MAKING CHANGE HAPPEN

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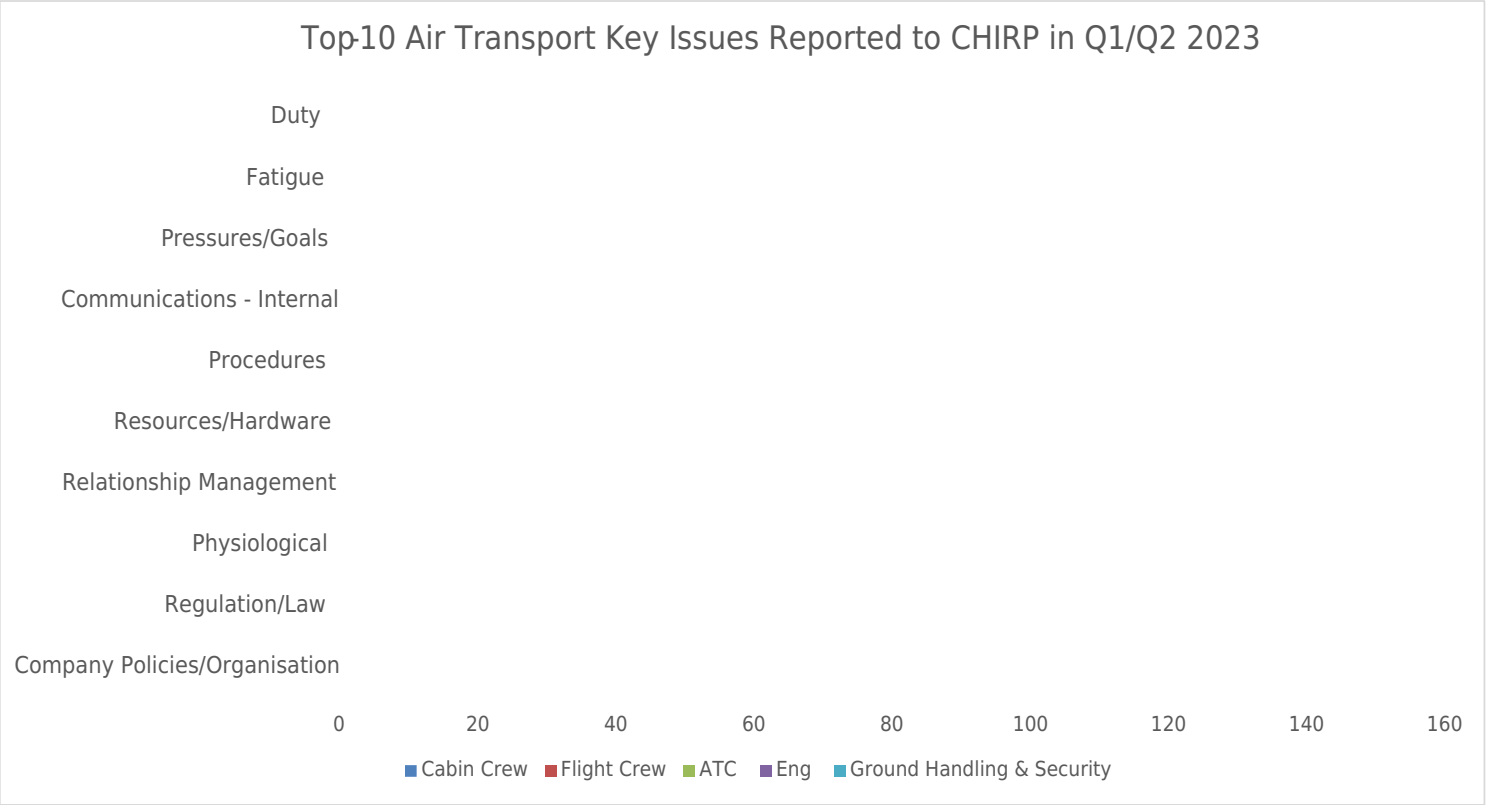
Editorial

CHIRP provides a vital safety net when normal channels don't deliver the results

As I write this editorial we're approaching halfway through the year so I thought it would be useful to give an idea of the main themes reported to CHIRP in these first 6 months. The chart shows the associated top-10 Key Issues reported to us across the Air Transport sector and, for those who are interested in the breakdown of each Key Issue, the sundial chart at the end of this editorial shows the principle sub-issues for each (the Key Issues are in the internal wheel and their associated sub-issues are in the outer wheel).



Each report can be ascribed more than one Key Issue or sub-issue and so care needs to be taken in interpreting the chart. In this respect, **'Duty'** and **'Fatigue'** are often synonymous within individual reports but, collectively, it is telling that these 2 issues continue to represent the bulk of concerns raised to CHIRP by a long margin. Often, we can't publish these reports or interact with the companies ourselves on specific details due to confidentiality issues but rest assured that CHIRP has represented their content to the CAA to indicate our concerns that it appears to us that some companies are rostering some duties at the top end of the FTL spectrum.

Concern about **'Pressures/Goals'** is indicative of too much being asked of crews within the resources available (both time and crewing levels). Overt pressure (such as bonus payments for departing on time) or implied pressure (such as leading questions being asked as to the use of Commander's Discretion) can put crews in an unenviable situation where safety might be compromised as they try to cut corners to satisfy their masters for fear of negative consequences. Companies clearly need to run as efficiently as they can in these uncertain times but, as James Reason pointed out, efficiency and safety can sometimes be in competition with each other and so all of us need to know when to raise the red flag and stop when things appear to be compromising safety. Easier said than done, it sometimes takes real courage to 'call it' but those companies with an enlightened 'Just Culture' management philosophy will take such calls to heart and step back to review what has been going on. Sometimes it can feel like nothing is resulting from reporting but change will only occur if reports are made rather than keeping it to yourself and grumbling; only

with sufficient reporting evidence will company safety management systems respond, and be required to explain what they are doing about it by their regulatory oversight team.

Of the remaining issues, **internal communications**, **relationship management** (aka **'trust'**) and **company policies /organisation** all hint at the same problem. If things are communicated in a transparent and inclusive manner then most people will go the extra mile to achieve the aim. If new policies, procedures or imperatives are not adequately communicated, people feel disconnected from the management, undervalued and disinclined to lean into the task. Middle-management are often blamed for lack of commitment to their subordinate workforces as they try to enact company policies, and they're often the squeezed layer in the Senior-Middle-Workforce sandwich, but communication (and trust) is a two-way requirement that is not just a transactional process of sending and receiving messages, but also one of interpreting and negotiating meanings – and the meaning you intend is not necessarily the one that the recipient takes away with them. Furthermore, communication and trust is always complicated by an almost infinite number of factors such as expectations, attitude, prejudice, history, values and beliefs, moods, likes and dislikes, etc.

The bottom-line? CHIRP provides a vital safety net as another route to promote change when the normal channels of reporting aren't delivering results, you don't feel able to report through company systems, and for collecting reports with safety concerns that did not meet the threshold for normal reporting and would otherwise have gone unwritten. We rely on you to report Human Factors related aviation safety concerns to us so that we can both help in their resolution and highlight relevant issues to others. Reporting is easy by using either our website portal or our App (scan the appropriate QR code shown or search for 'CHIRP Aviation' – avoiding the birdsong apps that come up if you just search for CHIRP and the legacy version that we are about to remove!). In our reporting portal you'll be presented with a series of fields to complete, of which you fill in as much as you feel is relevant – not every field is mandatory, but the more information you can give us the better. Although you'll need to enter your email address to get access to the portal, none of your details are shared outside CHIRP, and we have our own independent secure database and IT systems to ensure confidentiality.

Steve Forward, Director Aviation

Top -10 Air Transport Key/Sub -Issues Reported to CHIRP in Q1/Q2 2023

Engineering Editorial

Concerns in relation to engineers' duty times have been ongoing for a number of years, long before COVID staff shortages. Engineers' hours are a constant concern for an organisation to balance

between excessive overtime, necessity for extending hours for an AOG situation and, worst of all, contract labour – not to mention permanent staff vs contractor ratios in accordance with Part145.A.30(d). Regulation on engineers' maximum working hours has been looked at before and remained in accordance with the Working Time Directive (WTD) and it's opt-out concession. It is well-known that shift-work affects our health, our susceptibility to personal injury[1], our performance, and increases the chance of our making mistakes and errors.[2] Fatigue may also be induced by the environment and conditions in which the work is carried out (e.g. noise, humidity, temperature, confined spaces, working overhead).

Recently amended (May 2023), UK Regulation (EU) 1321/2014, Annex II (Part 145) Section A, 145.A.47(b) requires, '*The planning and organisation of maintenance tasks must take into account human performance limitations, including the threat of fatigue for maintenance personnel during shifts*'. The applicable AMC & GM will follow in due course. British Approved organisations need to prepare for compliance by July 2024. EASA AMC1 consolidated[3] Part 145.A.47(b) has the same statement of course, and EASA organisations and British organisations with EASA foreign approvals need to prepare for compliance by December 2024. Your organisation's Management System 145.A.200, should include a Fatigue Risk Management system (FRMS), defined by ICAO as *'a data-driven means of continuously monitoring and maintaining* fatigue *related safety risks, based upon scientific principles and knowledge, as well as operational experience that aims to ensure relevant personnel are performing at adequate levels of alertness*'.

We know that night shifts, even shifts with a 04:30 start, have the biggest impact, and rotating shifts are worse than a pattern with the same social start time (for example, 12 hour shifts starting at 08:00). The reality is that engineers' overtime could be the difference for them buying or not buying a house or having a family holiday for example. Also, contractors working a long way from home like to 'cane' the hours so that they can take time at home in blocks rather than five hours alone in digs every evening. Everyone's personal circumstances are different and, just like pilots, travel distances to work will impact tiredness. A fit and rested engineer staying on after a late shift (a 'ghoster'), is likely to be more alert than an engineer staying on at work until midday after their fourth nightshift. Working permanent nights can be eased by staying in a "night mode" on odd rest days if family life does not get in the way, not to mention the neighbour's lawnmower. Training invariably takes place on 'Days', so who is looking to remove or reduce a clash between training and returning to shifts? Is it wise for an employer to offer night shift overtime to a day worker, or worse still, the other way around.

The unfortunate outcome of most shift-work patterns is that both the quality and quantity of shift-workers' sleep suffers. One almost immediate result is fatigue. Of course, not all shift-work is problematic, but severe sleep disturbances may develop over time and lead to chronic fatigue, anxiety, nervousness, and depression, any or all of which frequently demand medical intervention. Such effects are aggravated by working hours that are greater than the typical 35-40 hours per

week, which often accompany extended shifts (12 to 16 hours) or multiple job roles e.g. 'moonlighting'. Sleep is the primary human function disrupted by shift-work. Many bodily processes, such as temperature, blood pressure, and heart rate are at their lowest ebb at night so, it is not surprising that people who try to work at night and sleep during the day often report that they cannot do either very well. Shift-workers who need to sleep during the day may have difficulty in falling asleep and remaining asleep because they are attempting to sleep when they are at odds with their circadian rhythms. How long one can continue to do this sort of thing before becoming fatigued is an issue, and of course age[4] is a factor.

There must be organisations around the world with foreign Part145 approvals issued by the UK CAA, British Overseas Territories and EASA, that locally can allow staff to work 96 hours per week (but not in accordance with their Part 145 approval of course). Perhaps we are fortunate for the existing WTD limits to protect our health, and for the fatigue management oversight (and now FRMS) by our Compliance and Safety Departments to protect air safety? In addition, it is vitally important for individuals to consider their personal performance in the best interests of themselves and the task/s in hand, and bring the danger of mismatches and cumulative hours to the attention of their manager. If you suspect you are suffering from fatigue and/or notice performance deteriorating, it is imperative that you find some mitigation and then submit a report using your organisation's internal reporting vehicle. Needless to say, CHIRP is always ready to accept your Human Factors reports on all the subjects mentioned above.

Phil Young, Engineering Programme Manager

[1] The risk of injury on a night shift is highest at 23:00 but the chance of risks increases as each night is worked. On average, risk is about 13% higher on the second night, more than 25% higher on the third night, and nearly 45% higher on the fourth night shift, than on the first night.

[2] CAA PAPER 2002/06 – Work Hours of Aircraft Maintenance Personnel.

[3] Consolidated, therefore covering Part M, Part 145, Part 66, Part 147, Part T, Part ML, Part CAMO, Part CAO.

[4] Over the age of 45 – 50 years, shift-workers increasingly encounter difficulties in altering their sleep-wake cycles.

I Learnt About Flying From That (ILAFFT)

This edition's ILAFFT is taken from our US equivalent organisation's NASA Aviation Safety Reporting System (ASRS) Callback Newsletter Issue 521 and is a cautionary tale about the need to conduct thorough pre-flight external checks, especially after an aircraft has been undergoing maintenance – 'remove before flight' flags are a great aid to spotting things that shouldn't be there, but the absence of a flag (or a really grubby one that is hiding amongst grease/oil/dirt) isn't fail-safe and doesn't necessarily mean that all is well…

Hidden in Plain Sight – an item barely visible was missed on this B777 walkaround inspection and resulted in an expensive air turnback.

After landing at ZZZ, we tail-swapped into an aircraft coming out of the paint shop. We discussed the need for a thorough pre-flight, paying note to the static ports, pitot tubes, etc., and I as FO conducted the exterior and supernumerary area pre-flight. The weather was broken clouds and daylight hours. After take-off, we raised the gear and soon received a GEAR DISAGREE EICAS message due to left main landing gear disagreement. We notified ATC, levelled at 10,000 feet, and maintained airspeed at 250 knots. We completed the non-normal checklist for gear disagree. We contacted Dispatch, and they recommended we return to ZZZ. On [downwind]… we lowered the gear and received a normal gear down indication, landing without incident.

Once parked, Maintenance inspected the left main and found one gear-pin installed without a gear-pin flag attached to it… Maintenance informed us that four of their maintenance team had each conducted individual walkarounds, and none of the four who inspected the aircraft noticed the gear-pin was still installed. Four local Maintenance personnel had inspected the aircraft individually. They annotated in the Airworthiness Release Document (ARD) that they had pulled and stowed all the gear-pins. I, as FO, had walked around the aircraft and did not observe the pin still installed. It appears that there may not have been a gear-pin flag attached to the gear-pin,…making the pin challenging to see. The aircraft came out of a non-Company facility after significant work. All walkarounds require a thorough inspection; however, out of a non-Company city, it's fair to say extra diligence is required. Additionally,…instead of looking for pins and flags, it would be better to look for an empty gear-pin hole.

Comments on previous FEEDBACKS

Comment No1 – Connected? The lesson to be learned from the recent Air Transport FEEDBACK Edition 146 ILAFFT report when the aircraft began to taxi while ground equipment/personnel were still connected is that the lead member of ground crew or visible equipment should always be in sight of the pilots, with a headset lead of sufficient length, until the all clear signal is given and acknowledged.

CHIRP Response: There are unambiguous safety procedures for confirming whether or not groundcrew or equipment are connected before releasing the parking brake for just this reason. The ILAFFT article acknowledged that and was focused on the fact that the flight crew were tired, under pressure to depart on time, and distracted by receiving new take-off data due to a change in weather conditions so they didn't follow the procedures. In fact, the PM could see the groundcrew and equipment, it was just that they didn't do the required check to ensure they were clear.

On an associated topic, we recently discovered that some foreign locations are beginning to use

Bluetooth-enabled headsets which provide the groundcrew user with greater freedom to move around the aircraft. There are 2 problems that have surfaced: firstly, the headset wearer may not now always be visible; and, secondly, the kit involves a Bluetooth receiver unit that is plugged into the aircraft instead of the headset itself and there have been incidents where the receiver has not been disconnected before taxying and therefore flight. If operating in foreign locations, crews are advised to check whether these sorts of headsets are in use and, if they are, remind the groundcrew to disconnect the receiver and show it to you when they 'disconnect' prior to taxying. We're unsure as to what process these headsets have undergone in respect of EM compatibility or aircraft manufacturer approval so beware.

STOP PRESS: We recently received the NASA ASRS alert below (ACN 1993903) that directly relates to this problem, it seems that these headsets may be the source of EM problems on some aircraft after all if they are not positioned appropriately when connected up so it's certainly one to be aware of.

> *On Day 0, Aircraft X, ZZZ – ZZZZ, was at the gate in ZZZ on APU power, without ground power connected. Just prior to departure, all of our MFDs (Multi□function Flight Displays) began to flash, then fail, and numerous cockpit lights flashed along with the main cabin lights. We were unable to control the MFDs and until it stopped, the status page had 20+ Faults. This issue caused an 8□hour delay to clear the faults and replace some components that failed because of it. Both the original FAs (Flight Attendant) and pilots timed out, the flight had to be re□crewed, and departed late with another aircraft.*
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> *When a Maintenance team initially got to the cockpit, they told us that they did not know what caused the problem and proceeded to work on clearing the faults. I explained to the team that clearing the faults was not good enough. I needed to know what caused the problem and that it would not happen in flight. Eventually, the team was joined by another Mechanic who said he knew what caused the problem, because he had seen it about 5 years ago on another 777.*
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> *The team returned us to APU power. The Mechanic went down to the nose gear and repeated the light show we saw with the fault. He did this by bringing the headset adapter block nearby the air/ground sensor on the nose gear. Apparently, the sensor works with an electromagnetic field and the headset adapter, when hung too close to it, can trigger the aircraft into "Air Mode." In our case, in and out of Air Mode rapidly.*
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> *How is it even possible that we allow that headset anywhere near a $300 million jet? If we are that foolish, how do we not let every single Mechanic/Ramper/pilot who works with the 777 know that this is a real danger? Perhaps if we explained to the CFO how much this simple error cost air carrier X, he/she would ban that adapter from use on the 777. Oh what a wonderful world that would be.*

Comment No2 – CHIRP Clarification We received a complaint from an airline who were concerned that Report No.4 in Air Transport FEEDBACK Edition 146 (FC5223/FC5229 – Punitive and unsafe

sickness policy) identified them. They also lodged their displeasure about the nature of the report's text, and particularly the last sentence which said, "*This absolutely highlights the value of reporting; without having done so it is unlikely that anything would have changed until circumstances conspired to bring about a serious incident involving someone who was unfit to operate*." It is not CHIRP's intention to impugn the reputations of companies and so we are careful to try to disidentify our published material where possible so that those not immediately affected by an issue will not be able to identify the organisation concerned. At the time, we were dealing with similar absence management concerns relating to three companies and were working with the CAA in each of these cases. In reviewing the report text, we don't believe that the content could be associated with a particular company by the general readership but, as with many of our reports, it is always possible that those with associated detailed knowledge of an issue may be able to identify their company despite the measures we take to disidentify them.

Our article closed with a final paragraph where we lauded the company's response in changing their policy "*…by understanding the dilemma to which it was placing its workforce.*" We finished this paragraph with a message intended to highlight the value of reporting in order to enact change. In doing so, we accept that we were somewhat clumsy in our wording. A better wording would have been something like:

"This absolutely highlights the value of reporting; without having done so it is ~~unlikely~~ ***uncertain*** that anything would have changed, ~~until~~ ***and*** circumstances ***could have*** conspired to bring about a serious incident involving someone who was unfit to operate."

There are no comments yet.