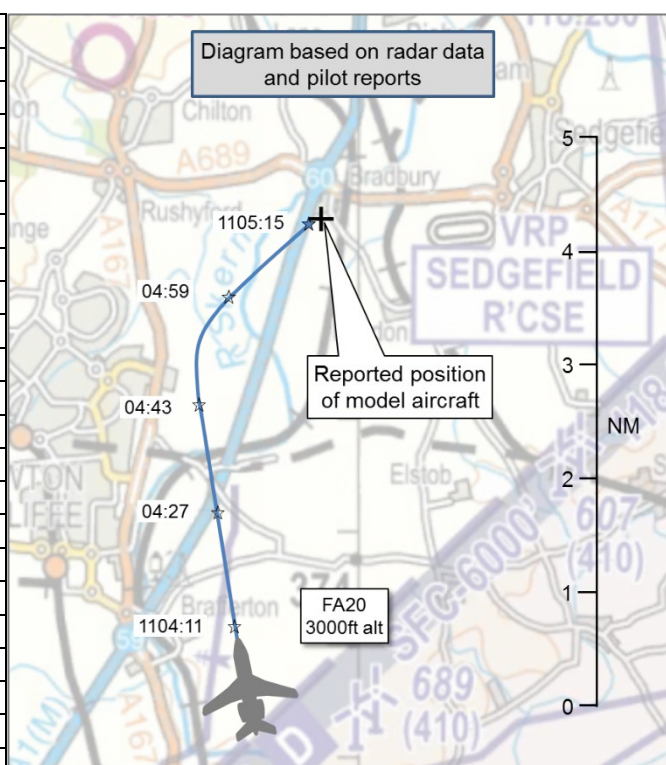


AIRPROX REPORT No 2020042

Date: 20 May 2020 Time: 1105Z Position: 5439N 00131W Location: Newton Aycliffe

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	FA20	Model aircraft
Operator	Civ Comm	Unknown
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Traffic	Unknown
Provider	Teesside Radar	
Altitude/FL	3000ft	NK
Transponder	A, C, S	Nil
Reported		
Colours	Blue/white	White/light colour
Lighting	NR	NK
Conditions	VMC	NK
Visibility	>10Km	NK
Altitude/FL	2800ft	NK
Altimeter	NK	NK
Heading	030°	NK
Speed	200kt	NK
ACAS/TAS	TCAS II	Unknown
Alert	None	Unknown
Separation		
Reported	2-300ft V/200m H	NK
Recorded	NK	



THE FA20 PILOT reports that, during the latter stages of a go-around and short-notice diversion, a member of the mission crew in the rear of the aircraft spotted a model aircraft. The model was a straight-winged monoplane with an approximately 4-6ft wingspan, white (or very light) in colour, with a T-type tail. Cockpit workload on the flight deck was high and a radar service was maintained with all members of the operating crew conducting lookout. The FA20 was heading 050° at 2800ft, approximately 7NM NNW of Teesside Airport, when the EWO¹ noticed the model aircraft from the starboard side window, flying in the opposite direction. They estimated it to be 300ft below and offset 200ft to the south of their aircraft. They were visual with the model aircraft for 2-3sec before it disappeared from view underneath the starboard wing leading edge. They informed the flight deck of the sighting as soon as was appropriate.

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

THE MODEL AIRCRAFT OPERATOR could not be traced. Enquiries were made amongst the membership of the local model aircraft club. Although the club was operating on that day, and had informed Teesside ATC as such, none of the members that were logged as flying on that day recalls flying their models at the position and altitude reported by the FA20 pilot.

THE TEESSIDE RADAR CONTROLLER reports that they cannot recall anything particular about this event as ATC had not been notified of the Airprox and therefore the session appeared uneventful at the time. They do remember that Redmarshall [the Teesside Model Flying Club site] was active with larger models, and that they informed the FA20 pilot because the aircraft was likely to pass close to the Redmarshall site when performing the right-hand run-and-break.

¹ Electronic Warfare Officer.

The controller did not make an assessment of the severity of the incident.

Factual Background

The weather at Teesside International Airport was recorded as follows:

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METAR EGNV 201050Z 17008KT 140V220 CAVOK 21/11 Q1020=  
METAR EGNV 201120Z 19010KT 150V230 9999 FEW025 21/11 Q1020=
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Analysis and Investigation

Teesside International Airport ATC

On reviewing the radar recordings around the time of the event, the FA20 was 2.5NM NW of Teesside Airport, routing northbound maintaining a distance of approximately 4.5NM to the west of the Redmarshall model flying club site. Due to the distance of the aircraft from the Redmarshall site at the time of the event, the FA20 pilot was contacted to ensure that the report was accurate. It was noted that the FA20 made an approximate 20° left turn at the time of the event. The turn took the aircraft to the west of a known permanent echo (a windfarm located 5NM NNW of the airport) but there were no other discernible contacts displayed. Unfortunately, ATC was not advised of the event at the time and, due to the FA20 operating VFR and only making a relatively small adjustment of 20° to avoid the craft, it was not noticed or questioned by the Radar controller. Had ATC been notified, and because the weather conditions were favourable, the Aerodrome controller may have been able to visually acquire and maybe track the craft.

Redmarshall (Teesside) Model Flying club is notified in the Teesside AIP entry as generally operational from 0830 to Sunset and has a horizontal limit of 500m from the site and a vertical limit of not above 400ft agl. Redmarshall was not only active, but also notified as active with larger models at the time of the event. There are no recorded historical events of issues between the club and ATC with regards to their operations.

UKAB Secretariat

The Teesside Model Flying Club operates from a site near Redmarshall, Stockton-on-Tees. The club is contained within Teesside's Class D airspace and is located 3.7NM on a bearing of 016° from the airfield. The Teesside AIP entry states that the model aircraft will remain within 500m of the site not above 400ft agl. Whilst an agreement between Teesside and Redmarshall exists for them to operate as per the AIP entry, the club must seek approval to fly heavier models (between 7Kg and 20Kg) and, when this has been approved, ATC will advise aircraft receiving a Service that the site is active. The Club Chairman contacted members that were operating from the site at the time of the Airprox and, whilst a number of them recall seeing the FA20, none were operating their model aircraft at the position and altitude reported by the FA20 pilot.

The FA20 pilot and model aircraft operator shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.² The person in charge of a small unmanned aircraft which has a mass of more than 7kg must not fly the aircraft at a height of more than 400 feet above the surface.³

Summary

An Airprox was reported when an FA20 and an untraced model aircraft flew into proximity near Teesside International Airport at 1105Z on Wednesday 20th May 2020. The FA20 pilot was operating under VFR in VMC and was in receipt of a Traffic Service from Teesside Radar. The model aircraft operator could not be traced.

² SERA.3205 Proximity.

³ The Air Navigation Order 2016, Article 94(4)(c).

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilot of the FA20, responses from the membership of the Teesside Model Flying Club, radar photographs/video recordings, a report from the air traffic controller involved and a report from the appropriate ATC operating authority. 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.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided dial-in/VTC comments. Although not all Board members were present for the entirety of the meeting and, as a result, the usual wide-ranging discussions involving all Board members were more limited, sufficient engagement was achieved to enable a formal assessment to be agreed along with the following associated comments.

The Board first considered the actions of the Teesside controller and quickly agreed that, without any radar return from the untraced model aircraft, they had not had any situational awareness of the presence of the untraced model aircraft (**CF1**) and could therefore have done nothing to warn the pilot of the FA20. The Board also wished to express their gratitude to the membership of the Teesside Model Flying Club for their participation in trying to trace the model aircraft operator; through their responses the Board was able to discount the possibility of the model aircraft being flown from the Redmarshall site.

Turning to the actions of the FA20 pilot and model aircraft operator, the Board was unable to determine the nature of the model aircraft. A member with experience in small unmanned aircraft operations informed the Board that it was entirely possible that the model aircraft could have been lighter than 250g and, therefore, not subject to the provisions of The Air Navigation Order 2016. That said, even if this had been the case, the model aircraft had been operated close to the edge of the Teesside CTR and, therefore, members felt that a call to Teesside ATC to inform them of the intent to fly the model aircraft in that location would have been helpful (**CF2**). For their part, the FA20 pilot had not had any situational awareness regarding the presence of the model aircraft (**CF3**) because it had neither been showing on radar nor had it been displayed on the TCAS II fitted to the FA 20 (**CF4**). The Board agreed that, given the known limitations of lookout, the model aircraft had probably been seen as soon as practicable, but this had nonetheless been too late for the FA20 pilot to materially increase the separation between the 2 aircraft (**CF5**).

When considering the risk, members noted that there was no manner in which CPA could be measured and so they only had the FA20 pilot's estimation of separation and risk of collision (Medium). The Board felt that the FA20 pilot had not been overly concerned by the proximity of the model aircraft and that the pilot's assessment of separation, whilst inevitably likely to be inaccurate to some degree, represented a situation in which, although safety had been degraded, there had been no risk of collision between the 2 aircraft. Accordingly, the Board assigned a Risk Category C to this event.

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

	2020042		
CF	Factor	Description	Amplification
Ground Elements			
• Situational Awareness and Action			
1	Contextual	• Situational Awareness and Sensory Events	The controller had only generic, late or no Situational Awareness
Flight Elements			
• Tactical Planning and Execution			
2	Human Factors	• Pre-flight briefing and flight preparation	
• Situational Awareness of the Conflicting Aircraft and Action			
3	Contextual	• Situational Awareness and Sensory Events	Pilot had no, late or only generic, Situational Awareness
• Electronic Warning System Operation and Compliance			
4	Technical	• ACAS/TCAS System Failure	Incompatible CWS equipment
• See and Avoid			
5	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots

Degree of Risk: C

Safety Barrier Assessment⁴

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 **ineffective** because the Teesside Radar controller had no knowledge of the presence of the untraced model aircraft.

Flight Elements:

Regulations, Processes, Procedures and Compliance were considered un-assessable because the exact nature of the untraced model aircraft could not be established and, therefore, whether or not the provisions of The Air Navigation Order 2016 applied.

Tactical Planning and Execution was assessed as **ineffective** because the untraced model aircraft operator was operating the model aircraft at a height and in a location where it could interfere with other aircraft without notifying Teesside International Airport.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither the FA20 pilot nor the model aircraft operator had any prior knowledge of the presence of each other's aircraft.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the TCAS II fitted to the FA20 could not detect the model aircraft.

See and Avoid were assessed as **ineffective** because the FA20 crew did not sight the model aircraft in time to materially increase separation.

⁴ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

Airprox Barrier Assessment: 2020042 Outside Controlled Airspace

Barrier		Provision	Application	Effectiveness		
				Barrier Weighting		
		0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓			
	Manning & Equipment	✓	✓			
	Situational Awareness of the Confliction & Action	✗	✗			
	Electronic Warning System Operation and Compliance	○	○			
Flight Element	Regulations, Processes, Procedures and Compliance	○	○			
	Tactical Planning and Execution	✓	✗			
	Situational Awareness of the Conflicting Aircraft & Action	✗	✓			
	Electronic Warning System Operation and Compliance	✗	✓			
	See & Avoid	✗	✗			
Key:		Full	Partial	None	Not Present/Not Assessable	Not Used
Provision	✓	⚠	✗	○		
Application	✓	⚠	✗	○	○	
Effectiveness	■	■	■	■	□	