach the flight was instructed to contact Tower. The pilot 'checked in' with a very brief c/s call and was instructed to report 4 DME (SOP) and was informed that they were No 2 to a PA31 downwind that was a hospital flight. The PA31 was observed halfway through the base turn and he had still not received a call from the PA34 flight so he picked up the binoculars to check its position whilst eliciting a range check. The PA34 pilot reported at 2 DME as the PA31 pilot also reported 2 DME; at this time the PA34 was seen pulling up sharply to the R and turning away from the PA31; both ac had been in extremely close proximity. Traffic levels were light with 4 speaking units and several ground units making frequent calls on a discrete frequency. Oxford is technologically challenged as they operate without an ATM and rely on 'Mk1 eyeball' and

accurate pilot's reports in order to sequence ac. It is becoming increasingly prevalent for students to not make such essential safety calls and the burden of separation is being placed upon the skill and wits of the controller on duty. The 4 DME call is an essential safety call to facilitate the safe integration of cct and approach traffic and if omitted by the student it should be made by the instructor.

ATSI reports that the Airprox occurred at 1340:11, within Class G airspace, 2·3nm to the NNE of Oxford Airport and just outside the Oxford ATZ. The Oxford ATZ extends to a height of 2000ft above aerodrome level and is bounded by a circle 2nm radius centred on the mid-point of RW19.

The PA31 was a hospital CAT B, IFR flight, inbound to Oxford from Jersey. The radar recording shows the PA31 passing Compton (CPT) at an altitude of 1900ft below CAS. It is not clear if the PA31 had cancelled IFR earlier en-route.

The PA34 was a local training flight conducting an NDB approach and operating in accordance with VFR.

Oxford were providing split positions for Aerodrome (Tower) and Approach control, without the aid of surveillance equipment. The Tower controller reported workload as light with no distractions.

CAA ATSI had access to RT and radar recordings, together with written reports from the 2 pilots and 2 controllers.

The weather for Oxford was not available, however the weather for Brize Norton was provided: METAR EGVN 221250Z 24010G20KT 9999 BKN028 SCT220 19/09 Q1006 BLU NOSIG=

The PA34 flight was under VFR at 3500ft, in receipt of a BS and holding at the OX-NDB, prior to commencing an NDB approach for RW19. At 1330:07, the PA34 flight was cleared by Oxford Approach for the NDB approach and asked to report beacon outbound.

At 1332:00, the PA31 flight established contact with Oxford Approach requesting a BS and a visual join. The Approach controller passed the QNH 1006 and the PA31 pilot reported 19nm to the SSE of Oxford requesting a join downwind LH for RW19.

At 1332:25, Approach replied, *"(PA31 c/s) that's understood join er visual downwind left hand then for runway one nine traffic is a P A thirtyfour in the Oscar Xray hold three thousand five hundred feet er he's V F R shortly to go outbound for the N D B one nine and Weston on the Green Danger Area one two nine is active to flight level one two zero report the field in sight*." This was acknowledged by the PA31 pilot.

At 1333:22, the PA34 pilot reported beacon outbound and Approach advised, *"(PA34 c/s) report leaving altitude three thousand five hundred feet traffic is a P A thirty one inbound from the south for a downwind join visual."* There was a short period of transmitter modulation, but no audible response from the PA34 pilot.

At 1334:57, the PA34 pilot reported leaving 3500ft and Approach instructed the pilot to report base turn complete. This was acknowledged by the PA34 pilot.

At 1337:18, the PA31 pilot reported 5nm to run and Approach transferred the flight to the Tower frequency 133·425MHz.

At 1337:34, the PA34 reported base turn complete and Approach transferred the flight to the Tower on frequency 133·425MHz.

Both flights were coordinated with the Tower controller, who later stated, that the PA31 strip had been placed in the active bay and the PA34 strip had been cocked out, indicating that the ac had commenced the NDB and would be transferred by APC once 'base turn complete'.

At 1337:38 the PA31 pilot contacted the Tower and the controller replied, *"(PA31 c/s) no circuit traffic report on final number one for landing runway one niner."* The PA31 pilot acknowledged, *"Wilco runway one niner (PA31 c/s)."* The radar recording shows the PA31, 4·2nm SE of the airfield. Later the controller was asked whether he considered that the distance of the PA34, at base turn complete [chart 6·5nm] was probably equidistant with the range of the PA31. The controller indicated that he didn't have radar, the PA34 was still with Approach and the range of the base turn tended to vary considerably with training ac.

The Tower controller was asked whether he had considered asking the PA31 pilot to report either downwind or on L base. The controller indicated that the PA31 was No 1 and considered that the ac was approaching the beginning of the downwind leg. The controller added that because of the position of D129 and from previous experience, he expected that the PA31 would make a short cct pattern.

At 1338:28, the PA34 pilot contacted the Tower, the controller responded, *"(PA34 c/s) tower continue approach runway one nine report at four D M E you will be number two to hospital flight traffic that's er downwind."* The PA34 pilot replied, *"(PA34 c/s).*" The radar recording shows the PA31 commencing the downwind leg.

At 1339:36, the radar recording shows the PA31, at the boundary of D129 and turning onto L base, at a position 2·4nm NE of the airfield. The Tower controller indicated that, as he observed the PA31 turning L base, he had a 'sixth sense feeling' and decided to request a range check.

At 1340:00, the Tower controller asked, *"(PA34 c/s) range check please,"* and the PA34 pilot replied, *"we're two D (PA34 c/s)."* The Tower controller responded, *"visual with the chieftain turning in ahead."* At this point the PA31 pilot transmitted, "*er (PA31)c/s we're two D."* The Tower controller responded, "(*PA34 c/s) break off and join overhead for runway one nine."* There was no response from the PA34 pilot.

At 1340:04, radar recording shows the distance between the 2 ac as 0·3nm. The PA34 is on final approach at an altitude of 800ft and the PA31 is on L base indicating an altitude of 1000ft and turning towards final.

At 1340:16, the radar recording shows the distance between the 2 ac as less than 0·1nm with the ac labels overlapping. The PA34 is indicating an altitude of 700ft and the PA31 is indicating an altitude of 800ft.

At 1340:20, the PA34 breaks off the approach by turning R.

Both flights were in receipt of an Aerodrome Control Service. The Manual of Air Traffic Services Part1, Section 2, Chapter1, Page 1, paragraph 2.1, states:

> 'Aerodrome Control is responsible for issuing information and instructions to aircraft under its control to achieve a safe, orderly and expeditious flow of air traffic and to assist pilots in preventing collisions between:
> a) aircraft flying in, and in the vicinity of, the ATZ;
> b) aircraft taking-off and landing'

The controller later indicated, that he had subsequently discussed the incident with the PA34 instructor, who advised that they were not aware of the hospital flight and that a student was being examined and had not reported at 4 DME.

The Approach controller had given the PA34 pilot TI regarding the PA31 and it was noted that there was only a transmitter modulation in response. The Tower controller had advised the PA34 pilot that he was "…number two to hospital flight traffic," instructing the pilot to report at 4 DME. It was noted that on this occasion there was only the c/s as acknowledgement.

The controller indicated that in the busy non-radar, training environment, and busy cct at Oxford, controllers are reliant upon accurate position reports from pilots making an instrument approach, in order to effectively integrate the traffic into the cct. It is not clear why the PA34 pilot did not provide a range check at 4 DME.

On first contact with the Tower, the PA31 pilot was advised that there was no cct traffic. The PA31 pilot was passed TI about the PA34 by the Approach controller and was aware of the PA34. It is likely that the PA31 pilot's situational picture was also reliant upon the PA34 making a call at 4 DME. The PA31 pilot's written report indicated that, "I did not hear the PA34 call at the IFR reporting point at 4 DME."

The integration of traffic into the visual cct is the responsibility of the Aerodrome controller. The PA31 hospital flight, with a clear cct was cleared to final. When the PA34 flight called Tower, the PA31 was in the downwind position. The PA34 pilot was instructed to, "continue approach runway one nine report at four D M E you will be number two to hospital flight traffic that's er downwind." The controller was reliant upon the 4 DME check in order to integrate the arrival into the cct pattern. On this occasion, traffic loading was light however, the possibility of a late or missed call from a pilot, due to heavy RT loading or complex traffic situations, is something that controllers need to safeguard against.

The incident occurred when the PA34 pilot, having been advised about the hospital flight in the circuit, did not report at 4NM DME as instructed by the Tower controller, resulting in the 2 ac coming into close proximity on final approach.

CAA ATSI considered that, in a non-radar environment controllers are reliant upon accurate position reports from pilots. An initial request for the range of the inbound PA34 on first contact with the tower, would have aided the Tower controller's assessment of the situation. Additionally a request for the PA31 to make a standard call downwind or when turning L base may have prompted the controller to re-assess the plan or check the position of the arriving PA34 and would also have served to give the PA34 pilot a situational reminder of the other traffic on frequency.

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.

Members agreed with the ATSI summary of the incident. In the procedural environment, without radar or ATM, controllers are reliant on accurate pilot reports. The controller had formulated a plan with the CAT B PA31 being made No 1 in the traffic sequence and the PA34 No 2. The PA34 pilot was told to report at 4 DME and position No 2 to the PA31; however, the PA34 pilot did not comply with either of the ATC instructions which Members agreed had caused the Airprox. The 4 DME call was essential to allow the controller to integrate the traffic into cct and Members were surprised that the instructor had not made the call in the absence of the handling pilot, under examination, not carrying out the instruction. That said, it appeared that SA was diminished in the PA34 cockpit as the pilot had continued his approach apparently unaware of the PA31 until it was pointed out by the controller after querying the ac's range approaching 2 DME. Members acknowledged that visibility is diminished when I/F screens are erected but this deficiency should be mitigated by the instructor moving his head frequently during lookout scans. The PA31 pilot was complying with ATC instructions positioning No 1 towards final and, although aware that the PA34 was inbound, he was unaware of its range. Whilst turning through base leg onto final, the pilot's view was degraded as the PA31 was belly-up to the approaching PA34. Both crews only saw each other's ac as the PA31 was establishing on final approach and were made aware of each other's proximity when the ADC queried the PA34 flight's range. On hearing the PA34 pilot's response, the PA31 manoeuvred to the L revealing the PA34 just 50ft below and 100-200ft to the R of his ac whilst the PA34 instructor

visually acquired the PA31 just 100ft above and 50m ahead. These factors led Members to unanimously agree that luck had played a large part in the incident, with both flights having missed each other purely by chance. This left the Board in no doubt that there had been an actual risk of collision during this Airprox.

The CAA SRG Advisor informed the Board that the ATC Procedures Working Group had recently discussed the integration of traffic in the vicinity of aerodromes as an agenda item and that current procedures and guidance are under review.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The PA34 pilot did not comply with ATC instructions.

Degree of Risk: A.