



UK AIRPROX BOARD

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**Selected extracts from UKAB Reports
for use by General Aviation Pilots**

Book Number 10

Airprox in UK Airspace Involving General Aviation Pilots

Incidents reported January - June 2004

FOREWORD

The purpose of this publication is to highlight for the GA community some of the flight safety 'lessons learned' arising from Airprox events which occurred in UK airspace. The particular Airprox in this book have been taken from "UKAB Report Number 12 January 2004 – June 2004", volumes A and B, published in April 2005. Some of the tables and figures in the main report, relating to GA, have also been included. Acting on a suggestion from one of our readers, we are also including a glossary of abbreviations that can appear in Airprox reports.

Peter Skinner, a Member of the UK Airprox Board since its formation - and a Member of the Joint Airmiss Working Group before that - is a GA specialist with a wealth of aviation experience. These 'GA books' are very much his brainchild and I thank him for his work on this edition which includes writing the introduction to each of the three Sections of Airprox Reports. One topic in this edition is 'see and avoid', no apology being made for returning to the subject. Another section of this book deals with 'infringements' and another with 'penetration of glider site airspace': it is hoped that you will find the examples food for thought.

Before inviting you to turn the page, I would like to reiterate a point from the Foreword of "GA Book 9". As with all of the UK Airprox Board's activities, there is no intention to allocate blame: the purpose is to find out what happened and then to disseminate the details so that the many can learn from the unfortunate experiences of the few. In this respect, tribute is paid to those who reported their experiences honestly and openly so that fellow aviators might benefit.

Peter Hunt

Peter Hunt
Director, UK Airprox Board

INTRODUCTION

Airprox Risk Levels

Risk level assessments are made on the basis of what actually took place and not on what may or may not have happened. There are four internationally-agreed categories as follows:

- A Risk of collision** An actual risk of collision existed
- B Safety not assured** The safety of the aircraft was compromised
- C No risk of collision** No risk of collision existed
- D Risk not determined** Insufficient information was available to determine the risk involved, or inconclusive or conflicting evidence precluded such determination

“UKAB Report Number 12 January 2004 – June 2004”, volume A, included details of the ‘GA Risk’ results from the two January – June periods in 2003 and 2004. When figures are expressed in percentage terms, the proportion of Risk A events is slightly higher; that for Risk B slightly lower and the proportion of Risk Bearing (Risk A+B) Airprox is unchanged at 43% of the total. Put another way: **Safety was not assured in approximately one in two GA Airprox.**

“Who Met With Whom?”

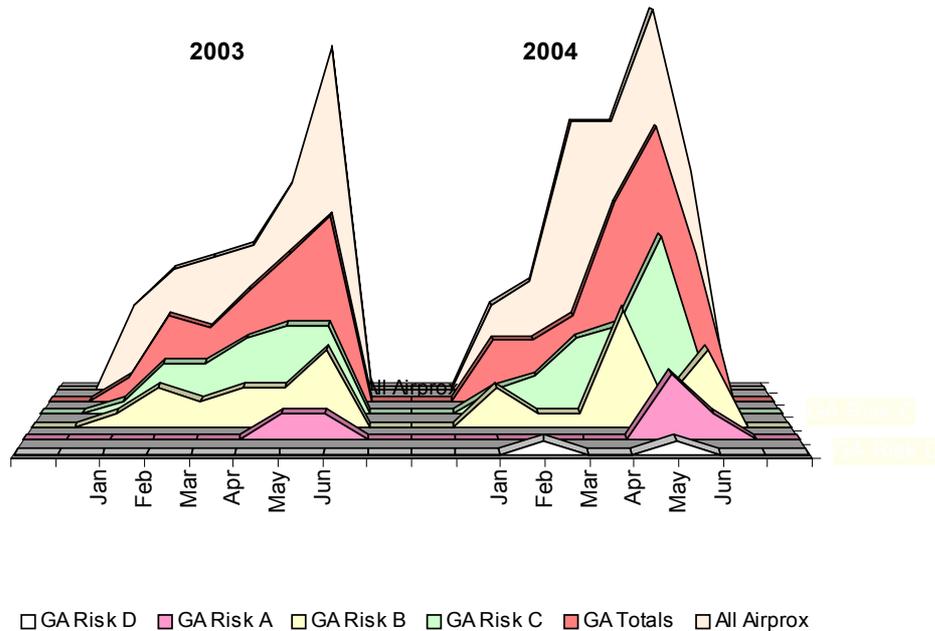
The grid below, taken from UKAB Report Number 12, shows which groups of pilots conflicted and how often. The yellow column shows the pilot group (or their ATC controllers) that filed the Airprox while those in the green row represent the other party. Positioning in either grouping does not imply being ‘right’ or ‘wrong’ – it is just how they met. For example, GA helicopter pilots met GA Private or Club pilots on three occasions, the latter group meeting each other nine times.

Jan to Jun 2004	CAT Helicopter	CAT Passenger	GA (Hire & Reward)	GA Company Ac	GA Glider	GA Helicopter	GA Private or Club	GA Training	Untraced GA Ac	Military Fixed Wing	Model aircraft	Military Glider	Weather Balloon	Unknown	Other Civil Ac	Untraced aircraft	Totals
CAT Cargo								1									1
CAT Passenger		10	2	1			6	3	1	12				1			36
GA (Hire & Reward)			1					1		4							6
GA Company Ac								1		1							2
GA Glider			1				2										3
GA Helicopter							3			1	1						5
GA Private or Club		2		1	1		9	1		6							20
GA Training							3	1	1							1	6
Military Fixed Wing	1	2			1		4	1		10	1			1	1	1	23
Military Glider						1											1
Military helicopter		1		1			2			2							6
Totals	1	15	4	3	2	1	29	9	2	36	2	0	0	2	1	2	109

GA: RISK RESULTS

Also taken from UKAB Report Number 12 are the two Figures below which plot the data in the Tables (also below) to show the GA Risk results from the two January – June periods in 2003 and 2004. When figures are expressed in percentage terms, the proportion of Risk A events is slightly higher; that for Risk B slightly lower and the proportion of Risk Bearing (Risk A+B) Airprox is unchanged at 43% of the total.

GA Involvement in Airprox: January - June in 2003 and 2004



2003	Jan	Feb	Mar	Apr	May	Jun	Totals
Risk A	0	0	0	0	2	2	4
Risk B	1	3	2	3	3	6	18
Risk C	1	4	4	6	7	7	29
Risk D	0	0	0	0	0	0	0
Totals	2	7	6	9	12	15	51

2004	Jan	Feb	Mar	Apr	May	Jun	Totals
Risk A	0	0	0	0	5	2	7
Risk B	3	1	1	9	2	6	22
Risk C	2	3	6	7	14	4	36
Risk D	0	1	0	0	1	0	2
Totals	5	5	7	16	22	12	67

GA: CAUSAL FACTORS

The Table below shows the principal causal factors assigned to the 67 GA Airprox which occurred in January – June 2004. As in the same period in the previous year, 'see and avoid' underpins the first two entries in the Table. It is pleasing to note that the number of penetrations of CAS/ATZ without clearance has dropped from 10 to six.

Ser.	Cause	Totals:
1	DID NOT SEE CONFLICTING TRAFFIC	19
2	LATE SIGHTING OF CONFLICTING TRAFFIC	14
3	PENETRATION OF CAS/ATZ WITHOUT CLEARANCE	6
4	INADEQUATE AVOIDING ACTION / FLEW TOO CLOSE	3
5	DID NOT ADHERE TO PRESCRIBED PROCEDURES	3
6	FLYING CLOSE TO/OVER GLIDER OR PARADROP SITE	3
7	NOT OBEYING ORDERS/ FOLLOWING ADVICE/ FROM ATC	3

You'll now recognise why Airprox involving 'see and avoid' are a topic in this book. The first two such reports (Airprox 073/04 and Airprox 082/04) were both assessed by the Board as being Risk Category A – for very good reasons. These two Airprox are reproduced below.

Penetrating controlled airspace without clearance can cause significant problems for the pilots of other aircraft and for air traffic controllers alike. Other types of infringement can equally create safety problems – infringement of the airspace around a notified and active glider site being one such - as the examples given in this book demonstrate.

GLOSSARY OF ABBREVIATIONS

AAI	Angle of Approach Indicator	CWS	Collision Warning System
aal	Above aerodrome level	DA	Decision Altitude
ac	Aircraft	DAAvn	Director Army Aviation
ACAS	Airborne Collision Avoidance System	D & D	Distress & Diversion Cell
ACC	Area Control Centre	DF	Direction Finding (Finder)
ACN	Airspace Co-ordination Notice	DFTI	Distance from Touchdown Indicator
ACR	Aerodrome Control Radar	DH	Decision Height
A/D	Aerodrome	DME	Distance Measuring Equipment
ADC	Aerodrome Control(ler)	DUA	Dedicated User Area
ADF	Automatic Direction Finding Equipment	E	East
ADR	Advisory Route	EAT	Expected Approach Time
AEF	Air Experience Flight	ERS	En Route Supplement
AEW	Airborne Early Warning	est	estimated
AFIS(O)	Aerodrome Flight Information Service (Officer)	FAT	Final Approach Track
agl	Above Ground Level	FIC	Flight Information Centre
AIAA	Area of Intense Aerial Activity	FIR	Flight Information Region
AIC	Aeronautical Information Circular	FIS	Flight Information Service
AIP	Aeronautical Information Publication	FISO	Flight Information Service Officer
AIS	Aeronautical Information Services	FMS	Flight Management System
ALT	Altitude	FO	First Officer
amsl	Above mean sea level	fpm	Feet Per Minute
AOB	Angle of Bank	FPS	Flight Progress Strip
A/P	Autopilot	GAT	General Air Traffic
APP	Approach Control(ler)	GCA	Ground Controlled Approach
APR	Approach Radar Control(ler)	GCI	Ground Controlled Interception
ARP	Aerodrome Reference Point	GMC	Ground Movement Controller
ASACS SSU	Air Surveillance and Control System Standards and Safety Unit	GP	Glide Path
ASR	Airfield Surveillance Radar	H	Horizontal
ATC	Air Traffic Control	HISL	High Intensity Strobe Light
ATCC	Air Traffic Control Centre	HLS	Helicopter Landing Site
ATCO	Air Traffic Control Officer	HMR	Helicopter Main Route
ATCRU	Air Traffic Control Radar Unit	HPZ	Helicopter Protected Zone
ATIS	Automatic Terminal Information Service	HTZ	Helicopter Traffic Zone
ATM	Aerodrome Traffic Monitor	HUD	Head Up Display
ATS (U)	Air Traffic Service (Unit)	iaw	In accordance with
ATSA	Air Traffic Service Assistant	ICF	Initial Contact Frequency
ATSOCAS	ATSs Outside Controlled Airspace	IFF	Identification Friend or Foe
ATSI	Air Traffic Services Investigations	IFR	Instrument Flight Rules
ATZ	Aerodrome Traffic Zone	ILS	Instrument Landing System
AWACS	Airborne Warning and Control System	IMC	Instrument Meteorological Conditions
AWR	Air Weapons Range	JOI	Joint Operating Instruction
AWY	Airway	JSP	Joint Services Publication
BGA	British Gliding Association	KHz	Kilohertz
BHAB	British Helicopter Advisory Board	kt	Knots
BHPA	British Hang Gliding and Paragliding Association	km	Kilometres
BINA ERS	British Isles/N Atlantic En Route Supplement	L	Left
BMAA	British Microlight Aircraft Association	LACC	London Area Control Centre (Swanwick)
c	circa	LARS	Lower Airspace Radar Service
CAA	Civil Aviation Authority	LATCC(Mil)	London Air Traffic Control Centre (Military) (West Drayton)
CALF	Chart Amendment - Low Flying	LFA	Low Flying Area
CANP	Civil Air Notification Procedure	LFC	Low Flying Chart
CAS	Controlled Airspace	LLZ	Localizer
CAT	Clear Air Turbulence	LJAO	London Joint Area Organisation (Swanwick (Mil))
CAVOK	Visibility, cloud and present weather better than prescribed values or conditions	LOA	Letter of Agreement
CFI	Chief Flying Instructor	LTMA	London TMA
CinC Fleet	Commander in Chief Fleet, Royal Navy	MACC	Manchester Area Control Centre
CLAC	Clear Above Cloud	MATS	Manual of Air Traffic Services
CLAH	Clear Above Haze	MATZ	Military Aerodrome Traffic Zone
CLBC	Clear Below Cloud	mb	Millibars
CLBL	Clear Between Layers	MHz	Megahertz
CLOC	Clear of Cloud	MOD	Ministry of Defence
CMATZ	Combined MATZ	MRSA	Mandatory Radar Service Area
CPA	Closest Point of Approach	MSD	Minimum Separation Distance
C/S	Callsign	MTRA	Military Temporary Reserved Airspace
CTA	Control Area	N	North
CTR/CTZ	Control Zone	NNATS	National Air Traffic Services
		NDB	Non-Directional Beacon
		nm	Nautical Miles
		NK	Not Known

NOTAM	Notice to Airmen	USAF(E)	United States Air Force (Europe)
NR	Not Recorded	UT	Under Training
NVG	Night Vision Goggles	UTA	Upper Control Area
OAC	Oceanic Area Control	UTC	Co-ordinated Universal Time
OACC	Oceanic Area Control Centre	V	Vertical
OAT	Operational Air Traffic	VCR	Visual Control Room
OJTI	On-the-Job Training Instructor	VDF	Very High Frequency Direction Finder
OLDI	On-Line Data Interchange	VFR	Visual Flight Rules
PAR	Precision Approach Radar	VHF	Very High Frequency
PFL	Practice Forced Landing	VMC	Visual Meteorological Conditions
PF	Pilot Flying	VOR	Very High Frequency Omni Range
PI	Practice Interception	VRP	Visual Reporting Point
PINS	Pipeline Inspection Notification System	W	West
PNF	Pilot Non-flying		
PTC	Personnel & Training Command		
QDM	Magnetic heading (zero wind)		
QFE	Atmospheric pressure at aerodrome airport elevation (or at runway threshold)		
QFI	Qualified Flying Instructor		
QHI	Qualified Helicopter Instructor		
QNH	Altimeter sub-scale setting to obtain elevation when on the ground		
R	Right		
RA	Resolution Advisory (TCAS)		
RAS	Radar Advisory Service		
RCO	Range Control Officer		
RIS	Radar Information Service		
ROC	Rate of Climb		
ROD	Rate of Descent		
RPS	Regional Pressure Setting		
RT	Radio Telephony		
RTB	Return to base		
RVSM	Reduced Vertical Separation Minimum		
R/W	Runway		
RVR	Runway Visual Range		
S	South		
SAP	Simulated Attack Profile		
SAS	Standard Altimeter Setting		
SC	Sector Controller		
ScATCC(Mil)	Scottish Air Traffic Control Centre (Military) (Prestwick)		
ScOACC	Scottish and Oceanic Area Control Centre		
SID	Standard Instrument Departure		
SMF	Separation Monitoring Function		
SOP	Standard Operating Procedures		
SRA	Surveillance Radar Approach		
SRA	Special Rules Area		
SRE	Surveillance Radar Element of precision approach radar system		
SSR	Secondary Surveillance Radar		
STAR	Standard Instrument Arrival Route		
STC	Strike Command		
STCA	Short Term Conflict Alert		
SVFR	Special VFR		
TA	Traffic Advisory (TCAS)		
TBC	Tactical Booking Cell		
TC	Terminal Control		
TCAS	Traffic Alert & Collision Avoidance System		
TDA/TRA	Temporary Danger or Restricted Area		
TFR	Terrain Following Radar		
TI	Traffic Information		
TMA	Terminal Control Area		
TRUCE	Training in Unusual Circumstances and Emergencies		
UAR	Upper Air Route		
UDF	Ultra High Frequency Direction Finder		
UHF	Ultra High Frequency		
UIR	Upper Flight Information Region		
UKDLFS	United Kingdom Day Low Flying System		
UKNLFS	United Kingdom Night Low Flying System		
UNL	Unlimited		

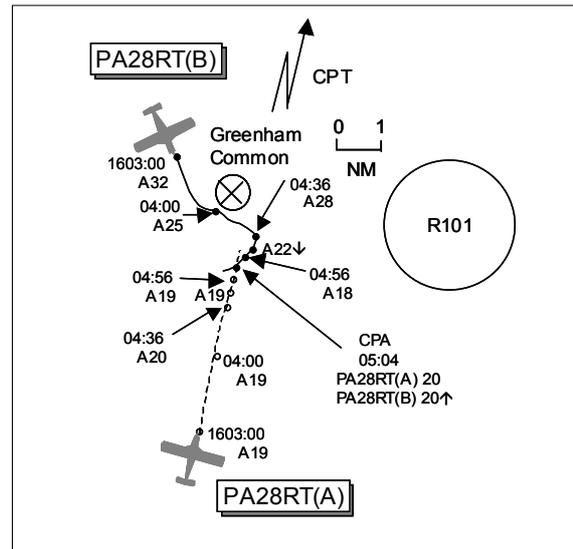
SECTION 1

See and Avoid

As an instructor at a flying school, one can often conduct a “Trial Lesson” and might suggest to a nervous passenger – who anyway probably did not want such a gift from a vindictive relative - “but not to worry, it is just like driving a car but the view is better”. Well it isn’t. Cars drive on roads and the movement on them is restrained by strict rules. Not so in the air. Other aircraft can come at you from all directions and as if that were not enough, the view from many cockpits is such that, to continue the analogy, would probably make a car unsaleable. The only remedy is “LOOKOUT”. This can be augmented by “LISTEN-OUT” as to some extent, there can be through the headphones a flow of information on other traffic. However, in some circumstances, this can be misleading – such as within Class D airspace when a controller is either unable or unwilling to provide it. Piloting an aircraft is a demanding task made up of many functions which can only be dealt with if appropriately both sequenced and managed – what we can refer to as Cockpit Resource Management.

AIRPROX REPORT NO 073/04

Date/Time: 16 May 1605 (Sunday)
Position: 5121N 00116W (2nm S Greenham Common)
Airspace: FIR (Class: G)
Reporting Ac Reported Ac
Type: PA28RT(A) PA28RT(B)
Operator: Civ Pte Civ Trg
Alt/FL: 2000ft 4000ft
(RPS 1028mb) (QNH 1025mb)
Weather VMC CAVOK VMC CLNC
Visibility: >10km
Reported Separation:
2-3m V not seen
Recorded Separation:
nil V returns merge



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE PA28RT(A) PILOT reports tracking 015° towards CPT at 120kt and 2000ft RPS 1028mb enroute from Compton Abbas to Wycombe Air Park and in receipt of an AFIS from Wycombe TOWER on 126.55MHz squawking 7000 with Mode C. The weather was CAVOK and the ac was coloured beige/brown with wing-tip strobe lights switched on. Although flying as P1 in the LH seat, a second qualified pilot (P2) was occupying the RH seat carrying out nav and radio duties with a further qualified pilot (P3) seated in the rear. P3 was reading out the approach instructions for Wycombe Air Park whilst P2 was checking their position and ETA. P3 then drew their attention to restricted area R101 in their 3 o'clock and they all turned to look. A few seconds later P2 shouted “look out” and P1 then saw the approaching underside of an ac in about their 1 o'clock position which immediately filled the windscreen. The other ac was in a climbing and turning attitude (R wing down 15-20°), its nose was out of view above the screen and slightly to his L, heading about 210-220° with the underside of its tail, at the leading edge of the elevators, being directly in line with his propeller. He could not see the whole underside of the other ac as it was so near but recalled it being white or light brown/beige, single engined with retractable gear

AIRPROX REPORT No 073/04.

possibly a Mooney, Bonanza or Arrow. Its wheels could be seen in their entirety in the wheel wells (not fitted with spats) and he estimated the distance to impact as 7-8m. Presumably as a reflex action he pushed the control column forward and collision was averted. However, he recalled the incident as if it had occurred in slow motion – he remembered processing the information, the unusually heavy resistance on the control column and on pushing forward being convinced he had pushed forward too late. The CPA was estimated as 2-3m vertically, the whole episode lasted about 4sec. Of concern was the fact that none of the 3 pilots on board had seen the other ac before the incident and he wondered whether its pilot had been climbing, turning or pulling sharply to avoid them or if they had been sighted at all. He assessed the risk as 'the highest possible'.

THE PA28RT(B) PILOT reports flying a dual training sortie from Blackbushe and in receipt of a 'radar' service from Farnborough on 125.25MHz squawking an assigned code, he thought. The visibility was >10km in SKC VMC and the ac was coloured beige/brown/red; no lighting was specified. During this navigation exercise, operating up to 4000ft, neither he nor his student had seen any ac conflicting with their flight path and he did not consider that his ac had been involved in the Airprox.

AIS MIL reports that the reported ac was tracked on recorded radar until it landed at Blackbushe at 1646Z with Blackbushe ATC confirming the identity of the ac as PA28RT(B).

ATSI reports that at 1555Z all ac on 125.25MHz were told to squawk 7000 as LARS was closing for 90min. Subsequently all pilots calling were advised by other pilots on frequency to broadcast their position and intentions and to treat the frequency as a 'traffic' frequency. No calls were heard from PA28RT(B) pilot. Further checks were made 1hr earlier in case of UTC/BST error but the frequency was again closed with no calls heard from the reported ac's pilot. The Farnborough APP frequency of 134.35MHz was checked between 1555-1615Z and no calls were heard from the PA28RT (B) pilot.

UKAB Note (1): Met Office archive data shows the Portland RPS 1500-1600Z & 1600-1700Z as 1025mb and the QNH for the Greenham Common area was 1028mb.

UKAB Note (2): Analysis of the Heathrow radar recording at 1603:00 shows a 7000 squawk believed to PA28RT(A) 5.7nm S of Greenham Common tracking 015° indicating 1900ft (London QNH 1028mb). At the same time another 7000 squawk is seen, believed to be PA28RT(B), 1.5nm NW of Greenham Common tracking 160° indicating 3200ft QNH 1028mb. PA28RT(A) continues on a steady track until the Airprox occurs with its Mode C varying between 1900-2000ft. PA28RT(B) however is seen to manoeuvre abeam Greenham Common, turning to the ESE and descending to 2500ft before climbing to level at 2800ft at 1604:36. Thereafter PA28RT(B) turns sharply R onto a conflicting south-westerly track and commences a rapid descent to 1800ft 20sec later (ROD 3000fpm) before immediately climbing again. The CPA occurs 8sec later at 1605:04 when radar returns merge, both ac indicating 2000ft.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, radar video recordings and reports from the appropriate ATC authorities.

Members shared the reporting pilot's concern that PA28RT(B) had gone unsighted to all 3 pilots on board until the Airprox occurred. The radar recording shows PA28RT(B) manoeuvring ahead of PA28RT(A), initially crossing ahead L to R above their level before it turns into conflict. Thereafter it is seen to converge almost head-on, descend through their cruising level before pulling up and turning to the W. Conversely, PA28RT(B) pilot had the opportunity to see PA28RT(A) and should have seen it when he cleared the area into which he was turning. That said, on this occasion, for whatever reason, 'see and avoid' in Class G airspace had not worked. The graphic description of the incident from PA28RT(A) pilot, combined with the radar recording, left members in no doubt the sighting of PA28RT(B)

had occurred too late for any avoiding action taken to have been effective, the subject ac passing by chance. This led members unanimously to agree that the Airprox had been caused by a non-sighting by PA28RT(B) pilot and an effective non-sighting by PA28RT(A) pilot and that a definite risk collision had existed.

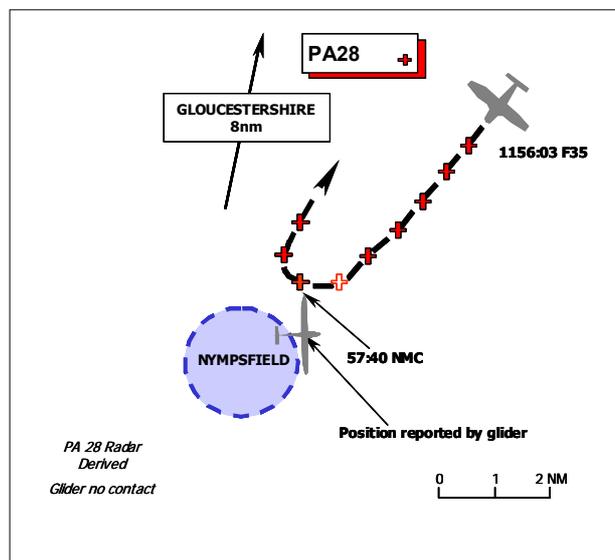
PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Non-sighting by PA28RT(B) pilot and an effective non-sighting by PA28RT(A) pilot.

Degree of Risk: A.

AIRPROX REPORT NO 082/04

Date/Time: 15 May 1157 (Saturday)
Position: 5144N 00215W (2nm ENE Nympsfield)
Airspace: London FIR (Class: G)
Reporting Ac Reported Ac
Type: LS4 Glider PA28R
Operator: Civ Club Civ Club
Alt/FL: 2600ft FL30
 (QFE)
Weather VMC CLBC VMC CLBC
Visibility: >5nm 15km
Reported Separation:
 100ft V 0 H NR
Recorded Separation:
 NR



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE LS4 GLIDER PILOT reports flying a white glider on a local soaring sortie from Nympsfield and listening out on their frequency. He was at 2600ft QFE heading 090° at 60kt when he heard engine noise and very shortly afterwards a light ac passed directly over him 100ft above. The ac came from his 9 o'clock and departed to his 3 o'clock and he was able to identify it by type and registration number. Since he saw the other ac so late, he was unable to take any avoiding action and assessed the risk of collision as being high.

THE PA28R PILOT reports flying a blue and white ac from Gloucestershire to Dinard [see UKAB Note (2)] with strobes and the beacon selected on, in receipt of a RIS from Bristol [International] Radar. At the reported time of the incident he was heading 185° at 135kt and FL30. Until he was contacted, he was not aware of an Airprox occurring. However, he doubted the proximity as reported by the glider pilot and assessed the risk as none.

UKAB Note (1): The PA28R can be seen on the Cleve Hill radar recording squawking 7000 climbing to and maintaining FL35 Mode C on a SW heading. One min before the incident the squawk changed to 0414, a Bristol code, and descended to FL31. It is seen directly over the reported position at 1157:49 in a hard R turn. Immediately after, the squawk changes back to 7000 and the ac departed the area on a Northerly heading.

AIRPROX REPORT No 082/04.

UKAB Note (2): The PA28R took off from Gloucestershire at 1150UTC outbound for Dinard and encountered a problem in the vicinity of Stroud (the Airprox position). The ac turned round and recovered to Gloucestershire where the problem was rectified before taking off again at 1220UTC for Dinard. In a subsequent telephone conversation the pilot confirmed that his report was for the first sortie and that he had not seen any gliders (this was not clear from the written version).

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, a radar video recording and reports from the air traffic controllers involved.

The BGA provided written comments, which were concurred by the Board and are summarised in the following. This was a worrying incident in that it took place on a weekend soaring day. Nymphsfield and adjacent Aston Down both have more than 50 gliders based there and it is likely that more than 10 would have been flying in the area on such a day. Furthermore, had the PA28R turned back to Staverton a little later, he would have almost certainly have passed over the Nymphsfield launching wire. Nymphsfield also launches by aero tow in this area. No mention was made [by the PA28R pilot] of seeing any other traffic which may have meant that he was concentrating on navigation, autopilot and transponder activities rather than looking out. Some form of advisory routing advice could provide a way forward so that en-route light ac and helicopters avoid the busiest spots: in this case routeing just a little to the W would have minimised the risk. Gliders travelling in straight lines are almost impossible to see, but an ac operating below 150kts should see a circling glider much more easily. You can hear ac approaching quite often in gliders but it is often very difficult to establish their direction and reactionary manoeuvring without visual contact can exacerbate the problem. Most LS4 pilots will be experienced and the glider pilot having sufficient capacity to note the type and registration does indicate the encounter must have been relatively close.

Notwithstanding the BGA comments, both pilots had a responsibility to see and avoid each other. That neither did in time to take effective avoiding action was of concern to, and the reasons analysed by, the Board. Members agreed that the PA28R pilot had probably become distracted by his ac problem, deciding whether to return to Staverton, plotting a new course and changing frequency and squawk. A combination of these factors had probably led to a lapse in his lookout. If the glider pilot was circling, his picture of the surroundings would have been changing continuously. However if the PA28R came from his 9 and departed to his 3 o'clock, as he reported, then he was probably a little farther NE than the position reported. This would have meant that he had been in a position to see the PA28R for some time, albeit presenting a small target to acquire, not moving across his canopy and coming straight towards him. Members surmised that a combination of these factors had led to the glider pilot not seeing the other ac until it was too late to take avoiding action.

Since neither pilot was able to take any action to avoid the opposing ac, it had been only good fortune that prevented them from colliding: the Board judged that there had therefore been an actual risk of collision, grading the Airprox 'A' accordingly.

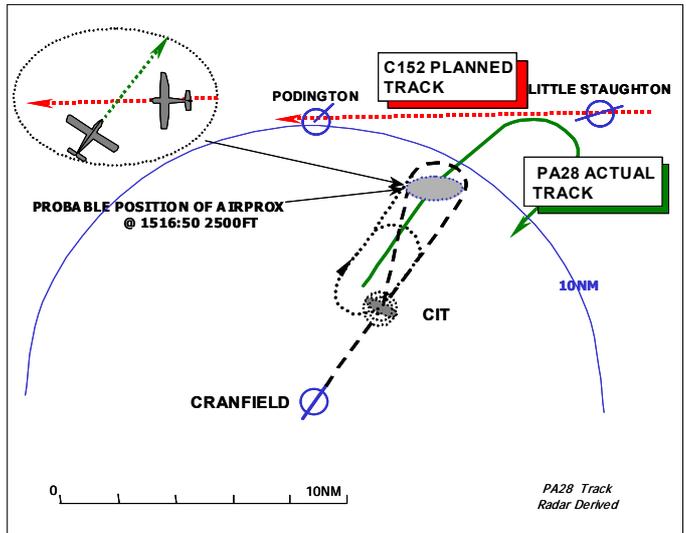
PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Non-sighting by the PA28R pilot and effectively non-sighting by the LS4 glider pilot.

Degree of Risk: A.

AIRPROX REPORT NO 113/04

Date/Time: 20 Jun 1520 (Sunday)
Position: 5241N 00028W (9m NNE Cranfield - elev 358 ft)
Airspace: London FIR (Class: G)
Reporting Ac Reported Ac
Type: PA28 C152
Operator: Civ Pte Civ Trg
Alt/FL: 2500ft 2500ft
(QNH 1004 mb) (QNH 1005 mb)
Weather Inter IMC RAIN VMC CLBC
Visibility: ~8km 20-30km
Reported Separation:
0V 30ft H Not seen
Recorded Separation:
Not recorded

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

THE PA28 PILOT reports flying a white ac with red and blue stripes with nav lights, beacon and landing lights selected on, on an IFR flight from Teesside to Cranfield. He was intermittently IMC in rain showers and was squawking 7017 [at the time Cranfield Conspicuity] with Mode C and was in receipt of an Approach Control Service from Cranfield APP. While heading 035° at 130kt and having just levelled at 2500ft 1min 30sec outbound on the ILS procedure for RW22, [the pilot reported his position as commencing the base turn on the RT] he saw a white C152 with blue stripes crossing from R to L, just above him at a slant range of approximately 30ft and on a track of 260°. [He was able to read the ac registration]. The ac transited the published IAP, he thought, which is clearly marked on ½mil GA charts with a chevron, without contacting the controlling ATSU. He immediately dived his ac and applied right bank and assessed the risk of collision as being imminent/high.

THE C152 PILOT reports flying a blue and white ac with HISLs on on a local training flight from Bourn squawking 7000 with no Mode C and listening out with Cranfield APP [on the same frequency as the PA28]. At the time of the reported Airprox he was heading 265° at 85kt and was tracking from Bourn to Salcey Forest, about 2nm N of the planned track. Just before St Neots he changed frequency from Little Staughton but heard no reply to their call: shortly afterwards he changed frequency to Cranfield APP. Their ground speed was ~70kts (wind ~270°/15) and when they were abeam Podington [10nm N of Cranfield] they had been listening out for between 9 and 10 minutes but heard no calls. When about 1 to 2nm SW of Podington [the APP Controller reported that he said 4nm S in the telephone call to them] they heard the pilot of another ac calling Cranfield, stating that he wished to file an Airprox with a blue and white Cessna 152 reg G XXXX. He was surprised and asked his student if he had seen anything. The student commented that he believed he had seen a 'white flash' passing from left to right immediately below that could have been another ac. They continued their flight towards Salcey Forest and then turned to the N tracking towards Oundle (track 025°) and thence back to Bourn landing at 1705 local. He then rang Cranfield ATC to establish if he had indeed been involved in an AIRPROX, giving a contact telephone number.

SATCO Cranfield reports that he was informed that the PA28 pilot had reported an Airprox with another ac while on the approach to Cranfield. The other ac was believed to be a C152 reg G XXXX and the pilot of which, on hearing the Airprox being reported, realised that he may have been involved. The pilot

AIRPROX REPORT No 113/04.

contacted ATC after landing: his details were recorded. The SATCO contacted both pilots, as he was unsure as to whether an AIRPROX was to be filed.

The PA28 pilot described the incident [as in his report above]. It was established that the other pilot believed to be involved had been in the vicinity, on an instructional flight with a student pilot operating out of Bourn. They had not seen the reporting ac and confirmed that he had been listening out on Cranfield APP but did not call Cranfield, as it was 'quiet'. He informed the SATCO that he was aware of the Cranfield instrument approach, as he had been an instructor there some ten years previously. He believed that the reporting ac had not been anywhere near the ILS pattern. The SATCO asked that notwithstanding this incident, he would appreciate a call on APP if he was listening out in order to inform other ac of his presence.

ATSI reports that there were no apparent ATC causal factors in this incident. The PA28 was receiving an Approach Control service from Cranfield which is not radar equipped. The C152 was not known to APP as it was only listening out on the frequency.

UKAB Note (1): The PA28 can be seen on the recording of the Debden Radar throughout the Instrument pattern. The ac flies the pattern as described by its pilot but drifts to the E by about 1nm and extends to 13nm (9½ nm from the Cranfield LCTR) before turning in. Although this is 4nm further outbound than the promulgated pattern, from the timings on the RT transcript the PA28 pilot reported the Airprox to APP when he was in a position 028° 9½nm from the airfield and still tracking outbound. The C152 does not paint on primary or secondary at any time. However an unidentified primary return shows very intermittently just to the W of the reported position (tracking slowly to the W) just after the time that the PA28 pilot reported the incident to Cranfield APP. If this were the C152 then back-plotting the ac track would verify the diagram of the incident provided by the PA28 pilot. Although there is a slight discrepancy in the positions reported, this can probably be explained by the time lag of the 2 pilots' verbal reports to APP.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequencies, a radar video recording, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

Although unable to resolve positively the differences in the reported positions, the Board had little doubt that the C152 had been the other ac involved, stemming mainly from its registration and colour scheme.

The Board determined that both ac had been operating legitimately in Class G airspace and, in the absence of any radar assistance, 'see and avoid' was the sole means of collision avoidance. Although accepting that no radar assistance would have been available at the height that the respective ac were operating, this does not absolve the respective pilots from their obligation to avoid other ac even if they are flying on a published IFR approach.

Despite his distance from Cranfield, the Board considered that the C512 instructor might have been unwise in not calling them and informing them of his position and intentions. Had he done so this could have been relayed to the PA28 pilot allowing him to make an informed decision as to whether or not it was safe to proceed with his approach in IMC conditions. Members accepted however that such calls to non radar-equipped airfields can be of limited value to the pilot making them. Additionally the LARS provider for the area is Brize Norton and at 2500ft the C152 would have been below their radar coverage. In such circumstances, it can therefore be difficult to decide which airfield to call. In this instance the C152 was equidistant between Sywell and Cranfield: Cranfield can be exceptionally busy and at these times information calls can serve to distract APP from their primary function. Nevertheless

in this instance an information call by the C152 instructor could have prevented this incident even allowing for the fact that the PA28 was outside the pictorial representation of the published approach.

The closeness of this occurrence and the fact that neither pilot saw the opposing ac in time to take effective avoiding action was of major concern and the Board determined that only good fortune had prevented the ac from actually colliding and even then by the smallest of margins.

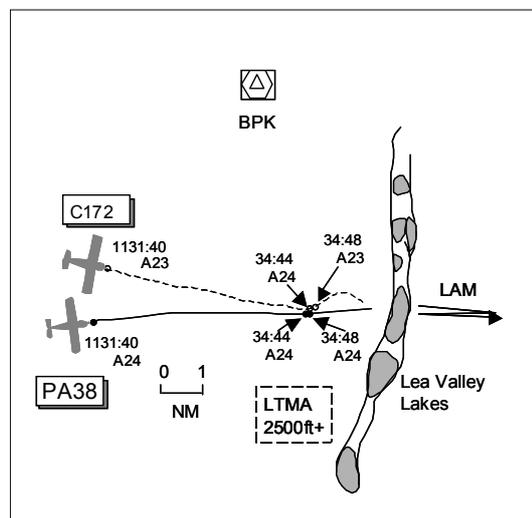
PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Non-sighting by the C152 pilot and very late sighting by the PA28 pilot.

Degree of Risk: A.

AIRPROX REPORT NO 010/04

Date/Time: 9 Feb 1135
Position: 5140N 0003W (8nm W LAM)
Airspace: FIR (Class: G)
Reporting Ac Reported Ac
Type: C172 PA38
Operator: Civ Pte Civ Pte
Alt/FL: 2300ft 2400ft
 (QNH 1035mb) (QNH)
Weather VMC CLNC VMC CLNC
Visibility: >30km >30km
Reported Separation:
 nil V 100m H nil V 300m H
Recorded Separation:
 0.1nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE C172 PILOT reports heading 095° at 95kt cruising at 2300ft QNH 1035mb and listening out with Elstree on 122.4MHz squawking 7000 with Mode C. The visibility was >30km in clear sky VMC, the ac was coloured white with red/blue stripes and the strobe lights were switched on. Passing over the Lea Valley lakes, his passenger spotted a PA38 Tomahawk ac, coloured white with a thin stripe, in their 5 o'clock position range 100m at the same level heading directly towards them. He immediately executed a descending L turn to avoid it and believed that had neither ac deviated at all, the risk of collision would have been high. After regaining his track towards LAM VOR, the Tomahawk was now in front and he watched it diverge away to the NE, apparently not having altered course or altitude.

THE PA38 PILOT reports heading 090° at 90kt cruising at 2400ft QNH and listening out with Essex RADAR on 120.62MHz squawking 7000 with Mode C. The visibility was >30km in clear sky VMC, the ac was coloured white with red stripes and the strobe lights were switched on. When W of the Lea Valley he saw a high wing white/light coloured Cessna overtaking him on his LHS, he had been watching it for about 5-10min as it slowly caught him up from behind. In accordance with the Rules of the Air, he waited for the Cessna pilot to see him and to take appropriate action. He kept watching it in case he was unsighted, particularly as vision from the Cessna's cockpit, owing to the high wing, was not good in his direction and because their tracks were converging. He deduced that the other pilot did see him as the

AIRPROX REPORT No 010/04.

Cessna reached his 10 o'clock position range 300m and altered course by turning steeply to the L and descending before turning R to pass behind. He maintained his course whilst watching the Cessna continue diverging to the SE. He believed that there had been no risk of collision.

UKAB Note (1): The Rules of the Air Regulations 1996 Rule 17 Rules for avoiding aerial collisions para (2) Converging (b) (i) states "...when two aircraft are converging in the air at approximately the same altitude, the aircraft which has the other on its right shall give way". Para (4) Overtaking (a) states "...an aircraft which is being overtaken in the air shall have the right-of-way and the overtaking aircraft, whether climbing, descending or in horizontal flight, shall keep out of the way of the other aircraft by altering course to the right, and shall not cease to keep out of the way of the other aircraft until that other aircraft has been passed and is clear, notwithstanding any change in the relative positions of the two aircraft".

UKAB Note (2): The London QNH was 1036mb.

UKAB Note (3): Analysis of the Heathrow radar recording clearly shows the incident as described by the PA38 pilot. At 1131:40 the C172 is seen 13.5nm W of LAM tracking 100° squawking 7000 indicating 2300ft QNH 1036mb with the PA38 to the SSW of it range 1.5nm tracking 090° squawking 7000 indicating 2400ft QNH. Both ac continue on steady converging tracks, the C172 very slowly overhauling the Tomahawk until the CPA occurs at 1134:44, both ac indicating 2400ft QNH, with the C172 in the PA38's 10 o'clock range 0.1nm. The next sweep 4sec later show the subject ac 0.2nm apart with C172 diverging on a 070° track at 2300ft QNH, 100ft below the PA38's level. The ac continue to diverge until displaced by 0.4nm before the C172 turns towards the SE to pass behind the PA38.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac and radar video recordings.

It was clear that Rule 17 pertained during this 'see and avoid' encounter in Class G airspace. Unbeknown to the C172 pilot, he had slowly overtaken the PA38 for several minutes whilst both ac had been on a converging course. However, the C172 pilot had only seen the PA38, which had 'right of way', after he had pulled ahead of it and once his passenger pointed it out to him. Being startled by the PA38's position and proximity at this first sighting, the C172 pilot had believed the Tomahawk was in conflict and had executed a descending L turn away. Members agreed that what had taken place amounted to a non-sighting by the C172 pilot and that this had caused the Airprox. The PA38 pilot had watched the overtaking/converging C172 for several minutes, and had been mindful that its pilot may not have seen him. However, some members thought that the situation had warranted some sort of action also. Whilst the Tomahawk pilot had always been in a position to manoeuvre if required, it may have been prudent to do so until he was certain that the Cessna pilot had seen him, notwithstanding any 'right of way' priorities. As it transpired, despite this view, safety had remained intact.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A non-sighting by the C172 pilot when overtaking the PA38 on a converging course.

Degree of Risk: C.

AIRPROX REPORT No 036/04.

got as close as reported by the other pilot. He had been told the other ac had a low wing configuration and it had been descending which could have meant each ac had been in each other's blind spots. Retrospectively, he thought he should have spoken to Filton as he was within 10nm of the aerodrome. In summary, he had learnt a) to keep a good lookout and not concentrate too much on ground features and b) to use the radio more especially when flying towards aerodrome final approaches.

UKAB Note (1): The Airprox was reported by the TB21 pilot to the UKAB within 1hr of the incident occurring but the completed CA1094 was not received however until over 4 months later. Mil ATC Ops were only informed of Lyneham ATC involvement after AIS (Mil) tracing action 6 weeks post incident.

UKAB Note (2): Met Office archive data shows the Cotswold RPS 1000-1100Z as 1001mb and the Filton METAR as EGTG 1120Z 17015KT 9999 SCT025 13/04 Q1005=

UKAB Note (3): Analysis of the Clee Hill radar recording proved inconclusive, as the Airprox is not seen. An intermittent primary only response, believed to be the Pegasus Quantum M/light, is seen leaving the Kemble area at 1028 on a nominal track of 225° before fading completely from radar 1nm S of Badminton at 1046:40. Fifty seconds later (1047:30), the TB21 leaves the Lyneham CTA 6nm WNW of Lyneham tracking 275° squawking 4522 (Lyneham code) at FL40. At 1048:28 the TB21 turns onto a track of 270° followed 40sec later with the squawk code changing to 4251 (Filton code) indicating FL40. On this track the TB21 passes 2nm S of Badminton on the extended FAT to Filton RW27 before commencing descent 1nm N of J18 on the M4. The TB21 descends through 3500ft QNH 1005mb, approx FL37, the level reported by its pilot when the Airprox occurred, at 1052:23 7.5nm E of Filton.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac and radar video recordings.

Members discussed the 'crossing' of the Filton FAT by the Flexwing pilot, which had been about 9nm to the E of Filton. Some thought that flying at 4000ft, the M/light had been well above the instrument approach profile and clear of the procedural approach pattern; the TB21 had effectively joined from a long straight-in approach. Although advisable and good airmanship, there is no requirement for pilots to call the appropriate ATSU when crossing a promulgated approach path, such paths being afforded no protection in Class G airspace. Although the Flexwing was not showing on radar at the time, an RT call from its pilot would have alerted the APR to his presence. Ultimately this had been an encounter in the FIR where 'see and avoid' pertained with an equal onus on both pilots. The Flexwing pilot had not seen the TB21, although the opportunity had been there, but it was made more difficult as it had approached from his rear L quarter and passed behind and below. However, this non-sighting element had been a part cause of the Airprox. The TB21 pilot had seen the M/light at the earliest possible opportunity, albeit late, after he had exited cloud. This had been the second part cause of the Airprox.

With only the TB21 pilot observing the incident, the Board could only assess the risk on this limited information. Undoubtedly the TB21 pilot had been surprised to see the subject M/light, as he exited cloud, in his 1130 position range 0.5nm crossing R to L 100ft above, their flight paths having already crossed with the M/light slowly diverging away to the L. He had instinctively tried to increase the separation distance but thought that his actions had had little effect, passing 400yd behind and still about 100ft below it, just before he re-entered cloud. This led the Board to agree that there had been no actual risk of collision but the safety of both ac had been compromised during the encounter.

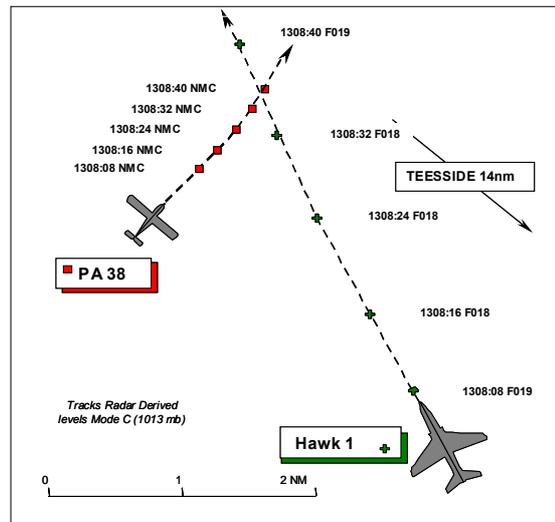
PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Non-sighting by the Flexwing pilot and a late sighting by the TB21 pilot.

Degree of Risk: B.

AIRPROX REPORT NO 074/04

Date/Time: 17 May 1308
Position: 5437N 00150W (14 NW Teesside)
Airspace: London FIR (Class: G)
Reporting Ac Reported Ac
Type: Hawk PA 38
Operator: HQ STC Civ Club
Alt/FL: 2000ft 2000ft
(RPS 1018 mb) (Teesside QNH)
Weather VMC CLOC VMC CLBC
Visibility: 8km 10km
Reported Separation:
30ft V 0 H NR
Recorded Separation:
Contacts Merge



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE HAWK PILOT reports flying solo leading a formation of 2 black Hawk ac 20nm NW of Leeming en-route to a FAC training exercise with HISLs and Nav lights selected on squawking 7001 with Mode C. The weather was good and he was heading out of sun with a little haze. He was heading 335° at 360kt at 2000ft on the RPS and had just called Newcastle APR to inform them of his sortie details. Having called them he went head-up, after a short period head-in to retune a VHF frequency, and a white and blue light ac was seen out of the corner of his eye, 100yd away and 30ft below crossing from L to R on a heading of about 070°. He instinctively pulled and rolled but had passed the light ac before his ac actually changed its flightpath. He believed that had there not been a height difference between the ac they would have collided. He also thought that his low arousal state during the transit just prior to a very high workload period, the obscuration of the conflicting ac by his windscreen pillar and head down work had combined to produce a close miss. He assessed the risk of collision as being very high. As a result of this incident he has re-examined his personal priorities and lookout technique.

THE PA38 PILOT reports flying a local flight from Teesside, solo in a club ac with strobes and nav lights selected on, squawking a Teesside squawk but Mode C was not fitted. He was in receipt of a FIS from Teesside and flew a triangular route to the NW of the airfield. Since the flight was made 3½ weeks before he compiled the Airprox report and the flight log had been destroyed, all he had was his logbook and memory to recall the details. The flight was VFR throughout, usually at 2000ft or below cloud and was flown at 90kt. From the recorded timings he had been in the area of the reported incident but did not recall seeing any other ac and the flight had been routine.

In his experience Teesside Radar always gave a first class service in keeping pilots advised of conflicting traffic but if no avoiding action is needed details are hard to recall.

UKAB Note (1): The Teesside QNH at the time of the incident was 1023mb. If the PA 38 was at 2000ft on that QNH, as the pilot reported, and the Hawk was at 2000ft but on the RPS of 1018, as its pilot reported, the PA38 would have been 150ft lower than the Hawk.

THE HAWK STATION comments that there is very little that can be added to this comprehensive Airprox report: the pilot has already identified the need for constant lookout at low level and the need to be vigilant at all stages of flight.

AIRPROX REPORT No 074/04.

HQ STC comments that the Hawk pilot should have been more aware of the likelihood of encountering a light ac at 2000ft. For many years we have encouraged the GA community to fly at or above 2000ft to avoid fast jet traffic at low level; this guidance is also contained within the CAA's GA Safety Sense leaflet No 18A. All fast jet aviators should take note of this fact and be pro-active in increasing their 'heads out' time when operating in this height band or operate under a suitable LARS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, a radar video recording, and a report from the Hawk operating authority.

This incident took place in Class G airspace with both ac planning to operate at the same altitude of 2000ft and both having an obligation to see and avoid one another. Although the Hawk was at 2000ft to comply with the regulation in the Mil AIP that ac should not transit in the LFS unless essential, perhaps 2000ft, a height regularly used by light ac, was an unwise choice. Fortunately, the 2 pilots were operating on QNHs, both appropriate to the area, which unusually differed by 7mb generating a small vertical separation. The Hawk ac being the higher, its pilot was able to pull up and roll at the last second. It was however, most unlikely that the Hawk flightpath had changed in the 100m (½ sec) between its pilot seeing the other ac and their tracks crossing. The Hawk would have been in the PA38's 3-4 o'clock with very little relative movement and not in the pilot's direct line of view. Nevertheless, Board experts reminded pilots that ac often appear coming from the areas where lookout is less easy and that most of the images seen and registered by the human eye are in a 10° cone round the line of vision: therefore a deliberate scan by moving the head laterally and vertically must be undertaken.

The Board again noted that this was another recent incident when a GA pilot was apparently under the mistaken belief that he was in receipt of a radar assisted service while on a FIS. Experts advised that if pilots require a radar service they should contact the LARS provider for the area and request either a RIS or a RAS.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Non-sighting by the PA38 pilot and very late sighting by the Hawk pilot.

Degree of Risk: A.

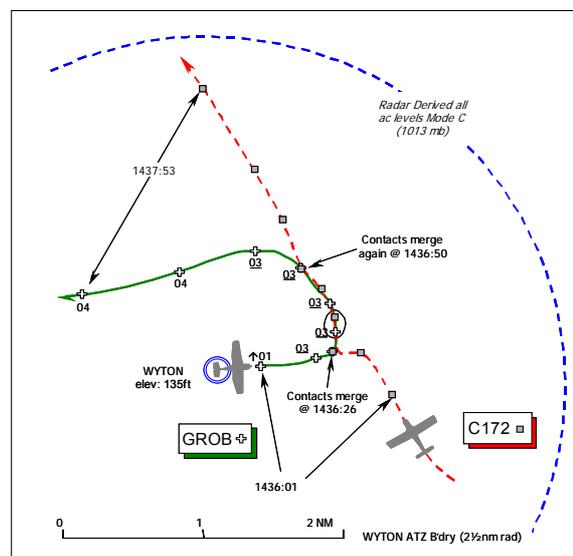
SECTION 2

Intergration into Penetration of ATZ's

Established aerodromes have the benefit of a dedicated Aerodrome Traffic Zone. The location of these are depicted on aeronautical charts. With the 1:25000 series, the depiction will often include the layout of the runways themselves. This provides an opportunity, in conjunction with an appreciation of the surface wind, of assessing the likely traffic pattern both within the ATZ and the surrounding airspace.

AIRPROX REPORT NO 011/04

Date/Time: 11 Feb 1436
Position: 5221N 0006W (Wyton A/D Cct - elev 135ft)
Airspace: Wyton ATZ (Class: G)
Reporting Ac Reported Ac
Type: Grob Tutor C172
Operator: HQ PTC Civ Pte
Alt/FL: 700ft↑ 1100ft
 (QFE 1026mb) (QNH 1027mb)
Weather VMC HAZE VMC CLOC
Visibility: 4000m 15km+
Reported Separation:
 50m H/50ft V 75yd H
Recorded Separation:
 Contacts merged



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE GROB TUTOR PILOT, a QFI instructing a student, reports that his aeroplane has a predominantly white colour scheme and the landing lamp and HISL were on, shortly after take off from RW09 into the aerodrome Cct at Wyton. He was in communication with Wyton TOWER on 245.375MHz and squawking A7000 with Mode C.

Whilst turning L through 070° at 80kt, as he was approaching 500ft QFE (1026mb) in the climb, he spotted a single engine light aircraft (LA) approaching from the starboard side about 500m away, heading NW and slightly above his ac. The downwind turn was continued as it was the best avoiding action and the LA passed 50m ahead from R - L and 50ft above his Tutor, whereupon he was able to identify the ac's registration letters. The pilot of the LA took no avoiding action and continued on a steady course out of the Wyton Cct area. No transmissions were heard from the LA pilot to either Wyton APPROACH or Wyton TOWER who were unaware of the ac before the incident occurred. Given the intensity of Cct traffic, in his opinion, this was a highly dangerous infringement of the ATZ and he assessed the risk as "high".

THE CESSNA C172 PILOT reports his ac had a white colour-scheme and the anti-collision beacon was on whilst in transit from Duxford to private strip N of Leeming under VFR at 100kt. He had been in

AIRPROX REPORT No 011/04.

receipt of a FIS from Cambridge on 123.6MHz and was flying clear below cloud with an in-flight visibility of 15km+. A squawk of A7000 was selected, but Mode C is not fitted.

His intended track was east of the Wyton ATZ, but on this return leg he had to fly lower than his preferred cruise altitude to remain VMC. Heading 340° in level cruise at 1100ft QNH (1027mb) just as he was about to establish communications with Cottesmore, he spotted another low-wing single engine ac about 1000yd away off the port wing and 500ft below his ac. He also saw a runway beyond and realised that he had drifted to the west of his intended track. There was no point in altering course at that point because the other ac would have passed well behind him and the separation was increasing, but it then turned onto the same course he was flying and continued climbing, following his ac below and to port. He watched the other ac for some time as it gradually caught him up until eventually it peeled off at a range of about 75yd. He assessed the risk as “*none*”. On landing he telephoned Wyton ATC to explain that he may have inadvertently entered their ATZ.

HQ No1 EFTS comments that this Airprox occurred as a result of a civilian light ac infringing the Wyton ATZ. Conditions were fit for Cct work but the visibility, at 4000m, was relatively poor. Earlier sighting of the Cessna was further prevented by the climbing attitude of the Tutor, which would have obscured the intruding ac under the right hand side of the Tutor’s nose. Fortunately, the Tutor pilot was keeping a good lookout and he saw the Cessna in good time to take avoiding action, albeit that the miss distance was minimal. It seems that the Cessna pilot, already unaware of his proximity to a busy airfield, did not see the Tutor or if he did then did not take any avoiding action; this is disturbing.

The key points are the importance of being fully aware of ATZs and the need to keep a good lookout at all times. It is easy when in the Cct to just look inside the Cct pattern to locate known traffic but this Airprox emphasizes the value of looking outside the Cct pattern and to be vigilant for the unexpected.

THE WYTON AERODROME CONTROLLER (ADC) reports that shortly after the Grob Tutor took-off from RW09, whilst turning cross-wind, the pilot reported sighting a light single engine ac in the ATZ. He then spotted the white C172 himself at a height of about 800ft very close to the Grob. Later, during the down-wind leg the Grob pilot reported the C172’s registration. The C172 pilot was not in contact on any Wyton frequencies and maintained a non-deviating track of about 290°(M) before departing the Wyton Zone, seemingly unaware that he was crossing a busy ATZ. LATCC (Mil) was informed for tracing action. No traffic information was passed, as he had not spotted the C172 before the Grob pilot reported it; he assessed the minimum separation as 50m at the same height

[UKAB Note (1): The 1450 Wyton weather (14min after the Airprox) was reported as: sfc wind: 360/9kt; >10km nil Wx; SCT-1400ft; OVC-1800ft; QFE: 1026mb; QNH: 1031mb; CC GREEN.]

[UKAB Note (2): The UK AIP at ENR 2-2-2-4 notifies the Wyton ATZ as a radius of 2½nm centred on RW09/27, extending from the surface to 2000ft above the aerodrome elevation of 135ft amsl. The Wyton LA Cct height is 800ft.]

UKAB Note (3): The Debden radar recording shows the Grob Tutor departing from Wyton (after a stream departure of similar ac) as it climbs into radar cover at 1436:01, squawking A7000 indicating 100ft unverified Mode C (1013mb). Meanwhile the C172 is shown [no Mode C fitted] approaching from the SE after penetrating the ATZ boundary. The Grob levels at 300ft (1013mb) – which equates to a height of about 690ft Wyton QFE (1026mb) that is maintained thereafter as the C172 turns west for a short while. The contacts merge at 1436:26 at 0.83nm in the climbout to RW09. Thereafter the C172 is shown just ahead of the Grob Tutor before the latter closes and the contacts appear to merge once more at 1436:50, 1nm NE of the aerodrome though it may be that radar contact on the C172 is lost at that point. Afterwards, the Grob turns downwind in conformity with the Cct pattern and the C172 maintains a NW track to clear the ATZ.

ATSI had nothing to add to the ADC’s report.

HQ PTC comments that in the absence of any Mode C data from the Cessna, there can be no certainty as to the proximity of the 2 ac. However, we are satisfied that the Tutor pilot saw the Cessna sufficiently early that he had only to continue his circuit to keep safely clear of the Cessna and (coincidentally) to identify it. We concur with 1 EFTS' remarks – an ATZ boundary is no fireproof barrier against incursions.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, radar video recordings, reports from the air traffic controllers involved and reports from the appropriate operating authority.

It was reported that the C172 pilot had taken care to plan his homeward bound route clear of the Wyton ATZ. However, the radar recording clearly illustrated that the Cessna had entered the ATZ and flown across the climb-out from RW09 as the Grob took-off into the Cct. Members recognised that the C172 pilot had not navigated accurately enough to ensure that he stayed out of the Zone, as he was required to do in the absence of any communication with the controlling ATSU who had not issued any permission to enter beforehand. The Wyton TOWER controller confirmed the C172 pilot had not called on any of the Wyton frequencies but had instead called Cottesmore. Some members wondered why he had done so when passing so close to Wyton, a busy training aerodrome. While Cottesmore was the most suitable ATSU from which to acquire a radar service, it could have been quite helpful if the C172 pilot had called Wyton APPROACH on 134.05MHz to advise ATC that he was passing by, as intended, outside the ATZ. Unknown to the Cessna pilot, a wave of about 6 similar training ac had departed from RW09 out to the NE immediately before this incident occurred, so it was indeed fortunate that the C172 pilot had only encountered the Grob flown by the reporting pilot. Unfortunately, when the Cessna pilot realised that he had drifted into the ATZ without the permission of Wyton TOWER he made no attempt either to exit the Zone expeditiously, or, more importantly, to call ATC on RT to report his presence. An ATZ is a controlled environment and all traffic within it should be known to ATC. Civilian pilot members highlighted an important flight safety lesson to pilots here – if you realise you are in the wrong place and have inadvertently strayed into an ATZ tell ATC as soon as practicable. Here, the ADC had not acquired the C172 before the Airprox occurred and since there may have been other ac in the vicinity it would have been wise if the Cessna pilot had asked ATC for traffic information.

The Grob Tutor pilot said that he spotted the C172 some 500m away. By that stage the C172 pilot had seen the Grob some 1000yds away to port and some 500ft below, climbing; in broader terms this was a distance of ½nm and members noted that both pilots having seen each other at these ranges closed further. The Grob pilot had turned, crosswind toward the downwind leg at first sighting to avoid the C172, while the latter's pilot had flown on without taking any action, perhaps thinking that the Grob was going to pass behind. This led the Board to agree, unanimously, that the Airprox had occurred because the C172 pilot had penetrated the Wyton ATZ without permission and had flown into conflict with the Grob Tutor in the aerodrome Cct.

It was not clear why the Cessna pilot apparently turned his ac west toward the aerodrome just before the merge at 1436:26, as shown on the radar recording. But the head-on aspect of the meeting between these two white ac would have made the C172 more difficult to spot from the Grob pilot's perspective, a difficulty that was shared also by the ADC in the Control Tower. Nevertheless, both pilots had acquired each other's ac before the CPA and each pilot had been in a position to afford greater separation if need be. Although the radar recording showed that the contacts had merged, which accorded with the minimum range reported of 50–70m, it was not feasible to determine independently the minimum vertical separation because the C172 was not fitted with Mode C. However, after carefully weighing all these factors, the Board concluded unanimously that no risk of a collision had existed in the circumstances reported here.

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PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The C172 penetrated the Wyton ATZ without permission and flew into conflict with the Grob Tutor.

Degree of Risk: C.

AIRPROX REPORT NO 045/04

Date/Time: 9 Apr 1234

Position: 5129N 00049W (3nm NE WOD)

Airspace: LTMA (Class: A)

Reporter: HEATHROW FIN DIR

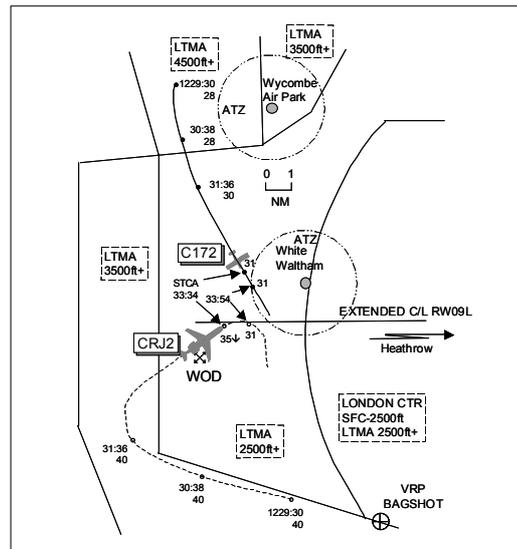
	<u>First Ac</u>	<u>Second Ac</u>
<u>Type:</u>	CRJ2	C172
<u>Operator:</u>	CAT	Civ Pte
<u>Alt/FL:</u>	3000ft↓ (QNH)	3200ft (QNH 1020mb)

Weather VMC CLAC VMC CLNC

Visibility: 30nm >10nm

Reported Separation:
not seen nil V 1nm H

Recorded Separation:
nil V 1.4nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE HEATHROW FIN DIR reports that she was vectoring traffic for Heathrow RW09L. She noticed unknown traffic just S of White Waltham squawking 0436 at 3000ft tracking SSE towards the RW09L extended C/L whilst the CRJ2 was on a closing heading of 055° from the R to establish on the LLZ at 3000ft. She gave avoiding action to the CRJ2 crew - a R turn onto 180° - and TI followed by climb clearance to 4000ft and a further R turn onto 240°.

THE FARNBOROUGH LARS CONTROLLER reports that the C172 pilot called on frequency at 1230 routing from Barton to Fairoaks. A squawk code 0436 was issued and the Farnborough QNH of 1020mb was passed and the flight was given a FIS in an area of high traffic density. The frequency was very busy [Easter Bank Holiday Friday]. At 1234 a telephone call was received from Heathrow Radar that the 0436 squawk had infringed CAS. The C172 pilot was asked to report his altitude and replied 3200ft QNH 1020mb. Immediately the pilot was instructed to descend to 2400ft and leave CAS and informed that Heathrow had taken avoiding action on his ac. One minute later the C172 pilot reported level at 2400ft as was told to turn onto a southerly heading as the ac was tracking towards the Heathrow CTR.

THE CRJ2 PILOT reports inbound to Heathrow established on the ILS LLZ RW09L at 3000ft and in receipt of an ATS from Heathrow TOWER, he thought, squawking an assigned code with Mode C. The visibility was 30nm 1000ft above cloud in VMC and the ac was coloured white with strobe lights switched on. The controller gave him avoiding action, an immediate R turn heading 150°, he thought, owing to a light ac. The turn was commenced and the ac was automatically levelled off at 3000ft. A few seconds

later the controller said, still without raising her voice, *“that’s not enough turn further right heading 180° and climb to 4000ft”*. After then being told that they were clear of the unknown VFR traffic, a further R turn was given to allow them to re-establish on the ILS and the approach was completed without further incident. The other ac was not seen visually and no TCAS alerts/warnings were received.

THE C172 PILOT reports that the Airprox really happened on his kitchen table when he had planned his flight. On his planned trip between Barton and Fair Oaks he knew that he had to be below 4500ft in the sector immediately to the N of the Airprox area but he had simply not noticed the requirement to be below 2500ft abeam White Waltham. The figures on the 1:500,000 chart were to the N and E of the associated sector. He could offer no reason, having spent 2hr planning, what was for him, an adventurous trip. Heading 185° at 120kt and 3200ft QNH at the time, he was in receipt of a FIS from Farnborough on 125.25MHz squawking 0436 with Mode C. The visibility was >10km in VMC and the ac was coloured white/green with anti-collision light switched on. About 2nm W of White Waltham he saw a white coloured airliner, possibly a Jumbo jet, in his 2.30 position range 2-2.5nm converging from R to L but in a R turn. It passed about 1nm away on his RHS as it turned through an easterly heading onto a southerly track, slightly above his level. He wondered if there was a problem and it was then that Farnborough asked him for his height and then to descend immediately to 2400ft. In his report, the C172 pilot offered sincere apologies for any problems that he had caused.

ATSI reports that the pilot of the C172 established communication with the Farnborough LARS controller at 1229:30. He reported at 3000ft on QNH 1020mb, 2 miles abeam Wycombe, en route from Barton to Fair Oaks. A *“... Flight Information Service to Bagshot Mast ...”* was requested. The LARS controller confirmed the QNH and instructed the flight to squawk the discrete code 0436. No further communication took place until the Airprox occurred.

The CRJ2 was being radar vectored for an ILS approach to Heathrow’s RW09L by the TC Heathrow FIN Director. When on a closing heading and descending to 3000ft, STCA activated (1233:34) in respect of unknown traffic in its 11o’clock position at a range of 2.2nm with Mode C indicating 3100ft. At that point the CRJ2’s Mode C indicated 3500ft. The Heathrow controller issued the CRJ2 an ‘avoiding action’ instruction to turn R onto heading 180°, passed TI and then instructed the flight to climb to 4000ft, emphasising that that this was also part of the avoiding action due to traffic *“... to the north of you at a range of one and a half miles at the same level.”* Half a minute later, the CRJ2 was advised that the traffic was now to the NE, at a range of 3nm descending, and was subsequently repositioned for an uneventful ILS approach.

Analysis of the relevant RT and radar recordings provided the following additional information. At the time of the C172 pilot’s initial call, the ac was approximately 3.8nm to the W of Wycombe Air Park (Booker) with its Mode C indicating 2800ft. In that position, the base of the LTMA is 4500ft, however, on its track the flight would enter an area where the base is 2500ft in approximately 2nm. When the 0436 squawk was issued, the flight was still indicating 2800ft Mode C with just over 1nm to run to the boundary of the area with a base of 2500ft. With approximately 0.5nm to run to the boundary (1230:38), the C172’s 7000 squawk disappears and when the 0436 squawk appears (1231:36), the flight is indicating 3000ft Mode C, 1.4nm inside the portion of the LTMA with base 2500ft, i.e. apparently inside CAS. No further communication took place between Farnborough and the C172 until 1234:09, when the flight had travelled a further 5nm and into conflict with the CRJ2. In a telephone call, commenced at 1233:56, TC alerted Farnborough to the conflict developing between the subject ac. The Farnborough controller asked the pilot of the C172 to report his altitude, to which he replied 3200ft. The controller instructed the pilot to descend immediately to 2400ft and informed him that he was inside CAS. A few seconds later he informed the pilot that *“... Heathrow have taken avoiding action on you this time”* but no TI was passed. By that stage, the CRJ2 was 1.4nm to the S of the C172 at a similar altitude, 3100ft Mode C, turning away to the S. This was the point of minimum separation. The requisite vertical separation was quickly re-established as the ac followed their respective climb and descent instructions and, at 1235:09, the pilot of the C172 reported at 2400ft. A few seconds later it was

AIRPROX REPORT No 045/04.

necessary for the Farnborough controller to instruct the C172 to take up a more southerly heading in order to avoid infringing the London CTR.

From their written reports, both the pilot of the C172 and the Farnborough controller were under the impression that the ac was in receipt of a FIS at the time of the Airprox. However, although the pilot had requested a FIS, no service was ever specified. MATS Pt. 1, Section 1, Chapter 5, para. 4.4.1 states: “*A controller assigning any Mode A code must validate the code by checking as soon as possible, either by direct reference to his display or with the assistance of another controlling agency, that the data displayed corresponds with the code which has been assigned.*” In addition, para. 4.3.1 states: “*Unless otherwise directed by an air traffic control unit, Mode C will be selected in conjunction with Mode A. Controllers must, therefore, verify the accuracy of the Mode C readout when assigning codes to aircraft.*” As soon as controllers have identified ac flying outside controlled airspace, they are required to inform pilots that they are identified and to pass them their position. From this it follows that a pilot, who should be flying outside CAS but is identified inside CAS, should be informed without delay. (Section 1, Chapter 5, Paras. 7 and 8 refer). It is disappointing that the Farnborough controller was unable to prevent the Airprox situation developing. If he had paid stricter attention to the MATS Pt. 1 instructions for validating and verifying SSR data, even though he may not have been able to prevent the infringement, he may well have been able to detect it at an early stage and, thereby, to have prevented the subsequent Airprox. The unit was asked whether the pilot’s initial reported position and altitude (2nm abeam Wycombe at 3000ft) and intention to route via the Bagshot Mast should have raised questions in the controller’s mind. The response was that calls of this nature are commonplace and would not, in isolation, cause undue concern. Under such circumstances, flights not wishing to descend will normally track slightly further west, to remain in the area where the base of CAS is 3500ft, and those wishing to remain on the track followed by the C172 will descend below 2500ft.

There were other ac in receipt of a service on the Farnborough controller’s frequency but the RT recording does not indicate that the workload was excessive, particularly around the time that the actual infringement took place. After the pilot of the C172 had acknowledged the assigned squawk, there were no further transmissions on the frequency for over a minute and from 1229:52, the time that the pilot of the C172 made his initial call, until 1231:40, 3sec after the 0436 squawk first appeared within CAS, no RT transmissions to or from any other ac were made and there is no record of the controller making or receiving any telephone calls. That said, the latter transmission, at 1231:40, was to pass TI to an ac in the Hook/Odiham area so it is likely that the controller’s attention was focussed in that area at the time and, from that point until the Airprox occurred, the controller dealt with 5 other ac.

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.

It was clear that the cause of this Airprox was the unauthorised penetration of the LTMA, Class A airspace, by the C172 pilot. During the planning stage of the flight, the Cessna pilot had missed the LTMA’s base level change, down to 2500ft, to the N and W of White Waltham. However, the change in level is shown on the 1:500 000 topographical chart as a line, with qualifying altitude figures displaced to the NE of High Wycombe, so the pilot should have assimilated the information during the planning process. Controller members agreed that the Farnborough LARS controller should have validated and verified the C172’s discrete code as soon as possible but a number felt that the ATSI criticism was harsh. The discrete code appeared seconds before the controller passed TI to another flight and then dealt with 5 other flights during the intervening period before the Airprox occurred.

Members noted that the Heathrow FIN DIR had not noticed the potential conflict until STCA activated. ATCOs members said the FIN DIR’s attention would be focussed on the primary task of vectoring ac in

the Heathrow traffic sequence and, although the discrete Farnborough code would have been displayed, a conscious check would have to be made to 'assimilate' the associated height readout. It was not uncommon for there to be several other squawks showing on radar in this area, owing to traffic routeing around the London CTR and under the LTMA. The STCA 'safety net' warned the FIN DIR of the potential conflict and she issued an avoiding action R turn, TI and then climb. The CRJ2 had not visually acquired the Cessna nor received any alerts/warnings on TCAS. The C172 pilot had seen the CRJ2 in his 2.30 position about 2-2.5nm away in a R turn and watched it pass about 1nm clear to his R. After being warned by TC of the CAS infringement, the Farnborough controller told the C172 pilot to descend which had quickly removed the Cessna from CAS. The radar recording had revealed the ac had passed 1.4nm apart at the CPA with the CRJ already diverging in a turn and pulling away from the Cessna. The Board agreed that the prompt and robust avoiding action taken by the FIN DIR had taken any 'sting' out of the deteriorating situation, making the potential conflict benign, to the extent that any risk of collision had been effectively removed.

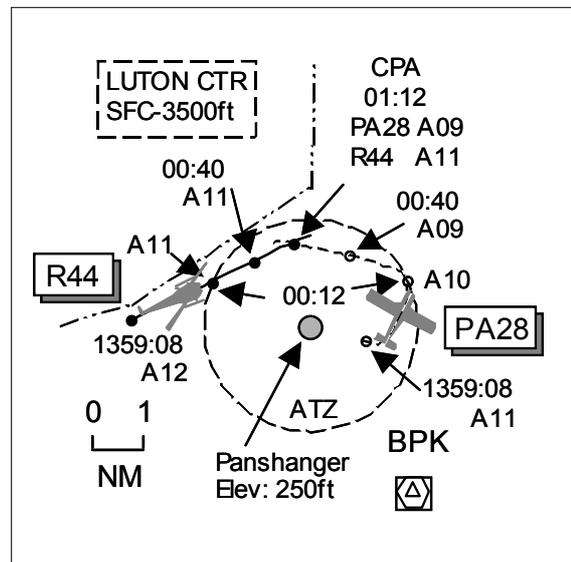
PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Unauthorised penetration of Class A airspace by the C172 pilot.

Degree of Risk: C.

AIRPROX REPORT NO 048/04

Date/Time: 16 Apr 1401
Position: 5150N 00010W (1.5nm N Panshanger - elev 250ft)
Airspace: ATZ (Class: G)
Reporting Ac Reported Ac
Type: PA28 R44
Operator: Civ Trg Civ Pte
Alt/FL: 800ft 1300ft (QFE 1001mb) (QNH)
Weather VMC CLOC VMC CLBC
Visibility: >10km >10km
Reported Separation:
 50-100ft V 300ft V&H
Recorded Separation:
 Contacts merge 200ft V



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE PA28 PILOT reports flying a dual local training sortie (visual ccts) from Panshanger and in communication with Panshanger RADIO on 120.25MHz squawking 7000 with Mode C. The visibility was >10km in VMC, the ac was coloured white/mauve/pink with the anti-collision and wing-tip strobe lights all switched on. When flying downwind LH for RW11, heading 280° at 105kt and 800ft QFE 1001mb, the instructor saw an ac 1.25nm ahead. She called on the radio but there was no response but then quickly realised that it was a helicopter on a reciprocal heading at the same level. She took control from the student, cut power to descend and turn L as the helicopter was seen to do the opposite. The helicopter, a dark coloured R44, passed over her starboard wing about 100ft above and she

AIRPROX REPORT No 048/04.

assessed the risk of collision as high. She contacted the A/G operator who telephoned Luton ATC: the helicopter's registration was provided and information that it was under a FIS. Later she spoke to the R44 pilot who had said that he had been aware of the Panshanger ATZ and believed that he had passed 150-200ft above her ac with sufficient separation.

THE R44 PILOT reports flying en route from Swindon to a private site near to Stansted and in receipt of a FIS from Luton on 129.55MHz squawking 7000 with Mode C. The visibility was >10km below a 4000ft cloud base in VMC, the ac was coloured magenta/gold with nav and strobe lights switched on. The incident occurred owing to his transit very close to the northern boundary of the Panshanger ATZ, causing a conflict with cct traffic which was flying a wide downwind leg. Heading 060° at 110kt and 1300ft Luton QNH, he saw the white/blue low wing single-engined ac in his 1.30-2 o'clock position about 300m ahead and below in level flight. He maintained his level as he judged that the other ac would pass clear, which it did by 300ft away to his R and below.

ATSI reports that there are no apparent ATC causal factors. The R44 pilot was in communication with LTCC Luton INT DIR at the time and the flight was being provided with a FIS and was not identified.

UKAB Note (1): The Luton QNH was 1009mb.

UKAB Note (2): The UK AIP promulgates Panshanger ATZ as a circle radius 2nm centred on the longest notified RW11/29 514809N 0000929W up to 2000ft agl, elevation 250ft amsl. The aerodrome is active winter 0900-SS, summer 0800-SS with A/G available during the notified hours.

UKAB Note (3): The Rules of the Air Regulations 1996 Rule 39 Flight within aerodrome traffic zones para (2) states *"An aircraft shall not fly, take off or land within the aerodrome traffic zone of an aerodrome to which this paragraph applies unless the commander of the aircraftwhere there is no air traffic control unit nor aerodrome flight information service unit, has obtained information from the air/ground radio station at that aerodrome to enable the flight to be conducted with safety.*

UKAB Note (4): Analysis of the Stansted radar recording at 1359:08 shows a 7000 squawk, believed to be the R44, 3.4nm W of Panshanger tracking 065° indicating unverified 1200ft altitude QNH 1009mb. At the same time, another 7000 squawk, believed to be the reporting PA28, is seen 1nm SE of Panshanger tracking 105° level at 1100ft altitude, unverified, before it turns L shortly afterwards onto the crosswind leg for RW11. At 1400:12, the R44 is seen to enter the Panshanger ATZ 2nm WNW at 1100ft altitude by which time the PA28 is turning L onto the downwind leg at 1000ft altitude. Twenty-eight seconds later the PA28 is 1.4nm NNE of Panshanger downwind maintaining 900ft altitude with the R44 in its 11 o'clock range 1.5nm on a converging/crossing track 200ft above. The subject ac continue on steady tracks until the CPA occurs at 1401:12 when contacts merge 1.5nm N of Panshanger with the R44 still indicating 1100ft and the PA28 900ft.

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.

Given the proximity of the Luton CTR to the Panshanger ATZ, the R44 pilot's plan to route between both had been ill-conceived. Moreover, without ATC clearance from Luton to route through the Class D Zone, penetration of the ATZ was inevitable. The recorded radar shows the R44 entering it to the WNW of the airfield, which had caused the Airprox. At the time, the R44 pilot was in receipt of a FIS from Luton, contrary to the requirements of Rule 39 where the R44 pilot should have contacted Panshanger, prior to entering the ATZ, to obtain information to enable the flight to be conducted with safety. Following this, the helicopter had then flown into conflict with the PA28 in the visual cct flying in the downwind leg.

Looking at the risk element, the PA28 pilot had seen the R44 1.25nm ahead but had not immediately assimilated it as head-on conflicting traffic. After then realising the geometry, the PA28's instructor had taken positive action by taking control, turning L and descending whilst she watched the helicopter pass just to her R about 100ft above. It appeared that the R44 pilot had seen the PA28 later, in his 1.30-2 o'clock range 300m, below in level flight and had maintained his level, judging that it would pass clear. He estimated that the PA28 passed 300ft away to his R and below. The recorded radar had shown the subject ac on converging tracks, vertically separated by 200ft, which is maintained during the incident as the ac's returns merge. The PA28 pilot had undoubtedly been surprised at seeing the unknown traffic flying in the opposite direction of the visual cct. However, the visual sightings by both pilots combined with the PA28 pilot's timely actions were enough to persuade the Board that any collision risk had been effectively removed.

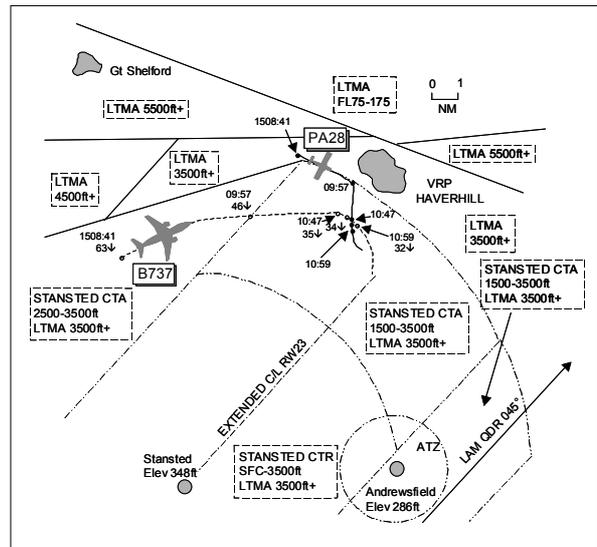
PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The R44 pilot entered the Panshanger ATZ contrary to the requirements of the Rules of the Air Regulations 1996 Rule 39 and flew into conflict with the PA28.

Degree of Risk: C.

AIRPROX REPORT NO 055/04

Date/Time: 23 Apr 1511
Position: 5203N 00024 E (11nm NE Stansted - elev 348 ft)
Airspace: LTMA/CTA (Class: A/D)
Reporting Ac Reported Ac
Type: B737-300 PA28
Operator: CAT Civ Pte
Alt/FL: 3500ft↓ 3200ft
(QNH 1025mb) (QNH 1027mb)
Weather VMC CLNC VMC CLOC
Visibility: 10km >10km
Reported Separation:
300ft V 1nm H 1000-1200ft V
Recorded Separation:
0.25nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE B737 PILOT reports flying inbound to Stansted IFR and in receipt of a RCS from Stansted DIRECTOR on 126.95MHz squawking an assigned code with Mode C. Whilst descending to 2000ft QNH in a R turn onto heading 190° to intercept the ILS LLZ for RW23 at 180kt in VMC, a light ac was spotted about 3nm ahead moving L to R tracking S, initially at the same level, 3500ft. The traffic passed 300ft above them and 1nm clear to their R, he thought, and was identified as a PA28 coloured white with a dark blue stripe. The ac was not squawking so no TCAS alerts/warnings were received. No avoiding action was taken but the other traffic's presence was reported to the Stansted Director. He assessed the risk of collision as medium.

AIRPROX REPORT No 055/04.

THE PA28 PILOT reports flying with a passenger from Fowlmere, intending to land at Andrewsfield and flying at 3200ft QNH 1027mb and 100kt. The transponder was set to 7000 but had been inadvertently left on standby. The visibility was >10km clear of cloud in VMC and the ac was coloured white/burgundy with strobe lights switched on. He had previously flown around the NE side of the Stansted CTR on a number of occasions and had landed at Andrewsfield 5 times in the previous 4-5yr. On those previous occasions, he had approached from the SW from overhead the LAM VOR: this time he had aimed to intercept the QDR 045° from LAM and then descend to below 2000ft before turning R for Andrewsfield. On course from Great Shelford railway junction tracking 113° to pass over Haverhill (S side), he changed frequency from Duxford to Andrewsfield but did not establish contact with them. Whilst attempting to obtain a reliable VOR indication, he saw a large low wing twin engined ac 1000-1200ft below, overtaking him on a similar south-easterly track, and then saw that it was turning R. He assumed the ac had approached him from behind and below. Disconcerted that his involvement with the VOR may have led him to drift into CAS at his altitude, he turned L to head NE to make the quickest exit followed by a quick descent to below 1500ft, just in case he had mistaken Haverhill. On second sighting he felt sure of his position and at 1300ft, after cross checking his DI and compass and finding it needed resetting, he resumed his previous track, heading 113° whilst looking for the 045° VOR radial on which to turn. Having started the flight later than originally planned and conscious of his passenger's later engagement, he abandoned the idea of continuing to Andrewsfield and turned L onto 310° towards Cambridge, later climbing to 2600ft to avoid the ATZ. He routed to N side of the city back to Fowlmere, contacting Duxford en route. If he had drifted just into CAS, he regretted any such inadvertent incursion and any concern caused to the other crew.

ATSI comments that the Airprox occurred within CAS where the base is 1500ft. The Stansted Final Director (FIN DIR) would have no reason to suspect that the primary only contact (the PA28) had entered CAS. The B737 was flying about 2000ft above the base level at the time. No apparent ATC causal factors.

UKAB Note (1): The London and Stansted QNH was 1025mb.

UKAB Note (2): Analysis of the Stansted and Debden radar recordings at 1508:41 shows the B737 9nm NNW of Stansted tracking 065° descending through 6300ft QNH 1025mb with a primary only return, believed to be the subject PA28, 3nm W of Haverhill VRP in its 12 o'clock range 7.7nm tracking 120°. Just over 1min later at 1509:46 the B737 is steady tracking 090° descending through 4600ft QNH following vectors from the Stansted FIN DIR whilst the PA28 has commenced a R turn 1nm SW of Haverhill VRP on the boundary of the Stansted CTA, rolling out onto a track of 180° 18sec later. The B737 commences a R turn at 1510:47 descending through 3500ft QNH with the PA28 0.6nm to its ESE still tracking 180°. The next radar sweep shows the B737 indicating 3400ft QNH 0.33nm NW of the PA28. The CPA occurs on the next sweep at 1510:59 with the B737 turning R through 120° at 3200ft QNH 0.25nm NE of the PA28. The radius of turn executed by the B737 means that the subject ac diverge for the next 18sec before the B737 crosses ahead of the PA28 which is seen to commence a L turn away from the Stansted FAT.

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 NATS Advisor informed members that an internal operations group within NATS had recently formed to study airspace infringements. During the initial meeting it had been agreed that as CAA already had an ongoing confidential infringement project, 'On Track', NATS would proactively support this initiative and produce internal publicity to encourage constructive reporting of incidents.

Members agreed that the PA28 pilot had been unwise to plan to fly so close to the Stansted CTA (S side of Haverhill VRP) leaving himself no room for error: normal good practice is to plan a track remaining 2nm clear of CAS. It was clear that the cause of the Airprox had been an unauthorised penetration of CAS by the PA28 pilot who flew into conflict with the B737. Although the PA28 pilot had inadvertently not switched on his transponder, it was not known whether Mode C was carried which would have revealed the ac's level to ATC. The Stansted FIN DIR had been oblivious to the PA28's entry into CAS as the ac had been a primary-only return in an area where the CTA base level is 1500ft. The PA28 pilot had only seen the B737 as it passed underneath, he thought by at least 1000ft, on a similar track and having approached from behind. Fortunately the B737 crew had visually acquired the PA28 about 3nm ahead on a crossing track L to R at the same level and had continued their R turn and descent whilst they monitored its course and watched it pass 300ft above and 1nm clear to their R. The recorded radar shows the B737 passing 0.25nm NE of the PA28 at the CPA during the overtake situation. Nevertheless, the B737 crew were always in the position to manoeuvre their ac further to avoid the PA28, had the situation deteriorated, which led the Board to conclude that safety had been assured during the encounter.

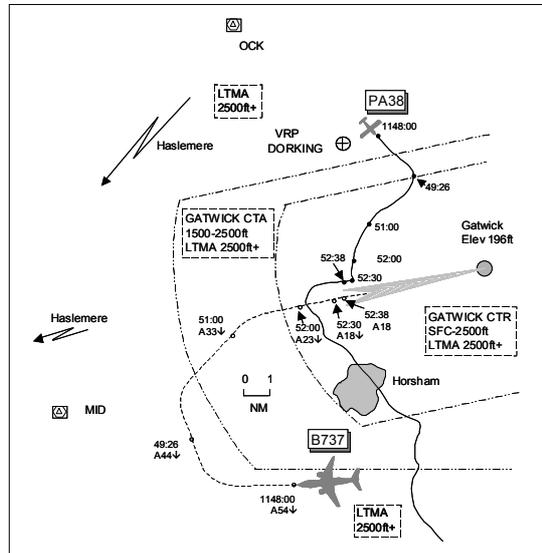
PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Unauthorised penetration of CAS by the PA28 pilot who flew into conflict with the B737.

Degree of Risk: C.

AIRPROX REPORT NO 057/04

Date/Time: 25 Apr 1152 (Sunday)
Position: 5108N 00020W (5nm W Gatwick - elev 196ft)
Airspace: CTR (Class: D)
Reporting Ac Reported Ac
Type: B737-500 PA38
Operator: CAT Civ Trg
Alt/FL: 1500ft↓ 2300ft
 (QNH 1026mb) (QNH)
Weather VMC CLBC VMC HAZE
Visibility: >10km NR
Reported Separation:
 nil V 0.5nm H not seen
Recorded Separation:
 0.6nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE B737 PILOT reports inbound to Gatwick on the ILS to RW08R at 135kt and in receipt of an ATS from Gatwick TOWER. Descending through 2000ft, ATC advised “unidentified traffic at 10 o'clock”. At approx 1500ft he became visual with traffic in his 10 o'clock <1nm tracking S bound at 1500-1800ft which then turned sharply away onto a westerly heading passing 0.5nm clear to his L. It was a single-engine light ac, possibly a Mooney, coloured white with blue markings. During the encounter, TCAS had given a TA alert and he assessed the risk of collision as medium.

AIRPROX REPORT No 057/04.

THE PA38 PILOT reports flying at 90kt on his student solo qualifying cross-country flight on the leg from Fair Oaks to Lydd via Haslemere, Littlehampton and Bexhill and in receipt of a FIS from Farnborough on 125.25MHz. The weather was VMC and the ac was coloured white with blue stripes and the strobe lights were switched on. After departing Fair Oaks and reaching OCK at 1400ft, he turned on heading for Haslemere and climbed to 2300ft, he thought. Five minutes later he contacted Farnborough for a FIS, no squawk code was issued. As he progressed along his route, he became concerned about the poor visibility: it was becoming very hazy, to the point where he considered turning back to OCK and returning to Biggin Hill, his original aerodrome of departure. At the allotted time according to his Pilot's Log (PLOG) he saw what he thought was Haslemere, called Farnborough and gave his height and position. He did not observe any other ac at this time. Approaching the coast, the visibility improved so he carried on towards Lydd with flight conditions remaining fair for the remainder of the flight.

THE TC GATWICK INTERMEDIATE DIRECTOR (INT DIR) reports that having just coordinated a task with Gatwick Tower, he noticed a 7000 squawk 4nm NW of Gatwick. As the subject B737 had just been transferred to Tower frequency 124.22MHz, he immediately telephoned the Tower controller, stating the unknown ac's position and potential route southbound through the ILS. The B737 continued its approach and the conflicting traffic was seen to turn away about 0.25nm N of it and route to the W. The following inbound ac, another B737, was positioned onto the ILS and TI was passed. The conflicting ac turned S so further TI was given and it was seen to pass ahead of the second B737 which continued its approach.

THE GATWICK ADC reports that he was alerted by the TC INT DIR to unknown traffic approaching the FAT. He passed TI immediately to the subject B737 crew, who were already on his frequency, and, after updating the TI once more, the crew reported the traffic in sight. The unknown ac, sighted as a low wing single engine type, turned away from the B737 to the W, then S, passing behind the first B737 and in front of the next ac on final approach.

UKAB Note: Met Office archive data shows the Gatwick METAR as EGKK 1150Z VRB02KT 9999 SCT040 19/08 Q1026=

ATSI reports that the pilot of the PA38 established contact with the Farnborough LARS controller shortly after 1145:30. The pilot reported overhead Ockham, routing from Fair Oaks to Littlehampton via Haslemere at 2300ft and requested a FIS. This was provided and the controller requested that the pilot report passing Haslemere. However, there is no evidence that this report was made and no further transmissions from the PA38 pilot are evident on the RT recording.

Shortly before 1152, after the B737 inbound to RW08R at Gatwick had been transferred from the Gatwick INT DIR's frequency to that of the Gatwick ADC, the DIR saw a 7000 squawk, with NMC, approx 4nm NW of Gatwick. He immediately contacted the Aerodrome controller and advised him of the unknown ac. MATS Part 1, Section 1, Chapter 5, Page 13, states that within Class D airspace, if an unknown ac is observed, a controller will: *'Pass traffic information unless the primary function of sequencing and separating IFR flights is likely to be compromised. If a pilot requests avoiding action it shall be provided to the extent determined by the radar controller. Give avoiding action if radar derived or other information indicates that an aircraft is lost, has experienced a radio failure, or has made an unauthorised penetration of the airspace'*. As the ac was clearly within the lateral confines of the CTR, this latter requirement applied.

The radar recording shows that a 7000 squawk entered the Gatwick CTR at 1149:26, on a south-westerly track. At approximately 1151, the ac turned L onto a southerly track, which took it towards the FAT.

At 1152:00, the ADC passed TI to the crew of the first B737 who, at 1152:30, reported the ac in sight and that it was turning away. However, this was fortuitous and it is assessed that the INT DIR, via the

ADC, should have taken positive action at an earlier stage to prevent the ac getting into such close proximity.

Minimum separation occurred after the light ac had turned R to pass through the 9 o'clock position of the B737, at a range of 0.6nm. The ac then turned sharp L behind the first B737, passing 2.2nm ahead of the next inbound ac on the ILS. The light ac then continued to track S and away from the Gatwick final approach before finally leaving CAS.

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.

Although the PA38 student pilot had been flying solo 'in command', members agreed that overall responsibility for the flight had initially rested with the instructor who had authorised the qualifying cross-country sortie. The onus had been on the instructor to ensure that the student could complete the flight safely after assessing his ability and that the weather conditions were – and would continue to be – suitable over the whole of the intended route. For whatever reason, the PA38 pilot had not flown the planned route correctly which led to an unauthorised penetration of Class D airspace and a subsequent flight path conflict with the B737. This had caused the Airprox. ATCOs were concerned that the Gatwick FIN DIR had only noticed the 'intruder' ac after he had transferred the B737 and although he had telephoned the ADC asking him to relay TI to the B737 crew, the FIN DIR had not given avoiding action instructions. It was considered that this had contributed to the incident. The B737 crew saw the conflicting PA38 after receiving TI again in his 10 o'clock <1nm away at about the same level which then was seen to turn to the W passing 0.5nm clear on their LHS. Members could not reconcile the PA38 pilot's unexplained hard R turn, immediately prior to the CPA as the student pilot had reported not seeing any conflicting ac on this leg of his flight. This raised doubts, as this turn may have been purely coincidental with the airliner truly going unsighted to the PA38 pilot. This led the Board to conclude that safety had not been assured during the encounter.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Unauthorised penetration of Class D airspace by the PA38 pilot who flew into conflict with the B737.

Degree of Risk: B.

Contributory Factor: The Gatwick INT DIR did not issue avoiding action to the B737 crew.

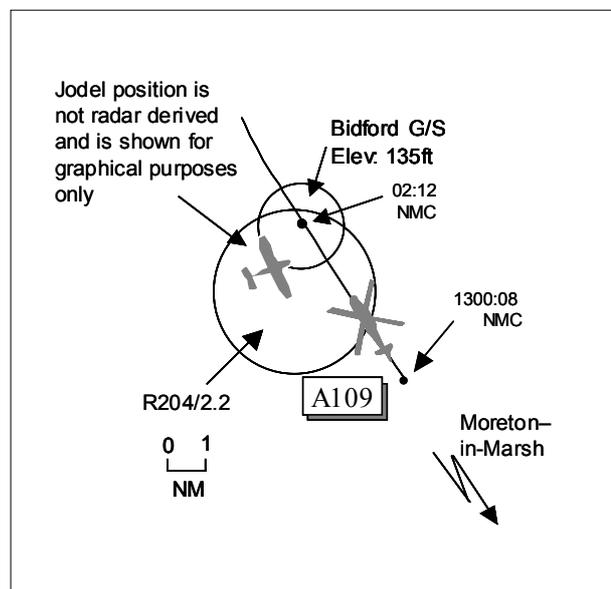
SECTION 3

Penetration of airspace around Glider Sites

Glider sites are clearly marked on the topographical charts and whilst they may engender a lesser level of legal protection if you blunder through, they sure as heck can spoil your day. If planning to fly in close proximity to any such site, consider the wind vector, as this will give you a good indication as to the sector of operations relative to the site itself. Gliders will launch into wind – climbing steeply and staying on the cable as long as they can before passing over the winch. These operations do create hazards for other airspace users. A falling glider launch cable can take your wing off. The site radio frequencies are promulgated and if transiting close by, a radio call can be useful.

AIRPROX REPORT NO 026/04

Date/Time: 21 Mar 1302 (Sunday)
Position: 5208N 0151W (1nm SE Bidford G/S elev 135ft)
Airspace: FIR (Class: G)
Reporting Ac Reported Ac
Type: Jodel1050 A109
Operator: Civ Pte Civ Pte
Alt/FL: 1500ft↓
(QFE 997mb)
Weather VMC CLBC
Visibility: >10km
Reported Separation:
just below V 200yd H
Recorded Separation:
NR



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE JODEL1050 PILOT reports flying solo on a local sortie from Bidford Gliding Site, not in communication with any agency and squawking standby. The visibility was >10km below cloud in VMC and the ac was coloured red/white with nav lights switched on. Whilst descending through 1500ft QFE 997mb on the downwind leg heading 060° at 70kt, he was looking L (9-10 o'clock) towards the RW24 threshold prior to turning onto L base, he looked R and saw a large black/silver helicopter on a relative bearing of 45° to his track at about 400-600yd range heading towards him slightly below him. He immediately turned hard R 270° and watched the helicopter pass 200yd to his L just below his level and continue to track overhead Bidford airfield in level cruise. He believed that there had been a definite risk of collision if he had not taken avoiding action.

THE A109 PILOT declined to submit a report.

UKAB Note (1): The UK AIP at ENR 5-5-1-1 promulgates Bidford as a Glider Launching Site centred on 520803N 0015103W where aerotow launches may be encountered during daylight hours, site elevation 135ft.

UKAB Note (2): The Rules of the Air Regulations 1996 Rule 17 Rules for avoiding aerial collisions para (5) Flight within the vicinity of an aerodrome states *“Without prejudice to the provisions of rule 39, a flying machine, glider or airship while flying in the vicinity of what the commander knows or ought reasonably to know to be an aerodrome or moving on an aerodrome, shall unless, in the case of an aerodrome having an air traffic control unit otherwise authorises: (a) conform to the pattern of traffic formed by other aircraft intending to land at that aerodrome, or keep clear of the airspace in which the pattern is formed; and (b) make all turns to the left unless ground signals otherwise indicate.*

UKAB Note (3): Analysis of the Clee Hill radar recording proved inconclusive as the Airprox is not seen. The A109 is identified from its Brize Radar 3706 squawk showing NMC which changes to a 7000 code at 1256:37 11nm SE of Bidford near Moreton-in-Marsh tracking 330°. The A109 pilot had reported to Brize to be cruising at 1500ft altitude whilst en route to Chester when under an ATS. The Jodel is not seen at all but the A109 continues on a steady track passing overhead Bidford Glider Site at 1302:12.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included a report from the Jodel pilot and radar video recordings. Members were dismayed that the A109 pilot had declined to complete an Airprox form.

Bidford Glider Site is shown clearly on topographical charts so due regard should have been taken of aircraft/glider operations during the A109 pilot's flight planning stage. The recorded radar shows the A109's track passing through the Bidford overhead, which, on this occasion, had caused it to conflict with a Jodel in the cct, and this had caused the Airprox.

Without the benefit of the A109 pilot's viewpoint, the Board could only assess the incident on the limited information available. Fortunately, the Jodel pilot had visually acquired the helicopter, whilst descending downwind, in his 01.30 position about 400-600yd away, slightly below his ac and on a converging track. Quickly realising the potential confliction, the Jodel pilot had executed timely avoiding action by turning hard R through 270° whilst maintaining visual contact with the helicopter, watching it pass 200yd to his L just below. These actions taken by the Jodel pilot led the Board to conclude that any risk of collision had been effectively removed.

PART C: ASSESSMENT OF CAUSE AND RISK

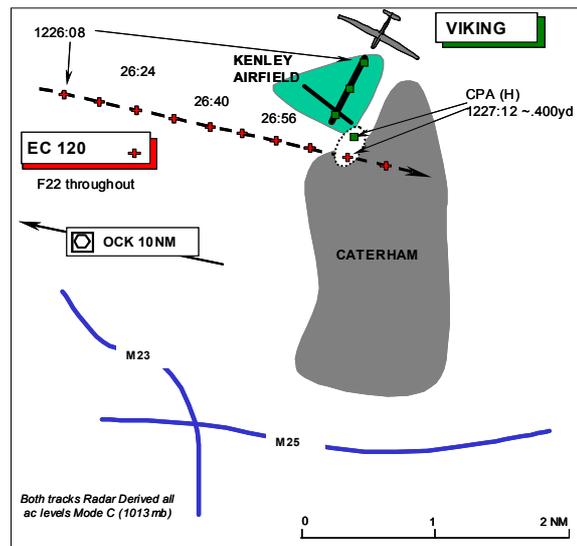
Cause: The A109 pilot flew into conflict with the Jodel in the Bidford cct.

Degree of Risk: C.

AIRPROX REPORT No 049/04.

AIRPROX REPORT NO 049/04

Date/Time: 17 Apr 1227 (Saturday)
Position: 5118N 00005W (S perimeter Kenley Airfield - elev 566ft)
Airspace: London FIR (Class: G)
Reporting Ac Reported Ac
Type: Viking Glider EC120
Operator: HQ PTC Civ Pte
Alt/FL: 1300ft 2000ft amsl
(QFE 984 mb) (N/K)
Weather VMC CLBC VMC N/R
Visibility: >10km N/R
Reported Separation:
200ft H 50/100ft V N/R
Recorded Separation:
Approx 400yd H N/R V



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE VIKING GLIDER PILOT reports flying from Kenley, instructing a student pilot on his first sortie in a Day-Glo and white glider. The instructor was at the controls and had just released the cable at the top of the launch and was about to explain the normal gliding attitude. At the time the ac was over the S perimeter of the airfield, heading 210° at 55kt and 1300ft on the QFE [1866ft amsl] when he saw a helicopter 200ft away in his 2 o'clock level, converging with him on a course approx 90° to the glider launch line of 210°. He estimated that the helicopter passed with 200ft horizontal clearance, very slightly above. The instructor lowered the nose of the glider and banked hard, turning L through 270°. He saw no apparent avoiding action by the helicopter and assessed the risk of collision as being high had he not taken avoiding action. He reported the incident to Kenley Radio during avoiding turn.

THE EC120 HELICOPTER PILOT reports flying a black ac from Nether Warton, Oxfordshire, to East Grinstead routeing via OCK VOR, tracking S of Sevenoaks VRP, then following M25, staying N to avoid Gatwick Zone, but remaining S of Kenley and Biggin Hill ATZs. At Sevenoaks he turned S to enter the Gatwick Zone under Gatwick's control. He understood that an Airprox was reported S of Kenley: however, he was unaware of any potential collision. Assuming the Airprox took place at a position S of Kenley he was receiving a FIS from Biggin Hill and neither he nor his passenger saw a glider close to them. He thinks that at the time he was at 1500-2000ft, but was descending to 1500ft for entry to Gatwick Zone after passing S of Sevenoaks. He was certain that he passed between Kenley and M25/M23 Intersection.

UKAB Note (1): Kenley is promulgated in the UK AIP ENR 5-5-1-3 as a Glider Launching Site up to 1700ft agl (2266ft amsl) daily from sunrise to sunset. It has no ATZ.

UKAB Note (2): Both ac paint on the Gatwick radar recording. The EC120 can be seen as it approaches from the W at a constant altitude of FL22 while a primary-only contact of the glider is seen shortly after it gets airborne. The contacts continue to merge and the glider can be seen apparently commencing a hard L turn. Shortly after, it disappears, reappears 20 sec later a few hundred yards to the WSW of the field whilst the EC120 continues to track to the E.

UKAB Note (3): The Biggin Hill QNH at 1220 from Met Office data was 1001mb; it can be calculated therefore that EC120 was flying at an actual altitude of 1840ft amsl while the reported altitude of the glider was 1866ft amsl.

UKAB Note (4): The base of the London TCA in this area is altitude 2500ft.

HQ PTC comments that this is just the latest of a continuing number of Airprox between gliders at Kenley and GA traffic. More disturbingly, it is not the first where the GA pilot has not even been aware of the glider. Previous informal approaches to avoid such occurrences seem to have brought no improvement in the local airspace management. HQ PTC is aware that 2 further local initiatives, both by the VGS and the civilian club, are in progress. If these bear no substantial fruit, more formal avenues will be explored.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, radar photographs/video recordings and a report from the glider operating authority.

The BGA provided the Board with written comments. In summary they believed that this incident could have been prevented if the helicopter pilot had not routed so close to Kenley or had flown at a lower height. Further, at the speed he was flying the helicopter pilot should have been able to see both the airfield and the glider. Members also thought that the Viking instructor not only saw the situation and acted promptly, but also was able simultaneously to warn others on the frequency. Finally, they commended the local initiatives, mentioned by HQ PTC, to try to resolve the continuing worrying number of GA/glider conflicts in the vicinity of Kenley.

Members agreed with the BGA view that the prime cause of this incident had been the EC120 flying close to the promulgated glider site at Kenley. Although he did not overfly the site or contravene any regulations or procedures, Members considered that it was unwise to fly so close to busy glider sites particularly at a weekend. A Member with considerable experience in this field informed the Board that he believed that, given the height and speed of the helicopter, it should have been spotted by the glider launch party and they should have delayed the launch.

Members agreed with the BGA comment that the helicopter pilot had been in a position to see the glider but had not done so, possibly due to it being obscured by window or door supports. Although they accepted that there had been airmanship deficiencies by the helicopter pilot the good lookout and correct follow-up action by the glider instructor had prevented this from becoming a more serious occurrence. Members therefore concluded that there had not been any risk of the ac colliding.

PART C: ASSESSMENT OF CAUSE AND RISK

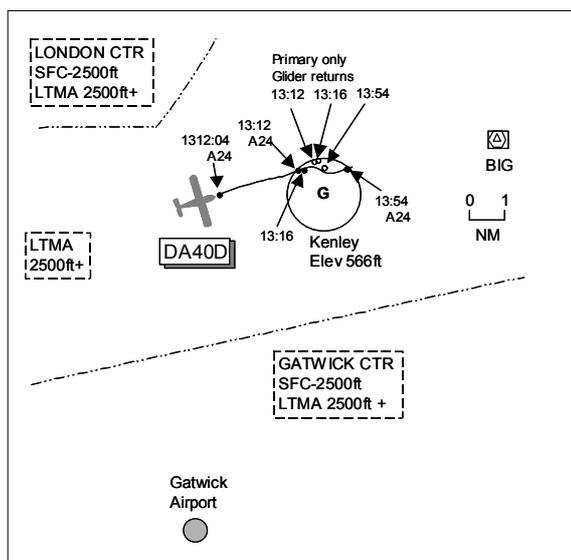
Cause: Conflict in Class G airspace in the close vicinity of a promulgated glider site, resolved by the glider pilot.

Degree of Risk: B.

AIRPROX REPORT No 089/04.

AIRPROX REPORT NO 089/04

Date/Time: 19 May 1313
Position: 5119N 00006W (0.75nm NNW
Kenley - elev 566ft)
Airspace: FIR (Class: G)
Reporting Ac Reported Ac
Type: KA8 Glider DA40D
Operator: Civ Club Civ Trg
Alt/FL: 1800ft 2000ft
(agl) (QNH)
Weather VMC CLNC VMC CLBC
Visibility: 50km >10km
Reported Separation:
50ft V 100m H 300ft V 800m H
Recorded Separation:
NR



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE KA8 GLIDER PILOT reports flying solo from Kenley at 1800ft agl thermalling in a RH orbit over the NW aerodrome boundary of Kenley. The visibility was 50km in SKC VMC and the ac was coloured red/white; no radio was fitted. Turning through E an ac was sighted about 1000m away approaching him from behind tracking E and after turning about, the other ac was seen still to be approaching. The geometry remained unchanged after completing 1 further orbit so he tightened his RH turn to avoid the conflicting ac, a white/blue coloured low wing T tail single engine type. Simultaneously it was seen to execute a RH wing-over to avoid him, passing 50ft below and 100m clear to his L, before it then turned back onto track towards Biggin Hill. He believed that there had been a risk of collision.

THE DA40D PILOT reports flying a dual training sortie en route from Southampton to Stapleford at 2000ft, he thought, and he was in receipt of a FIS from Biggin Hill on 129.4MHz squawking 7000 with Mode C. The visibility was >10km 1000ft below cloud in VMC and the ac was coloured white with strobe lights switched on. Approx 1nm S of Kenley, he thought, whilst heading 070° at 120kt, he saw a glider in a RH orbit about 1000m ahead and above his level. He turned 20-30° R to avoid, the glider continued to orbit without taking any avoiding action, and it was seen to pass 800m to his L and 300ft above. He opined that the glider pilot probably saw his ac a lot later than he acquired the glider and he did not consider there to have been any risk at all. Also, he went on to say that if he had thought that there had been a risk, he would have altered his heading by a lot more than he did.

UKAB Note (1): The London QNH was 1023mb.

UKAB Note (2): The UK AIP at ENR 5-5-1-3 promulgates Kenley as a Glider Launching Site centred on 511820N 0000537W for winch launches where cables may be encountered to 1700ft agl during daylight hours; site elevation 566ft amsl.

UKAB Note (3): Analysis of the Heathrow and Gatwick recorded radars at 1312:04 shows the DA40D 2.85nm W of Kenley Glider Site tracking 070° indicating 2400ft altitude QNH1023mb; this level is maintained throughout. Just over 1min later an intermittent primary only return is seen on 2 consecutive sweeps at 1313:12 and 1313:16 before fading, believed to be the KA8 Glider, tracking 090° 0.9nm NNW of Kenley, just to the L of the DA40D's 12 o'clock range 0.9nm. The DA40D is seen to commence a R turn immediately thereafter, steadying on a track of 120° for 3 radar sweeps before turning L and

regaining its original track 0.8nm NE of Kenley. The Airprox is not seen, the KA8 Glider only re-appearing on radar at 1313:54 0.7nm N of Kenley 0.66nm W of (behind) the DA40D. The KA8 pilot had reported flying at 1800ft agl during the encounter which equates to about 2300-2400ft amsl.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac and radar video recordings.

Members were aware that airspace near to Kenley is 'tight' owing to adjacent CTRs and the LTMA, base level 2500ft, above. Gliding activities are predominantly training flights which are normally concentrated within the immediate vicinity of the glider site and usually within the upper levels of the available height. Although the DA40D's track towards BIG would not have overflown the site, some Members thought that the pilot should have planned to give Kenley a wider berth. As it was, the KA8 pilot had been thermalling to the NW of the site and the DA40D pilot's chosen route had brought the subject ac into conflict which had caused the Airprox.

Members could not resolve the disparate separation distances reported by the pilots. The KA8 pilot had reported flying at 1800ft agl (2366ft QNH) and had seen the approaching DA40D, monitoring its progress; his options to avoid were limited owing to his speed. After completing 1 further orbit, he had tightened his R turn to increase separation, estimating the DA40D passed 50ft below and 100m clear. The DA40D pilot had reported cruising at 2000ft and had seen the glider 1000m ahead and above his level. He had turned 20-30° to the R to avoid it by 800m laterally and 300ft vertically below it. The recorded radar shows the DA40D indicating 2400ft QNH during its transit of the Kenley area. Putting the distances issue aside, the Board agreed that both pilots had discharged their duties to 'see and avoid' and their combined actions had been effective in removing any risk of collision.

PART C: ASSESSMENT OF CAUSE AND RISK

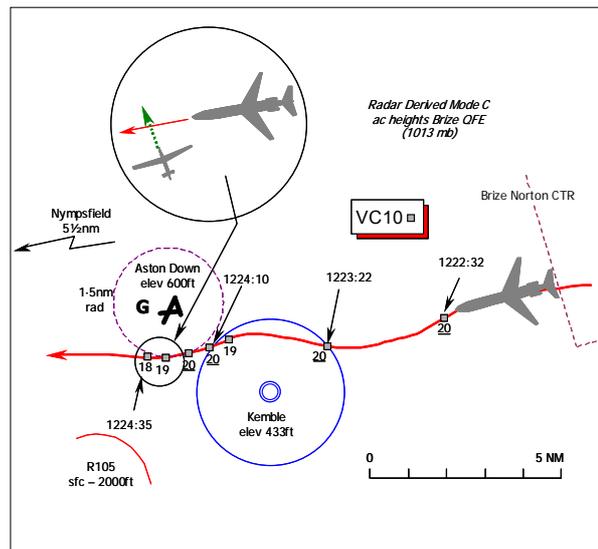
Cause: Conflict in the vicinity of a notified gliding site resolved by both crews.

Degree of Risk: C.

AIRPROX REPORT No 106/04.

AIRPROX REPORT NO 106/04

Date/Time: 15 Jun 1224
Position: 5141N 00238W (1½nm S of Aston Down Glider Site - elev 600 ft)
Airspace: London FIR (Class: G)
Reporting Ac Reported Ac
Type: ASW15 Glider VC10K4
Operator: N/K HQ STC
Alt/FL: 2500ft 2000ft
QNH QFE (1013mb)
Weather VMC CLOC VMC CLOC
Visibility: 20nm Good
Reported Separation:
200ft V/nil H 400ft V/1½-2nm H
Recorded Separation:
Not recorded



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE ASW15 GLIDER PILOT reports his glider is coloured white overall. He was conducting general handling at an altitude of 2500ft just to the S of the Aston Down glider site boundary, and there were several other gliders from Aston Down and Nympsfield operating in the local area, soaring at all altitudes up to the cloud base of about 3500ft amsl. At the time of the Airprox he was flying straight and level heading 350° at 40kt just after straightening out from a circling L turn, with another glider 3-400ft above him and some 1000ft below cloud with an in-flight visibility of 20nm. Whereupon a greyish VC10 was spotted at 2 o'clock, some 500yd away, approaching obliquely from R – L. The jet passed about 200ft directly below his glider with a “considerable” risk of a collision, but no avoiding action was taken as he opined there was no point. He added that the VC10 flew close to both glider sites at some 15-1700ft agl.

THE VC10K4 PILOT reports his ac has a grey camouflage scheme but the HISLs were on. Whilst outbound from Brize Norton he was in receipt of a RIS from Brize Norton APPROACH (APP) and squawking the assigned code with Mode C; TCAS is fitted but neither an RA nor TA was enunciated during the period of the Airprox.

Flying at 2000ft Brize QFE (1013mb), [Brize Norton elev-288ft] heading W reportedly into sun, at 250kt, some 1000ft below cloud and “good” in-flight visibility, APP called traffic to him at a range of about 4nm. An ac - a white low-wing glider - was acquired visually at the reported range and was flying either at about the same altitude or slightly above his ac. As his current heading would have kept his jet clear of the glider he maintained his course, but the glider then manoeuvred towards his ac. Therefore, he initiated a descent to increase the clearance below the glider and descended overall about 180ft. He added that it was difficult to assess the minimum separation, but estimated it was about 400ft vertically and 1½ - 2nm horizontally and assessed the risk as “low – medium”.

MIL ATC OPS reports that the VC10 departed Brize Norton for Air-to-Air Refuelling Area (AARA) 10. The outbound VC10 crew contacted Brize Norton APP at 1219:34, APP identified the ac within the Class D Brize CTR and stated “once passing 1500ft you're cleared left or right turn own navigation”, which was acknowledged. At 1219:52 APP informed the VC10 crew that “...it is very, very busy around the Nympsfield Glider Site, multiple contacts there”. APP advised the VC10 crew when they exited the Class D CTR and placed the flight under a RIS at 1221:54. Traffic information was passed to the VC10

crew at 1221:56, "...traffic right 10'clock, 6miles, looks to be south east bound, indicating 800ft above". Just under 1min later at 1222:53, an update on the previously reported traffic was given within traffic information passed by APP at 1223:05, "...further traffic 12 o'clock, 5 miles, southbound, no height, possible Kemble visual circuit". The VC10 crew reported having the conflicting traffic on TCAS, 800ft below. At 1223:38, further information was passed to the VC10 as "traffic right 20'clock, 5miles, manoeuvring 3 contacts, no height possible glider". The VC10 reported visual at 1223:45. APP limited the RIS from all around at 1223:59, due to "high traffic density and also altitude from below." Prior to transfer to the next ATSU, APP passed updated information as "traffic left 11o'clock, 2miles, manoeuvring no height, 3 contacts" and again at 1224:31 as "...multiple contacts, right 20'clock through to 11o'clock various,(transmission broken). There's about 12 contacts there, no height information, all gliders". The VC10 reported "visual with several and taking avoiding action". More traffic information was passed at 1225:50, as "further contact left 11o'clock, 2miles, manoeuvring. Your current track should take you clear." The VC10 was transferred to Filton at 1226:00.

[UKAB Note (1): The Heathrow, Debden and Pease Pottage radar recordings' were reviewed but unfortunately did not show the Airprox. The Clee Hill SSR [primary out of service] clearly shows the VC10 after departure from Brize Norton, however, the glider was not shown as no transponder is fitted. Analysis of the Clee Hill SSR shows the VC10 climbing out of Brize Norton at 1219:54, squawking A3733 at 1600ft Mode C (1013mb, that is also the value of the QFE), tracking 260°. The VC10 levels at 2000ft Mode C at 1220:45. The VC10 starts a L turn SW'ly at 1222:32, and at 1223:04 the ac is shown making a R turn back onto a W'ly track. The VC10 crosses the Kemble ATZ boundary at 1223:22, level at 2000ft Brize QFE to pass 1½nm N of Kemble. At 1224:10, when the ac is NNW of Kemble, the VC10 is shown in a L turn SW'ly again and the Mode C descends to 1900ft for 1 sweep before returning to 2000ft. The VC10 is shown passing 1½nm S abeam Aston Down at 2000ft QFE then at 1224:27; the Mode C indicates 1900ft momentarily before descending further to 1800ft for one sweep at 1224:35, which is when the Airprox might have occurred, before climbing back to 1900ft and maintaining that height westbound. The VC10 then commences a R turn back onto a W'ly heading and changes squawk to A4274.]

The VC10 had departed Brize Norton on a SW'ly heading, climbing to 2000ft QFE (1013mb), routing towards AARA10. Upon vacating Brize Norton Class D airspace the VC10 was placed under a RIS and released own navigation. The crew was initially informed of numerous contacts operating in the Nympsfield area, which was well to the W of their position at the time. However, APP appears to have passed detailed and relevant traffic information to the VC10 crew about the position of gliders operating in the Aston Down area. It is impossible to ascertain whether the information was accurate as the gliders do not show on the recording, but the crew of the VC10 was visual with the gliders at 4nm after which the VC10 crew advised "taking avoiding action"; the pilot reports taking a 200ft descent after the glider manoeuvred towards the VC10. This coincides with the fluctuation of the VC10's Mode C indication at 1224:27. Brize Norton do not have Aston Down Gliding Site marked on their radar map and were therefore unable to provide accurate information as to the VC10's position in relation to the glider site.

[UKAB Note (2): The UK AIP at ENR 5-5-1-1, promulgates that Aston Down Glider launching site is active during daylight hours for winch and aerotow launches which may attain a height of 3000ft agl, above the site elevation of 600ft amsl.

UKAB Note (3): The extant UK Mil AIP at Vol 3 UKDLFS Pt 1-2-2-5 stipulated that Aston Down Glider Site - GS10 - was to be avoided by 1.5nm [below 2000ft msd] and noted that gliders operate up to 3000ft agl.

It was also noted that the Mil AIP states that Kemble – CA11 - is to be avoided by "2nm Weekends and PH...0800-1700 Summer" which might imply to some pilots that the ATZ is only active at weekends and on Public Holidays, which is not the case. This Airprox occurred on a Tuesday.

AIRPROX REPORT No 106/04.

The civilian UK AIP at ENR AD2-EGBP-1-3 notifies the Kemble ATZ as a radius of 2nm centred on RW08/26 extending from the surface to 2000ft above the aerodrome elevation of 433ft amsl. Active in Summer 0800-1700].

HQ STC comments that the VC10's crew's selected route and altitude was misguided due to the likelihood of conflict with GA and glider traffic. Furthermore, the busy nature of this airspace should be of no surprise to Brize-based aircrew. From the report it is probable that the VC10 was avoiding another glider rather than the one that reported the Airprox.

It is disappointing that the RAF has installed TCAS on the VC10, at great expense, only to conflict with another airspace user operating without a transponder; thus restricting the utility of the TCAS fitment. Moreover, with known poor visual and radar conspicuity on gliders, the options to 'see and avoid' are usually limited to a very short range (if at all) and useful potential conflict information from ATC is unlikely.

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 and operating authorities.

This incident occurred on a good summer soaring day when there were many gliders operating from Aston Down and Nympsfield and almost certainly gliders from sites many miles away, flying cross-country flights using waypoints in that area at which to turn. It was mentioned that 60 gliders are based at each of the two sites and up to 30 additional gliders might visit the sites on a busy day. With this in mind, the Board was somewhat puzzled as to why the VC10 crew had elected to transit to AARA10 in the SW, within the low-level environment, and route so close to these busy sport-flying locations. The STC member said there was no readily apparent reason for flying in this large, relatively unwieldy ac at these heights so close to Kemble and the two glider sites. He added that the execution of this departure from Brize was perhaps somewhat unwise. It was evident that the VC10 crew had been warned by APP about the presence of aerodrome cct traffic at Kemble and the large number of gliders operating around Nympsfield so it might have been more appropriate to give these locations a wider berth. It was suggested that a fairly rapid climb with radar assistance to a level that is above cloud tops would reduce the potential for encounters such as described here. It was explained that in thermal conditions, gliders will more often be found under clouds (with a higher concentration just below cloudbase) but once above the cloudbase and atop thermic cloud the risk of encountering these unpowered ac is reduced. Similar conditions prevailed here. The gliding advisor undertook to liaise with HQ STC with a view to providing a general briefing about gliding for the benefit of military crews operating from Brize Norton and Lyneham as soon as possible. Moreover, in his view the explanatory wording in both the UK AIP and the UK Mil AIP was somewhat misleading as some aircrew might get the impression from the warning about the respective activities that it is quite safe to overfly sites at heights of more than 3000ft. Whereas both sites have winching capability on the wire to a height of 3000ft aal, aerotows to any height below cloud (but normally 4000ft) are executed and soaring gliders will be found at any height up to cloudbase, and occasionally above during wave conditions. However, despite these site-specific warnings it was stressed that gliders could legitimately be encountered anywhere in Class G airspace. The Board's advisor on military low-flying had previously undertaken to review the UK Mil AIP Vol III entry regarding the Kemble ATZ at UKAB Note (3) and had asked No1 AIDU to revise the wording to make it clearer and reflect the information published in the RAF FLIP En-Route Supplement. Furthermore, the Mil ATC Ops Advisor elected to investigate the feasibility of marking Aston Down on the Brize Norton SRE video map.

Members were all too well aware of the poor visual and radar conspicuity of white gliders made of composite materials. The Board was advised that not much could be done about STC's observation

about SSR transponders for gliders until the technology actually becomes available commercially. The GA member commented that much has been made over the years of the potential for a lightweight transponder, but it was explained that they have not as yet been developed to the point that they can be placed into production. Nevertheless, the Mil ATC Ops report had made it plain that the controller had conscientiously called the traffic that he could see displayed to him in the vicinity of Aston Down.

From the reporting glider pilot's perspective, he was conducting his general handling sortie from his local site when he saw the VC10 500yd away ($\frac{1}{4}$ nm). At a closing speed in the order of 250kt this distance would have been covered in about 4sec. So although he opined there was no point in taking any avoiding action as the jet passed 200ft directly beneath his ac, the Board recognised he would probably have been unable to alter his glider's flightpath significantly in the time available. A gliding advisor explained that the BGA Safety Committee is currently in the process of providing advice to glider pilots on avoidance techniques when faced with conflicting traffic, but it is extremely difficult to clear away from ac with a speed differential of more than 100kt. Without recorded radar data it was impossible to resolve the anomalies in the horizontal separation reported by both pilots. The Clee Hill SSR had shown that the VC10 had passed $1\frac{1}{2}$ nm S of Aston Down, in the immediate vicinity of where the glider pilot reported he was operating at the time of the Airprox. Whereas the VC10 pilot's account had stated that $1\frac{1}{2}$ -2nm horizontal separation had existed at a minimum as he descended below a white glider, if that was the case then either the glider pilot had been mistaken, which was unlikely as there were no other VC10s in the vicinity, or the jet pilot had based his assessment on another glider which he had been avoiding whilst passing directly beneath the reporting pilot's ac that had not actually been spotted at all. In this dense traffic scenario with many gliders about this was entirely feasible and in the STC member's opinion the VC10 crew had probably not seen the subject glider: the Board was unable to reconcile this anomaly beyond doubt. The Board could only conclude, therefore, that this Airprox had resulted from a conflict on the boundary of the Aston Down Glider Avoidance Area. Given the separation reported and the probability that the VC10 crew had not seen the subject glider the Board agreed that, on the information available, the safety of the ac involved had not been assured.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Conflict on the boundary of the Aston Down Glider Avoidance Area.

Degree of Risk B.
