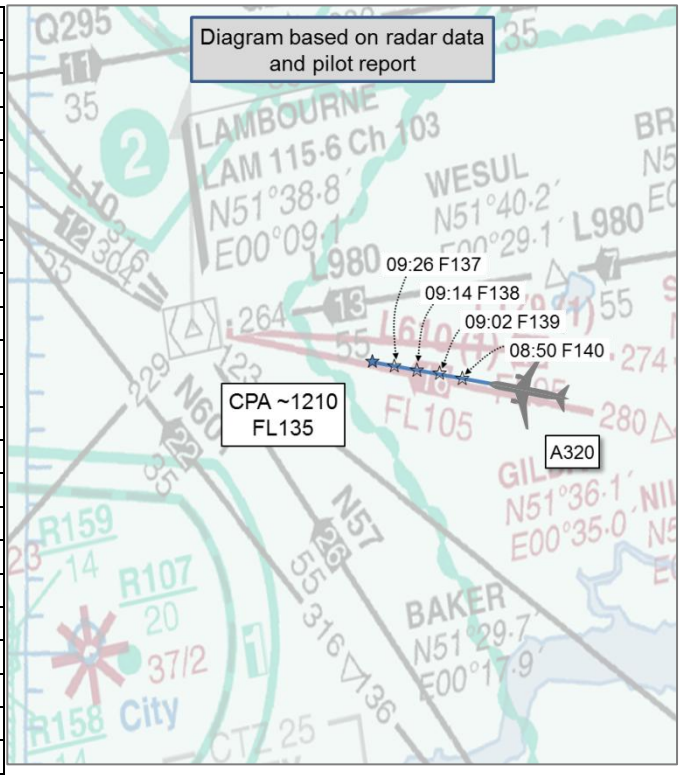
AIRPROX REPORT No 2015073

Date: 28 May 2015 Time: 1210Z Position: 5138N 00019E Location: Approaching Lambourne

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	A320	Unknown
Operator	CAT	Unknown
Airspace	London TMA	London TMA
Class	A	A
Rules	IFR	
Service	Radar Control	
Provider	Swanwick TCC	
Altitude/FL	↓FL135	
Transponder	A, C, S	
Reported		
Colours	Blue/White	
Lighting	NK	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	FL135	
Heading	270°	
Speed	230kt	
ACAS/TAS	TCAS II	
Alert	TA	
Separation		
Reported	200ft V/0m H	
Recorded	NK	



THE A320 PILOT reports P2 was acting as PF, at 8nm inbound to the LAM hold on the 100° radial, descending through FL135. They received a TCAS Traffic Alert with amber traffic displayed directly overhead at +200ft. The TCAS alert lasted for less than 5sec. The pilot noted that no RA was generated and that nothing was seen visually at any stage. Both transponders and the TCAS system were fully serviceable with no faults generated at any time. He noted that on informing ATC of the occurrence he was advised that they had reports of an unmanned drone in the Southend area, last reported at 6000ft.

He did not make an assessment of the risk of collision.

UNKNOWN TCAS CONTACT: Recorded radar replay did not indicate a secondary or primary contact in proximity to the A320, nor was another aircraft or air vehicle seen.

THE SWANWICK TCC LAMBOURNE CONTROLLER reports the A320 was inbound to Heathrow when the pilot asked him if there were any aircraft in the vicinity, as he had received a TCAS TA. There was nothing within 10 miles of him. There had been drone activity nearby, previously reported by the North East radar controller, so he passed that information on to the pilot. There was nothing to see on the radar at the time and no other reports from aircraft nearby.

Analysis and Investigation

UKAB Secretariat

A TCAS TA would normally be generated in response to other transponding traffic. Radar replay indicated that there was no such other traffic and therefore the TA must either have been caused by another source or have been spurious. Considering another source, such as a passenger-

owned personal electronic device (PED), it was considered unlikely that a TA could be generated.[1] Considering a spurious source, the TCAS is designed to detect other aircraft without interference from own on-board systems[2] and is therefore integrated with these systems via a 'mutual suppression bus' which, in this case, suppresses TCAS reception whilst the SSR transponder is transmitting a reply. Failure of the bus could allow the aircraft's TCAS to receive its own aircraft transponder replies to TCAS interrogation, which would in turn generate a TCAS alert. However, due to the proximity of the received reply it would be expected to be a TCAS RA. Intermittent failure of the mutual suppression bus may conceivably result in a short duration TCAS alert.

Summary

An Airprox was reported when an A320 pilot received a TCAS Traffic Alert at about 1210 on Thursday 28th May. He was operating under IFR in VMC in receipt of a Radar Control Service from London, in the descent through FL135, approaching the LAM hold. No other secondary or primary contact was observed on radar replay in proximity and no other aircraft was seen.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the A320 pilot, radar photographs/video recordings, a reports from the air traffic controller involved and a report from the appropriate ATC authority.

Members quickly agreed that although the incident was no doubt disquieting to the crew involved, there was a dearth of information with which to make any meaningful findings in respect of Airprox assessment. There was no secondary radar return of another aircraft in proximity, and the Board therefore agreed that the incident was probably caused by a spurious aircraft indication.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Probably a spurious aircraft indication.

Degree of Risk: D.

[1] Firstly, transponder signals lie within the internationally protected 960–1215 MHz Aeronautical Radio Navigation Service (ARNS) RF band and commercial PEDs have to be certified as not transmitting within this band. The band is shared with other functions, such as DME/TACAN and JTIDS (Joint Tactical Information Distribution System, a military data-link), but these equipments are operated on a coordinated basis in order to avoid interference. Secondly, a transmitted signal would have to emulate the 1090MHz SSR transponder reply which is a series of tightly controlled pulses of specific width, spacing and rise and fall rates, unlikely to be accidentally formed. Additionally, the device would have to transmit with sufficient power to be detected at the external TCAS antennae.

[2] For example, potential interference due to signals detected from on-board SSR transponder replies.