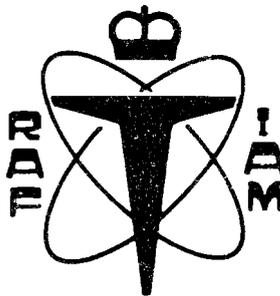


# CONFIDENTIAL HUMAN FACTORS

## INCIDENT REPORTS

# FEEDBACK

# Nº 9.



This issue of FEEDBACK marks CHIRP's third birthday. We've had over 550 reports in this time, and what started as an experiment is now an established part of the aviation safety scene. At the beginning there were one or two companies that had, and probably still have, some reservations about the scheme, but we don't think their fears have materialised.

It's occasionally been mentioned that we should put the odd shirty comment on the bottom of reports when our reporter seems to have behaved in some way 'unprofessionally'. We don't see this as being our job for, we think, obvious reasons: we are here so that anybody can write to us without feeling that the result of doing so will be ridicule or censure in FEEDBACK. On the other hand, if you don't like what you read in one of our reports, drop us a line and there's a good chance that we'll include your comments in the next issue.

We've also been asked what happens to the reports. You see about 20% of them in FEEDBACK, of course, but, in addition to that, we'll supply information from disidentified reports to anyone with a reasonably legitimate interest in it. Here are some of the people that this has meant so far:

- Flight Time Limitations Board
- Air Accident Investigation Branch
- National Air Traffic Services
- Parliamentary Advisory Council for Transport Safety
- NASA Aviation Safety Reporting System
- British Aerospace
- Westlands
- De Havilland Canada
- Boeing
- CAA Medical Branch and Directorate of Research

We've also given a lot of talks to, for example, The Royal Aeronautical Society, The Flight Safety Foundation, and The European Association of Air Traffic Controllers. If you'd like us to give a chat about CHIRP in your company, let us know, and we'll do what we can to comply.

As in all previous FEEDBACKS, the items which follow in italics are, as nearly as possible, in the reporters' own words.

## SLEEP SECTION

A S61N Captain reports on his flying over the North Sea - this winter!

Monday I flew 7 hours 40 mins, including 7 sectors and 35 mins night. Tuesday I flew 7 hours 40 mins including 6 sectors and 1 hour 25 mins night. Wednesday I have just completed 1 hour 40 mins flying, including 2 sectors and I am about to embark on a 5 hour flight. I feel very tired but a refusal to carry out this trip could lead to disciplinary action as I am within the limitation of our operation manual. Something is wrong somewhere.



We taxied from the hangar to a parking spot 100m away to carry out the normal engine power check prior to the first flight of the day. This aircraft has two "motorcycle" twist grip throttles alongside each other and to carry out the check each throttle is retarded in turn, power is applied and readings taken to check power is above the minimum specified.

As I approached the spot, I rolled the No.2 Engine throttle back against the ground idle spot - something I would usually not do until I was fully stopped on the spot. I then applied the brakes, turned off the landing lights, and then attempted to close the No.2 Engine throttle again. Of course it would not move as it was already closed against the idle stop. Having failed to recognise this I asked the Co-Pilot to try his No.2 throttle. He did not recognise the throttle was closed either. Convinced we had a stuck throttle I radioed for an engineer to come to the aircraft but luckily before he left the hangar I realised what I had done.

The reasons for all this? - because it was the third early morning start out of the past four days - up at 0455 local, in work at 0545, man up at 0630 for 0700 departure. Nothing unusual in this if you fly a long range North Sea helicopter. CAP 371 just does not cater for the shattering tiredness one feels after three days of early morning flights to the northern East Shetland Basin and back - seven and twenty-eight day restrictions do nothing to protect the pilot against cumulative short term fatigue.

Whilst approaching XXX on the subject date on a Tristar, being flown on a manual approach by the first officer, the aircraft approached the stall condition. This was due to :- Auto throttles being engaged and speed set at 170 knots with 10 degrees of flap selected, but the Captain overriding the throttles and inadvertently holding them in the idle position. Although I was monitoring the constant auto throttle engagement (as it has the habit of tripping out on 2000ft) the aircraft's speed was naturally reducing and was unobserved by the Captain or myself. Some conversation was going on at the time between all three of us, as we were indicating to the first officer the approximate position of the airfield, as he had not made an approach to XXX before. At this time I mentioned that the pitch of the aircraft felt high and then the first officer called "Speed", the Captain immediately applied power as the speed on the ASI was now indicating 133 knots - 2 knots below the landing VAT of 135K for a standard 33 degree flap landing. Although the stall warning system did not activate it must have been close with the speed as low as 133K with only 10 degrees of flap still selected. After landing the Captain and I discussed the incident and put it down to tiredness as both he and I had previously done a minimum rest work pattern together and had not had a full night's rest for 4 consecutive nights.



I feel I must express my views about flight time limitations. We now have to work right up to the new CAP 371 limitations which is having a noticeable effect on flight safety. Nearly all the Captains I fly with are noticeably tired and fed up, and there is a general air of lethargy on the flight deck. I personally get extremely tired and I find that I am going to work feeling tired. We can of course go sick, but you cannot keep being sick just because you are tired. There has been a noticeable increase in small mistakes in the last two years like forgetting checks, going through assigned altitude etc. Twice this year I have had a Captain fall asleep on a day flight. The combination of long hours, multiple sectors, night flights, bad crew meals and no summer holidays make you very fatigued. Something MUST be done soon to change this before there is an accident.

On turnround out of Italy I set the selectors on the external fuel panel for refuelling. I also calculated the expected uplift. The captain completed supervision of refuelling whilst I had a meal.

During the subsequent climb I noticed the auxiliary tank contained 750kg of fuel. It should have been empty. We had inadvertently loaded 750kg of fuel and therefore taken off 750kg heavier than we thought we were. Most of our aircraft are not fitted with aux. tanks so that gauge is not automatically taken into scan. It is right up on the roof panel away from the other gauges. The switch for its operation is right next to the master switch for the fuel panel. On landing it was found to be on. I probably turned it on inadvertently although it could have been left on by previous crew. (The control panel can be closed with it still on). I had not checked the uplift.

I consider fatigue to have been a

factor as it was the second of two night flights and our workload is generally too high in the summer. The previous week, for example, I was rostered for 7 consecutive days in ZZZZ which meant leaving the hotel at dawn each morning, doing multiple sector each day including the seventh day.

\*

All three crew members were finding it very difficult to stop nodding off during the cruise, due to tiredness.

Crew checked in at 18:45 Local time in UK and operated LGW - TLV and then TLV - LGW with one hour turnaround.

Although the duty was legal by the letter of the law (CAP 371), it certainly wasn't within the spirit of the law! i.e. scheduled duty of eleven and a half hours finishing at 0605 local time.

\*

The crew had a 40 minute drive to the airport and then operated as follows. 1 hr turnaround then 53 mins to "A", a 1hr turnaround followed with a 8.33 hr flt to LHR with 30 mins at LHR making a grand total of 12.33 hrs on duty (scheduled) with NO DELAYS. Half way through the flt I awoke to realise I was the ONLY ONE awake - a sobering thought. I had been asleep at least 30 MINS. Our trip was as follows LHR - "A" - "C" 24 hrs rest. Passenger to "B" then 48 hours rest.

The crew that brought the aircraft to "B" had operated "A"-"B" then jumped in the back and passengered back to "A"! The cabin crew operated "A"-"B"-"A" and for the LHR sector a new cabin crew took over!!

My contention is why could we have not gone from "C" to "A" and just operated "A" - LHR. We were right on the edge of the crew duty day - not very good scheduling. P.S. Arrival time LHR 1117 hrs G.

Good luck with the 2 crew 747!!

\*

#### FATIGUE - IT'S GETTING WORSE.

All of our regular reporters will be aware that the most common type of report that we receive concerns fatigue. We've had reports from wide-body, helicopters, IT, and air-taxi pilots about whole crews being asleep, and many reports detail errors that could be attributed to tiredness and the low motivation and level of care that it carries in its train.

Many of the reports make the point that CAP 371 is not working to provide a maximum limit that will be reached only occasionally, but as the standard to which many companies routinely operate, even rostering trips that can be realistically accomplished only by expecting the captain to use his discretionary powers. We have also been disturbed by the number of telephone calls we have had from crews who sound at their wit's end with fatigue and frustration because they feel that nothing is being done for them, yet feel unable to tackle their companies for fear of being branded as troublemakers and jeopardising their jobs.

Despite this, many of you say that you realise that the companies are also on a hiding to nothing. They feel compelled by commercial pressures to operate more or less frequently to the legislative limits and they clearly can't be held responsible if the limits are too liberal.

Your reports most commonly point the finger at CAP 371. You feel that it should take more account of the problems of off-shore oil support, single crew, long haul time change operations, and the intensive summer work patterns that the IT business demands (especially,

for some companies, during the past summer). Many of you obviously feel that present levels of fatigue bring safety sharply into question, and that the first ameliorative measure must be to modify CAP 371 - even if this won't solve the problems.

Obviously it isn't our job to make the rules, but to pass on your reports to those who can, and every one of your fatigue reports has gone to the CAA at the highest level. We sent a draft of this editorial to the Director General(Operations) at the CAA - Mr A J O'Connor - and asked him for his comments. Here they are.



Any report of a threat to safety arising from fatigue or drowsiness (two quite different things) is a cause of concern. Unfortunately it is much easier to describe a problem than to assess it and arrive at an effective solution.

The reports which the CHIRP system has prompted cover a wide timespan - some going back to the days of flying boats and radio officers when there was no detailed system of flight time regulation. Insofar as we can identify reports as referring to operations under the present CAP 371 requirements, pilots obviously find a significant problem in long or repeated night flights preceded by sleep disruption. We have a Working Party studying this topic with co-operation from international bodies. Incidents have occurred where pilots have, for some reason, had their rest period disturbed by random factors or where they have engaged in "strenuous" activity during that period. It is impractical to try to deal with such individual cases by additional legislation. There is no field of human activity immune from the occasion when, once in a while, all the adverse factors pile up together to create a situation no-one would want to see. Some of the reports reflect this, with combinations of the least favourable rest periods and unpredicted factors like bad weather or aircraft unserviceability. It is our aim that these occasions should be reduced as far as is humanly possible. But there is no framework of rules which can eliminate them completely.

We keep a close watch on achieved flight and duty times. There is no evidence available at present to show that any particular group of pilots is being pushed regularly to the limits of what is permitted under CAP 371. If pilots find themselves in this situation the CHIRP team will no doubt be glad to receive and analyse any information which is given to it. Similarly, if any group or individual feels that there are specific provisions in the current rules which can be shown to permit excessive and fatiguing demands to be made - then they should write to us, or to the CHIRP team - to tell us specifically what they think should be done to put things right.



#### FROM THE CAA MEDICAL DEPARTMENT

The Director General (Operations) refers above to some studies at present being done. Your readers will be interested to know that these include:

1. Actual achieved sleep patterns in long haul operations involving night flights and time zone changes - done in conjunction with NASA, the RAF Institute of Aviation Medicine, BA, JAL, Lufthansa and Pan Am. The two main objects are to advise on reporting practices and effective sleeping strategies.
2. North Sea helicopter operations, again involving the RAF Institute of Aviation Medicine and NASA as well as Southampton University and the four main helicopter operators at Aberdeen.
3. Work in conjunction with the IAM on proposals for long-range 2-pilot operations and CAP 371.



From the tone of the reports that you have sent us we can guess that you might not be entirely happy with the above reply. It obviously sets a challenge - if you think that there is a fatigue problem in a certain section of aviation, you'll have to prove it to the CAA. Some of you may think that the reports you have sent us should have already done just that, but as the CAA seems to want more evidence, it's obviously up to you to give it to them. We don't think that we or the CAA have heard the last of this.

## TWO SIX OR NOT TO SIX ?

Departure clearance from Runway 18 gave SID number and instructions to contact Control when airborne. The use of R18 is unusual since despite the wind conditions a "suitable Calm" invariably exists to enable more expeditious procedures using R36. The SID on the Jeppesen clearly states (inter alia) "... Climbing to FL60" - this was correctly set on the Altitude Alert System selector.

Captain handling pilot on this leg, my R/T. When airborne I contacted Control as instructed, giving our passing altitude, and received the reply in the usual heavily accented growl "(Callsign) continue climbing to Six Zero" to which I replied "(Callsign) continue climbing Two Six Zero" and reset the Altitude Alert to 26000. As the aircraft approached FL60 the Captain took actions indicating his intention to level-off - I pointed to the Altitude Alert selector and said he was cleared to continue climbing. He replied that he hadn't heard that so I immediately transmitted requesting our cleared level - the reply was to maintain 60 on reaching, I reported reaching FL60. At this instant the Captain and I both saw another aircraft crossing approximately 1000 feet above homing to the Initial Approach Fix (on a different frequency). The looks exchanged on the Flight Deck spoke volumes, and a lesson was well and truly

learned. Stick to the correct R/T procedures, make your readbacks correct even if the initial instruction has been incorrectly given. Don't be conned by someone else's laziness - it may sound "Laid Back" BUT IT'S DANGEROUS

\*

Just a general point which sometimes has me out of the "loop" for longer than necessary. (And presumably others). THE RAPID TALKING AMERICANS ON ATIS. We are English and have trouble copying it, so how do others cope? Can anything be done to slow them down?

\*

During the climb I made a mistake which I should NEVER have allowed myself to make. I allowed a check to be interrupted half way through by ATC. Whilst changing from APU bleeds to engine bleeds, I was distracted by an ATC call requiring a response and frequency change. Some minutes later whilst "double checking" what I had done, I was horrified to see that I had mixed the two hot air supplies- a potentially lethal situation which I rapidly corrected and drew the Captain's attention to my sins. We discussed the duration of the mixed air supplies, hoped for best and continued the flight.

\*

## WHO HAS CONTROL ? YOU, ME, OR THE AEROPLANE ?

I am not absolutely certain of the date as I did not enter any comment in the Remarks column in my log book, and the incident was not reported, but it is irrelevant, it could have been anywhere anytime.

I flew the sector UK - MED, after a visual approach and landing (smooth) I noticed the trim wheel turning. The pilot in the left hand seat was not touching the controls, and in any case the trim wheel was turning too slowly for manual switching, in other words it could only be the auto-pilot! There is nothing on the landing check list because you could be doing an instrument approach down to limits, and presumably the "Runway in Sight" call would prompt you to

disengage. This incident could only occur on aircraft with CWS and I cannot think of any way of preventing it - anybody else guilty?

## NOXIOUS FUMES

Firstly, many thanks for Feedback. Always very welcome. Secondly, any progress on the subject of banning passenger smoking in aircraft where cockpit and passenger cabin can/may not be partitioned (most helicopters)? (I am flying the Sikorsky S61).

## TROUBLE WITH IDENTS

We were inbound to MALPENSA in IMC, cleared for an ILS on 35R. As we commenced the turn, i.e. as we reached 17nm on the 205 degree Radial from SARONNO, the captain, who was operating pilot, asked me to tune the ILS on both NAV sets. This I duly did, or thought I did!

We both identified the 3 letter coding, and we both dialled 351 degrees in our course indicators.

It being IMC, the captain selected AUTO APPROACH on the Autopilot. I think this must have been at a relatively late stage in the approach, so it's possible he may have been using VORLOC mode initially. Anyway, on selecting AUTO APPROACH the mode would not engage. By the time we had decided what was wrong, we were above the glide path and initiated an overshoot. This proceeded normally and we were cleared to return to NOVARA NDB for another approach.

What was wrong, of course, (he says "of course" with that hindsight born of experience) was that I had tuned both NAVs to the MALPENSA VOR. I was stupid but

this, I think, was made all the easier by the facts that

a) The VOR beacon is located very close to the runway such that with the ILS radial selected, all the indications are that one is tracking the LOCALISER.

b) The 3 letter ident's are the same for the ILS and the VOR.

The above incident on its own is hardly worthy of note, except that had it happened in different circumstances e.g. low on fuel and in a very busy traffic environment etc. etc. an overshoot could have been more embarrassing, with embarrassment comes the potential loss of "face" - in my opinion a significant factor in the "human factors" cause of accidents.

As a sequel, I recently went through my Jeppesens and found (unless I have missed one) that the only state (i.e. country) in which both factors i.e. VOR location and Ident are as described is in Italy; and in Italy it is the case at several other airports.

Most other countries (in Europe at least) seem to consider it worthwhile to differentiate between the ILS and VOR ident's - or maybe it's just coincidence.

## ODDS + ENDS

As the company had an insufficient number of co-pilots, two captains were rostered to fly together on this service. Neither of them had previously been employed as co-pilots on this type, but both had more than five years as captain on it. Neither was a training captain or had received any training in operating the aircraft from the right seat other than one P2 sector on each annual line check. The fleet consists of several aircraft of many different marks with essential items of equipment located in different places around the flight deck panels which makes it difficult enough even to operate from one's accustomed seat without the added difficulty of doing things left handed.

On this occasion the pilots had swapped seats after the outbound sector and were taking off for the return. The departure clearance was for a turn immediately after take off in the direction opposite to that of the normal SID but the captain had missed that and commenced the SID turn. The captain then called for flap retraction while correcting the turn error, and the acting co-

pilot moved the flap selector with his left hand. It was then observed that the flap position had gone well beyond the first stage of retraction and was almost completely up. Fortunately the take off had been made with full power and the aircraft was rather lightly loaded so the acceleration was fast and no stall warning occurred.

Subsequently, the acting co-pilot could not recall his actual actions in retracting the flaps nor explain how a pilot of his experience could have moved the lever through the full range without stopping at a gated position other than the total lack of operating experience in that seat.

This could have been Staines all over again but with a very different crew situation.

No pilot should ever be required to operate in such an unfamiliar role. If a pilot is required to perform duties other than his usual duties, he must be given sufficient training and recency experience to prevent incidents such as this. A single sector once a year is not enough when he has never been trained in that seat.

Positioning empty flight, but with hostesses on board. No pax but catered for full return flight to base. Warned the girls of severe turbulence to be expected on the approach. Despite the turbulence (which was severe) normal approach & landing. After landing, & while decelerating before turning off R/W, an enormous crash from behind me as flight deck door was stove inwards by a runaway bar trolley that had detached itself from rear galley, then turned 90 degrees and careered the full length of a/c, before ending up almost in the flight deck. "Shell shock" caused to FI/Eng, but no injuries & no damage except to flight deck door which was just about torn off its hinges.

✱

I was cleared by Island Control to takeoff on 05L and turn right, climb and intercept the 118R from the destination VOR and to proceed to the XXX VOR. Initially we were under radar contact with Island Control but later were handed over to Destination Approach. Approach advised us we were cleared for an ILS approach to Runway 10.

I had instructed the First Officer to fly the leg and at about 12 nm from the VOR he said he was going to turn slightly right of the track to assist the entry into the ILS

procedure, i.e. so that a sector 2 type of entry could be made and then a right turn straight onto the localizer. The wind was quite strong SW'ly. I did not overrule this plan which was my mistake. I definitely should not have allowed this.

Soon after, Destination Approach requested our position, I checked with the RMI and replied "110 Radial 10 miles". Understandably ATC were quite irate as the clearance had been to, "INTERCEPT THE 118R TO THE VOR!"

We could have been in conflict with aircraft on departure because I HAD NOT OBEYED THE SPECIFIC CLEARANCE. I apologised to ATC, I let the first officer know my feelings and was not very happy with myself.

In future I will try to be much more meticulous and hope this experience may benefit someone else. It could have led to a nasty incident or accident.

✱

A/FT WHT 2/3 of MX.PERM.T/O WHT. Flap setting 15 degrees/15 degrees. ACCEL - HT. 3000' QFE. At "F" SPD "FLAP IN " call. I selected FLAP/SLT lever to SLT O right through the gate - all in one go! Luckily due to low A/FT WHT no appreciable sink occurred.

## WHAT COMES IN

TOTAL NUMBER OF REPORTS SINCE LAST FEEDBACK 50

CAPTAINS	29	WIDE BODIED	13	(747,A310,757)
FIRST OFFICERS	12	TWIN/TRI JET	23	(727,737,1-11)
F/ENGINEERS	6	HELICOPTERS	6	(S61,SA365,PUMA)
NOT KNOWN	3	TWIN PIST/TURB	2	(BE 90,330,F27)
		4 JET	3	(707,DC8)
		LIGHT	3	(CESSNA,ETC)

BROAD AREAS OF REPORT CONTENTS:

FATIGUE/FLIGHT TIME LIMITATIONS/COMMERCIAL PRESSURES	26
OWN ERRORS	8
ATC RELATED	4
ERGONOMIC PROBLEMS	3
CREW CO-ORDINATION	3
MISC	6

*Have a Chirpy Christmas*

*Roy Skinner*

*Roger Green*

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IN ANY EVENT THIS PART OF THE FORM WILL BE  
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YOURSELF	THE FLIGHT	THE INCIDENT
CREW POSITION	DATE	TIME (PLEASE STATE LOCAL/GMT)
TOTAL FLYING HOURS	FROM :-	DAY/NIGHT
HOURS ON TYPE	TO :-	LOCATION
	IFR/VFR	PHASE OF FLIGHT
	TYPE OF OPERATION	WEATHER (IMC/VMC)

PLEASE USE THIS SPACE TO WRITE YOUR ACCOUNT, USING EXTRA PAPER IF YOU NEED TO

SEND TO: CONFIDENTIAL REPORTS, FREEPOST, RAF I AM, FARNBOROUGH, HANTS.