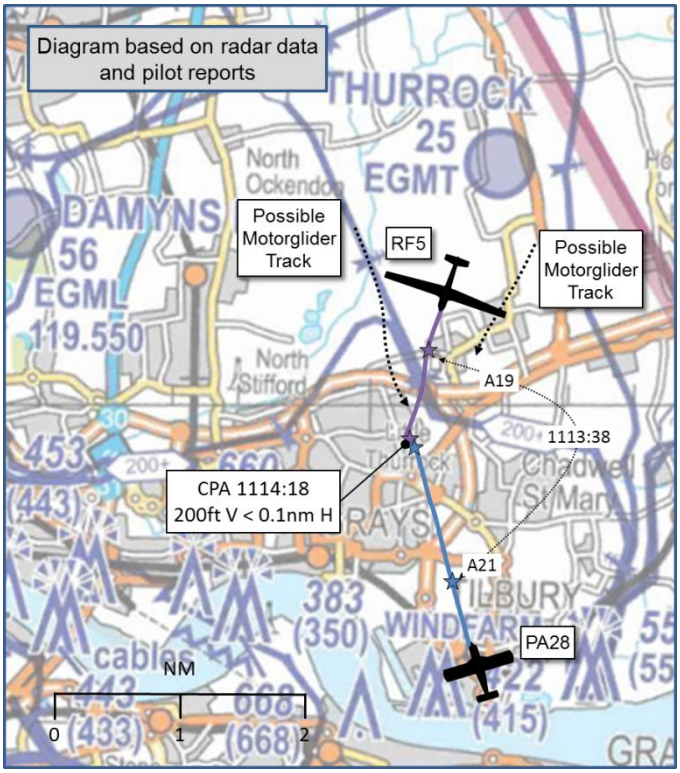
AIRPROX REPORT No 2014133

Date/Time: 3 Aug 2014 1114Z (Sunday)

Position: 5129N 00020E (3.5nm SSW of Thurrock)

Airspace: London FIR (*Class*: G)

	Aircraft 1	*Aircraft 2*
Type:	Fournier RF5 Motorglider	PA28
Operator:	Civ Pte	Civ Pte
Alt/FL:	1800ft (1009hPa)	2000ft QNH (1010hPa)
Conditions:	VMC	VMC
Visibility:	>10km	>30km
Reported Separation:	0ft V/50ft H	20ft V/<40m H
Recorded Separation:	200ft V/<0.1nm H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE RF5 PILOT reports flying a predominantly white motorglider, without lights fitted, heading 200° at 80kt, squawking transponder Modes 3/A, C & S, whilst leading two other motorgliders, of different types, in a loose formation. The other two pilots were French but spoke excellent English and the formation had successfully been in contact with Mildenhall for a MATZ crossing earlier in the flight. Nonetheless, because of the difficulties involved with checking in a formation on a busy ATC LARS[1] frequency, the RF5 pilot decided keep the pilots on a discrete formation frequency whenever possible, and adjusted the second leg of their route to the west, towards Thurrock and away from the western corner of the Southend RMZ[2], whilst 'keeping a good visual lookout'. He decided not to contact Farnborough LARS East because the frequency is 'generally impossible to receive' and his experience of reception near to Ringmer had been particularly poor. After passing Thurrock, the RF5 pilot looked down at his chart for 'about 4 seconds' and when he looked up he saw another aircraft around 100-200ft in his left 9.30-10 o'clock, and about to pass 'just behind' his aircraft's tail without any noticeable deviation from its course. The RF5 pilot broadcast a warning to the rest of the formation and then selected the Farnborough East frequency. As expected, he could hear other aircraft transmitting but could not hear the Farnborough controller, so he contacted London Information, who were also very busy, and they requested that he file the Airprox after landing. Once the formation had landed, the No 2 pilot confirmed that, when he heard the lead pilot's warning, he had seen a high-wing aircraft 'with flaps' but assessed that it was not a threat to him. With hindsight, the RF5 pilot assessed that he may have been better served to have called Southend, but noted that the funnelling effect of the Southend RMZ pushes pilots without radios, or who do not wish to contact Southend, into a 5nm corridor. He also observed that his experience of the poor coverage of the Farnborough East frequency means that he was far more reluctant to use it, whereas the coverage for Farnborough West and North is good and he uses them frequently.

He assessed the risk of collision as 'High'.

[1] Lower Airspace Radar Services
[2] Radio Mandatory Zone

THE PA28 PILOT reports flying VFR, heading 355° at 100kt, with white wing-tip strobes and a tail beacon illuminated, squawking transponder Modes 3/A, C and S and in receipt of a 'Reduced Traffic Service' from Farnborough LARS East. He was accompanied by another qualified pilot sitting in the right-hand seat, but they had experienced difficulty with the seat adjustment and, consequently, the right-hand seat was 'in a reclined position' resulting in a reduced field of view below them on that side. They were routing towards the east of Damyns Hall to keep clear of a NOTAM'd air display and, as they approached Thurrock, they received Traffic Information on an aircraft converging from their right and passing ahead and above their aircraft; they had been keeping a good lookout and saw that aircraft pass clear of them before another aircraft then passed at 'high speed', from right to left, immediately in front, and slightly below their forward field of view. Just 2 to 3 seconds before this second aircraft passed them, they received Traffic Information from the Farnborough Radar controller, on traffic converging from their 1 o'clock. There was not enough time to take any avoiding action and, shortly after the aircraft passed, the PA28 pilot saw another two aircraft, which he believed to be motorgliders, pass in the opposite direction around 200m clear to their right-hand side.

He assessed the risk of collision as 'High'.

Factual Background

The weather for London City at 1050 was recorded as:

METAR EGLC 031050Z AUTO 24010KT 210V280 9999 BKN040/// 22/10 Q1010=

Analysis and Investigation

CAA ATSI

The Farnborough LARS(E) controller's workload and RTF loading were assessed as high. The CAA ATSI had access to RTF and area radar recording together with written reports from both pilots and the investigation report from the Farnborough ATSU.

At 1103:32 the PA28 contacted Farnborough Radar and reported en-route from Lashenden to Elstree and requested a Traffic Service on QNH 1010hPa and 8nm northwest of Lashenden. The Farnborough controller confirmed the QNH 1010hPa and instructed the PA28 to squawk 1734, which was acknowledged correctly by the PA28 pilot.

At 1105:10 the Farnborough controller advised *"(PA28)c/s identified to the south of Rochester by six miles Traffic Service may be late warning of traffic due to traffic density on frequency and in the local area"*. The PA28 pilot replied *"Reduced traffic (PA28)c/s".*

During the next few minutes the Farnborough controller passed Traffic Information to the PA28 pilot on a number of other on aircraft not involved with the Airprox:

1108:27	ATC	*"(PA28)c/s north of you range of three miles believed to be inbound to Rochester present track should clear on your righthand side one o'clock three miles"*
	PA28	"*Roger traffic (PA28)c/s"*
1111:42	ATC	*"(PA28)c/s in your two o'clock range of three miles two thousand feet converging from your righthand side"*
	PA28	*"Roger traffic (PA28)c/s"*
1112:30	ATC	*"and (PA28)c/s that traffic is now one o'clock one and a half miles crossing you right left ahead"*
	PA28	*"Have traffic contact with traffic (PA28)c/s"*

At 1112:44 the PA28 had reported this traffic in sight and the controller then passed Traffic Information on an aircraft approaching from the north [the RF5], *"(PA28)c/s further traffic north of you four miles southbound one thousand eight hundred feet not working this unit".* There was no response from the PA28 pilot. The RF5, squawking 7000, was 1nm south-southwest of Thurrock airfield, tracking south at an altitude of 1800ft and in the PA28's half past twelve at a range of 4.4nm – Figure 1.

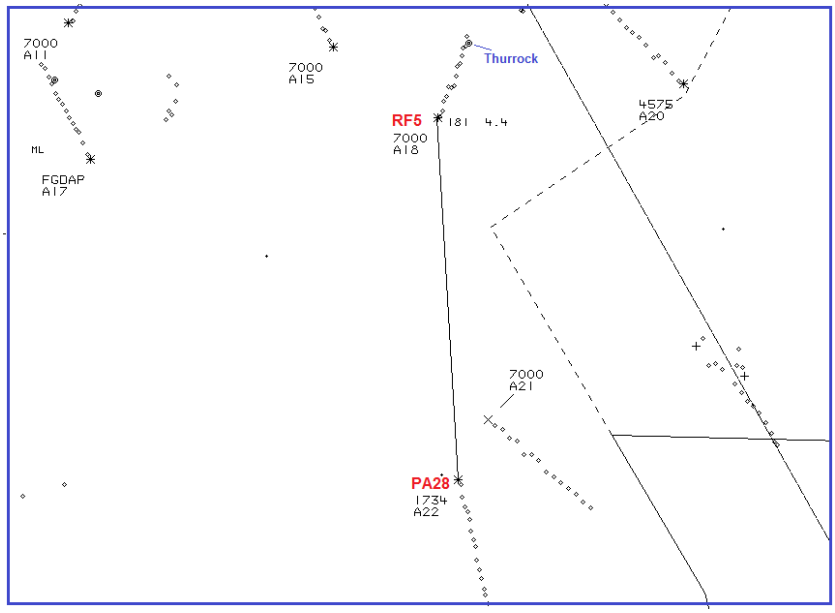


Figure 1 – Swanwick MRT at 1112:44

The two aircraft continued to route on reciprocal tracks and the position of the two other motor gliders is unclear but radar showed a following radar contact positioned 1nm northeast of the RF5.

At 1114:10 the controller updated the Traffic Information *"(PA28)c/s the other traffic is just north of you range less than a mile pass [1114:20] on your righthand side further traffic west of you one and a half miles two thousand one hundred feet".* There was no response from the PA28 pilot. Radar showed the vertical distance between the two aircraft was 300ft – Figure 2.

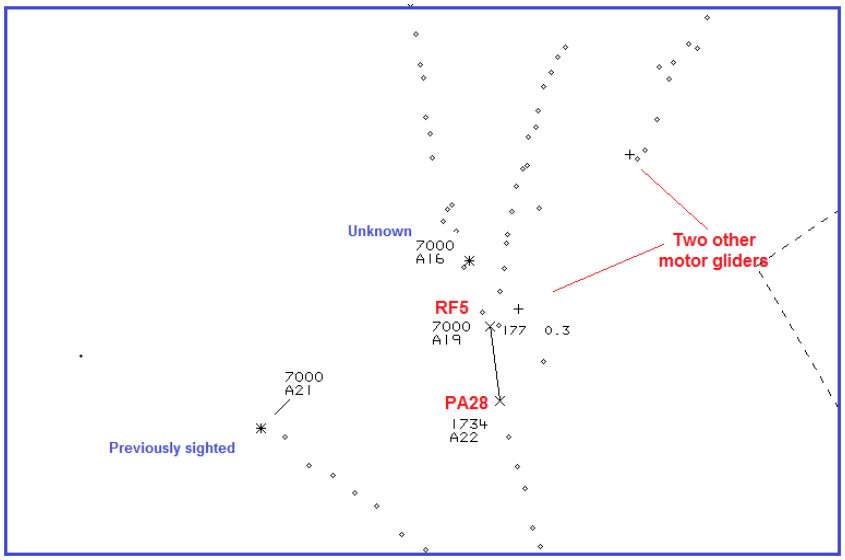


Figure 2 – Swanwick MRT at 1114:12

It is likely that the two aircraft passed abeam each other whilst Farnborough were transmitting the Traffic Information. The PA28 pilot's written report indicated that the RF5 passed at high speed from right to left, immediately in front of and slightly below.

At 1115:10 the controller advised the PA28 pilot that he was clear of the previously reported [RF5] traffic. The controller continued to provide Traffic Information and at 1117:10 the PA28 was transferred to Farnborough LARS(N) on frequency 123.8MHz.

The written report from the RF5 pilot indicated that, due to the potential difficulties in checking in a formation on a very busy ATC frequency, he elected to remain on a discrete frequency routeing via Thurrock to remain west of the Southend RMZ. The RF5 pilot added there are difficulties in communicating with Farnborough LARS(E) in that area.

The Farnborough ATSU have recommended that Thurrock and Damyns Hall are contacted to establish if any aircraft operating in the vicinity of the airfields have difficulty in communicating with Farnborough LARS(E) and if so then a further technical investigation may be required.

The controller had a high workload and was viewing a situational display set at 60nm range. The area around Thurrock would have shown multiple contacts in close proximity and the controller agreed a Traffic Service with the PA28 pilot but advised that there '*may be late warning of traffic due to traffic density on frequency and in the local area'.* The PA28 pilot acknowledged being in receipt of a reduced traffic service and although not considered a causal factor, it was noted that the controller did not use the correct phraseology to reduce the Traffic Service. CAP 413, Radio Telephony Manual, Chapter 6, Paragraph 6.75/76 state:

> '*When providing a surveillance derived ATS, there may be circumstances that prevent controllers from passing timely Traffic Information and/or deconfliction advice, e.g. high workload, areas of high traffic density, against aircraft conducting high energy manoeuvres, or when traffic is not displayed to the controller. Controllers shall inform the pilot of reductions in Traffic Information along with the reason and the probable duration; however, it may not always be possible to provide these warnings in a timely fashion.*
>
> *In high workload situations, which may not always be apparent from RTF loading, it may not be possible for controllers to always provide timely Traffic Information and/or deconfliction advice. High workload situations may not necessarily be linked to high traffic density.*'

The controller passed Traffic Information on a number of other contacts and then passed information on the RF5, '*further traffic north of you four miles southbound one thousand eight hundred feet not working this unit"* but there was no acknowledgement from the PA28 pilot and the controller did not challenge the pilot, probably due to workload.

As the two aircraft closed on reciprocal tracks the controller gave a further late warning of the conflicting [RF5] traffic '*just north of you range less than a mile pass on your righthand side'*. It was considered likely that due the controller's workload and urgency of the warning, the phraseology used was non-standard.

UKAB Secretariat

Both pilots had equal responsibility to avoid a collision[3] and, because the aircraft were approaching more or less head-on, both pilots were required to alter course to the right.[4]

[3] Rules of the Air 2007, Rule 8, Avoiding Aerial Collisions
[4] Rules of the Air 2007, Rule 10, Approaching Head-on

Summary

An Airprox occurred at 3.5nm to the south-southwest of Thurrock airfield, within Class G airspace between a Fournier RF5 motorglider and a PA28 Piper Cherokee Warrior II. The Airprox occurred when the RF5, not in receipt of an Air Traffic Service, and the PA28, in receipt of a reduced Traffic Service from Farnborough LARS(E), came in to proximity. Neither pilot saw the other aircraft in time to take any avoiding action.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings, reports from the appropriate ATC and operating authorities.

Board members agreed that this Airprox had occurred during a very busy day in a busy piece of airspace; considerable discussion about the 'funnelling effect' of the Southend RMZ then ensued. Some members thought that many GA pilots did not understand the difference between an RMZ and controlled airspace and, consequently, they perceived that contacting Southend ATC would result in unwanted control restrictions. In fact, an RMZ only requires them to attempt radio contact with ATC so that controllers can better manage their traffic without unnecessary avoiding action, and does not oblige pilots to accept any form of Air Traffic Service. A Board member commented that he had been in touch with the Southend SATCO[5] about the RMZ, who reported that they very rarely have to refuse a service and that Southend ATC actively encourages pilots to contact them for the benefit of all airspace users. There was agreement that understanding of the use of RMZs could be improved to the benefit of all airspace users, and the Board resolved to make a recommendation that GASCO should consider ways of improving pilots' understanding of RMZs. It was also noted that the RF5 pilot reported frequent problems with the Farnborough LARS(E) frequency; the NATS advisor informed the Board that radio coverage and sectorization for Farnborough LARS were already being reviewed. Board members noted that the PA28 pilot had managed to achieve two-way contact with Farnborough LARS and agreed that, despite the limitations placed on the Traffic Service provided, the controller had done well to pass relevant Traffic Information given the busy airspace.

Turning to the actions of the pilots, the Board thought that, notwithstanding the difficulties involved with leading such a loose formation, the pilot of the RF5 would have been better served by attempting to obtain an Air Traffic Service from Farnborough LARS, or alternatively using the Southend RMZ to simplify his routing. Regardless of the radio problems, formation problems and Air Traffic Services on the day, the Board agreed that both pilots were required by the Rules of the Air to avoid colliding with each other's aircraft. It seemed likely to the Board that the RF5 pilot had experienced an increased workload due to the demands of leading a formation, and that the PA28 pilot, having seen one conflicting aircraft and likely focussed on monitoring it, had probably not maintained an effective scan and so had not seen the RF5 approaching him. The Board agreed that the lesson for all aviators here was captured in the old adage 'aviate, navigate, communicate'; no matter what other demands are placed on a pilot's attention, the requirement to fly the aircraft, look-out, and avoid collision must come above all other actions.

It was agreed that the cause of the incident lay in a late sighting by the RF5 pilot and, because he saw the RF5 so late as to be unable to take action, effectively a non-sighting by the PA28 pilot. Turning to the degree of risk, the Board noted that the CPA reported by both pilots and confirmed by the radar recording was extremely close, and that neither pilot had been able to take any action to improve matters. They therefore classified it as a Category A situation that had just stopped short of an actual collision, where separation had been reduced to the minimum and / or where chance had played a major part in events.

[5] Senior Air Traffic Control Officer

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A late sighting by the RF5 pilot and effectively a non-sighting by the PA28 pilot.

Degree of Risk: A.

ERC Score[6]: 100.

Recommendation(s): GASCO considers ways of improving pilots' understanding of Radio Mandatory Zones.

[6] 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.