

## Fatigue – it’s an insidious issue

**There’s no real definition of tiredness because it’s a subjective perception, but the consequences of it are clear**

In the last few months CHIRP has received a number of reports regarding fatigue and FTL management that are indicative of companies trying to fill schedules with reduced crewing levels and availability.

Although we can’t publish many of these reports due to confidentiality issues, we do progress those that we can with the appropriate agencies and, in many cases, we have been able to pass on our concerns to the CAA, whose Flight Operations Team have been active in reviewing the circumstances reported.

The CAA say that they have regular interactions with the larger airline Designated Flight Operations (DFO) representatives and work in conjunction with the companies in a fatigue working group to address issues. DFOs have been asked to deliver to the CAA their top ranking fatigue activities so that assumptions can be validated regarding operational performance as opposed to simple compliance.



**Director Aviation:  
STEVE FORWARD**

Also, as part of their responsibilities within the UK State Safety Programme, the CAA-staffed Air Safety Unit within the DfT are interested in how foreign airlines who enter UK airspace approach fatigue management so that they can be aware of any associated safety issues.

Ultimately, although company rostering teams have a duty to ensure that they publish rosters within regulatory requirements, it also remains the responsibility of individual crew members to review their roster and ensure that their duties are firstly legal and, secondly, if they feel fatigued during a duty, to report as such.

The effects of fatigue and an individual’s susceptibility to it are not an exact science; individuals react differently to each other under the same circumstances, and they may even react differently themselves if faced with similar situations on another occasion. Because our experience and perception of tiredness/fatigue are so subjective, there is no universally accepted definition of tiredness/fatigue.

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**Bullying, Harassment, Discrimination & Victimisation**

### CONTACT US

01252 378947 [mail@chirp.co.uk](mailto:mail@chirp.co.uk)  
[reports@chirp.co.uk](mailto:reports@chirp.co.uk) [chirp.co.uk](http://chirp.co.uk)



For those with smaller devices, you can view this report in a single-column format. Open the newsletter in Adobe Acrobat Reader and select the ‘Liquid Mode’ icon in the toolbar.





Sleepiness (tiredness) is defined by some as, ‘the lack of ability to maintain a wakeful state of attention without the aid of situational factors’. Sleepiness has a simple cause and a simple cure. It occurs when people have had insufficient quality sleep and is remedied by sleep of sufficient duration and quality to replenish the sleep debt. It is acute, meaning that it is usually of short duration – a day or two – and one good episode of sleep is usually sufficient to replenish several recent episodes of sleep deprivation.

In contrast, fatigue might only be experienced after many weeks and months of exposure to the fatigue inducing hazards. It is often insidious in nature, with people often reporting signs of weariness or disease when it is too late to prevent it from happening or considerably more difficult to rectify its consequences.

When it comes to the causes of fatigue in working people, work stress, shift work and physical workload are important risk factors. In aviation terms, ICAO defines fatigue as “A physiological state of reduced mental or physical performance capability resulting from sleep loss or extended wakefulness, circadian phase, or workload (mental and/or physical activity) that can impair a crew member’s alertness and ability to safely operate an aircraft or perform safety-related duties.”

The stages of fatigue can be represented as in the flow chart which shows the relationship between sleepiness and fatigue.<sup>1</sup>

Ultimately, individuals are responsible for arriving fit for duty, including making appropriate use of non-work periods to obtain sleep and rest. The NHS self-help tips to reduce fatigue/tiredness provides some useful tips on how to fight tiredness, and for those who are really having trouble sleeping at night (pun intended), the ‘Fatigue Management Guide for Airline Operators’ contains

some interesting material about sleep theory and fatigue. The QR codes on this page also point towards these 2 documents.

Other reports in this issue relate to ‘normalised deviation’ and ‘just culture’. Normalised deviation refers to people doing things outside of normal procedures in order to get the job done. Whilst standard procedures can’t cater for every eventuality, if people are having to regularly operate beyond their scope then that’s the time to raise the issue so that either the procedures can be amended if that’s sensible, or the requirements changed so that rules don’t have to be broken to meet the task.

In the COVID-19 world that we now live in there will be many occasions where pressure to achieve tasks or performance targets will tempt people to cut corners. The rules and procedures are there for a reason

and such temptations should be resisted. That’s where ‘just culture’ plays an important role in providing an environment where people can honestly report such conflicts so that those in management positions can change priorities or tasks in light of the realities of the new world we operate within.

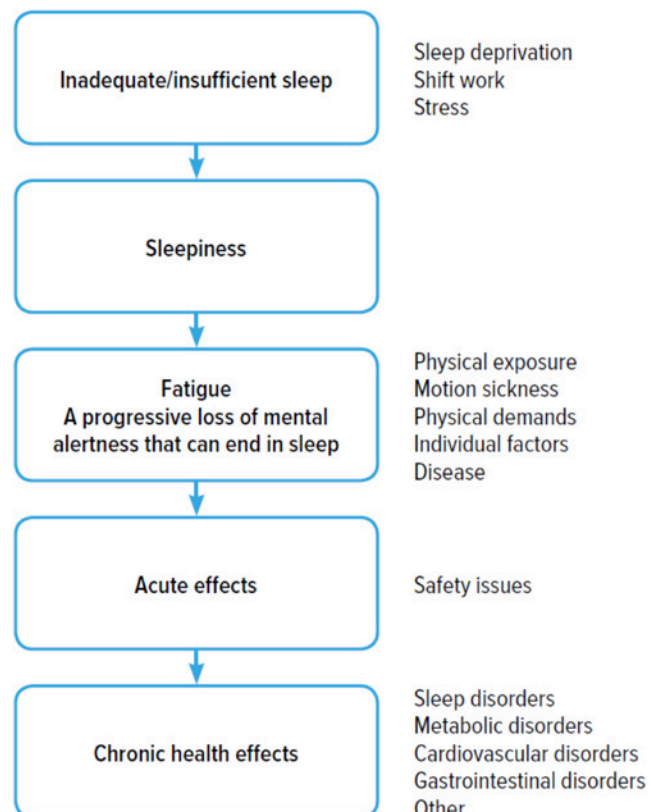
**Steve Forward, Director Aviation**



**NHS self-help tips to reduce fatigue/tiredness**



**Fatigue Management Guide for Airline Operators**



**The relationship between sleepiness and fatigue**  
(Source: Jepsen et al., 2015; p.108)

<sup>1</sup> Jepsen, J. R., Zhao, Z., & van Leeuwen, W. M. A. (2015). Seafarer fatigue: a review of risk factors, consequences for seafarers’ health and safety and options for mitigation. In International maritime health. <https://doi.org/10.5603/IMH.2015.0024>





## Engineering Editorial

CHIRP has received a number of reports over the last few months where, for whatever reason, the issues reported have been ongoing for some time. It could be because COVID has made internal reporting more difficult, or fear that COVID pressures on an organisation may have put open and transparent reporting and Just Culture into the background and where speaking up may be perceived to be a precursor to redundancy.

Perhaps individuals returning to work after a long absence discover that situations or “Norms” that were previously accepted should be addressed before things start to ramp up. Let us hope that such reports are the product of freshly motivated individuals. Some reports are received by staff that have resigned or been dismissed but CHIRP never lets such situations prejudice our thoughts or processes.

Better late than never of course, and all's well that ends well. The dilemma is that if something has been unsafe for some time, where does one start to rectify the issue? If a report indicates a time lapse, it may mean that several

aircraft or products have been affected. We have all seen various Airworthiness Directives (AD) where an untold number of aircraft are involved in an issue and the worldwide fleet needs an inspection in accordance with the AD.

The dilemma for the NAA is in establishing when the issue started, and the safety case for grounding aeroplanes or pulling engines. If an AD rectifies the situation, it's tempting to think we more or less got away with that one. However, repeating latent errors on numerous aircraft over a period of time builds the likelihood of failure and the Risk Matrix consequence may then approach the red.

Similarly, knowingly not working in accordance with regulations until your NAA discovers the non-conformance may lead to exactly the same outcome. In the United States, the FAA have hefty financial penalties for non-conformance, and it could be that prompt corrective and preventative action may be cheaper than the fine.

This time lapse situation is not just restricted to engineering processes, procedures and standard practices, it can also apply to certification. A number

of years ago an engineer did not sign his licence when it arrived in the post. Eventually the licence was sent back to the CAA to add another privilege and the CAA decided that every certification made with the invalid licence should be re-certified. There was a time when one multiple choice licence question asked, “What will you do with your licence on receipt” (or words to that effect) and the answer was “sign it in black ink”. The easiest question of the whole exam one might think.

Finally, if you enjoy reading CHIRP Feedback and consider it serves a useful safety function, may I request that you consider encouraging others to read it, possibly print off a few copies and leave them in Crew Rooms and other gathering places in your organisation. Doing so would make it available to mechanics and individuals embarking on the path to obtain their licence. We at CHIRP would like to expand our readership in the interests of all stakeholders.



**Phil Young,**  
*Engineering Programme  
Manager*

## COMMENTS FROM PREVIOUS FEEDBACKS

### Comment No 1 – Pro-active reporting

With regard to your editorial comments within FEEDBACK Ed 140 about the importance of proactively reporting issues and concerns about things that ‘almost happened’ and the behaviours, cultures and corrective actions that are applied in routine, normal operations before an accident or incident occurs, the AAIB have just published an investigation that was triggered after an internal safety report which, although being well below the MOR threshold, the operator took sufficiently seriously to examine further. This led to the

discovery of systemic deficiencies in aircraft loading procedures that the AAIB classified as a ‘serious incident’ worthy of wider awareness. A very good example supportive of your message! The AAIB report can be found at the QR Code/hyperlink shown.

### “CHIRP Response”

As we mentioned in the last edition, reporting is the life-blood of any safety management system. Learning from what people have done to prevent incidents means that we can promote real safety management over simple risk assessment as we try to ensure that as much as possible goes right.

That requires people to report things that ‘almost happened’ when they don't have to, therefore

highlighting safety-related issues that could draw attention to potential problems that have yet to manifest themselves. In an operator with a meaningful safety culture, such reports will constitute the majority of safety reports, with relatively few others falling within mandatory reporting requirements. An inclusive Safety Culture requires this continuum of reporting, not just a focus on the failures.



**AAIB Report**



## Reports

### **Report No.1 –FC5082 – Airline grossly under-crewed**

**Report Text:** [Airline] recently made multiple pilots redundant. They claimed this was due to an issue of over-crewing. Within 2 weeks of making pilots redundant, they were trying to remove leave from the remaining pilots and compel them to work multiple off-days. I believe this to be a deliberate policy to use less than minimum crewing levels and use pilots' off/rest days to plug the serious gaps. I believe that this is leading to severe fatigue, multiple minor, significant and one serious incident.

[Airline] crewing levels on the [Aircraft type] fleet are woefully inadequate. It is an extremely questionable employment practice and somehow they now have managed to have the correct crewing level but by decimating the remaining employees' terms and conditions.

**CAA Comment:** The CAA Oversight Teams conducted targeted audits in FTL/Fatigue Management for this operator both pre and during the pandemic and will continue to do so to ensure appropriate safety standards are being maintained.

The management of the prescriptive FTL limits within the approved FTL scheme, and evidence of the management of any FTL exceedances are required whilst also managing the fatigue hazards using the SMS processes in place. Standby coverage and the utilisation of crew on days off (overtime) formed part of these oversight activities as well as the management of roster disruptions (under Subpart FTL), which required the operator to ensure robustness of rosters and have appropriate metrics established to measure these.

The UK Retained Regulations do not define what is the legal minimum number of crew to operate a fleet of aircraft.

However, rostering practices and the level of the fatigue reporting rate could be indications of a potential hazard on the rise. The CAA Oversight Team will always conduct a focused oversight in any cases where insufficient crew levels are being raised as safety concerns such as these.

#### **“CHIRP Comment”**

The CAA conducted an extensive investigation of the issues raised but were unable to share any of the detailed findings or headlines due to confidentiality. Although we have no details of the findings, CHIRP welcomed the CAA's comment that they will continue to conduct ongoing oversight activities focused on ensuring appropriate safety standards are maintained by the operator. The risks associated with airlines attempting to fill schedules from depleted crew numbers are clear; stress on FTL and fatigue management systems can soon become an issue in themselves, and a leading indicator of potential safety problems elsewhere. In this respect, roster stability can be an important indicator of airlines operating with too few crews as they attempt to mitigate normally occurring gaps due to illness etc from an already stretched crew complement.

Although roster stability can be adversely affected by many factors, the CAA informs CHIRP that they are keeping an eye on company rosters as a loose indicator of overall safety performance. The issue is topical in that other airlines are no doubt also trying to fill schedules with reduced numbers of crews during the COVID return-to-flying period and are also potentially subject to short-notice roster changes.

***‘Whilst clearly a significant error on my part, both pilots were so tired that this did not ‘register’ with either of us’***

### **Report No.2 –FC5105 – Insidious effects of fatigue**

**Report Text:** This report has been submitted to the company as an ASR with a request that it should be sent to the CAA as an MOR. Whilst it references a particular flight (as required by the company's system) it relates to a series of flights leading up to the report.

I have become increasingly aware over the last few months of the intensifying effects of fatigue, an experience also related to me by all of my colleagues with whom I've flown over the last few months. Most recently, whilst operating back from [Far East], I was very aware of how this was affecting my ability to operate effectively and I am greatly concerned about the ultimate detriment to flight safety.

Further to those submitted on previous flights, a company fatigue report was filed regarding fatigue and the disrupted sleep and pre-flight rest at the hotel in [Far East]. It should be noted that all three pilots were evidently extremely tired throughout the flight.

To illustrate this point, whilst briefing for the arrival and approach into [UK Airfield] I briefed that a hold at [holding point] might be required due to the amount of traffic toward [UK Airfield]. This is an arrival that is very familiar yet, even whilst looking at the Jeppesen plate, I briefed the hold as “inbound xxx°, right hand turn” [the wrong direction]. I subsequently programmed this into the FMC however, whilst clearly a significant error on my part, both pilots were so tired that this did not ‘register’ with either of us.

During further descent on the arrival I felt uneasy that something was wrong but could not recognise what this was. With about 3 miles to run to the holding fix I realised that I had briefed and programmed the wrong direction of turn, I immediately corrected the error, programmed the correct turn (left) and the hold was entered and flown correctly - a very near miss.





The next event was during the approach when instructed by the Approach Controller to fly "160 knots to 4.0 DME." The appropriate flap setting was selected and speed reduced however, again an error on my part occurred whereby after calling for landing flap setting I reduced the speed to final approach speed (this was at approximately 6-7 miles).

Approaching 5 miles I realised this further error and increased the 'bug speed' back to 160 knots - this was of course more of a token gesture rather than anything effective. Given the use of Mode S at [UK Airfield] I am sure the controller had seen this but they are all very aware of how tired and exhausted [Airline] pilots are on arrival into [UK Airfield] and they did not comment on my error and let it pass. Another error caused by the fatigue I was experiencing.

During the final stages of the approach and landing I also had the extraordinary sensation and feeling that I was not 'connected' with the aeroplane - something I have never experienced before. The landing, rollout and taxi-in were all satisfactory but I was extremely unsettled by these three closely connected events, all of which I attribute to the cumulative fatigue I was (am) experiencing.

Following the events described, I had only two rest days before starting an extended block of standby, (prior to which a duty was allocated and changed twice, together with calls, messages and e-mails from crewing to check the crew web portal which, without putting too fine a point on it, meant my days off were disrupted by this intrusion into them).

Yet again I reported for the next duty feeling extremely tired. Whilst no significant errors or events to report occurred during this next duty, I again felt very much 'on the back of the drag curve throughout'. [Airline] has (relatively) recently introduced working and scheduling practices that combine minimum rest periods with the maximum number of duty periods so I do however sympathise with the crewing department over the pressure they are under from the company management to do this.

As a postscript, after submitting the ASR to the company, I was contacted by a manager who had been instructed to call me to discuss the report. During the discussion, an attempt was made to put pressure on me to withdraw my request that the report be submitted as an MOR; something to which I did not agree.

**Lessons Learnt:** Because of the events described here I have fully realised just what the insidious effects cumulative fatigue has and the detriment to flight safety it is. I know I am not the only [Airline] pilot suffering from and experiencing this. I have also been made aware that the company now [apparently] regularly ignores individual fatigue reports unless an accompanying ASR/MOR is submitted.

### “ CHIRP Comment ”

This report gives a very good insight into how things can catch up with you as a result of tiredness/fatigue. It's also very topical because we're seeing a number of airlines maximising FTL regulations as they try to satisfy schedules from a reduced compliment of crews after COVID layoffs etc.

Although such long-duty, minimum-rest rosters might comply numerically with FTL requirements, it's not good practice to regularly work FTLs to the maximum allowable because the limits were originally devised only to be approached for occasional, managed, rather than routine use.

Humans find it difficult anyway to discern in themselves a gradual accumulation of fatigue and a corresponding erosion in performance, but pilots are perhaps more susceptible to accumulated fatigue because of their default 'can do' attitude. This weakens the safety barrier of pilots declaring themselves unfit through fatigue, and it is further undermined when operators do not respond appropriately when pilots do declare themselves too fatigued to operate or report fatigue after a completed duty.

Commercial pressure will undoubtedly continue to drive some operators to

regard FTL numerical limits as an acceptable baseline for rostering unless the adverse effects of doing so can be measured.

A previous study by the Norwegian Accident Investigation Board (AIBN) correlated self-reports of flight crew sleepiness (as measured on the Karolinska Sleepiness Scale) with FDM data; there was a tendency for sleepy pilots to fly slower on the approach (down to Vref -10), had more hard landings, were later in decoupling the Auto Pilot, had more fuel at shutdown (i.e. had carried more), taxied more slowly and had a higher fuel burn whilst doing so. The safety risks associated with fatigue and tiredness are evident in this report, but there are also commercial imperatives for ensuring flight crews are alert.

#### Karolinska Sleepiness Scale

1. Extremely alert
2. Very alert
3. Alert
4. Fairly alert
5. Neither alert nor sleepy
6. Some signs of sleepiness
7. Sleepy, but no effort to keep alert
8. Sleepy, some effort to keep alert
9. Very sleepy, great effort to keep alert, fighting sleep

### Report No.3 –ENG706 – Engine maintenance practices

**Report Text:** I am writing to you to report on serious safety breaches at [Organisation] in relation to engine overhaul and maintenance. I believe I have been constructively dismissed for threatening to whistleblow on things I have witnessed for many years whilst working at that site. I will list below some of the incidents that happened and are continuing to take place.





1. Managers breaking into engineers' lockers to obtain their stamps to clear repair cards to get engines out quicker.
2. Multiple deviations from the engine manual in respect of turbine shaft overhaul. One example is painting the internals with a house brush.
3. Multiple deviations from the engine manual in respect of the overhaul of engines whereby corrosion was being found on the fan case itself when the fan blades were removed from the case which meant the case was scrapped and replaced but, in order to put profit before safety and compliance, the blades were not removed and repaired in accordance with the engine manual. This means that a) The corrosion is still present and not dealt with and b) The fan blades were not repaired correctly. This repair and overhaul process is still going on, which is continuing to endanger the lives of passengers.
4. Multiple repairs including exhaust and combustion cases being repaired in situ with these components missing up to 90% heat resistant enamel and were being touched up with house brushes to replace the enamel; the engine manual clearly states that if more than 5% of the enamel is missing then the case is to be stripped from the module and fully repaired with the removal of the existing enamel and then go through the full overhaul process before being reassembled. This was not being done as the company were more concerned about turnaround times on engines and considered the disassembly of the module as not cost effective, despite this being a serious deviation from the engine manual.

These are some of the incidents that I and others have witnessed and, because I reported these incidents to Quality through the company's reporting system, I have been victimised and bullied ever since. These incidents have been occurring over the past decade and I have always been threatened with the

sack if I dared mention it to the aviation authorities. Now that they have decided to dismiss me, I feel I can now report it without any fear of repercussions.

### “CHIRP Comment”

The CAA were contacted with the reporter's consent and the reporter was asked to resubmit his report to them as a Whistleblower Report. The CAA informed CHIRP that the organisation was to be audited at the beginning of Autumn 2021. Post-audit the CAA reported that, *“the information from the reporter was useful during the audit and actions are ongoing with regard to any issues identified”*.

The report contains some concerning issues in respect of deviations from the Approved Data. The internal reporting culture seems highly questionable and created fear in the reporter, rather than being open and objective.

The report of personal Authorisation Stamps being used by others without the knowledge of the holder demonstrates a violation - the 'hero' that does so and gets the flight or the product away on time as a result should bear in mind that if a serious incident occurs, it will be them in the firing line, not the company or OEM.

Overall, if reporters don't feel able to report issues through normal company procedures for whatever reason then it's important that a confidential report is made either directly to the CAA through their [whistleblowing](#) facility or through [CHIRP](#); it's always incredibly difficult to resolve things months or years after an event, and any latent safety issues can surface at any time in the meantime. Timely reporting and doing the right thing are central to effective safety management; wilful disregard for procedures undermines safety for everybody.

**‘There is sense to the use of the ‘VFR approach mode’**

## Report No.4 –FC5092 – Sanctioned company violations

**Report Text:** The helicopter industry is suffering from a slow implementation of RNP procedures and gradual withdrawal of numerous legacy Instrument Approach Procedures (IAP). Despite our modern fleet being able to fly highly accurate internal GPS approaches, these procedures do not exist in any recognised way and no formal training exists for their use.

Rumour suggests that the practice of conducting non-published IFR approaches is common, there is even suggestion that collusion exists at the regulatory level. My company ops manual does not sanction their use unless as part of a published IAP, but many pilots feel pressured into doing them and there is a culture that the business would not survive without breaking certain rules so, if pilots don't like it, they should leave.

There is sense to the use of the 'VFR approach mode' - used correctly it can have great accuracy, but with no training or published standards it becomes the Wild West. I have heard pilots describing its use to 300' agl when IMC!

If the system is safe to use could the CAA not authorise it? In the meantime, aircrew operating on AOCs (Air Operator Certificates) and beholden to their licence are expected to violate published regulations placing many of us under ever-increasing stress. We are forever being told that accidents are 80% human error but the system is working against us when we cannot utilise available technologies designed to make our lives safer. There is certainly scope to make these approaches safe, or at least safer than flying low-level in marginal VFR conditions.

**CAA Comment:** There are two elements in this report that the CAA would like to address. With regard to descent below Minimum Flight Altitude (MFA) with the intent to land, the CAA is reviewing the guidance (for both meaning and intent) of the flight alleviations in UK Standardised European Rules of the Air (SERA), with a planned delivery date of Q2 2022.





Point in Space (PinS) descent procedures are available to be developed, but the take-up has been slow due to a combination of perceived cost issues and lack of both industry and CAA resource. This potential has been discussed with industry, and the CAA will continue to engage with the onshore operators to see how we can facilitate procedure take up. The CAA has no remit or capacity to design such procedures.

### “ CHIRP Comment ”

The specific operational issues in this report refer to [SERA 5015\(b\)](#) which states that:

#### (b) Minimum levels

Except when necessary for take-off or landing, or except when specifically authorised by the competent authority, an IFR flight shall be flown at a level which is not below the minimum flight altitude established by the State whose territory is overflown, or, where no such minimum flight altitude has been established:

(1) over high terrain or in mountainous areas, at a level which is at least 600 m (2 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft;

(2) elsewhere than as specified in (1), at a level which is at least 300 m (1 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft.

The legislation effectively provides alleviation for descent below MFA when IFR provided the aircraft is intending to land (which for a helicopter could be anywhere). The helicopter industry reports that this practice is commonplace and causing considerable concern within the responsible elements of the sector because of pilots apparently routinely descending to 500ft or below in IMC on unapproved let-downs.

The Onshore Helicopter Review Report ([CAP1864, November 2019](#))

mentions IFR GPS let-downs at Para 14.18-14.20 and includes Action A14 which states that: “*The CAA will review SERA 5015 and consider implementing a national position so that all IFR take-offs and landings are conducted in accordance with either notified or approved procedures*”.

Whilst the use of PinS would provide a tool for such IMC descents, CHIRP understands that, at present, the development of PinS procedures requires a [CAP1616](#) airspace change process to be invoked, and any measures that the CAA can take to reduce this burden would be very welcome in encouraging their introduction; the CAA have responded favourably to this suggestion as a potential way of accelerating PinS airspace changes.

However, the concerns are bigger than just the specific issue at hand, and relate to unofficial practices being conducted in contravention of company operating manuals and wider regulations. In Human Factors terms this is referred to as ‘normalised deviance’, which describes procedures and processes that have become accepted over time as ‘the way things are done’ in order to achieve a task.

Some CHIRP members commented that they had anecdotal evidence that IMC descents were accepted to the extent that sometimes they were included in flight checks; this was an example of ‘normalised deviance’ infiltrating into the very core of safety and cannot be condoned at any level. Whilst there may be understandable pressures to break rules for operational benefit, many such rules have been developed through hard lessons written in blood and lives lost. [CHIRP](#) provides one way of reporting such concerns if reporters feel too vulnerable to put their heads above the parapet; the CAA also provides a [whistleblowing service](#) that is available to anyone and allows the CAA to engage directly with industry and reporters to resolve issues in a timely manner.

## Report No.5 –ENG710 – Punished for mistakes

**Report Text:** I was forced to sign for an inspection that I did not carry out because the [Authorised Manager] had missed a duplicate inspection and had issued a Form 1 on the component. Months later I assembled a component incorrectly, which resulted in removal of my Inspector authorisation, a CV review, and being called useless and unskilled while being expected to carry out the same level of work and supervise. Any mistakes made in this hangar result in complete ridicule and aggression.

### “ CHIRP Comment ”

The reporter’s Quality/Compliance Manager was contacted with the reporter’s consent. The organisation took these matters very seriously and reported back to CHIRP that senior staff changes were pending when their investigations were concluded.

It is gratifying that the report progressed to a satisfactory conclusion, no doubt improving the organisation’s safety culture, but a little disheartening that there are still some individuals in our industry that struggle to grasp the fundamentals of Human Factors, a Just Culture and open and transparent reporting. The work of CHIRP is never done and we all must play our part in identifying and highlighting unsafe old-fashioned cultures.

## Report No.6 –ENG709 – Charging oxygen systems on the ramp

**Report Text:** I have noted that [Operator] at [Location] still charge crew & portable O<sub>2</sub> bottles. This procedure was removed from the AMM many years ago and the [Aircraft] doesn’t have an external charging point.

The AMM procedure has been for many years to replace the Crew/Portable O<sub>2</sub> bottles when they are below minimum levels. The Oxygen bottle is on a towable trolley that sits out in the open next to where the passengers queue prior to boarding. I haven’t actually seen them





recharging bottles but the rig has been in use for years.

I haven't seen a designated toolbox for the same reason stated above, there isn't any fire extinguisher in the area and there isn't any kind of cage to place a bottle in during re-charge. I am not aware that they have a workshop/clean room at [Location]. My biggest concern is for the guys working for [Operator] as I suspect they feel they cannot complain.

### “CHIRP Comment”

This report has great merit because it was a case of 'something is not quite right here'. The reporter carried out a subconscious risk assessment and took appropriate action in contacting CHIRP and we approached the operator's NAA with the reporter's consent.

It transpired that the practice was allowable under a 'Local Agreement' with the NAA, which had been in place for approximately fifteen years whereby the operator's Part 145 'Component Rating C15 Oxygen' could cover all their outstations.

The NAA were satisfied that the Maintenance Organisation Exposition/ Procedures, Dedicated Approved Tooling, Explosion Protection and Fire

Extinguishing were all in place. The paperwork for the recording of work was by an internal document, which is also permissible. Local agreements do have a place in making regulations work until they can get up to speed with industry changes and needs. The question therefore must be, does a local agreement show that the regulation (and/or the AMC or GM) is inadequate in the first place, and for how long should they be allowed to be in place? When maintenance personnel use a work-around based on a local agreement, is the organisation assuming it will be addressed properly at a later date?

Ordinarily a C15 Approval would require a facility designated for the purpose, which would of course have to be free of dust and oil. As you would expect, this local agreement also relies on the training, authorisation and competence of the individuals carrying out the work.

The one requirement missing from the checklist in this case however is the facility! The lack of a facility demands a bit of common-sense of these individuals. We don't normally get to use much common-sense in aircraft maintenance anymore because aircraft, procedures, approved maintenance data and Human Factors

training all try to pre-empt any likely errors. One must assume in this case the individuals involved have the common-sense not to attempt to carry out this practice in any sort of bad weather. How many potential Human Factors issues have just crossed your mind that might make it seem like a really good idea to ignore the weather just this one time to get the flight away?

A further question raised by this report is whether an engineer should query the practices of others in other organisations? We as engineers would hope they do every time something looks amiss; any engineer should challenge what they perceive as a safety issue or breach of regulations.

It is great to think that one day you might be the engineer that saves lives with a 'good spot' that everyone else has overlooked but, unfortunately, (Human Factors yet again) it is often a balance between our safety conscience and looking foolish. Would you call the Tower to inform them an aircraft taxiing out is covered in ice, or would you possibly hope it might be taxiing to a remote location for de-icing? A Just Culture protects against being thought of as foolish – after all, there is no such thing as a silly question.

The CHIRP Aviation Programme also provides a facility for confidential reporting of **Bullying, Harassment, Discrimination and Victimisation (BHDV)** where there is an identifiable safety-related concern. CHIRP has no specific expertise or resources to investigate BHDV reports. CHIRP's role is to aggregate data to build a picture of the prevalence of BHDV in the aviation sector. See our [BHDV page](#) on the CHIRP website for further information. Initially, BHDV reporting will be rolled out as a 6-month pilot-programme for **Flight Crew and Cabin Crew only**. The remaining sectors of aviation (ATC, Engineering, Ground Handling etc) will be included once the pilot-programme has been reviewed and any lessons incorporated (likely to be in April 2022).

# CHIRP

Aviation and Maritime Confidential Incident Reporting

### Steve Forward

Director Aviation – ATC, Flight Crew and GA

### Jennifer Curran

Cabin Crew Programme Manager – Cabin Crew

### Phil Young

Engineering Programme Manager – Ground Handling and Engineering

### Rupert Dent

Drone/UAS Programme Manager - Drone/UAS

CHIRP, One Kingdom Street, Paddington Central, London, W2 6BD

**01252 378947** | [mail@chirp.co.uk](mailto:mail@chirp.co.uk) | [reports@chirp.co.uk](mailto:reports@chirp.co.uk)  
[chirp.co.uk](http://chirp.co.uk)

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