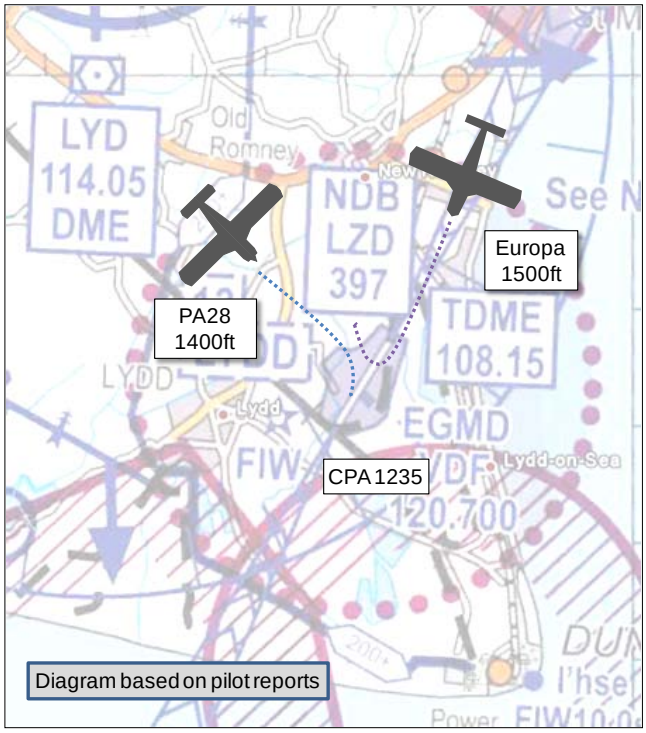
AIRPROX REPORT No 2014022

Date/Time:	9 Mar 2014 12:35Z (Sunday)	
Position:	Lydd	
Airspace:	Lydd ATZ	(*Class*: G)
	Aircraft 1	*Aircraft 2*
Type:	PA28	Europa
Operator:	Civ Pte	Civ Pte
Alt/FL:	1500ft QNH (1024hPa)	1500 QFE (1025hPa)
Conditions:	VMC	VMC
Visibility:	8K	Good
Reported Separation:	0ft V/50m H	30ft V/100 H
Recorded Separation:	NK	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE PA28 PILOT reports flying a white and burgundy aircraft with all lights illuminated and SSR transponder mode 3A and C selected. The aircraft was not fitted with TCAS. He reported flying a cross-country flight and changed frequency to Lydd to call for joining clearance. Lydd ATC was busy trying to call an aircraft that wasn't responding, but they told him to report 4nm, which he duly did, was told to report overhead, and was given the Tower frequency. He reported overhead to Tower and was told to report downwind. ATC were sounding exasperated, asking another pilot for his position. As he was correcting his course for crosswind he saw an aircraft to his left, 50m at the same height and banking sharply right: he immediately turned right to avoid it and the other aircraft turned towards the dead-side. He then reported downwind and heard ATC try to establish the position of an aircraft that was reporting long final. He advised ATC that he couldn't see any traffic on final and subsequently landed and reported the close encounter with the aircraft in the overhead.

He assessed the risk of collision as 'High'.

THE EUROPA (EUPA) PILOT reports flying a white aircraft with SSR transponder Mode 3A and C, he did not report which lights he had illuminated, and the aircraft was not fitted with TCAS. He was operating VFR and receiving an ATS from Lydd. He was joining from the North of the airfield and was instructed to report 4nm north of the field. This he did, and he was given joining instructions for the circuit. As he joined overhead at 1500ft, at the start of RW21, he noticed another aircraft joining in a similar manner to the right and ahead of him. They were on slightly converging headings and, judging the other aircraft to be faster, he reduced power and turned right to position behind. The other pilot questioned ATC to ask whether someone was joining using a non-standard approach, when questioned by ATC he informed them that he intended to track down the runway before turning crosswind.

He assessed the risk of collision as 'None'.

Factual Background

The weather at Lydd was recorded as follows:

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METAR EGMD 091120Z 22011KT 8000 NSC 13/08 Q1025
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Analysis and Investigation

CAA ATSI

The PA28 was VFR inbound to Lydd and in receipt of an Aerodrome Control Service from Lydd Tower on frequency 119.375MHz. The EUPA was also VFR inbound to Lydd and in receipt of an Aerodrome Control Service from Lydd Tower. Runway 21 was in use with a left hand traffic pattern for light aircraft and promulgated circuit height of 1000ft QNH. Lydd Ranges (EG D044) and Dungness Power Station (EG R063) are situated to the south of Lydd airport as shown below in an extract from the Topographical Air Chart of the UK 1:250,000 South (Ed.16)– Figure 1.

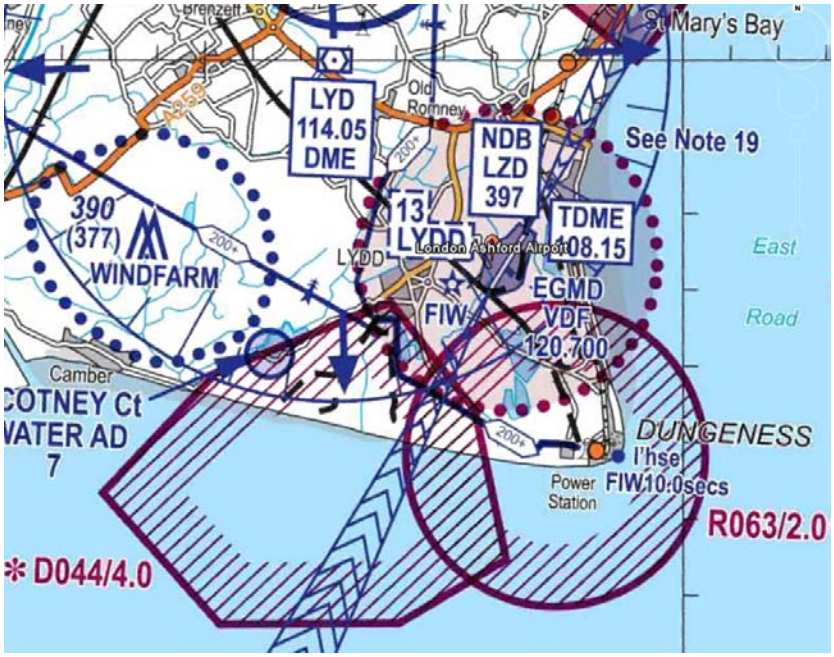

Figure 1 – Topograhical Air Chart of the UK South (Ed.16) 1:250,000

The UK AIP page AD 2.EGMD-8 (12 Dec 2012), 2.22 (1a), states

VFR Arrivals

(i) Inbound VFR aircraft should make their initial call for joining instructions before reaching Rye (9 NM West of Lydd), Tenterden (15 NM NW), Ashford (12 NM N), Folkestone (12 NM NE) or 10 NM to Lydd if approaching over the sea.

(ii) Pilots are responsible for their own separation from EG D141, EG D044, EG R063 and the runway final approach/departure areas, although ATC may provide assistance.

(iii) Basic Service will be provided by default.

(iv) Lydd VFR transponder conspicuity code 7066 should be selected if possible. It should be noted that Lydd is not radar equipped and is unable to provide any form of surveillance. The transponder code is to assist neighbouring ATS Units.

(v) Joining aircraft will be requested to report at 4 NM to the Lydd overhead (NB. not to the LYD VOR).

(vi) Light aircraft joining via Rye, Tenterden, Ashford or those routeing inland from Folkestone will, unless otherwise instructed, join overhead at 1500ft QNH, descend crosswind, and turn downwind at 1000ft. DO NOT DESCEND DEADSIDE.

(vii) Aircraft inbound from E, SE or S, having made the 4 mile report, can anticipate instructions to join the circuit downwind or base leg, subject to traffic.

The Lydd controllers were providing a split Tower and Approach Control service from the VCR without the aid of surveillance equipment. The Lydd Approach frequency is equipped with a VDF facility but Aerodrome Control is not; however, local 'best practice' is for Approach to write the

VDF bearing on the strip to assist Aerodrome control when the inbound aircraft is transferred at 4nm. The Lydd Manual of Air Traffic Services Part 2, Page 4-1-2, Paragraph 3.2, states:

> VFR joining traffic shall be asked by APP to report 4nm to Lydd so that the order of arrival can be anticipated. The majority of light aircraft will join via the overhead at 1500ft as published in the UK AIP. As this is the standard procedure no direct coordination with ADC is required. The FPS shall be clearly annotated with 'OH' in the left hand box, and the aircraft transferred at 4nm to ADC, along with the FPS.

CAA ATSI had access to Lydd RTF and area radar recordings, together with written reports from the Lydd controllers, the pilot of the PA28 and the pilot of the EUPA. ATSI interviewed the Aerodrome controller. The area radar recording did not show the occurrence and Manston radar recordings were obtained. The accuracy of the video map showing Lydd airfield could not be verified to give a runway centreline, however for clarity, an approximate representation of the runway centreline has been added to each figure below terminating at approximately 1.5nm from the airfield.

The EUPA contacted Lydd Approach at 1215:33 reporting at 2700ft QNH 1025, abeam Eastbourne for joining instruction. A Basic Service was agreed. The Approach frequency was busy with a number of aircraft and traffic information was frequently being updated by the Approach controller. The EUPA pilot subsequently reported overhead Lydd, which was questioned by the Approach controller and corrected to overhead Rye. The EUPA pilot indicated his intention to route 4nm north of Lydd before setting course inbound. The Approach controller instructed the EUPA pilot to report inbound at 4nm. The EUPA pilot was advised about two aircraft, a C182 and another Europa, inbound from the north and northwest.

At 1228:18 the PA28 contacted Lydd Approach, reporting south abeam Tenterden (10nm NW of Lydd) at 2100ft. A Basic Service was agreed and the PA28 was instructed to report at 4nm for an overhead join RW21 left-hand circuit. At 1229:07 a C182 inbound from the north was transferred to the Tower, but failed to establish contact. This increased the already busy workload of both the Tower and Approach controller as they tried to re-establish contact with the C182.

At 1231:30 the EUPA reported 4nm north of the airfield and was transferred to the Tower on frequency 119.375MHz. At interview the Tower controller indicated that his workload was moderate with a number of aircraft in the circuit and on the ground but then increased to heavy when he became concerned about the inbound C182 which had not to checked in on Tower frequency. The Tower controller called the C182 twice. After the second call at 1232:15 the C182 pilot reported late downwind. At this point there was an aircraft on final and one on left base. The Aerodrome controller did not have the C182 in sight and instructed the C182 to carry out a right hand orbit in the downwind position. The Aerodrome controller indicated that he, together with the Approach controller and Air Traffic Support Assistant (ATSA), became absorbed in looking for the C182 in the circuit. The Tower controller recalled weather conditions as hazy with a visibility of 8km and bright sunshine.

At 1232:40 the PA28 pilot reported at 4nm on the Approach frequency. The Approach controller advised *"(PA28)c/s roger continue t-to the overhead traffic ahead of you just called four miles from the north is a Europa also inbound".* The PA28 pilot replied, *"continue approach to the overhead looking for the traffic (PA28)c/s".* The PA28 was then transferred to the Tower at 1233:00, *"(PA28)c/s contact Lydd Tower one one nine decimal three seven five"*, which was correctly acknowledged by the PA28 pilot and almost immediately the Approach controller responded, *"(PA28)c/s er Lydd remain on my frequency and hold at four miles initially"*. However there was no response as the PA28 had already changed frequency. At interview the Tower controller recalled that at this point he had recognised that he was becoming extremely busy and had requested that Approach retain control of the PA28 and hold it 4nm north.

Meanwhile, the EUPA contacted the Tower and was asked to pass it's message. The EUPA pilot reported 3 miles north of the airfield at 2700ft QNH 1024 and requested joining instructions. The Tower controller initially asked the EUPA to report 4 miles north but corrected the transmission,

instructing the EUPA pilot to report overhead runway 21 left-hand. At 1233:39 the Tower controller made two calls to check if the PA28 was on frequency, but mistakenly used the EUPA callsign. The Tower controller could not remember the transmission but reasoned that he was likely distracted because of the workload and looking for the C182. This resulted in a response from the EUPA pilot and the controller advised, *"(EUPA)c/s report overhead and look out for a one eight two inbound to Lydd from the northwest also inside four miles".* At interview the Tower controller recognised that he had referred to the C182 rather than the PA28. The C182 had already been told to orbit downwind.

At 1233:56 the EUPA crossed the northern boundary of the ATZ at altitude 2600ft and, at 1234:04, the PA28 crossed the north-western boundary of the ATZ at altitude 1300ft. The PA28 pilot reported, *"Lydd Tower (PA28)c/s er two miles to the north"* and the Tower controller instructed the PA28 pilot to standby. At 1234:28 the EUPA was at 2100ft and the PA28 1300ft, with the C182 orbiting to the east as shown in Figure 1 below.

Figure 1 – Manston 10cm radar at 1234:28

By 1235:12 the PA28 had tracked towards the overhead from the northwest and the EUPA appeared to have crossed the centreline 1nm northeast of the airfield before turning right towards the airfield from the east-northeast. Both aircraft were indicating 1400ft as shown in Figure 2.

Figure 2 – Manston 10cm radar at 1235:12

At 1235:23 the distance between the two aircraft was approximately 0.5nm with the EUPA indicating 1500ft and the PA28 1400ft – Figure 3.

Figure 3 – Manston 10cm radar at 1235:23

At 1235:27 the PA28 pilot reported overhead and was instructed to report downwind left-hand runway 21, which the pilot acknowledged correctly. At 1235:40 the Tower controller asked the EUPA for a range check and the following RTF exchange occurred:

EUPA *"(EUPA)c/s is also overhead er one thousand five hundred feet erm the other aircraft is now in front of me in the er in the circuit"*
Tower "*Roger (EUPA)c/s thank you report downwind following that Cherokee"*
EUPA *"and I'll report er downwind following the Cherokee ahead of me (EUPA)c/s"*

At 1235:58 only the SSR code of the PA28 was detected as the two aircraft returns merged, as shown in - Figure 4.

Figure 4 – Manston 10cm radar at 1235:58

The EUPA pilot in his written report stated that: *"As I joined overhead at the start of runway 21 at 1500ft I noticed another aircraft also joining in a similar manner to the right of me and ahead of me".* The EUPA pilot wrote: *"as the other pilot [PA28] had priority I reduced power and turned to the right to position myself behind the other aircraft [PA28]"*.

The Tower controller asked the EUPA pilot, *"(EUPA)c/s you flying a standard overhead join at the moment"* and the EUPA pilot replied, *"I'm overhead er fifteen hundred feet and er descending er to one thousand feet on downwind".* At 1236:06, Manston radar showed the EUPA in a right turn with no Mode C. The PA28 was crosswind at 1300ft. [Note: the SSR label for the PA28 is offset to the north and the EUPA is to the south]- Figure 5.

Figure 5 – Manston 10cm radar at 1236:06

The ATSA had stepped outside the VCR to get a better view and reported sighting a EUPA on the north side of the RW21 flying parallel to the runway but in the opposite direction. The EUPA was observed to make a 180 degree right turn, then to fly on RW21 heading before turning crosswind. At 1236:34, the PA28 was at 1000ft and the EUPA was at 1500ft as it commenced a turn crosswind – Figure 6.

Figure 6 – Manston 10cm radar at 1236:34

The radar return of the PA28 then faded and the PA28 pilot reported downwind at 1236:42 followed by the EUPA at 1237:56. The two aircraft continued to land without further incident.
After the PA28 landed the following RTF exchange occurred:

PA28 *"…(PA28)c/s er encountered er er traffic erm on the overhead coming from the live side er on my approach"*
Tower *"Roger (PA28)c/s"*
Tower *"Er (PA28)c/s did you see what aircraft type it was"*
PA28 *"Huh single engine white erm modern aircraft I'm sorry I'm not a spotter"*
Tower *"Okay no problems thanks"*
PA28 *"Yeah caught me p-really by surprise"*
Tower *"Okay sorry about that".*

When questioned the Tower controller recalled that whilst he was aware of the PA28 and EUPA joining overhead, he had initially considered that another aircraft might have flown through the overhead without being in contact with Lydd. When asked how the incident might have been prevented the Tower controller considered that making an earlier request for Approach control to hold inbound traffic would have eased his workload. In addition the Tower controller felt that having a D/F facility on the Tower frequency would have aided his awareness of aircraft position and allowed him to quickly locate the C182 once it called, hence reducing his workload and anxiety. The Tower controller was distracted and recognised that this had resulted in two slips of

phraseology and a delay in the updating of traffic information. The Tower controller believed that the two aircraft were aware of each other and should have positioned correctly into the circuit on a 'see and avoid' basis.

The ATSU indicated that inbound VFR traffic from the north would be expected to approach on the north side maintaining 1500ft before turning crosswind and descending to circuit height. Due to the proximity of the restricted and the danger areas, combined with helicopter operations, instrument procedures and options to vary circuit direction, the ATSU considered that local procedures for the 1500ft overhead join worked well.

The Tower controller was distracted by a combination of workload and complexity, which presented when there was a loss of RT and loss of visual contact with the C182 during the minutes prior to the Airprox. This resulted in a reduced level of updated traffic information to the inbound PA28 and EUPA. The PA28 pilot reported at 2nm and was asked to standby. The controller also made two slips of phraseology using incorrect callsign and then incorrect aircraft type. The Aerodrome controller had recognised the increased workload and tried to take action by requesting that Approach hold the PA28 4nm north. Unfortunately the PA28 had already changed to the Tower frequency. Without surveillance equipment, VDF would have provided an alternative means of assisting the Tower controller's situational awareness of aircraft position and would have reduced his workload**.**

Both the PA28 and EUPA had been provided with traffic information. The approach controller had provided traffic information to the PA28 regarding the EUPA ahead and the EUPA pilot had been advised by the Tower to look out for traffic inbound from the northwest, albeit that the Tower controller referred to this traffic as a C182 instead of PA28. Both pilots were therefore aware of other traffic joining overhead. Radar showed that the PA28 made an approach from the north-northwest at 1400ft to join crosswind and the PA28 pilot believed that the EUPA had come from the live side. The EUPA is considered to have made an unusual approach routing 1nm northeast of the airfield and appearing to cross the centreline before turning right towards the airfield. The EUPA pilot indicated crossing the beginning of the runway at 1500ft and sighting the PA28 approaching from the right. The EUPA pilot recognised that the PA28 had right of way and as the two aircraft came into proximity the EUPA pilot made a right turn and was sighted by the PA28 pilot who also turned right.

UKAB Secretariat

Traffic joining the visual circuit is required to conform to the pattern of traffic formed by other aircraft intending to land at that aerodrome, unless otherwise authorised by ATC[1]. Both pilots shared an equal responsibility for collision avoidance.[2]

Summary

An Airprox occurred when a PA28 and an EUPA flew into proximity at 1235 on 9th March 2014, both aircraft were making an overhead join to Lydd at 1500ft and both were on the Tower frequency. Both pilots made a right turn, the exact separation is not known.

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.

The Board first looked at the actions of ATC and agreed that the attempt to identify the C182 (not involved in the Airprox) had had a knock-on effect of increasing the controller's workload which had then impacted on his ability to maintain situational awareness on the other traffic joining the circuit.

[1] Rules of the Air 2007 (as amended), Rule 12 (Flight in the vicinity of an aerodrome)
[2] ibid., Rule 8 (Avoiding aerial collisions)

Nevertheless, some ATC members opined that ATC could have done more to sequence the joining traffic; however, it was recognised that ATC had given traffic information (albeit with mixed-up callsigns and aircraft types) which should have at least alerted the pilots to the presence of another joining aircraft.

In next discussing the actions of the PA28 pilot, the Board recognised that he was effectively prevented from making a timely joining call to Lydd Tower because he was waiting for another aircraft to respond to ATC's transmissions (which ironically were intended for him but with the wrong callsign). However, the Board noted that he had already been given Traffic Information on the joining EUPA from the Approach controller, which he acknowledged, and which he should have been able to employ to better effect when conducting his own join.

Turning to the EUPA pilot, the Board noted that the overhead join for Lydd was non-standard in that it states pilots are not to descend on the deadside. This led the Board to observe that many airfields had their own procedures for overhead joins, and that possibly the term "standard overhead join" was a misnomer. The Board agreed that the EUPA pilot appeared to have been attempting to conduct a overhead join whilst keeping clear of the danger areas to the south of Lydd as well as trying not to descend on the deadside. In doing so he had managed to cross the extended centreline, before turning back on track, thus causing the PA28 to believe that the EUPA was joining live side. Once he was aware that his track took him into confliction with the PA28, the Board noted that the EUPA pilot took action to keep clear.

The Board commented that this Airprox highlighted the need to be vigilant when joining the visual circuit, the need to understand fully local procedures, and the importance of good lookout. They determined that the cause of the Airprox was a late sighting by both pilots, but added two contributory factors: firstly, that the PA28 pilot was unable to make a timely joining call due to ATC confusion on the RT; and secondly, that the EUPA pilot did not conduct his overhead join in accordance with the Lydd procedure. The Board considered that although avoiding action had been taken to prevent a collision, this had still resulted in safety margins being much reduced below the normal; they categorised the risk as B.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A late sighting by both pilots whilst joining the Lydd visual circuit.

Contributory Factor(s): 1. The PA28 pilot was unable to make a timely joining call.

2. The Europa pilot did not conduct the overhead join in accordance with the Lydd procedure.

Degree of Risk: B

ERC Score[3]: 4

[3] Although the Event Risk Classification (ERC) trial had been formally terminated for future development at the time of the Board, for data continuity and consistency purposes, Director UKAB and the UKAB Secretariat provided a shadow assessment of ERC.