

AIRPROX REPORT No 2012018

Date/Time: 20 Feb 2012 1602Z

Position: 5205N 00036W (1nm FIN APP
RW21 Cranfield - elev 358ft)

Airspace: ATZ (Class: G)

Reporting Ac Reported Ac

Type: DA42 Twin Star PA44

Operator: Civ Club Civ Trg

Alt/FL: 400ft↓ 800ft
agl QNH

Weather: VMC NR VMC NSC

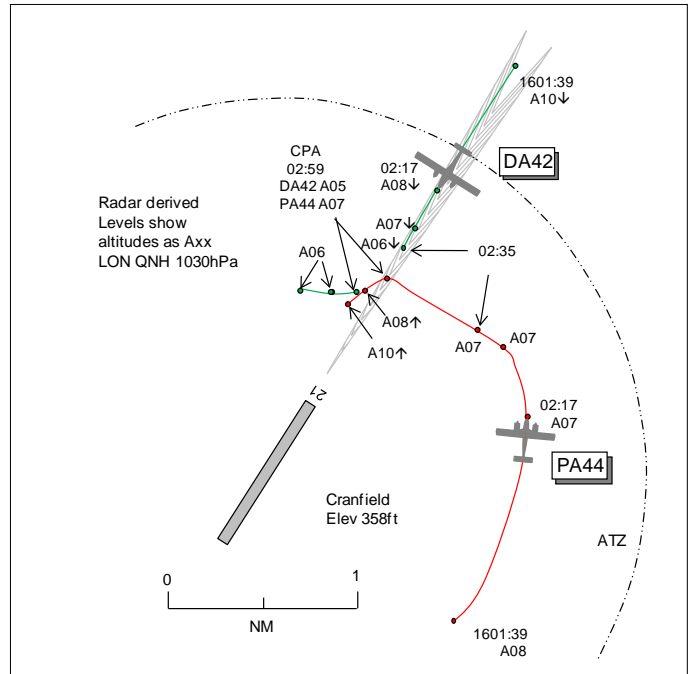
Visibility: >10km 10nm

Reported Separation:

<100ft V/<100m H 200ft V/0.4nm H

Recorded Separation:

200ft V/0.2nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE DA42 PILOT reports flying a short engineering test flight (1 visual cct) from Cranfield, VFR and in receipt of an ACS from Cranfield Tower on 122.85MHz, squawking 7000 with Modes S and C. The visibility was >10km in VMC and the ac was coloured white with wing-tip strobes switched on. On short final RW21 heading 213° descending through 400ft agl at 85kt he heard another flight being advised that they were No 2 to a DA42 (his ac) on final. His onboard EFIS/TAS audible warning alerted him to the presence of other traffic in close proximity but it gave no relative position. Traffic was immediately observed in his 10 o'clock range 100m about 100ft above and descending on base leg. He initiated avoiding action by applying power and commencing a level turn R turn and advised ATC that he was breaking-off the approach owing to an ac on a conflicting course. ATC instructed the other flight to go-around and he was instructed to re-establish on final. He assessed the risk as high.

THE PA44 PILOT reports flying dual training sortie from Cranfield, VFR and in receipt of an ATS from Cranfield on 122.85MHz, squawking 7000 with Modes S and C. The visibility was 10nm with no significant cloud in VMC and the ac was coloured white/blue with strobe and landing lights switched on. After going around into a low-level cct he was told he was No 2 to a DA42 on base leg. He looked but did not see any ac when he turned base due in part to the other ac being very low. He also expected to be No 1 by this point and ATC did not say anything until very late. Heading 290° at 100kt and 800ft QNH he had just spotted the DA42 ahead about 0.5nm away on low final and had just started a go-around when ATC finally asked whether he was visual. He estimated separation as 200ft vertical and 0.4nm horizontal at the CPA and he assessed the risk as medium. In summary, he thought the DA42 had carried out a wide and low cct, ATC had given a very late warning and his instructional workload was medium to high when he made a poor assumption that he had become No 1.

THE CRANFIELD ADC reports he was taking over from the previous controller as the PA44 was just going around from an NDB approach into a low-level cct and the DA42 was late downwind in the cct to land after an engineering flight check. As the PA44 flight went around it was passed TI on the DA42 and was told by the off-going controller that it was No 2. When the PA44 flight called downwind the DA42 traffic was re-iterated by the off-going controller and the DA42 was about to turn onto final. Both he and the off-going controller had sight of both ac. The off-going controller cleared

the DA42 flight to land and he, the on-coming controller took over the control position. The DA42 pilot then called, "taking avoiding action on the (incorrect PA44 operator c/s)" and the ac broke R. He acknowledged the transmission, double checked the position of both ac and then instructed the PA44 flight to go-around to increase the separation before again passing TI to its pilot. The DA42 then orbited on final and made a normal landing while the PA44 flew another cct and landed.

ATSI reports that the Airprox occurred 1.3nm to the NE of Cranfield in the Cranfield ATZ (Class G airspace), which comprises a circle radius 2nm centred on the longest RW (03/21), from the surface to 2000ft above aerodrome level.

The DA42 Twinstar was operating VFR on an engineering test flight which required one visual LH cct.

The PA44 was operating VFR in the LH cct following a go-around from an NDB approach.

CAA ATSI had access to recordings of RT from Cranfield Tower and area radar recordings together with written reports from both pilots and the Cranfield ADC.

The Cranfield METARs are provided for 1550 and 1620 UTC:

METAR EGTC 201550Z 23019KT 9999 FEW035 07/M01 Q1028= and EGTC 201620Z 23015G25KT 9999 FEW045 06/M00 Q1028=

At 1557:10 UTC the PA44 pilot reported at 4 DME and was cleared for a low approach and go-around RW21.

At 1558:20 the DA42 pilot reported, "...downwind simulated asymmetric" and was told by ADC, "...number two following a P A forty-four inside four miles on the N D B approach".

At 1600:00 the pilot of the PA44 reported going around and the ADC enquired, "(PA44 c/s) is this to circle ????? minima". The PA44 pilot replied, "Affirm with er two further low levels to follow if possible" and was told, "...you are number two following a D A forty-two er mid-point left base". The PA44 pilot acknowledged "Number two (PA44 c/s)".

At 1601:00 the DA42 flight was cleared to land. The pilot of the PA44 reported, "...turning downwind low for two one" and was told again, "...number two following a D A forty-two final". The PA44 pilot read back "Number two (PA44 c/s)". The report from the ADC stated that a handover took place when the PA44 was late downwind and that at the time of the handover both controllers had both ac in sight.

At 1602:17 the DA42 was on final 1.8nm NE of the airfield at 800ft while the PA44 was S of the DA42 by 1.3nm at 700ft.

At 1602:35 the PA44 at altitude 700ft had turned base inside the track of the DA42, which was indicating 600ft and was in its 10 o'clock position range of 0.6nm. The DA42 then fades from radar.

[UKAB Note (1): Just after 1602:40 the DA42 pilot asked, "Er confirm the (erroneous company name)'s visual with us" and Tower replied, "Say that again". The DA42 pilot replied, at 1602:50, "...is breaking off the (erroneous company name)'s heading straight for us". The ADC asked the pilot of the PA44, "...are you visual with the Twinstar you were told you were number two to" to which the PA44 pilot replied, "...we are now". The CPA occurs at 1629:59 as the DA42 reappears on radar 1nm NNE of the ARP, just to the W of the FAT turning through a WSW'ly heading indicating altitude 500ft with the PA44 0.2nm to its NE turning L onto the FAT, 200ft above. Thereafter the ac diverge, the DA42 tracking W at altitude 600ft and the PA44 tracking SSW and climbing, in accordance with the ATC 'go-around' instruction.]

The written report from the pilot of the PA44 acknowledged the instruction to position No 2 to the DA42 but stated that he did not see any traffic when he turned base and that he expected to be No 1 by that point.

The radar replay shows that the PA44 flew a much smaller cct than the DA42. In addition, the DA42 was simulated asymmetric and the surface wind was reported as 23018G28kt when the DA42 was given landing clearance. The DA42 had a GS of 77kt on final compared to the 119kt GS of the PA44 on the downwind leg.

The Cranfield ADC instructed the PA44 flight to go around to increase the separation between the ac. Both ac subsequently landed without further incident.

As both flights were in Class G airspace, VFR, the pilots of both ac were ultimately responsible for collision avoidance.

The pilot of the PA44 was told twice to position No 2 to the DA42. When the pilot turned base he could not see the DA42 but continued to final in the belief that he had become No 1. The smaller cct flown by the pilot of the PA44 in combination with the difference in GS may have led to the PA44 pilot's perception that the DA42 was further ahead than was in fact the case.

Having instructed the PA44 to position No 2 to the DA42 the Cranfield ADC had an expectation that the pilot of the PA44 would position appropriately behind it.

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.

The PA44 pilot was told twice by the ADC that he was No 2 to the DA42, which he acknowledged, and on both occasions was given accurate TI on its position in the visual cct; in between these 2 transmissions the ADC cleared the DA42 to land. The PA44 pilot appeared to have become task focussed on flying a low-level cct (usually a cct close-in to the RW) and had turned onto base leg without visually acquiring the DA42, having made an assumption that he had become No 1. The DA42's slow GS in the strong SW'ly wind may have caught out the PA44 pilot who may have thought the DA42 would have been much closer to the threshold by the time he had reached his turn onto final. It was only after the DA42 pilot asked the ADC whether the PA44 pilot was visual with his ac, and the ADC then asked this of the PA44 pilot, that the PA44 pilot reported visual contact just as he was commencing a go-around. Although these had been late sightings, the Board agreed that the root cause of the Airprox was that the PA44 pilot did not comply with the ADC's instruction to position as No 2 and flew into conflict with the DA42 on final which he had not seen.

Controller Members thought that the ADC had done all that was required of him and that it would have been difficult for him to assess exactly where the PA44 was in relation to the DA42 without an ATM. He had a justifiable expectation that the PA44 would position behind the DA42, as instructed, and was undoubtedly surprised when the 2 ac came into close proximity on final approach. Having ensured the PA44 pilot was visual with the DA42 the ADC instructed the PA44 flight to go-around to resolve the conflict and increase separation. The DA42 pilot, being concerned about the PA44's conflicting flightpath, had pre-empted the ADC's and PA44 pilot's actions and had initiated avoiding action by turning R, although this could have been constrained owing to the pilot's need to transition the ac from simulated asymmetric landing configuration into a go-around. The radar recording shows the ac separated by 200ft and 0.2nm at the CPA on short final. Taking all of these elements into account, the Board concluded that the actions taken by all parties were enough to remove the actual risk of collision but the ac had passed with safety margins reduced below those normally expected such safety had been compromised during this encounter.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The PA44 pilot did not comply with the ADC's instruction to position as No 2 and flew into conflict with the DA42 on final, which he had not seen.

Degree of Risk: B.