



## TECHNICAL COMMITTEE NOTES

**1400-1630 Dowgate Hill House, 14-16 Dowgate Hill, London, EC4R 2SU**  
**18<sup>th</sup> September 2018**

Attendees/ Apologies				
Marion	Wooldridge (CP)*	Chair		Present
Richard	Hall (CP)*	Vice-Chair		Present
Colin	Cox (CP)*	Master		Apologies
Malcolm	White (CP)	Master Elect		Apologies
John	Turner (CP)*	DAA		Present
Michael	Cleaver (CP)*	Australia		Present - via Zoom
Nick	Clutton			Present
David	Cockburn			Present
Geoff	Connolly			Apologies
Peter	Cox			Present
John A	Denyer (CP)*			Present - via Zoom
Alex B	Fisher*			Present
Nick	Goodwyn*			Apologies
Brent	Hawkins (CP)	Hong Kong		
Kent	Johnson (CP)*	North America		
Richard	Lotinga*			Present
Chris	Norton*			Present - via Zoom
Phil	Smith*			Apologies
Miles	Stapleton (CP)			
Syd	Utting			Apologies
Rob	Seaman*			Apologies
Dai	Whittingham (CP)			Apologies
Simon	Gaskin	Sec Gen IAIN		Present
Tom	Harrison	GATCO		

\*= Established on SharePoint as at end September 2018

### 1. CHAIR'S INTRODUCTORY REMARKS

- IT set-up was a major distraction so **future meetings using a 'booked' room will be scheduled to start 15 min after the room becomes available.**
- Amidst the turmoil, the Chair opened by welcoming all, covering apologies and outlining the process needed to complete the extensive agenda within the time available. Future meeting papers would be circulated on SharePoint; the website, would only be used for sanitized post-meeting notes.
- SharePoint would also support ex-committee communication and provide an area where a team could collaborate on draft documents. All should have received a link to join the SharePoint site; DAA has already circulated additional guidance by email.

### 2. NOTES OF PREVIOUS MEETING & Matters Arising (NOT COVERED BELOW)

#### 2.1 PERSONAL CONTACTS

- A .pdf of the latest contact matrix was circulated with meeting papers (action closed). **A 'live' copy of the spreadsheet is available in SharePoint folder TC CONTACTS MATRIX.** All TC members please update as and when necessary. Action & item closed.

#### 2.2 SKYBRARY

- On-going reminder to review/comment on SKYbrary articles where Air Pilots hold 'Content Control'.

- **DAA will relocate this topic to Section 5 to capture future written updates.**

### 2.3 Cabin fumes

- The Court endorsed TC words which are now published on the website. Action & item closed.

### 2.4 Consultations:

- As indicated in meeting papers, since last meeting DAA had responded to LAMP2, NATS FASI North, UK Airspace Modernisation Strategy and MOD Combat air Strategy consultations.
- Liverpool airport had issued proposals on converting to GNSS procedures that replicate current arrangements. TC felt a 'no comment' response would be suitable, notwithstanding GNSS vulnerability discussed below. **DAA agreed to send this. 'No Comment' response in SharePoint folder for the 19-01 January Technical Committee.** Complete

## 3. TOPICS FOR DISCUSSION (NOT COVERED BELOW)

### 3.1 Laser Attacks - UK Laser Working Group

- A Commons Briefing Paper on Laser Misuse (Vehicles) Act 2018 had been provided. Having largely achieved its aim, the UK Laser Working Group was now considering whether there were any other topics that would benefit from the cross-organisation/agency group that was established to address laser issues. TC thought GMSS spoofing/denial of signal might be a good candidate!
- **DAA will relocate this topic to Section 5 to capture future written updates.**

### 3.2 GNSS Spoofing

- A Satcom security vulnerability paper had been provided for info. This GNSS topic came up a couple of meetings ago and RIN have been warning government repeatedly of the implications of GNSS vulnerability, noting that it is an essential component of aviation, timing, banking, mobile phone networks, etc. **PMN: 2014 Cabinet GNSS National Space Security Paper is in SharePoint folder 19-01 January Technical Committee.**
- Instances of GNSS outage at airports (e.g. Gatwick and Dallas) have been caused by trucks carrying GNSS jammers. A pilot (together with others) lost GNSS on approach to Southend but found ATC was not interested when he informed them, so he did not raise an official report. NATS seems to believe that DME/DME fixing provides sufficient backup but that does not seem realistic for lower level operation (e.g. in TMA). The impression we get from NATS and CAA is that any outage will be sufficiently short-term and localised, so pilots can always divert to an alternate. The topic is also live within UK FSC and **Dai Whittingham plans to ask EASA whether they have GNSS vulnerability on their Risk Register.**
- At present, there is little defence in aviation, despite most larger aircraft having a very accurate (albeit unbounded over time) inertial position sources except that (e.g.) EASA rules prevent use of stand-alone inertial systems. So, denial of service is possible but the available defence is not permitted to operators because (except in latest aircraft such as 787 that exploits IMRS), the FMS assumes IMRS is completely unreliable.
- Air Pilots did have a Working Group on this some 15 years ago! Now, Norway is rumoured to be removing all its ground-based nav-aids. 60% of Australia's aids have been removed, leaving a 50/50 spread of VOR and NDB; probably 85% of approaches are GNSS. Australia has some ground-based local augmentation and is trialling a space-based augmentation system - in effect an Australian EGNOS. Ian Mallett is recognised as an expert in the field - Mike Cleaver will ask him for further information.
- Given the several issues - problems and potential remedies - it was agreed TC should try to establish a simple bullet-point list of all the issues - and to update developments for other TC members through SharePoint. **Alex Fisher and Richard Lotinga agreed to produce the simple bullet-point list for next meeting.**
- **DAA will relocate this topic to Section 4.**

### 3.3 APPG

- Meeting papers on National Planning Policy Framework 2018 ( by and from GAAC) and an August update from the APPG coordinator reflected the work going on within APPG.
- APPG website includes a long list of current GA aerodromes under threat.
- The current aviation system will not cope with Drones at all because it thinks in terms of aerodromes, not of air vehicles operating from anywhere. The pace of drone development could quickly result in an unfit air system for everyone. How will 'airfield' be defined/described in 10 years' time, noting that drones do not necessarily need to operate from a traditional airfield?
- Airspace issues arising within APPG are covered separately under AOB.
- **DAA will relocate this topic to Section 5 to capture future written updates.**

## 4. WORKING GROUPS

### 4.1 True North Heading Reference (MAG2TRU)

- There are continuing indications of progress with several areas supporting it and some indications that a switch may not be as difficult as was first thought. Nonetheless, there are still massive areas (including some aviation sectors within Canada) where there is no knowledge.
- We will only progress this further by getting ICAO on side so a plan of engagement to socialize the idea and persuade ICAO of the benefits of a change is required. The issue is now appearing within ICAO; Canada will present 'TRUE NORTH REFERENCE SYSTEM' to the ICAO 13<sup>th</sup> Air Navigation Conference under Committee A, Agenda Item 3 (Enhancing the global air navigation system), 3.5 Other ATM issues.
- Options to prepare a presentation were discussed. Unlike an extensive written paper, a presentation generally requires less work, people are more likely to go through all of it, a degree of anecdotal information can be exploited and it can pose open questions to make people start thinking. Also, a prepared presentation gives the Air Pilots a platform to present to various organisations and groups. This particular presentation would be offered *inter alia* to Nav Canada, Dutch equivalent asking whether we can be of assistance, to IFALPA (through BALPA) to try to elicit/awaken support and to Parliamentary Advisory Council for Transport Safety (PACTS) to explain the potential hazards in current Magnetic navigation techniques in aviation.
- **DAA agreed to prepare a 30 minute PowerPoint on MAG2TRU by end of November. Simon Gaskin offered his slides to DAA to assist with this.**

### 4.2 Human Factors – Fatigue

- The original Working Group had produced an extensive paper. At the time it was felt an academic approach would be more effective and de-couple any accusation of vested (industrial) interest from the position being advocated. Subsequent investigation of academic research options indicated this would be expensive and beyond the facilities available to the Air Pilots (and the Air Safety Group) with which we'd been sharing information.
- CAA have stated there is no difference between being tired and being fatigued(!) and EASA is resource-limited and cabin crew-led, essentially just running a watching brief.
- Airlines say a crew operating within Flight Time Limitations (FTL) cannot be fatigued - which flies in the face of EASA's argument when introducing relaxed limits to be 'informed' by a Fatigue Risk Management System (FRMS) using crew fatigue reports - while crews don't submit fatigue reports because that makes them first choice for redundancy. Some airlines insist that fatigue lasting more than 1 day is sickness.
- Australia has an ongoing FTL and FRMS study in which our member Wayne Martin has a major role.
- **Nick Clutton agreed to prepare a 30 minute PowerPoint on CREW FATIGUE, to include cabin-crew, and also should mention ATC fatigue etc; it is not confined just to air crew. In addition, it should highlight those places where there is a lack of evidence, thus identifying potential research areas for academic institutions**

to consider.

#### 4.3 Pilot Fatigue & Nutrition

- Nothing further to report. **DAA will relocate this to Section 5 to capture future written updates.**

#### 4.4 Addressing 'skill fade' - a low-cost Skill-Refresher

- Contact with Cranfield University had been re-established but they had little appetite.
- Chair observed that London City have expressed interest but have been difficult to engage.
- EASA approach ('opinion' in meeting papers) was to teach pilots to recover from a 'loss of control' event whereas the Refresher Aid was intended to prevent pilots from losing control in the first place.
- Loss of control was a major risk for airlines (where their pilots did little hand-flying) and these accidents tended to cause major loss of life.
- **Nick C offered to circulate an EASA Top Risks paper See EASA Annual Safety Review 2018 in SharePoint folder 19-01 January Technical Committee - complete.**
- Upset recovery training issues discussed - extra or diverted sim time, simulator fidelity, startle effects and simulation.
- Should seek a university that will trial our 'Skill Refresher' and should understand what research work is going on into Startle.

#### 4.5 UK Flight Instructors

- The next Senior Instructors' Forum will be in 2020; this will allow a refresh of content and format.
- The next WG meeting was on 19 September. Current topics included Threat and Error Management on which the WG members held a range of views.

#### 4.6 Unmanned Air Vehicles

- Papers on DfT drone consultation and Westminster Briefing indicated there were many major issues to address to progress drone operation to the satisfaction of those wishing to operate them and other aviators. BALPA and MAA approached DAA in advance of submitting their responses.
- Westminster Briefing also circulated. Five cities nominated to be test beds for drone urban operation, including London, Southampton and West Midlands. Exposed that without a valid Unmanned Traffic Management (UTM) system, it was not effective (or legal) to operate drones beyond visual line of sight (BVLOS) unless observers were placed every 500 metres or so. Still little acceptance by the public of where drone exploitation is likely to develop in future years.
- More education of drone operators required; many seemed concerned only with building - so the challenges identified by ASTREA, including 'see/detect and avoid, were no further advanced.
- Japan was reported to be well ahead of UK in facilitating drone operation, that itself would unlock enormous economic benefit; CAA unlikely to catch up soon as they will be busy with Brexit work.
- Airspace development was also not cognisant of the likely drone requirements and challenges for the future, which was particularly worrying - airspace issue was to be continued under AOB.

### 5 NOTICES/UPDATES FROM OTHER COMMITTEES, EVENTS, ETC (For information only, unless errors, significant further updates etc).

#### 5.1 UK FSC

- Standing action for DAA to email UK FSC redacted minutes direct to members, when available, had stalled. DAA would endeavour to do better in future; he hoped the SharePoint arrangement might help.

## 5.2 GAP (+ 121.5 Issue),

- Papers on Emergency calls, moving map and meeting report provided. CAA announced they would not engage on the 121.5 issue, since a UK military intercept had adequate safeguards to prevent an accident even if airliners had deselected 121.5 (!) (DAA action otbe)
- [DAA would circulate EASA CAG REPORT from David Cockburn on SharePoint](#) **The paper is 5.2e CAG 100918 in SharePoint folder 18-09 September Technical Committee.** Closed
- EASA are trying to establish a WG on GA technical failure handling.

## 5.3 Met Office Users Forum

- No meeting since last TC; next meeting is Oct/Nov. Met Authorities seemed determined to switch wind direction reporting to Magnetic!!! Peter Cox would continue to press against that change.

## 5.4 NATMAC

- DAA was unable to attend last and CAA had not permitted dial-ins. Next meeting date has been changed - the second time this has happened. Many NATMAC members are particularly unimpressed.

## 5.5 DfT/EASA Briefings

- As in meeting papers.

## 5.6 Forthcoming conferences

- ICAO 13th Air Navigation Conference, Montréal, Canada, 9 to 18 October 2018 (at which Nav Canada are presenting a paper on Mag2Tru). **The Nav Canada paper is in SharePoint folder 19-01 January Technical Committee.**

## 5.7 Meeting Critique

- DAA would arrange for the meeting to start at 1330 in future (**otbe**: now booked for 1300 as below).
- Future agenda should make it clear which items were for discussion and which, with supporting papers, were intended for info and not discussion. (PMN: Section 5 will become predominantly (if not exclusively) for written information inputs and not for meeting discussion.)

## 6. AOB

### 6.1 Airspace

- Airspace has arisen under several other items. An APPG-GA airspace challenge suggests that CAA should not be the arbiter of airspace decisions.
- TC needs to take on this topic and a standing airspace/ATC working group to handle airspace etc. was suggested, and it was agreed that this should be followed up after the meeting, to progress.
- Asked whether the intent was to allow everyone to use everything, DAA explained that the Air Pilots aspiration was for airspace that is shared effectively, rather than further blocking off of pieces for single use. The 'blocking off' approach leads to paradigms such as *"we've got bigger aircraft so we need more airspace"* or *"we expect to have more aircraft so we need more airspace"* rather than seeking alternative approaches to achieving a safe flying environment. When someone says *"this airspace is mine"* what they actually mean is *"it is nobody else's"* despite all the other potential users. In addition, there is rarely any appetite to reduce controlled airspace, even when traffic and movement forecasts don't materialise.
- Our approach is not intended to make airspace unsafe for anyone - but to make it safe and accessible to everyone - including the commercial drone operator who doesn't want a survey device costing several thousands of pounds to be damaged by jet wake etc.

- If we continue the current approach, we will end up with one person controlling all the airspace with everyone else excluded, which is not tenable in a democracy.
- An Airspace WG would assist DAA in taking on some of the burden of airspace consultations.
- Chair asked for volunteers - possibly wider than the TC - and asked committee members to think about where airspace should go, whether they want to be a part of that and how we might play it. There was consensus to establish a WG - suggested that members who were pilots (or navigators) *and air traffic controllers* might be able to contribute considerable insight.
- DAA noted the Class E consultation (meeting papers) would benefit from the WG approach.
- Committee noted that UK seemed inclined to always add something on top of what ICAO required.
- Air Pilots see no reason why the UK could not adopt ICAO standards for Class E airspace
- TC members to express interest in being involved in an Airspace WG.
- **DAA will respond with “Regulation of an international activity should be international, which means buying in to ICAO. If ICAO is not deemed correct, then the national approach should be to fix ICAO, not to implement national variations.” See Comment Response Document - Class E Procedures Consultation - Air Pilots in SharePoint folder 19-01 January Technical Committee. Complete**
- **Nicholas agreed to take that up at the CAA’s Mid Air Collision (MAC) Challenge Group.**

## 6.2 Composition of TC, and possible second Vice Chair

- Committee agreed with the Court that they would like Richard to remain as Vice Chair.
- Question posed whether, notwithstanding the ToRs, we wanted a second Vice-Chair, as has been the case until now.
- Chair suggested it would help if a second Vice-Chair brought a military background to the committee to balance the Chair (GA) and current Vice (CAT).
- It was agreed that in any event a strengthening of TC military input was desirable and a potential new candidate - Wg Cdr Ronnie Tresler, currently working in MAA policy & strategy was interested in joining the TC. Committee agreed to delay deciding on a second Vice-Chair and asked Chair to invite Wg Cdr Tresler to attend the next TC. PMN: Wg Cdr Tresler has agreed to join the TC, and plans to attend the next meeting.
- A number of the TC also identified a need for dedicated medical input to the TC. PMN: Chair has, with agreement of DAA and a number of TC members, invited Dr Eleanor Ivory (Liverman, BA 1<sup>st</sup> Officer and AME) to take on that role in the TC. PMN: Dr Ivory has accepted the invitation, and has plans to attend the next meeting.

## 6.4 Mini-briefings – What, by whom

- Already discussed within the meeting and agreed as a good idea and to take a couple of them (Mag2Tru and Fatigue) forward. Others would be:
  - **Why you should listen to the emergency brief** - those passengers that braced properly in the ‘Kegworth’ accident mainly survived - those that didn't would not have survived had there been an immediate fire due to broken legs and hands. **Chair asked for volunteers. PMN: Assistant Jonathan Legat has offered to assist with this mini-briefing; chair will be following up.**
  - **Airspace sharing** - following on from action above.
  - **Ground Handling.** Important in terms of safety & impacts all areas of aviation, not just CAT. - Lack of time to take further - **DAA to put this on agenda for next meeting.**

## 6.4 A Fair Tax on Flying - Aim to persuade Chancellor to reduce/remove APD

- Scottish parliament have already looked at this and decided reducing APD is a win/win because they gain more in corporation tax etc. from a more vibrant air sector than they do from depressed air activity under the burden of APD.

- DAA would circulate the link - <http://www.afairtaxonflying.org/getinvolved/> that allows people to message direct to their MP. - Complete with issue of these notes.

**NEXT MEETING:**

**Changed to:**

**1300-1630 on 26<sup>th</sup> February 2019 at 52A Borough High Street, London, SE1 1XN**

**Subsequent meetings in 2019: 21<sup>st</sup> May, 24<sup>th</sup> September**

Future Cameos: tbc - BAE Systems Laser strike protection?