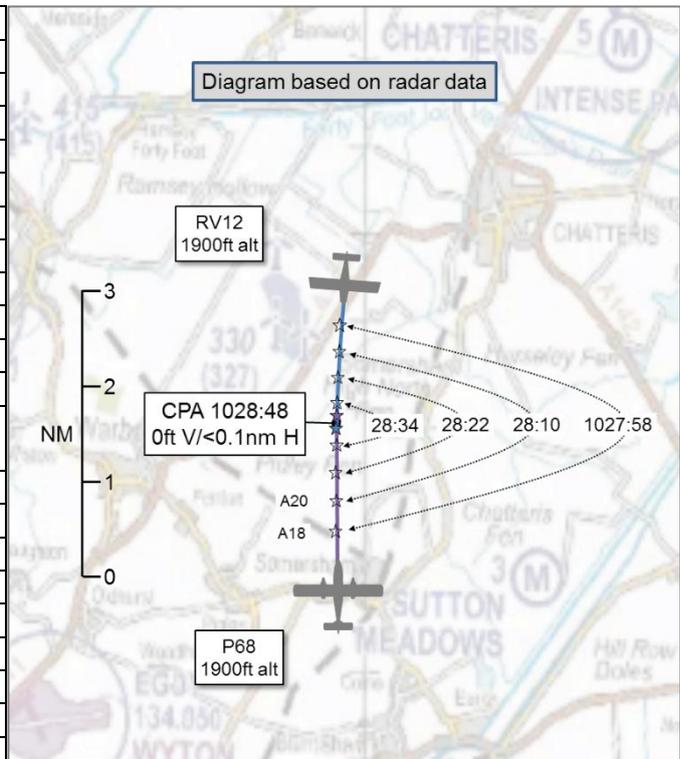


**AIRPROX REPORT No 2019201**

Date: 21 Jul 2019 Time: 1029Z Position: 5225N 00001W Location: 5NM SW Chatteris

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

| Recorded          | Aircraft 1                          | Aircraft 2    |
|-------------------|-------------------------------------|---------------|
| Aircraft          | RV12                                | P68           |
| Operator          | Civ FW                              | Civ Comm      |
| Airspace          | London FIR                          | London FIR    |
| Class             | G                                   | G             |
| Rules             | VFR                                 | VFR           |
| Service           | Listening Out                       | Basic         |
| Provider          | (Stansted)                          | London Info   |
| Altitude/FL       | 1900ft                              | 1900ft        |
| Transponder       | A, C, S                             | A, C, S       |
| <b>Reported</b>   |                                     |               |
| Colours           | White, blue                         | White, blue   |
| Lighting          | Strobe, flashing landing light, nav | Nav, beacon   |
| Conditions        | VMC                                 | VMC           |
| Visibility        | >10km                               | >30km         |
| Altitude/FL       | 1800ft                              | 1800ft        |
| Altimeter         | QNH (1020hPa)                       | QNH (1019hPa) |
| Heading           | 182°                                | 358°          |
| Speed             | 100kt                               | 120kt         |
| ACAS/TAS          | TAS                                 | Not fitted    |
| Alert             | None                                | N/A           |
| <b>Separation</b> |                                     |               |
| Reported          | 50ft V/0m H                         | 20ft V/0m H   |
| Recorded          | 0ft V/<0.1NM H                      |               |



**THE RV12 PILOT** reports that he was in straight-and-level cruise on autopilot when he was suddenly aware of an aircraft to the left of the nose at very close range. He just had time to make an abrupt pull up, overcoming the autopilot, and the other aircraft was seen to pass underneath at very close range. He declared a Pan to Stansted and asked if they could see an aircraft behind him heading about 350°; he was informed that they could.

The pilot assessed the risk of collision as 'High'.

**THE P68 PILOT** reports conducting a single-pilot survey task. He was flying on a northbound leg when he saw another aircraft directly ahead at very close range and very slightly above. It passed overhead within one second. He noted that his vision to the front was limited by the 'dashboard' and that the survey required him to pay careful attention to the line indicated by the survey equipment. He only became aware of the other aircraft as he saw movement to the front, then the sky went briefly black as the aircraft went overhead. He did not have time to react. He noted that there was no radar-based FIS available in the local area with no LARS available at the weekend. A Basic Service from London Information was the best he could have on Com Box 1 and he was also on Com Box 2 with Chatteris as they were para-dropping and their aircraft typically operate over where he was surveying. The pilot stated that the aircraft had no 'avoidance system' as the company does not allow unauthorized devices to be used in flight and no alerting system is fitted.

The pilot assessed the risk of collision as 'High'.

## Factual Background

The weather at Stansted was recorded as follows:

METAR EGSS 211020Z AUTO 22010KT 9999 SCT033 SCT043 21/13 Q1021=

## Analysis and Investigation

### UKAB Secretariat

The RV12 and P68 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard<sup>1</sup>. If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right<sup>2</sup>.

## Summary

An Airprox was reported when an RV12 and a P68 flew into proximity near Chatteris at 1029Z on Sunday 21<sup>st</sup> July 2019. Both pilots were operating under VFR in VMC, the P68 pilot in receipt of a Basic Service from London Information and the RV12 pilot not in receipt of a FIS.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of reports from both pilots and radar photographs/video recordings. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board first considered the pilots' actions and noted that neither was in receipt of a FIS that required a controller to monitor surrounding traffic (**CF1**). The P68 pilot had stated that he was not able to obtain a surveillance based FIS and members wondered whether Lakenheath could have done so. Members then turned to the nature of a survey task and agreed that it may not be conducive to a robust lookout; on-board equipment and the demands of the survey line may be such that a pilot's attention is focused elsewhere (**CF5**) than on maintaining an effective lookout scan. In this case members felt that the P68 operating company should consider more robust mitigations to MAC, given that the task was scheduled for a Sunday when there was a lack of LARS support. In this respect, although there was an operator in the rear of the aircraft, members felt that an additional front-seat observer would have been of benefit, along with a TAS that may have alerted the P68 pilot to the approaching RV12. The Board considered that the P68 operating company could have provided further mitigations against MAC for the survey task (**CF2**, **CF3**) and resolved to recommend as such.

The Board were unable to determine why the RV12 TAS did not alert on the converging P68 and, with no SA about each other's aircraft (**CF4**), mitigation against MAC was entirely dependent on see-and-avoid. Unfortunately this barrier also did not function as desired (**CF6**); in the Board's opinion, neither pilot saw the other in time to materially affect separation at CPA. The radar picture and pilot descriptions were such that the Board unanimously agreed that a serious risk of collision had existed and that collision had been avoided by providence.

The Board noted that this was one of 4 Airprox involving survey aircraft that had been reviewed at the January Board and members further discussed the question of effective mitigations. It was agreed that lack of effective lookout seemed to be a persistent problem and this incident was of such seriousness that a recommendation should be made to the CAA that, 'The CAA to consider mandating additional cockpit crew to enable enhanced lookout for single-pilot survey operations'.

<sup>1</sup> SERA.3205 Proximity.

<sup>2</sup> SERA.3210 Right-of-way (c)(1) Approaching head-on.

**PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**Contributory Factors:

|    | 2019201  |  |  |
|----|--|--|--|
| CF | Factor   | Description  | Amplification  |
|    | <b>Ground Elements</b>   |  |  |
|    | • Situational Awareness and Action                             |  |  |
| 1  | Contextual   | • Situational Awareness and Sensory Events         | Not required to monitor the aircraft under the agreed service    |
|    | <b>Flight Elements</b>   |  |  |
|    | • Regulations, Processes, Procedures and Compliance            |  |  |
| 2  | Organisational   | • Flight Operations Documentation and Publications | Inadequate regulations or procedures                             |
|    | • Tactical Planning and Execution                              |  |  |
| 3  |  | • Any other event                                  | <b>Absence of safety pilot</b>                                   |
|    | • Situational Awareness of the Conflicting Aircraft and Action |  |  |
| 4  | Contextual   | • Situational Awareness and Sensory Events         | Generic, late, no or incorrect Situational Awareness             |
|    | • See and Avoid  |  |  |
| 5  | Human Factors  | • Distraction - Job Related                        | Pilot looking elsewhere  |
| 6  | Human Factors  | • Monitoring of Other Aircraft                     | Non-sighting or effectively a non-sighting by one or both pilots |

Degree of Risk: A.

Recommendation:

1. The P68 operating company considers further mitigations to MAC for survey operations.
2. The CAA to consider mandating additional cockpit crew to enable enhanced lookout for single-pilot survey operations.

Safety Barrier Assessment<sup>3</sup>

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

**Ground Elements:**

**Situational Awareness of the Confliction and Action** were assessed as **not used** because neither pilot was in receipt of a service that required controller monitoring and action.

**Flight Elements:**

**Regulations, Processes, Procedures and Compliance** were assessed as **partially effective** because the company operations manual did not sufficiently mitigate the MAC risk whilst conducting single-pilot survey operations.

**Tactical Planning and Execution** was assessed as **partially effective** because the RV12 pilot opted not to obtain a FIS (albeit LARS availability was reduced at the weekend).

<sup>3</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because neither pilot was aware of the other aircraft's proximity until at a very late stage.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because the P68 was not fitted with a TAS and the RV12 TAS did not alert on the P68.

**See and Avoid** were assessed as **ineffective** because the P68 pilot did not see the RV12 until at about CPA and the RV12 pilot did not see the P68 until very shortly before CPA.

