CHIRP GENERAL AVIATION FEEDBACK
Confidential Human-Factors Incident Reporting Programme

Return to service

Director Aviation:
STEVE FORWARD

As you read this editorial, the UK will hopefully be well on the way towards the end of COVID-19 restrictions as we emerge out of lockdown and the Airline industry gears up to increased flying rates.

We'll all be looking forward to getting back to something approaching previous levels of activity but there will also be much nervousness about how we safely ramp up from what has been a dire period both mentally and professionally. As the tempo increases, this is the period of greatest danger if we overstretch either ourselves or the overall system as the taps turn on and rosters fill up again. More than ever, defensive flying, heightened awareness of potential risks and threats, ensuring an open and collegiate culture in addressing any issues, and maintaining morale and awareness of the pressures that everyone will be under will be vital. Caution, consideration and courtesy to others should be our watchwords, allied to a frank assessment of our own and our team's potential weak areas so that they can be openly discussed, understood and mitigated. To repeat what I said in the last editorial, after an honest appraisal, who is best placed to fly that first sector, who really needs that landing, what support do the cabin crew need given that they might also not be firing on all cylinders due to lack of recency? Focusing on the job in hand is vital from pre-flight to end of flight; it's easy to say, but external worries, issues and extraneous conversations need to be left outside the 'sterile' cockpit environment so that all attention can be given to the complex task of operating the aircraft.

Mistakes and errors will always occur, but the goal is to spot and stop them having any consequences through the use of standard operating procedures and training. It's well known that rule-based procedures that rely on long-term memory are prone to errors because long-term memory requires →

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periodic reinforcement to prevent incorrect recall - hence the use of check-lists, cross-checking and recency requirements. In this respect, some examples of topical reports from one of our sister organisations (NASA's Aviation Safety Reporting System – ASRS) provide food for thought as to the sorts of slips and errors that they have seen over the year.

Pre-flight. A pilot forgot to disengage the parking brake, damaging the towing vehicle that was trying to tow the plane to the runway. In another incident, the pilot forgot to turn on the altitude and airspeed sensors anti-icing mechanism; they commented that, "I felt that my recollection was strong enough, but in reality I should have taken some time to review the standard operating procedures".

In-flight. Among the most common errors are coming in too fast or too high during a landing or forgetting to get clearance from the air traffic control tower before descending to a lower altitude. The problem of unstable approaches increased in airports around the world in the spring and summer of 2020 - the rate of unstable approaches jumped from about 13 or 14 for every 1,000 flights before the pandemic to more than 35 per 1,000 in May 2020, with pilots typically trying to land at too high a speed or without enough thrust.

The message is clear, take it carefully during return to flying: check, double-check and cross-check to avoid errors of recall or mistakes caused by lack of recency.

As the aviation system ramps up again there will undoubtedly be things that could have been done better and so it's doubly important that issues are reported promptly so that lessons can be learned rapidly and timely changes made. As ever, CHIRP encourages everyone primarily to use the normal ASR channels for safety reporting because that will usually deliver the quickest and most comprehensive response. In doing so, CAA requests that you include "Return to Service" in the ASR header for the next few months so that they can quickly pick out issues that have resulted from the post-COVID restart. For those who fear reprisals for reporting sensitive issues using the ASR system, or if headway can't be made through the normal channels, CHIRP provides another reporting conduit albeit somewhat less responsive because of the need to ensure confidentiality and seek the company/regulator perspective about details with which we may not be familiar. However, even though we have no levers to pull ourselves in order to change procedures or resolve problems, if nothing else, we can give visibility to issues in a general way so that the wider community is aware. In that vein, please do send us details of important issues even if they have been resolved because we can then include them in future publications if appropriate so that the lessons can be widely shared.

Finally, it's important to remember that lack of recency and loss of competences are not just flight crew concerns. Many ground-based activities will also have suffered redundancies, furlough and overall lack of activity and so they will also be rusty, under pressure, and may be carrying out new activities with which they are unfamiliar. The whole aviation system is under stress so all sorts of functions that used to be taken for granted may not be operating optimally. Check those flight plans, NOTAMS and load sheets carefully; make sure that you are absolutely clear who is doing what and when in communicating with ground handling and maintenance staff; and remember that ATC will also be unused to busy operations and will need time to spin-up again. In short, don't assume that the previous service standards will immediately apply because there's plenty of scope for errors from slimmed-down, unpractised workforces who may even be relatively new to that ground-handling, maintenance, controlling, emergency services or operations management role. We'll probably be facing a changing environment for the best part of a year as we restart global operations so it's up to us all to re-engage fully so that we're not caught out; we need to get our heads back into the procedures, manuals and regulations, and pro-actively invest ourselves in aviation and safety matters as things evolve to ensure that we think ourselves back into aviation and identify potential threats and weak areas before they bite.

Stay safe!
Steve Forward, Director Aviation

'Please send us details of important issues even if they have been resolved so that the lessons can be widely shared'

Engineering Editorial

In view of the pandemic-forced changes to our industry, there will likely be a high number of staff who are changing employers because of redundancy and other difficulties in the aviation employment market. My concern is new staff performing below the standard they expected from themselves with their previous employer. Whilst drafting this theme, I came across a picture of chocks positioned longitudinally either side of a nose wheel, with a caption reference to new staff on LinkedIn, so I am not alone in this concern.

Consider the following three scenarios:

In 1975, a new but trained young mechanic, is tasked with assisting in the refit of an elevator on his very first day. It is necessary to manhandle the elevator up to the horizontal stabiliser and two experienced mechanics climb the scaffold (a Tail Dock it certainly was not). The plan was to offer up the elevator at the hinge points and drop Phillips screwdrivers or other suitable 'podgers' into the bolt holes to rest from the climb and regroup to prepare for bolt fitment. The two experienced

mechanics dropped their ¼ inch diameter stemmed screw drivers into the ¾ inch bolt holes from the top to be retained by the screwdriver handles. The new mechanic poked his up from below, let go of it and watched it fall fifteen feet to the floor! This was rather disturbing because of course, it was thirty years before engineers had heard of HF.

In the mid-1990s a new mechanic who had been working in aircraft manufacture was being shown around a narrow-body Airbus on his first day as a precursor to getting an authorisation to carry out transit inspections on the ramp. The Main Landing Gear doors were closed with the leg fairings attached to the outboard side of each leg. This configuration leaves a hole into the wheel well not much more than a foot square, where the leg lays when retracted. The new mechanic asked how the two, approximately three-foot diameter main wheels got through the hole!

A few years ago, a newly recruited but experienced licenced engineer had induction training on his first day where rigging pins and disabling systems were discussed, along with the requirement for a separate entry on the maintenance paperwork. A couple of weeks later, continuation training took place where the subject was discussed again. Shortly after that, there was a quality oral where some questions covered the subject. A further couple of weeks passed and, on the last day of the maintenance check, it was discovered that a major system had been deactivated and no record had been entered on the paperwork.

I too have fallen into this new staff member trap, failing to fit a component properly that I had replaced at least ten times previously, albeit twenty-two years earlier (complacency perhaps?). I also failed to check an over-wing exit from the outside post-fitment, possibly because I had come from an environment where I was solely responsible for the aircraft to one where the departure would be carried out (after I returned to the hangar) without headset or even marshallers, just a straight taxi off stand under control of the tower.

I'm sure that people in all other areas of our industry are not immune to this danger either, and we all need to be looking out for each other. I once had a pilot remove the steering lock-out pin on a B737 when the towbar and pushback tractor were attached. When asked why, he brought the "Remove Before Flight" warning on the streamer to my attention. I will never know, but I guess he was also new to type. New staff are in an information-overload situation and unintentionally behave differently to what we and they expect. This couples nicely with the editorial on change management in FEEDBACK Ed 135, good planning and vigilance are the best mitigating tools to maintain a safe aircraft when working with new staff. However, like many human factors scenarios, this situation also needs to be considered by the new staff member themselves.

If you have been working many years on autopilot, with the protection of countless procedures in a large organisation and find your new employer has weaknesses, or allows discretion on how you approach a task, you may need to consider adjusting your personal error-capturing initiatives. Never say to yourself "I know all about that, it's just like my previous employer" because the chances are, it isn't.

Phil Young,
Engineering Programme Manager

COMMENTS FROM PREVIOUS FEEDBACKS

Comment No 1 – Meaning of red anti-collision beacon

I have just been reading CHIRP Aviation Feedback Issue No 137 Report No 4 together with its associated comments on the topic of anti-collision lights and when they should be used. This interests me because when I was serving in the CAA's Flight Operations Department and co-incidentally an ex-officio member of the CHIRP Aviation Board a question arose as to when anti-collision lights might be turned off.

You have said, and your comment reflects what I have always known to have been accepted practice, " … ground crew should not approach an aircraft when they (the lights) are flashing". However, there needed to be an exception to this convention when the aircraft in question was a twin turboprop in which the No 2 engine was designed to be used as an APU but with its associated propeller stopped. The point at issue was, with the No 2 engine now running in APU mode, should the anti-collision lights be left flashing after the aircraft had parked on stand with the APU generator required to supply electrical power, or should the lights be switched off thereby enabling ground crew to approach the aircraft to unload passengers and baggage - but in contravention of the regulation? I should mention that in APU mode the engine power output in this configuration was significantly reduced.

The solution we arrived at was to issue an exemption against the regulation together with requirements that when the aircraft had been parked and the propellers on both engines had stopped rotating, and with the No 2 engine

selected to APU mode and one of the pilots seated in the right-hand seat, the anti-collision lights could be switched off. From this position the pilot could monitor activity around the No 2 engine and if it were to become necessary, they could apply foot brakes and/or switch that engine off completely. This exemption was most useful when the planned turn-around time was brief and a complete shut-down was not contemplated.

Thus, the convention whereby ground crew should remain clear of the aircraft until the anti-collision lights had been switched off, and only once that had been done be permitted to approach it, was preserved. This replaced an unsafe practice that had been in use hitherto whereby the ground crew had become used to unloading whilst the lights were still flashing 'because the No 2 engine was still running" regardless as to whether or not they knew that both propellers had stopped rotating and/or the No 2 engine was in APU mode. This also defied the accepted practice you described and might well have misled the ground crew to ignore flashing anti-collision lights on other types they might be required to service.

I offer this to you for your interest and because it describes risk and risk mitigation that needed to be applied at the end as well as at the commencement of flight - together with a continuing need always to comply with regulations.

CHIRP *Response*
It is essential that those working around aircraft are clear as to what is meant when the red anti-collision beacons are illuminated and the example above underlines that sometimes pragmatic solutions are required in order to preserve that meaning to ground handling personnel. Within that, it is fundamental that anti-collision beacons should be managed in a common manner because ground operators will be expected to clear away from the underside of the aircraft as soon as the anti-collision beacons are illuminated and they should not approach an aircraft when they are flashing.

Where there is uncertainty there is increased safety risk, and CHIRP looks forward to the CAA's promised review with the airlines of anti-collision beacon procedures to ensure that practices are robust and fully understood both by the crews and the ground handling personnel.

Reports

Report No.1 – FC5061 – Poorly tested software

Report Text: My employer recently replaced our EFB (Electronic Flight Bag) performance software: a product released by an arm of the aircraft manufacturer. The prior version was robust, but latent touchscreen errors led to take-off performance incidents, hence the replacement. Its successor is slower and often stalls, needing rebooting: a backwards step. We consider it was signed off by management who had to support the OEM solution, however inappropriate. We are told the reason it can be so buggy is that the previous user didn't shut it down properly - naturally nobody would admit it was poor design or insufficient operational testing.

Spring 2020 was the ideal downtime to recode [the EFB software version] to be as robust as its predecessor, but no. HQ should support us by demanding versions that are at least hassle-neutral: impossible if the poor software foisted upon them creates work. The ultimate test would be if this software would be bought on the high street - I don't consider it would be.

Company Comment: Our EFB software is provided by a third-party software developer. The version in question was introduced in July 2020 but, despite a successful initial evaluation, it appears that there was an error in the software that only came to light after the EFB hardware memories became full, which was 5 days after launch. Our EFB team were quick to respond, and a work-around was found which involved completing an unscheduled update to the EFB - this was documented to all crew at the end of July 2020. The Airline is not a software developer, but we do report bugs, issues, and raise change requests to the developer to improve the application. Given the issues we encountered with this version, our policy in future will be to deploy future updates to a limited user-sector so that we can assess any volume issues before full roll-out. Furthermore, we have recently changed our EFB hardware to a different operating system and are in the process of obtaining regulatory approval for the EFB software on this platform. We estimate that all flight deck crew will have access to the new hardware/EFB combination by April 2021 subject to a successful operational evaluation of the application. These will then become the primary platform for EFB use, and we anticipate that it will be more robust in hosting the EFB software.

CHIRP *Comment* EFBs are a critical element in many operating environments and it's vital that they are not only accurate and fail-safe but also user-friendly in their interfaces in order to avoid any input errors by flight crew. Frustrations can easily multiply when the software appears flaky or hangs, and an in-depth evaluation of any new software should be conducted before it is released fleet-wide. It seems that, in this case, the Third-Party developer and Company evaluations were not extensive in that the hardware capacity issue was not evident during their bench-test processes. Although the Company were not responsible

for the software's compilation itself, it's good to see that they have since recognised the need to conduct their own independent limited-audience 'field trials' before whole-scale roll-out of software in future.

Report No.2 – FC5070 – Definition of Ground Transport

Report Text: Within 'ORO.FTL.215 Positioning', the method of ground transport is not specified and this can lead to companies asking crews to drive their own cars before reporting for duty when sent Out-of-Base. This is not a question of who is covering the expense, but how fit the crew will be for the duty. It is unquestionable that physically driving a car has a greater effect on fatigue and stress levels than the use of a taxi or direct shuttle (or public transport) but the use of a combination of public transport should also be limited by numbers of connections and time spent during the travel before the duty. In the past, EASA has defined minimum requirements in areas such as "Suitable accommodation" and I believe that there should also be a definition of "Suitable Ground Transport" which specifies clear limitations for types of transport with associated time limitations when reporting for duty.

Personally I have had to drive more than 1.5hrs to conduct a duty of 4 sectors of 1.5hrs each. Other colleagues have had to drive more than 2 or 3hrs before the start of their duty, and others have even driven 5.5hrs. In all cases, FTL was respected, but it is undeniable that the fatigue from driving and travelling adds to the fatigue of the performed flight duty. Moreover, self-driving to attend duties in another base exposes pilots to "Late arrival" or "No Show" if there are unpredictable situations on the road (traffic, work in progress, weather issues, etc). As a result, there is potential for enormous stress, forced rushing and risk taking in order to make the report time. If transport is organised by the company (taxi or public transport), then this responsibility shifts and pilots cannot be held accountable for any unpredictable conditions.

I hope my report will be taken in a constructive way and will help authorities to clarify what "Suitable" ground transport might be (self-drive (driving time); public transport (direct or not, max number of connections); total traveling time) with an overall view to considering whether FTL should be reduced when pilots have to drive their own car from one base to another.

CAA Comment: Under EASA FTL[1] every crew member must report to a single Home Base. Dual Basing is not permitted. If a crew member is asked to report at a reporting point other than his/her home base without having fulfilled the requirements for a home base change (CS FTL.1.200), the provisions for reporting out of home base apply. ORO.FTL.105(14) defines 'home base', stating that the operator is not responsible for the accommodation of the crew member at the home base. Furthermore, ORO.FTL.235 establishes the different minimum rest requirements for rest periods at the home base and away from home base. Consequently, if a crew member is asked to report at a reporting point, this reporting point is considered to be 'away from home base' unless a change of home base has been completed with its increased extended recovery rest. Operators can make an application for an AltMOC (Alternative Means of Compliance) under the 'Positioning' regulation (ORO.FTL.215). This would allow a crew member to report directly to another nominated base and additional notional hours are added to the FDP/Duty periods.

Crew members are not permitted to self-drive, either in their own car or hire car unless the FTL approval scheme permits.

For those national AOC holders operating under the provisions of *UK CAP371* (e.g. Bizjet operators), positioning is defined as a crew member being positioned in surface or air transport as a passenger. For the operator to allow crew to self-drive, they must have the self-drive variation in the FTL scheme. This variation will limit

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[1] **EASA Basing and Positioning FTL Regulations:**

ORO.FTL.105 Definitions

(11) "duty period" means a period which starts when a crew member is required by an operator to report for or to commence a duty and ends when that person is free of all duties, including post-flight duty

(14) "home base" means the location, assigned by the operator to the crew member, from where the crew member normally starts and ends a duty period or a seriesof duty periods and where, under normal circumstances, the operatior is not responsible for the acommodation of the crew member concerned,

(18) "positioning" means the transferring of a non-operating crew member from one place to another, at the behest of the operator, excluding:
- the time of travel from a private place of rest to the designated reporting place at home base and vice versa, and
- the time for local transfer from a place of rest to the commencement of duty and vice versa

ORO.FTL.200 Home Base

CS FTL.1.200 Home Base

(a) The home base is a single airport location assigned with a high degree of permanence.
…

GM1 CS FTL.1.200 Home Base

Travelling Time

Crew members should consider making arrangements for temporary accommodation closer to their home base if the travelling time from their residence to their home base usually exceeds 90 minutes.

ORO.FTL.215 Positioning

If an operator positions a crew member, the following shall apply:

(a) positioning after reporting but prior to operating shall be counted as FDP but shall not count as a sector;

(b) all time spent on positioning shall count as duty period.

crew members to drive for a maximum of 2h30min if this is before operating as crew within the FDP. It will also count as a sector which will further limit the FDP as each sector reduces the maximum FDP on the day. This could be varied if the operator puts in other mitigations.

For those operating under EASA FTL regulations (including UK retained EU legislation at present), positioning terminology is currently thin, however it does state that 'positioning means the transferring of a non-operating crew member from one place to another' suggesting that the crew member is 'being' positioned and not 'positioning' i.e. driving the car. EASA FTL operators can apply to include the self-drive AltMOC. Under this provision, the operator should ensure that driving before operating should be limited to 2 hours, that FDP starts immediately upon positioning and that a sector should be taken into account (or FDP penalty) for the self-drive. With the above in mind, self-drive positioning is regulated insofar as the operator requires approval within Section 7. This is audited as a matter of routine oversight.

Under both schemes, there is guidance material on length of travelling time to and from the place of rest to reporting point. It should be remembered that travelling time to and from place of rest, including hotel accommodation down-route does not count as duty or FDP. The only limitation being on a reasonable travel time when operating crews are down-route for rest including split-duty.

The CAA is aware that there is uncertainty in this area and is currently conducting a more in-depth but proportionate review of all Self Positioning Variations/AltMOCs.

CHIRP *Comment* There is scope for confusion within the EASA FTL regulations relating to out-of-base travel from home, and CHIRP welcomes the CAA's review. Each of the approved operators' FTL schemes should cover how they position their crews when not home based and, if excessively long journeys to out-of-base locations are required, CHIRP's view is that companies should be arranging either accommodation or taxis in order to prevent crews conducting fatiguing journeys and then flying long, demanding or multiple-sector duties. Paradoxically, taxis might not be the best solution in the current COVID-19 situation because this might expose crews to COVID-19 from contact with taxi drivers whereas self-drive might offer better bio-security mitigations; also, even before COVID-19, there was anecdotal evidence of some crews refusing taxis because they had no understanding of how competent or fatigued the taxi drivers were. An additional consideration is that if using one's own car, personal car insurance often only covers journeys to one's normal place of work under commuting rules so, if other destinations are being driven to for work reasons, then business-use insurance may be required. With UK's departure from the EU, the UK CAA now has little influence over EASA regulations per se, and might diverge from them in future. However, on CHIRP's behalf, the UK Flight Safety Committee member undertook to raise the issue with the EASA Human Factors and Commercial Air Transport Collaborative Analysis Groups, of which they were still a member, in order to highlight the concern.

Although terms of service are not a CHIRP issue per se, associated low morale and distractions have obvious flight safety implications.

Report No.3 – FC5071/ FC5072/FC5074/FC5075 – Pay models and Just Culture

Reports Précis: During the period of greatly reduced flying during COVID-19 lockdowns, CHIRP received a number of reports from crews of 8 different companies regarding pay models, safety cultures and pressures to operate that were severely impacting morale and causing distractions and stress when operating. The pay models concerned were designed for the halcyon days when schedules were operating at maximum capacity and crews were correspondingly busy. Depending on the exact contract, such models pay a relatively low basic salary, with most income coming from flight pay which is variously paid per km flown and landing completed. With very limited flying being carried out, the flight-pay element was reduced to minimal amounts and, in some companies, this was exacerbated by pay cuts or changes in terms of service to part-time flying which reduced the basic salary.

Although terms of service are not a CHIRP issue per se, associated low morale and distractions have obvious flight safety implications. Also, in order to preserve income, there is increased temptation for crews to fly when fatigued or sick (including poor mental health) when they should report unfit. It's recognised that the entire aviation sector is under considerable strain at present, and that all airlines are having to take some very unpalatable decisions to maintain their viability; most companies have cut the pay and working hours of their workforce during this time in an attempt to reduce their costs and preserve their viability as best they can. However, the reports that CHIRP received not only speak of considerable financial hardship due to greatly reduced rosters, but also a perceived lack of transparency in decision-making and communication with regard to rostered days, paid and unpaid leave periods, and roster forward-planning. The following comments are a sample that make troubling reading given the detrimental effects that fatigue and stress can have on flight safety due to distractions, poor mental health and what appears to be an atmosphere of fear that is building up in some companies.

"I talk to many pilots who inform me of being so distracted by the stress and behaviour of the company that they are barely able to concentrate on their flying tasks. Many are turning up for work having had no sleep whatsoever

the previous night. I can include myself in this. I cannot stress enough that the mental state of many of the pilots is so bad that they should not be flying".

"A common phrase which sums it up is, 'I feel sick when checking my roster because I don't know what the latest propaganda memo will be.' Crews are scared to report when they are unfit to fly due to the perception that it will be held against them in any 'redundancy matrix' devised by the company".

"A crew forgot to put meaningful performance data into the FMC due to distraction caused by conversations regarding how the crew had no idea whatsoever what they were being paid this and next month".

"The FO hadn't slept at all the night before because he's just been evicted and spent the night on someone's sofa".

"A crew took off without doing any below-the-line checks ... The error was discovered soon after take-off".

"... was ill with confirmed Corona virus but who's going to refuse a flight with money the way it is?"

" a member of flight crew was operating unwell and was subsequently diagnosed with COVID-19... the pay model motivates flight crew to do the WRONG thing by flying when unfit".

There were also reports of flight crew being removed from duties for lengthy periods of time after safety reports had been submitted. As a result, having done the right thing in reporting an incident, flight crew lost the opportunity to gain flying pay during that period, which may remove most of their income. This then becomes a disincentive to reporting incidents that runs counter to the premiss of Just and Reporting Cultures.

CHIRP *Comment* Most airlines are operating highly adaptive rosters at the moment, and that was exacerbated by the latest lockdown. For those companies based internationally, the situation is complicated by the fact that different countries have different COVID-19 support measures and so a variety of schemes, rules and financial impacts can apply to different crews within a single company; crews can see their peers being treated very differently depending on where they are based. CHIRP received multiple reports of UK airlines making use of flexible-furlough arrangements such that any applicable days that are not rostered were being annotated as furlough. Whilst the desire to use flexible-furlough arrangements is fully understood, some companies are reportedly changing days that are furloughed to duties and vice versa at short notice. As a result, some crews comment that it's difficult to plan for fixed days off unless company communications are made sufficiently far in advance. Dynamic rostering is highly undesirable and such changes should comply with ***AMC1 ORO.FTL.110(a)***, (in its EASA and UK retained forms) which state that rosters should be published 14 days in advance (see also ***CAP1267*** Page 2). Although changes can be made, they must fulfil all the required elements within ORO.FTL.110. Ultimately, timely communication from the Company to its crews is fundamental in allowing enough time for roster changes to be accommodated within FTL rules. That being said, we have to accept that companies are having to be as creative as possible even to remain in existence at the moment given the lack of revenue so there needs to be considerable tolerance to uncertainty in rostering by the workforce too.

With regard to pay models, the main priority for companies during the pandemic has been to remain viable and, unfortunately, this has meant significantly reduced flying and income for some flight crew this winter. Other than being sympathetic and aware of the potential morale and mental health issues amongst their crews, companies need to put mitigations in place to address the likely distractions that crews are facing; access to financial safety nets for those who may no longer be able to service major debts such as rents and mortgages etc would do much to reduce stress and distractions. Removing flight crew from duties for prolonged periods after submitting a safety report can only be justified in the most serious of circumstances, especially given the financial penalty that might be caused as a result.

Overall, whilst it's not for CHIRP to intervene directly in employees' financial matters, there are clear flight safety implications surrounding those who are distracted or stressed by these issues, especially if they do not feel able to raise them or report other associated safety issues due to a perceived fear for their jobs or income. Ultimately, it is the flight crew's legal requirement to ensure that they are fit to fly and, despite everything, we all have a professional responsibility to resist the pressures and temptations to fly when we shouldn't. But company policies and procedures need to understand that their workforce is under stress, and support people in doing the right thing as they deal with the associated distractions rather than setting up disincentives to reporting sick no matter how unintentional this might be. Part of this is the need for company executives who may not have an aviation background to understand the unique risks that are associated with aviation, and the UK Flight Safety Committee is part of a developing Flight Safety Foundation programme to highlight and promote such an understanding. Titled "Core knowledge for Aviation Leaders and Managers" (CALM), the initiative aims to articulate in simple terms the underlying nature of aviation structures and safety perspectives so that leaders and managers can balance their corporate judgements with an appropriate level of risk awareness and understanding about how those decisions might have consequences that have an impact on aviation operations and safety as a value.

Finally, in respect of mental health and stress in the current circumstances, although there may well be light at the end of what has been a very dark tunnel in recent months, flight crews should also consider using the various peer-support programmes that are in place to seek help and support in coping with the current stresses encountered during the pandemic predicament. As a fiercely proud and professional group of people, pilots are very reticent to come forward and ask for help. There is no shame in doing so, and a number of groups exist that provide confidential support

both within and external to company structures. In parallel with the internal company peer-network programmes, two prominent independent examples of where help can be found are *www.pilotstogether.org* and *www.projectwingman.co.uk*.

Short-notice changes resulting from COVID-19 related adjustments are a primary issue at present

Report No.4 – FC5077 – Flying under extreme duress

Report Text: On 24th Dec, 4 crew members reported for duty; 2 pilots 2 cabin crew. We were just commencing our pre-flight briefing when the company training manager came into the crew room and informed us that there was a new raft of restrictions to be placed on operating crew by the public health department. It was stated that the public health department would be shutting down operations to the UK if we did not comply. In the current climate in aviation this would threaten the jobs of everyone in the company. The crew did not have time to read or fully assess the implications of these new restrictions before flying. Further pressure was applied to make a quick decision through the threat of early closing of our destination airport. We agreed to operate the flight under this duress. Although the crew were put under considerable pressure, the flight was fortunately uneventful. On consideration, my margins for operation were degraded and I was conscious of operating with a considerable distraction. Given time to analyse the new restrictions I would have changed my decision to fly. I contacted the pilot liaison group and described what happened. I also contacted pilot support.

On 26th Dec, a different operating crew were subjected to the same pressure and refused to fly and the flight was cancelled. On the 27th, pressure was again applied to a crew and, after some delay, the flight operated. Management have managed to secure some relaxation of personal restrictions but daily testing is to remain. We are faced with complying with this testing regime, which is more stringent than for those working with COVID patients, or jeopardise everyone's future employment.

Lessons Learnt: Operating under such pressure is very distracting. People's fear of COVID-19 is a bigger threat than the disease itself. COVID-19 restrictions in various forms have the potential to cause bigger disasters than COVID-19 itself.

Company Comment: During the time of the report we were operating a much reduced service using volunteer crews. As part of this, local COVID-19 restrictions and requirements had changed a number of times over the last year and these were discussed, communicated and implemented with the crews. Further changes to COVID-19 requirements were proposed by the local authorities in the runup to Christmas, with crews potentially being required to self-isolate for 2 weeks each time they operated. The Company made it clear that they could not operate under such conditions and had thought that these restrictions would not be imposed. We were therefore surprised to find out on Christmas Eve, not long before that flight's check-in time, that this crew would, after all, be expected to self-isolate for 2 weeks on their return. Knowing the crew was shortly due to check in, the Training Manager went directly to the crew room with the associated new restriction documents to discuss the post-flight change. The flight was delayed by 30 minutes to allow the crew to digest, come to a decision and give time to get another crew if they declined to operate. The Training Manager did not feel that they put the crew under any duress on that occasion and, during the conversation, made it clear that this was not the Company's policy but an externally imposed restriction which would be challenged following the Christmas break. The crew chose to operate the flight, the only change was the requirement to self-isolate after the flight - all in-flight procedures remained the same.

It had been intended to publish a Flight Crew Notice after this to publicise the new restrictions but this was unfortunately not done before the Boxing Day flight crew reported for duty; they decided not to operate once they discovered the new restrictions were in place. A number of forums then took place on 27th December to discuss the issue with the Crew Liaison Group and, in parallel, the Company were able to get the local authority's isolation requirement lifted. As part of the lifting of this restriction, PPE for the Cabin Crew was increased to include them wearing full aprons, masks and face shields in addition to the masks, gloves etc that they had previously been wearing. With regard to testing requirements, crew conduct a self-test which involves rolling a swab around the rim of each nostril and depositing the swab in a receptable as they leave the Terminal; these testing requirements had been in place for some time before the period of isolation briefly changed.

The Company regrets that the first crew felt pressured to operate under duress, this was not the intention, nor was it the impression of the Training Manager after his discussions with them. How that affected the crews concentration is something only they can comment on, but if they thought that it would cause more distraction than they felt comfortable with then the Company would have expected them to decline to operate and file a safety report as with any other event. No such safety report was received by the Company, and we emphasise that we fully respect the notion of Just Culture and open reporting so that employees should feel safe and empowered to report any safety issue through the Company reporting processes.

CHIRP *Comment* Any late notice changes are undesirable when about to operate, some are unavoidable and dealt with as part of being an aviation professional, but significant changes that could perhaps be avoided by prior planning or consideration can be particularly stressful. To be faced with

a sudden change to circumstances due to COVID-19 during the pre-flight briefing is certainly less than ideal, but it appears that the Company reacted as quickly as they could to this externally-imposed requirement, informed the crew and gave them time to collect their thoughts and review the situation. In the pro-active way that most aviators approach such challenges, the crew decided to continue, although the matter was clearly on their minds during the flight and they were right to be cautious. Although no doubt with the best of intentions to ensure a service was delivered in the run-up to Christmas, if the crew felt sufficiently distracted and stressed by the new restrictions then they would have been well advised to have terminated the flight, as happened with the Boxing Day crew. Perhaps of more concern was that other crews were faced with the same situation but days later. It was unfortunate that the Company's procedures fell down in that respect – no doubt good intentions to publicise the problem were impacted by the Christmas break but this highlights the need for robust decision making and action plans within 24/7 operations teams.

The entire aviation system will be under severe stress for many months to come and there is plenty of scope for undesirable situations to occur due to lack of resources, unfamiliarity in role and short-staffed teams. All sectors of aviation will be affected, be they Flight Crew, Air Traffic Controllers, Maintenance, Ground Handling or Operations Teams. As a result, whilst operators and regulators must be cautious overall, the potential for rapid changes in procedures or availability/redundancy in the system is something that could usefully be covered as part of crews' pre-flight threat and error management (TEM) considerations. Short-notice changes resulting from COVID-19 related adjustments are a primary issue at present and there will be many new stressors that may unexpectedly emerge in the next few months (e.g. delays in boarding, changes to airfield/airspace availability, procedural changes etc); a proactive consideration of associated potential risks and mitigations within crews' TEM assessments will pay dividends, including consideration of when to say 'stop'.

Report No.5 – ATC816 – Concern regarding ATCO overload and procedures

Report Text: I am concerned that contingency procedures permitted by the CAA during the onset of COVID-19 are now standard operations, that ATCO overload is occurring, and that safety is not being assured. One of these is 'Radar in tower' (RiT) which was originally introduced for very quiet periods and was utilised mainly at night. Even before COVID, there was concern amongst many ATCOs as to whether we should be doing it on nightshift because traffic levels and workload can be high at times. RiT is currently being utilised by many as standard, with the onus placed on an individual to ask for the radar to open. This can then become a debate, as some ATCOs find it more satisfying to work RiT because they are busier. When it does get busy, sometimes without prior warning, it takes time to find another ATCO and open the normal radar position, and the capacity to do this is not always there.

Because all Air Traffic Support Assistants (ATSAs) and admin staff are furloughed, ATCOs are responsible for answering all external phone lines, internal airport lines, coordination with multiple ATC units, other ATSA duties, admin duties, answering the front gate and door intercoms and carrying out weather reporting every 30 minutes, all whilst on position. Although COVID-19 has resulted in a large reduction in commercial movements, we are still a relatively busy airport compared to others of a similar size. We also have the addition of Military and General Aviation training and overflights. There is no Unit-wide guidance from management, and there are no clear rules for RiT in the MATS Part 1 or 2.

❝ CHIRP *Comment* ❞ There are two elements to the reporter's concerns – the use of Radar in Tower (RiT), and the potential for controllers to become overloaded due to reduced manning (especially in the COVID-19 context). For RiT, there should be clear guidance about how to conduct these operations within the MATS Part 2 documentation for the airfield concerned. In this respect, a Safety Case should have been developed prior to RiT's introduction; SP400-series updates should have been made (specifically SP406 ATC Procedures and Safety Analysis); an update should have been made to the Safety Management Manual; checklists and documented procedures for the use of RiT should have been developed; and temporary instructions regarding the procedures to be employed during the reduced staffing situation should have identified any hazards, mitigations and residual operating risks. Controllers should also have had training in RiT, including the development of controller seating plans for when it is being employed. Unfortunately, the reporter had not specified at which airfield they were operating, and so CHIRP could not specifically investigate these aspects. Ultimately, ***Regulation (EU) 2015/1018*** (Occurrence Reporting) requires manuals to be adequate and not misleading and, if they were not, then the reporter could file a safety report about that requirement if they felt that the airfield had not developed sufficiently documented procedures.

More generally, multi-tasking should be predicated on the Controller's workload being at a level which allows it to be carried out safely. Area Air Traffic Control Units have a similar procedure called Combined Tactical and Planner (CT&P) where two positions are combined, but only in periods of suitably low workload. As part of this, rostering needs to meet expected demand and, even within the furlough context, a contingency should always be available should workload increase unexpectedly; if a multi-tasking Controller requests assistance, this should be able to be provided immediately and without question. Equally, when relieved of a multi-task, controllers need to be careful to mentally switch off the task that is now being completed by others; for example, with RiT there is a potential risk of aerodrome controllers forgetting that the radar controller is active and that they must therefore coordinate

with them. Ultimately, if a controller becomes overloaded then they are required to report this in accordance with ATC regulations, but it was not clear whether the controller in question had been overloaded in this case as opposed to simply being stretched too thin with potential multiple responsibilities that had not actually occurred simultaneously.

The aviation system is under stress overall as a result of COVID-19, not only ATC operations, and there are many weak-links that we all need to be alert for - things that we normally take for granted may not be robustly available behind a thin veneer of fragile capability. Ground handling teams will not be as practised or slick as they may have been before, airfields may only have a skeleton staff prone to unexpected gaps in availability, and controllers and flight crew will be unused to busy operations that might ramp-up very quickly once COVID-19 restrictions are lifted. Caution, consideration and courtesy for others should be our watch-words, and do report any issues, no matter how minor, so that they can be nipped in the bud before they potentially escalate into more serious implications.

Report No.6 – GHS51 – Cockpit door security

Report Text: I am just getting in touch with the following report as I am interested in your thoughts. There is a scrapyard company who are specialising in the decommissioning of aircraft and more recently the 747s. The scrapyard have their own website where they sell a vast collection of different aircraft parts and skin sections to general enthusiasts. I think it's a great concept and admit I've even purchased one or two things from them. However, yesterday I did notice they have advertised a flight deck door compartment, the emergency access keypad and the cockpit door override switch. I am sure somebody will buy these with good intent but I'm not sure how this sits with me that the general public could purchase such equipment and see the ins and outs of how this works. I know that certainly in a lot of general knowledge books I own on flying, things such as the cockpit door entry system etc is omitted and it's only in my work manuals that such information is touched on. I would be keen to know your thoughts on the general public having access to buy such equipment from this company.

CHIRP *Comment* This issue was discussed with other aviation engineering professionals and, apart from the ballistic protection of the actual door, it would seem the keypad and flight deck hardware are no more sophisticated than other electromechanical systems on board. Although the system has a memory, an unscrupulous individual with the necessary expertise would not gain much intelligence from having bought the components second-hand or otherwise. Aircraft dismantlers approved under EASA Part 145 are responsible for preventing scrap components re-entering the supply chain, and mutilation of the component is the standard way of achieving this. If the door components are to be sold as serviceable (accompanied by an Authorised Release Certificate), they will be available on the open-market (as secure doors have been since their introduction prior to 1st November 2003 when ICAO amended Annex 6 chapter 13.2.2 requiring them). Ultimately, the door itself is only one part of the overall security system, and there are access procedures and a "Deny" facility so, even in the event of someone with a useable code trying to gain access to the Flight Deck, the Flight Crew and Cabin Crew could still prevent them from entering. CHIRP concludes therefore that the sale of flight deck door systems does not pose a security risk. Presumably, there are now a number of garden sheds throughout the country that can resist penetration by small arms fire and grenade shrapnel, and able to prevent forcible intrusions by unauthorised persons to ensure the sanctity of the 'man-cave'!

'My concern is that, during the week, defects aren't being recorded in the Technical Log Book'

Report No.7 – ENG687 – Concern for the management of defects

Report Text: I am a First Officer based at [UK Base Airport] but working for a foreign-registered airline. I have been with [Company] for one year. The aircraft that I operate are now 30 years old and there are number of defects that are reported after almost every aircraft rotation. I am primarily concerned about the current structure of the Continuing Airworthiness Management Organisation (CAMO) at [Company]. I have made a query to the Quality Department about logging the many intermittent faults encountered in the aircraft but with no response. I do not know how to go about querying the current CAMO structure.

A duty consists of four flying sectors. This route is a circuitous route, [UK Base Airport], to [Airport 1], on to [Airport 2], back to [Airport 1], returning to [UK Base Airport]. From informal conversations with the line engineers, I understand that there is a designated maintenance office at [UK Base Airport] but there are no tools, spares or vehicles, and no permanent type-rated engineering staff. The only permanent [Company] type-rated engineer for the route is based at [Airport1]. Most aircraft line checks and other maintenance tasks are carried out during the stopovers at [Airport1]. At weekends, a line check is carried out by an engineer from [Foreign Location] or the Aircraft is positioned to [Foreign Location] for heavier maintenance.

My concern is that, during the week, defects are not being recorded in the Aircraft Technical Log Book (ATLB) at the end of a duty in [Base Airport]. Such an entry would ground the aircraft because there is no engineering maintenance staff readily on hand to investigate the defects. I am aware that many phone and email conversations take place between Captains and Operations Control in [Foreign Location] but I am not party to these! It has been the case that many intermittent faults have been encountered in the aircraft en route to [Base Airport]. It was later established that an avionics problem was causing other systems to fault, but a landing was completed without incident. It was

with some reluctance that the Captain recorded these defects in the ATLB at the end of the duty, grounding the aircraft. It was with surprise that I learnt that the following crew the next day departed at the scheduled time and operated the aircraft with no further investigation by a line engineer. However multiple defects were recorded on arrival at [Airport 1]. I later discovered that the original entries in the ATLB were later amended to include the statement 'For Information Only' which then released the aircraft for service.

I am concerned that the many phone conversations and emails discussing aircraft defects are circumventing the auditable use of the ATLB in an attempt to accommodate the lack of a CAMO presence at [Base Airport]. I am unaware of any attempts by the Airline to rectify this seemingly obvious lack of CAMO at [Base Airport]. I have been actively involved in raising day-to-day issues, but the Company readily resist most of my queries! I have not raised my concern about the CAMO with the Chief Pilot. I have not contacted the National Aviation Authority (NAA) either. As the Company are operating in the jurisdiction of the UK CAA, I am concerned that the rigour for maintenance standards are not being applied as they would in [Foreign Location].

CHIRP *Comment* Informal noting of defects for later resolution cannot be condoned simply for convenience, and engineers/pilots seeing "For Info Only" in an ATLB should still review the importance of any defects to ensure that they can be sensibly mitigated and do not threaten the safe flight of the aircraft or contravene the Minimum Equipment List (MEL). Although "For Info Only", has its uses for minor items that may not affect a subsequent flight, the relevant CAMO should still be informed so that they know the airworthiness situation of the aircraft at all times; injudicious use of "For Info Only" might exclude them from important information and the operator should have robust procedures in place to capture and promptly review such entries. There is a school of thought that suggests that the phrase "For Info Only" may be a misnomer in that it suggests that the significance of the fault is minimal; it may well be minimal for some elements of the operation but not others, and so operators and engineers need to be absolutely clear as to the implications of any defect that is 'accepted' or 'deferred' in this manner. More importantly, it is CHIRP's opinion that there should be clear criteria for when "For Info Only" may be used rather than its ad hoc use at the whim of captains/engineers. In this respect, as a result of this report the UK CAA have taken an interest in the use of the annotation "For Info Only" (or similar) in an airworthiness context, and are minded to review its use by UK operators.

In this specific instance, this report was forwarded to the UK CAA with the reporter's consent mid-2020. The aircraft was EASA registered and the UK CAA decided to conduct a targeted Safety Assessment of Community Aircraft (SACA) to review that aircraft's ATLB and documents to see if there was evidence of the reporter's concerns. A thorough review of the documents revealed no observations where safety barriers may have been eroded.

Report No.8 – FC5078 – Alternate not accepting diversions

Report Text: Whilst flying to Glasgow, as we transferred onto Scottish Control we heard that Edinburgh was closed until 0500 the next day due to an inability to clear ice from the airfield. What concerned me, though, was that we heard Prestwick was refusing diversions due to lack of staff (ATC was suggesting they had all been furloughed). As it happened, Prestwick was our nominated alternate that evening, and there was no NOTAM to suggest it would not be available. I am concerned that other airfields are running the same way, and that we will only discover they are not available at the point of diversion. Weather had a forecast of mild wintry showers at Glasgow and Edinburgh, though nothing exceptional. We had loaded an extra 900kg of fuel, so were comfortable, but the last 30mins of flight became an interesting thought experiment. I submitted an ASR to my Company about the issue but it was closed with no feedback or comment that I could see other than the slightly concerning "MOR Closed on issue".

Lessons Learnt: COVID, and the varying methods of handling the pandemic and the loss of revenue, is having a genuine effect on the safety margins that I have taken for granted over the last two decades. I believe that the allegorical Swiss Cheese holes are lining up to give someone a really nasty shock in the near future.

CAA Comment: The potential for delays due to airport infrastructure constraints has been identified by the various working groups associated with planning for the anticipated industrial recovery during this summer. One of the hazards associated with this is a combination of increased possibility of diversion, and restricted diversion options available (due to airport closures or airport capacity limitations at alternates). This is being escalated through the CAA Rapid Capabilities Office (RCO) to the various stakeholders responsible (Border Force, Airport Authorities, Ground Handling and Fuel companies etc) to try and ensure that capacity is always equal to demand. Airports that are closed outside of promulgated hours will be NOTAM'd and cannot be used for planning purposes; we are working with airports to ensure they retain some limited capability to handle diversion aircraft. If there is a NOTAM suggesting that the airport is not accepting diversions (but is open) the airport would still be available for aircraft in an 'emergency' situation (this includes aircraft declaring a fuel (Mayday) emergency). It might still be possible to plan to use an alternate that has NOTAM'd diversion restrictions applied if the operator has confirmed availability in advance on a case-by-case basis. CAA is planning to publish the appropriate guidance material for Industry in the short term to help mitigate the risk.

The RCO has been formed to identify and exploit opportunities in delivering our regulatory functions through dynamic, collaborative and risk informed decision making processes. This is achieved through enhancing our existing cross-CAA functions and capabilities by focussing on triaged candidate tasks and providing, where possible,

options that may deliver safe outcomes more expediently. This initiative is complementary to our existing and evolving risk-based regulatory principles and will reflect proportionate regulation whilst delivery unique value. The RCO's first task is in looking at the 'cross CAA' response to return to service post COVID 19. RCO has formed two work groups with the industry Operations Directors Liaison Group using some possible scenarios leading to the resumption of commercial passenger flight operations to help elicit the more holistic issues/risks and also provide a collaborative platform. The work groups have focussed upon customer/network resilience, and safety/security issues with CAA sharing our COVID Safety Risk Work Group (SRWG) material, this work due to report to RCO very soon.

CHIRP *Comment* To have a nominated diversion refuse diversion requests without warning is highly undesirable and could easily end up with aircraft finding themselves severely embarrassed for fuel depending on their circumstances; it is clearly important that if an airfield is closed or not available then it should be NOTAM'd as such.

However, not being available for diversions is not the same as being closed; Prestwick might still have been available for emergency use. The overall aviation system is under stress as a result of COVID-19, and there is a risk that this might be become more pronounced as operations start to return to historic levels with parts of the infrastructure still unable to meet full capacity or suffering from lack of resilience. CHIRP welcomes the fact that the CAA are alive to the issue and will shortly be publishing guidance on how to mitigate the risks.

With regard to the reporter's ASR submission, CHIRP asked the CAA to clarify what the situation was with MORs that were closed on receipt. The CAA responded with the following:

Occurrence reports that are submitted to the CAA that are assessed as having a lower safety severity or are not linked to an area or issue of ongoing interest will be marked as 'Closed on Receipt'. This means that the CAA will not conduct any further analysis or investigation into the report unless directed to by one of our organisational areas. The reporting entity (the Company) should continue to conduct their own internal analysis and share the results of that analysis with the CAA as part of a follow-up report which will be added to the occurrence report for future reference. Even if closed on receipt, reports can be re-opened by a CAA executor if they feel the occurrence warrants further follow up or if the reports pertains to an area of interest or has a high risk potential.

Due to the volume of occurrence reports that are received by the CAA, it is not practical or possible to provide individual feedback to the circa 30k reports we receive each year. We do however produce numerous safety promotion documents that contain the analysis of our safety data and key actions undertaken by the CAA to share lessons and best practices etc.

As for the communication of feedback by the Company, the issue was one that the Company was not in a position to resolve and they would have closed the report having notified the regulator through an MOR. Although it is disappointing that a more complete response was apparently not given to the reporter by the Company, companies receive many ASRs during the course of operations and brevity in responses should be expected. Company electronic reporting systems generally allow reporters to access their report and see what has been done to address the issue. For the company concerned in this instance, they categorise reports such that issues that are contained within normal or abnormal processes do not get an investigation assigned but are filed and noted as data points within part of the wider safety context. For those reports that are assigned an investigation, a centrally overseen workflow is created and the investigation narrative is available for review. It is likely that, in this instance, the report fell into the former category (i.e. a data point where the company could not change the outcome) and so, having notified the regulator, a formal investigation and feedback response to the reporter was not made in the expectation that the reporter could access the closed report electronically to see who had been notified and any subsequent action taken.

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