



TECHNICAL COMMITTEE NOTES

16th MAY 2017

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| Attendees/ Apologies | Dai | Whittingham (CP) | Chair | Present | |
| | Marion | Wooldridge (CP) | Vice-Chair | Apologies | |
| | Richard | Hall (CP) | Vice-Chair | Present | |
| | Chris | Spurrier (CP) | Master | Apologies | |
| | Colin | Cox (CP) | Master Elect | Apologies | |
| | John | Turner (CP) | DAA | Present | |
| | Michael | Cleaver (CP) | Australia | IT prevented participation | |
| | Nicholas | Clutton | | Present | |
| | David | Cockburn | | Present | |
| | Geoff | Connolly | | Present | |
| | Peter | Cox | | Present | |
| | Harvey | Crush | | Apologies | |
| | John A | Denyer (CP) | | Apologies | |
| | Alex B | Fisher | | Present | |
| | Nick | Goodwyn | | Apologies | |
| | Brent | Hawkins (CP) | Hong Kong | IT prevented participation | |
| | Kent | Johnson (CP) | North America | IT prevented participation | |
| | Richard | Lotinga | | Apologies | |
| | Chris | Norton | | Apologies | |
| | Phil | Smith | | Apologies | |
| | Miles | Stapleton (CP) | | Present | |
| | Syd | Utting | | Present | |
| | Tom | Harrison | GATCO | Present | |
| | Simon | Gaskin | Sec Gen IAIN | Present | |
| | 1.1 Chairman's introductory remarks | <ul style="list-style-type: none">Chair welcomed all, especially Simon Gaskin from IAIN. Apologies were noted.Regional reps again could not join as IT did not support SKYPE conferencing. PMN: Warwick Court connectivity is being improved; a new line has been installed and awaits set-up. | | | |
| | 1.2 Cameo | <ul style="list-style-type: none">Nil | | | |
| 2. NOTES OF PREVIOUS MEETING & MATTERS ARISING | | | | | |
| 2.1 Matters Arising - Discussions are, where possible, recorded against agenda items below, rather than chronologically. | | | | | |
| Cockpit Video | <ul style="list-style-type: none">Cockpit video seemed to be a developing issue. It has benefits as well as dis-benefits.<ul style="list-style-type: none">Student pilots are using it to aid their understanding of what had happened, though it could also be used to critique the instructor(!)Video can be extremely useful in showing exactly what the displays told the pilots rather than relying on databus message recording.All seems a bit of a re-run of CVR introduction!(Afternote: AAIB has cockpit video from 2 recent Squirrel accidents, from Vision 1000 system now being fitted at build as standard by Airbus Helicopters. AAIB treating data as per CVR but believe formal protocols should be developed ASAP.) | | | | |
| 2.1.1 Topics for Discussion/ | TOPICS | | | | |

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| Personal Contacts | <ul style="list-style-type: none"> • Previous meeting decided selection should await Strategy work. DAA outlined the developing Strategy themes (Contribute to aviation policy: Help people into flying: Recognise excellence: Fulfil duties of a City Livery Company) and suggested members look at the topics suggested earlier, against those with a view to down-selecting to 2 or 3. • Topics previously offered were as follows: <ul style="list-style-type: none"> • 8 x Drones – Drone pilot professional status/skills, Regulation, Better threat data, • 4 x <i>Fatigue, Cumulative fatigue,</i> • 2x <i>Brexit</i> • Position on further reductions in flight crew complement on 'quiet time' on long haul – only requiring one pilot to be awake. • Explain that EASA rules are a minimum not a target • Pilot mental welfare • <i>Minimizing erosion of handling skills</i> • Cabin Air conditioning • Ground damage • Recruiting and retaining experienced FI who can teach IR/Twin • Use of RNAV/GNSS • Video recording - to confirm what the pilot sees is the same as the FDR • Next RW for SE England – LHR 3rd is not the final solution is another needed and if so where & when • RW utilization – why LHR3 if you can get the benefit for free? • Steeper approach – frees up airspace, decreases noise, • RNP Nav – over-regulated, which needs to be freed up • Geo Altitude • ATSOCAS • Glider site avoidance • <i>Fly TRUE</i> • Go public on our Instructors Guide – say we believe it is best practice. • <i>Closure of small airfields in UK</i> • CAA lack of resource • Mid Air Collision • Committee decided there was little point in attempting to influence Brexit. That and others already in work are indicated above in <i>italics</i>. <u>All TC members to review topics to down-select to 2 or 3 and advise DAA.</u> <p>EXTERNAL CONTACT POINTS</p> <ul style="list-style-type: none"> • DAA noted the had only a few responses to request for members to send details of their links with other aviation-related organisations/people), which might be an IT failure. <u>All TC members to refresh details passed to DAA on their links to other organisations</u> <p>Some examples mentioned: NATMAC - Chair + DAA, UK FSC - Chair + Alex, Met Users Group - Chair + Peter, ADS Flt Ops Committee - DAA (+RPE), BADA – DAA, DfT – DAA + Chair, MAA – DAA, David Learmont – Miles, Aviation Week - Alex (successful 5/5 in letters being published), RAeS Flt Ops Gp – Chair, EASA (CAT CAG) - Chair</p> |
| 2.1.2 SKYbrary | <ul style="list-style-type: none"> • David Cockburn and Richard Hall felt our loss of control articles did reflect latest ICAO policy. DAA had asked SKYbrary (John Barrass) for update on anything owing or new needed from us. • DAA agreed to put a link to Air Pilot 'Content Control' articles in these notes - completed here - so that TC members could review and report back. The link is: <u>http://www.skybrary.aero/index.php/The Honourable Company of Air Pilots</u> • For completeness, links to all the articles are as follows: <ul style="list-style-type: none"> ▪ Aerodynamic Stall Awareness and Avoidance ▪ Aircraft Fire Detection Systems ▪ Aircraft Fire Extinguishing Systems ▪ Aircraft Fire Risk from Battery-powered Items Carried on Aircraft ▪ Aircraft Load and Trim ▪ Aquaplaning ▪ Autorotation ▪ Bird Strike on Final Approach: Guidance for Flight Crews ▪ Cockpit Automation - Advantages and Safety Challenges ▪ Crew Resource Management ▪ Deep Stall ▪ Ditching: Fixed Wing Aircraft ▪ Ditching: Rotary Wing Aircraft ▪ Drift Down Procedure ▪ Emergency Turn ▪ Energy Management during Approach ▪ Engine Core and Fan De/Anti-icing ▪ Engine Failure During Takeoff - Multi-Engine Transport Category Jet Aircraft ▪ Flight Crew In-Seat Rest ▪ Flight Crew Pre Flight External Check ▪ Flight Deck Security |

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| | <ul style="list-style-type: none"> ▪ Flying a Manual Go-around ▪ Flying a Visual Approach ▪ High Altitude Flight Operations ▪ Hot and High Operations ▪ Hydraulic Problems: Guidance for Flight Crews ▪ Hypoxia ▪ Ice Contaminated Tailplane Stall ▪ Ice Induced Roll Upset ▪ In-Flight Fire: Guidance for Flight Crews ▪ Inadvertent VFR Flight Into IMC ▪ Jet Efflux Hazard ▪ Landing Gear Problems: Guidance for Flight Crews ▪ Line Operations Safety Audit (LOSA) ▪ Loading of Aircraft Holds ▪ Mitigating Risk for Non Standard Flights ▪ Monitored Approach ▪ Oxygen Systems ▪ Passenger Cabin Fire ▪ Precautionary Rapid Disembarkation ▪ Radiation Cloud: Guidance for Flight Crews ▪ Recovery from Unusual Aircraft Attitudes ▪ Retreating Blade Stall ▪ Rules of Thumb ▪ Servo Transparency ▪ Stall Warning Systems ▪ Stand Entry Guidance Systems ▪ System Wide Events: Guidance for Flight Crews ▪ Tail Strike ▪ Unreliable Airspeed Indications ▪ Use of Radio Altimeter ▪ Volcanic Ash: Guidance for Flight Crews ▪ Vortex Ring ▪ Wake Turbulence Hazard - A Pilot Check List ▪ Wake Vortex Generation by Helicopters ▪ Wing Tip Clearance Hazard |
| 2.1.3 | <ul style="list-style-type: none"> • DAA had now provided a copy of the Cameo presentation from last meeting to the office. It would be transferred to the website papers (last meeting page) next week. |
| 3. TOPICS FOR DISCUSSION | |
| 3.1 Lasers Update | <ul style="list-style-type: none"> • Regrettably, the UK Aviation & Vehicle Technology Bill fell due to dissolution of parliament. It did go through committee stage unchanged and it was hoped it would be re-introduced in the next session, though this would depend on ministerial priorities. |
| 3.2 Cabin Fumes | <ul style="list-style-type: none"> • DAA had discussed fumes with Rob Hunter of BALPA, which proved most informative. BALPA's website http://www.balpa.org/Positions/Cabin-Air-Quality states: <i>"Cabin air quality events do occur and occupants can experience irritant effects due to the nature of these contaminants. There are concerns around long-term health effects resulting from exposure to contaminated cabin air. Some workers have cited the existence of an 'aerotoxic syndrome'."</i> <i>"We are mindful that just as it is remiss to know of a potential threat to health and not bring it to wider attention, it is also remiss to overstate such a threat so that people are misled. In this regard, we do not believe that we have the expertise to state whether or not such links exist; we defer opinion on this to clinical toxicologists and their representative bodies such as Public Health England."</i> <ul style="list-style-type: none"> • The discussion can be summarised as follows: <ul style="list-style-type: none"> • This is a highly politicised/sensitive topic. • BALPA would like to see NHS clinical toxicologists involved whenever there is a suspect case. These are the people who work in NHS Poisons Units • BALPA value toxicologists by their ability to be able to hold a position in a Poisons Unit. • At present, many cases do not go through toxicologists! • BALPA also engaging with academia to try to gain a full understanding of aircraft air system design and maintenance design as these relate to cabin air quality issues. They would like to fund this work but are having trouble finding someone with the right background and qualifications to do this type of work. • We discussed that someone who had retired from (e.g.) Rolls Royce and was now working at Imperial College or Cranfield might be more suitable than a pure academic who might miss the nuances of large corporation manufacturing behaviour. • BALPA are searching for such an individual; if anyone on the committee can help, please let me know! |

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| | <ul style="list-style-type: none"> • TC felt a medical and epidemiologist team (perhaps from the Royal Colleges) was needed as well as engineering/maintenance expertise but couldn't identify anyone who met BALPA's requirement. • There are suggestions of some 40 cases pending in Australia and <u>DAA agreed to contact Mike Cleaver to see if more information was available.</u> • Committee felt the Air Pilots need a position on this topic beyond our current 'science shows that organo-phosphates cannot enter cabin air. <u>Chair agreed to work up some words with DAA for Committee and then Court consideration.</u> |
| 3.3 Members Reports | <ul style="list-style-type: none"> • Covered at 2.1.1. |
| 4. WORKING GROUPS (NOT COVERED ABOVE) | |
| 4.1 WG – True North (TN) Heading Ref for CAT | <p>Led by Miles</p> <ul style="list-style-type: none"> • Miles had sent a letter that was published in FI. (See meeting papers) • Chair noted <u>others can write to FI on the same topic if they wish.</u> • Miles would like to see more support from Canada. • Simon Gaskin is Secretary General of the International Association of Institutes of Navigation (IAIN). <ul style="list-style-type: none"> • IAIN might be able to add to True north/Magnetic discussion. In marine world, to get the international community to take notice you must place several papers at lower level committees to generate an eventual issue at the international body's sub-committee/ad hoc working group and then present a paper to the International Maritime Organisation (IMO). • IMO papers need supporting business cases; e.g. it costs Nav Can 5,000,000 dollars/year to oversee updates. Case will need to show how many regs will need to be re-written - & how long it will take. Europeans plan to update their radio nav plan in 2020. • IAIN could assist form a WG – leading if req. Note that IAIN had proposed a switch for aviation to True North at an ICAO meeting in Dublin only to discover that IFALPA have an interest too, but in keeping Mag North! • NATS/GATCO? – how are area radars aligned? • Some working issues were discussed: <ul style="list-style-type: none"> • Does BALPA have a view now? • Who would be most effective in leading the activity. (IAIN are recognised at ICAO as a NGO.) <u>Chair will approach Flt Safety Foundation who also have an ICAO seat.</u> • IATA Flt Ops committee discussion - Need to understand how Jepperson could do this without needing to do it all at once – anything we might learn from maritime charting? • Need to understand GA community views, though UK GA accepted the change a long time ago. • Discussion of how to move area by area – this will be a once only cost and save recurring costs. • Need to convince IFALPA of the case: E.g. TN could have saved the Resolution Bay crew. And VORs are potential source of error as beacon & aircraft manufacturers may use different look-up tables, compounding the recognised differences between aircraft databases. • CAA do not seem to understand the benefits in safety and cost. • Head of British Geophysical Survey (Susan Macmillan in Edinburgh) support True North (and might be an effective speaker for TYMMS) - <u>DAA to note.</u> • GA would still need to compass swing. If the world went True, how do you ensure pilots can still operate on magnetic if necessary? • <u>Miles to liaise with IAIN and pull a campaign plan together</u> to identify issues – fall back, impact on GA, everything nay-sayers will ask, etc. • <u>All TC members to email their own inputs into Miles.</u> • IAIN will start putting out feelers to aviation reps in associated institutes. |
| 4.2 WG- Human Factors – Fatigue & FRMS | <p>Led by Nick Clutton</p> <ul style="list-style-type: none"> • BALPA gave good presentation on 'EASA regulations a year on' – recommended establishing a committee of impartial specialists (medical, mathematical, scheduling). <ul style="list-style-type: none"> • The view that 'It is legal so it is safe' runs throughout the airlines (which means they have failed to understand that the EASA rules are critically dependent on an effective Fatigue Risk Management System (FRMS) - you can't use the rules safely without an FRMS. • A prevalent issue: Standby crews have afternoon nap in preparation for evening flight, only to be told they are stood down until v early morning flight then can't sleep and have an accident /incident. • Lillian Greenwood MP is championing fatigue issues, as is ASG, which includes a Unite rep. ASG end plan is to establish a common line for questions and the direction to send them in the Commons, Lords or regulatory authority, to get a response that we can work with. Chair cautioned against raising the questions at Prime Minister's Questions because the CAA would then close down the issue with an 'all if fine' statement from the PM. |

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| | <ul style="list-style-type: none"> BALPA is pushing for a flight deck device that will monitor if the pilots have fallen asleep. Meanwhile, the EASA expert in fatigue has left the authority. The March issue of Nautical Institute's magazine (Sea Ways) reports on Project Martha (PMN: see also http://www.warsashacademy.co.uk/news-events/news-articles/2016/july/martha-the-findings-workshop.aspx); the maritime industry has issues over fatigue at sea and effects on watch-keepers and skippers. There must be some cross-over between aviation & maritime. College of Professional Pilots of Canada had asked for help. Fatigue WG had forwarded a copy of the draft paper on fatigue and other specific comments in response to proposed Canadian regulation changes. The College was complementary on the work we had done and help we provided. This is potentially the start of an ongoing collaboration on fatigue. It was noted that CAA has passed responsibility to the airlines who have followed that lead by passing responsibility onto crew members! |
| 4.3. Pilot Fatigue & Nutrition | <p>Led by DAA</p> <ul style="list-style-type: none"> Nothing further to report. |
| 4.4. Addressing 'skill fade' – a Low Cost Aid | <p>Led by Alex Fisher</p> <ul style="list-style-type: none"> Work is on-going to source sponsorship for a simulator trial. Some organisations, including Emirates, have expressed interested but have yet to follow-up. <u>Chair to approach Nick Dahlstrom (Human Factors (HF) specialist – Emirates Head of HF)</u> |
| 4.5 UK Flight Instructors | <p>Led by Syd Utting</p> <ul style="list-style-type: none"> 60 attended the 2 yearly Instructors Forum at Cranwell – but only 2 RW instructors. <ul style="list-style-type: none"> Successful day – new format worked well with good interchange of views. All active speakers were members of the Air Pilots. Cranwell very helpful in hosting the event. Cost zero to Company due Pooleys sponsorship. Next WG meeting 17 July WG is investigating possibility to improve/influence instruction standards, and may propose an additional Air Pilot scholarship for FI upgrade to FIE – the trainers who train the instructors. <ul style="list-style-type: none"> Personal concern that the number of RW FIE is dwindling year by year, as is number of people taking up FI training. – This will become a limiting factor for the industry in the longer term. No shortage of FI students in FW. This could be an issue for GAP? – <u>David Cockburn will write to Tony Rapson</u> |
| 4.6 Air Pilots' Good Neighbour Initiative | <p>Led by Marion Wooldridge (this report based on her written input to the meeting)</p> <ul style="list-style-type: none"> The underlying aim of this project was to identify the things which airfields, in particular smaller local airfields, can do to be 'good neighbours', thus increasing their local support, reducing complaints and so crucially to assist in their long term survival. However, although retaining a network of such airfields is vital to successful GA, the project has a chequered history due mostly to lack of volunteers/time. Since Marion took it over and started investigating, she has joined General Aviation Awareness Council (GAAC) and one of its major aims is to support local airfields under threat, generally from planning applications, which is clearly closely allied to the original aim of the project. GAAC also produces a regular review of airfields under threat. She now regularly attends GAAC meetings, has been proposed as a board member and has recently written part of a paper for Lord Ahmed on the need for, and role of, a sustainable national network of GA airfields - although the timing of the general election is unfortunate with respect to possible continuity of government approach. Therefore, she proposed that this WG is closed and replaced at the TC by her regular report on GAAC activities, the overarching aim being very similar. The committee agreed this was a most sensible way forward; PMN: DAA has advised Marion. |
| 4.7 Unmanned Air Vehicles | <p>Chris Norton continues a watching brief.</p> <ul style="list-style-type: none"> Australia safety report was included in papers Collision study suggests windscreen impacts less of an issue. Engine ingestion is most unlikely to ever be tested as, given the enormous variety of drone component, size, etc. engines will probably never be certified for drone ingestion. (There have been suggestions that where impacts have occurred they are messy!) Europe does not see private/hobbyist drone operation as an issue as no-one flies below 500' BALPA now accept drone pilots as members. |
| 5. Notices/Updates from other Committees, Events, etc. | |
| 5.1 UK FSC | <p>Chairman</p> <ul style="list-style-type: none"> Last meeting – as the papers provided |
| 5.2 GAP | DAA - Next Meeting is in July |

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| 5.3 Met Users Forum | Peter Cox <ul style="list-style-type: none"> Nothing since last meeting, Peter asked if there were any topics TC members would like raised at the next Met Users Forum. Instructors WG were worried about what seemed to be 'Reactive' TAFs i.e when a TAF not re-issued until after fog that has arrived. LHR TAFs have improved since the forecaster was re-introduced(!) | | | | | | | | |
| 5.4 NATMAC | Chairman <ul style="list-style-type: none"> Meeting next week - 25 May – Chairman & DAA plan to attend | | | | | | | | |
| 5.5 DfT/EASA Briefings | DAA <ul style="list-style-type: none"> PMN: Next meeting re-scheduled to 22 June when DAA is not available but Chair will attend. | | | | | | | | |
| 5.6 Forthcoming Conferences | <table border="1"> <tr> <td>14-17 May 2018</td><td>* European Navigation Conference 2018 [not to be confused with the European Nuclear Conference or the Experimental Nuclear Magnetic Resonance Conference in the US] (host Swedish Radio Navigation Board) Gothenburg, Sweden see https://enc2018.eu OR via the EUGIN website (www.eugin.info)</td></tr> <tr> <td>26-7 September 2017</td><td>International Flight Crew Training Conference - IPTA member rate £375+VAT</td></tr> <tr> <td>28-30 November 2017</td><td>* International Navigation Conference 2017 (host RIN) Brighton, UK 28-30 Nov 2017 see www.internationalnavigationconference.org.uk or via www.rin.org.uk</td></tr> <tr> <td>28 Nov-1 Dec 2018</td><td>* International Association of Institutes of Navigation World Congress 2018 (host JIN) Chiba, Japan see https://iain2018.org/ OR via the IAIN website (www.iainav.org)</td></tr> </table> <p>* These principle gatherings are usually generalist in coverage and there are usually tracks of papers addressing aviation issues - Navigation Plans and Air Navigation Services as well as developments in navigation equipment.</p> <p>IAIN carries a fulsome events calendar of most navigation related events as far ahead as we know and are happy to include notices of Air Pilots events that would appeal to a wider audience.</p> <p>Air Pilots may also wish to be aware of RIN events such as those arranged by the Special Interest Groups GANG (General Air Navigation Group) HANG (History of Air Navigation Group) and the East Midlands Branch which is aviation-centric. Details are carried on the RIN website www.rin.org.uk and some are open to non-RIN visitors.</p> | 14-17 May 2018 | * European Navigation Conference 2018 [not to be confused with the European Nuclear Conference or the Experimental Nuclear Magnetic Resonance Conference in the US] (host Swedish Radio Navigation Board) Gothenburg, Sweden see https://enc2018.eu OR via the EUGIN website (www.eugin.info) | 26-7 September 2017 | International Flight Crew Training Conference - IPTA member rate £375+VAT | 28-30 November 2017 | * International Navigation Conference 2017 (host RIN) Brighton, UK 28-30 Nov 2017 see www.internationalnavigationconference.org.uk or via www.rin.org.uk | 28 Nov-1 Dec 2018 | * International Association of Institutes of Navigation World Congress 2018 (host JIN) Chiba, Japan see https://iain2018.org/ OR via the IAIN website (www.iainav.org) |
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| 6. Any Other Business | | | | | | | | | |
| | <ul style="list-style-type: none"> We have so many different types of RNAV approach that the names confuse pilots, we can navigate to the nearest centimetre but there has been little attention given to what happens when signals are not available or interfered with. IAIN is a staunch advocate for navigation system resilience (position & time availability) and note a 21st re-vamp of LORAN could do this – transistorised version of LORAN will fit into a 10x10 shipping container. Congress has tasked DHS to provide a USA resilience plan – a LORAN demo in New York stock exchange showed it can sustain a usable time signal. Everyone has multiple Inertial Systems but regulators assume they have enormous drift rates. RIN journal is half about how to use GNSS to get to Mars with the other half about how to navigate without GNSS. Lighthouse Authority has a GPS-jamming detector at Harwich which regularly detects jamming signals as vehicles approach the ferries. Ferries themselves not affected – their antenna are masked to 15 degrees above horizon. <u>All asked to consider suggestions for Tymms speaker and advise DAA soonest.</u> Chair noted that it was approaching time for him to stand down - This would be something for the next meeting to address. | | | | | | | | |
| Next meeting(s) | | | | | | | | | |
| Next meeting | 1330, 12 September 2017 | | | | | | | | |

Meeting Closed at: 1630

DAA 22 May 2017