CONFIDENTIAL HUMAN FACTORS INCIDENT REPORTS

FEEDBACK Nº 13

Over the years, we have received many reports regarding Flight Time Limitations; in fact, our regular readers will know that FTL and the associated problems of fatigue have frequently featured in the CHIRP reports received during the four years the programme has been running. This continues to be the favourite subject of your reports. The groups most affected appear to be companies engaged in IT operations, single crew night ops., and offshore helicopter oil support. Although not really within our remit, we have received reports from cabin crews employed by non UK registered companies working from the UK, who seem to be out on a limb as far as rules and regs. are concerned. Duty days of 17-18 hours are rostered and on one occasion 34 hours' continuous duty was performed! It can be a hard life for some.

Many interesting, thoughtful, and often constructive reports have to be omitted from FEEDBACK due to lack of space and because we don't want to appear to be going on and on about the same subjects. We would like to say a very sincere thanks to all of you who take the trouble to send reports to us which, for the above reasons, do not appear in these bulletins.

However, we can assure you that good use is put to ALL reports that reach us, and the vast majority are seen by the departments concerned so at the very leas they know what is really going on and what the guys at the coal face are currently thinking.

A reminder about our address list. After each mailing of FEEDBACK, some 300-400 are returned marked "gone away" or "address unknown". Unless you tell us that you have moved, we have no way of knowing. A telephone call to the number on the last page will suffice, or drop a line to our FREEPOST address.

As ever, items appearing in italics are, as nearly as possible, the reporters own words.

APRIL 1987

RIG APPROACH SAGA (CONT)

Pre-flight - rig area forecast fog, rig actual WX 8 OCTAS 600ft visibility 6NM. En route, when radio contact established with rig actual WX reported as 8 OCTAS 200ft viz half mile in patchy fog. We elected to carry out an en route letdown and radar/NDB rig approach (minima 200ft - half mile viz) the Captain was handling pilot and as such was flying on instruments. I as N.H. pilot was briefed to monitor A/C RAD.ALT.HTS and A/C SPEED and also to maintain radar contact with the rig, using the A/C WX radar. This involved reducing range scales and manipulating the radar gain and tilt controls to reduce sea returns. When the A/C was level at 200ft at a spd of 60kts with zero forward visibility (but visual with the sea) at a radar range of between one mile and three quarters of a mile the rig radar echo became swamped by sea returns. I reported this to the Captain and instructed him to overshoot. He immediately applied collective to climb and rolled on 20 degrees of bank to alter Hdg. Approx 5-10 secs later my peripheral vision registered something passing slightly beneath and to the left of my footwell window. I looked out my window and through thick fog saw the top part of the oil rig derrick. I estimate we were displaced 50yds laterally and 50ft vertically i.e. we almost hit the rig!!! Why? We had done everything exactly I.A.W. S.O.P's. What went wrong? Apart from losing radar contact with the rig at an indicated range of three-quarters to one mile everything else had been done correctly, we should have been half a mile clear of the rig, at least. The reason why is fairly obvious, the radar indicated range was incorrect. Needless to say, to this day I treat uncalibrated WX radar ranging with a very healthy disrespect. The radar accuracies are not published, they are not calibrated and the manufacturers do not know how accurate they are because they were not designed for collision avoidance in the first place. The procedure has been flown down to minima which equate to minima for precision approaches to land airfields. Now I ask you what self respecting authority would allow you to carry out an ILS using uncalibrated ground or airborne equipment? Well that is what has been and still is happening in the offshore oil industry.

*

IS IT WORTH IT?

Temperature at rig 1degree C, nice sunny day. Using spare immersion suit, too small and very tight on my large frame. With normal clothes under the suit I felt pleasantly cool prior to departure. On the outbound legs the heater was required to maintain cockpit comfort, on the inbound legs with the heater off, into a low sun, my temperature rose until sweat was literally dripping from my brow. Combined with the constriction (verging on pain) of an overtight suit and the weight and constriction of the constant wear lifejacket I believe that the combined discomfort was sufficient to degrade my performance below an acceptable level. Nothing actually went wrong but I probably wouldn't have been too concerned about anything other than a major emergency.

Loading crews down with survival equipment will only enhance safety if a ditching occurs, for the rest of the time the equipment causes a build up of discomfort which is a positive disincentive to safety.

P.S. Crews are becoming very bitter about being forced to comply with these safety "cosmetics" whilst nothing is being done to improve cockpit environment or to limit flight times to compensate for the discomfort.

*

Much effort has recently been expended on dubious modifications and equipment to increase the survival chances post helicopter ditching. These include things like dinghies which are only certified for some 40kts wind conditions - way below the 60-70kts winds that we fly in etc.

CHATTER

Worse than this however is the so-called survival suits. While the enhancement to survivability of these is debatable, the detriment to air safety caused by fatigue/uncomfortability of wearing these and constant-wear lifejackets for long periods of time has been TOTALLY neglected.

*

..... However, on the return the sun was about 15 degrees off the nose. It shone straight into my eyes (and those of my co-pilot this time), and even sunglasses were ineffective. Vision in that sector was impossible, compounded by a brilliant reflection off the sea. Even instrument reading was difficult. The discomfort level in our survival suits and life-jackets (worn to conform to the oil company's commercial requirement) was high, even though the OAT was only 10 degrees C at most. Opening the flight deck windows helped ease discomfort, but caused a lot of distracting noise (in addition to the already high ambient levels). By the time I arrived back, I was feeling quite unwell.

The helicopters have no sun-visors, in spite of being requested several times by crew members who regularly experience these problems. The "soft hat" suggested by a correspondent in a recent Feedback would not have been a solution to either the outbound or inbound situation.

*

Reports from helicopter pilots make frequent reference to the poor environment, and these reports illustrate the current concern with the wearing of immersion suits. We've done some checking and discovered that the CAA, to its credit, has sponsored a large study in which the temperatures of pilots (from four operators in four helicopter types) were measured in winter and summer. The full published results (which will doubtless be scrutinized by the operators, BALPA, and the CAA) are not yet available, but a sneak preview seems to show that no evidence of unacceptable thermal stress was discovered .... Of course, you may know different. We'll try to keep you informed.

*

We showed the reports opposite to a spokesman for the offshore helicopter operators and this is what he had to say:-

1. Rig approach. From the information given this incident occurred many months ago prior to the introduction by all operators of the offset rig approach procedure. Minimum decision ranges are now 0.75 nautical miles and a 10 degree track offset has been introduced, commencing at 1.5 nautical miles range, which must be confirmed by an opening bearing on radar and ADF. These procedures have been established in consultation with the CAA and radar manufacturers, specifically to avoid the kind of incident described. The manufacturers have quoted range errors on the range scales used for approaches as being a maximum of 700ft. The range error described in the CHIRP report is between 3500ft and 5500ft, five to eight times greater, and clearly due to a gross radar malfunction. Hopefully the pilot reported this alarming incident to his company so that they could investigate the radar defect and reconsider their approach procedures.

2. Survival suits. The spokesman pointed out that since the HARP Report a great deal of effort is being expended on airworthiness improvements, particularly Health and Usage Monitoring, which the Report identified as the one way to improve the safety of existing helicopters. However, the new airworthiness standards have not yet been defined and development of HUM will take time. In the interim, it was essential to improve survivability standards. The significant improvements which have been developed have cost the Operators and their clients some millions of pounds which were not spent without careful consideration. The immersion suits now in use, while not as comfortable as a shirt and slacks, are the best that present technology can produce and the majority of responsible pilots have welcomed the valuable protection they afford.

Following on from your fatigue accounts, I feel the biggest problem is one of night flight/flights, followed by a 24 hour rest and then a day flight (particularly when it involves an early start). An example of a particularly bad roster I worked this summer which is totally allowed by present legislation.

ORIGINAL ROSTER

Day 1	*2020 A -> B*	
Day 2	*-> A 0150*	*2100 A -> C*
Day 3	*-> A 0600*	*1900 Standby*
Day 4	*-> 0500*	
Day 5	*1530 A -> D -> A 2155*	

ACTUAL ROSTER WORKED

Day 1	*2020 A -> C*	
Day 2	*-> A 0455*	*2100 A ->*
Day 3	*C -> A 0600*	
Day 4	*0130 A -> E -> A 0855*	
Day 5	*1210 A -> F -> G -> A 2155*	

Having been called out on standby in the early hours of Day 4, I then had just over 24 hours in which to rest and re-adjust for a long day flight. Day 5 was a 3 sector day which actually became 4 sectors due to the necessity for a refuelling stop on the last sector.

I was the operating pilot on sector G-A. On long finals to the intermediate destination I required extreme mental effort to concentrate on the task in hand, and this was at the most stimulating and alertness provoking phase of the flight. Now I know what real fatigue is!

Surely there should be legislation to ensure adequate rest after a series of night duties. 12 hours is not enough, and 24 hours is even worse if the next duty is a daytime one.

* * *

DAY	*ONE*	*A - B - A*	*1840 - 0245*	*(13)*
DAY	*TWO*	*A - C - A*	*2150 - 0350*	*(14)*
DAY	*THREE*	*A - D - A*	*2105 - 0555*	*(15)*
DAY	*FIVE*	*A - E - A*	*0840 - 1855*	

Three night flights. After "D" flight seemed rested and despite change of "body clock" felt fit for day duty FIVE. However, on the day operation started well but turned out to be a day with numerous errors, none of which in themselves caused any safety problems. After experiencing such a day I wonder if Flight Time Limitations (i.e. CAP 371) are adequate to cope with such a roster.

For some little time now I have been meaning to put pen to paper regarding CAP 371. Now with the winter almost over and another summer season looming over the horizon, I wonder if the same levels of fatigue/tiredness will be reached this year as last.

Without going into specific instances, the last season has got to be noted as the worst - in my experience - for particularly tired First Officers. Embarrassing when you need a ten minute break only to find your right hand man is already having one! The worst sectors being Scotland/N. England to the Canaries/Greek Islands especially with the odd enroute fuel stop thrown in.

I hope I am not wrong in understanding that the Flight Time Limitations are under scrutiny at the moment, hopefully using information provided by certain American Police Forces. As and when the CAA do revise/restrict the number of hours allowed to be flown, they will be doing themselves and the pilots a great disfavour if they allow and grant ANY airline dispensation on economic or other grounds.

After all, now that Greece and Spain have joined ourselves in the EEC why can we not all follow the German example and have blanket night restrictions between 2200-0600 LT.

* * *

WE ALSO HAVE PROBLEMS

COMMERCIAL PRESSURES

I had to crew up 2 Subcharters taken on at short notice. The first one was an ASAP standby call out, this therefore utilized our afternoon standby coverage.

That left me with crewing up an 0300AM take off (from approx 1800 onwards).

We soon gave up on days off and the crew eventually used were one on a split duty in a Hotel. They started duty at 0700AM to do a short UK Sector and were due to op back at 2100.

Both pilots expressed concern at operating such a flight but did it as a "favour to crewing". Luckily it was an empty leg out to Spain so they went at 2100, had another 6 hours split duty and eventually went off duty at 0915AM the next morning over 24 hrs later.

Having now had the opportunity to peruse the snooze spot of your excellent "CHIRP" reports and considering the proliferation of soporific subject matter contained therin, I am definitely now of the opinion that "CHIRP" could well be changed to "CHARP".

"CHARP" being the one time OK expression for a snooze. eg. "See you later Fred I'm off for a charp" - term possibly derived from Raj India days. - charpoy?

Perhaps we may now update the Jargon a little:-

Microcharp :- 15 Sec. "nod off". Head slumps forward. Old people do it, then pretend they haven't.

Millicharp :- A very "quick kip". 3 minutes. Possibly between trips.

Minicharp :- About 10 minutes. "Cat nap". Seemingly most suited to North Sea Helicopter Pilots.

Charp :- A normal snooze.

Megacharp :- A very long snooze this.

Gigacharp :- High Tech! A proper sleep this one, only suitable when crewed with a "heavy" crew.

Inebriocharp:- This most popular charp is extensively used by many aircrew. It is sometimes used when down route during the eight hour period prior to take off.

Early start tomorrow. Off to Boozer, then to Charpoy for a Snoozer.

TO WHICH WE MIGHT ADD

SINGLE PILOCHARP:- Sometimes suspected to have been responsible for unplanned arrivals.

* * *

As you may remember I sent you a number of reports over a year ago about mainly crew fatigue and badly equipped aircraft. The company I used to work for was called XXXX.

I now work for BBBB Airways and seem to have little to complain of. I do not fall asleep anymore. I do not go to work in bad weather wondering which bits of the aircraft will not work. In short BBBB seem to manage intelligent rostering, good ops backup and above all good maintenance. It can be done even by a fairly small operator and before you ask, BBBB also make a good profit.

Of course it helps a great deal if you do not have to work at night. My quality of life has improved a great deal and I feel far better than I have felt for years. How about new limits in CAP 371 for maximum number of night sectors per week, month and year?

ODDS + ENDS

We had a fire on take off - the take off being continued after V1. After the gear was selected up, I closed the appropriate thrust lever and then missed out the fuel cut-off lever, pulled the fire handle and fired the fire bottle. I realized my mistake after a second or two but it rattled me to make a cock up of the drill. I have flown BAC 1-11s for many years previously and feel that I reverted to this aircraft - the drill being to go for the HP cock with a red light in it! It is quite an inexcusable mistake but one that a 1-11 pilot could easily make converting onto 737s or shortly afterwards.

(This from an experienced 737 Captain, in a simulator).

* * *

HEATHROW ATIS

Local dialects seem to be more marked in the UK than in any other country, the result being that ATIS broadcasts come up in all sorts of accents, Cockney, Welsh, Irish, Scottish etc. Some are high pitched, some are low, some read by people who apparently have never handled a microphone before and so on. The fluctuations in quality are most marked when the information changes, the read-out on "Information Kilo" may be clear and precise, to be followed by "Information Hotel" - a stumbling transmission in Cockney. It is difficult enough for a native to adjust to the change - for foreigners a cultural shock.

Surely some voice checks can be made and a person nominated on each shift to make the tape.

* * *

ATIS uses terms like "Thirteen Knots" and "Forty Kilometres". As this is a recording there is no way of confirming exactly what is meant. Perhaps the readers should be reminded that transmission and reception is by a system designed for morse.

Another ATIS moan. Gatwick have often used terms such as "Severe turbulence reported on final approach". The ICAO definition of severe is that the aircraft is out of control for more than 50% of the time. Clearly if the turbulence is severe the aircraft reporting it must have crashed on landing!

ARCTIC ROLL

During the recent wintry weather I was rostered for a morning departure to the Canary Islands. At 0630 I was telephoned by Ops and informed that "Delayed Reporting" was in operation (ready to leave home within 30 minutes). At 1400 I was called with a report time of 1600. On reporting I was informed that the aircraft was further delayed and to expect departure at 1915. The Captain decided to extend crew duty time by one hour as a second crew could not easily be raised. Thus we departed at 1915 already feeling as though we had completed a day's work, and expecting to return to London at 0415. On the return flight both pilots (and indeed all the crew) were very tired.

For the approach into London the weather was 8/8 at 1200ft, visibility between 1200m and 3k in blowing snow with a 20kt crosswind component, braking action reported as good with 1mm of dry snow on the runway. The previous aircraft reported moderate turbulence on approach and touchdown visibility of 1200m. During the final stages of the approach, the aircraft was in moderate turbulence, and the runway appeared as a moving carpet of snow shifting from left to right partially obscuring the runway edge lights. At approximately 100ft AGL the Captain began to experience a roll orientated "pilot induced oscillation", and at just above touchdown decided to overshoot. The overshoot was completed safely, but several minor mistakes in the drills were made by both pilots. During the subsequent radar pattern, positioning the aircraft for a second approach, other little mistakes were made by both pilots culminating in the landing gear not being selected down. This major omission was corrected at the reading of the checklist.

After successfully completing the landing both pilots, experienced both in total flying and on type agreed that every single problem encountered during both approaches had one single root cause - fatigue!

* * * * *

WE NOW "FLOW" INTO AIR TRAFFIC CONTROL

The morale of the Air Traffic Controllers is declining and the Management do not seem to care about this and continue in their own haphazard way. I believe they have their heads in the sand and rely on their own historical knowledge of how things used to be when they did it and are not really aware of the present day traffic conditions. This seems an absurd situation when the majority of ATCO enjoy their work and have very good working relations with each other.

We have many equipment failures, our main computer, an IBM 9020D, is unreliable and a failure in one form or another 2 or 3 times a month is probably the norm.

Yesterday the CCDB (code callsign data base) was u/s for most of the afternoon. (CCDB changes aircraft squawks to callsigns on the radar.) This is a method of operation that most modern day controllers are totally unfamiliar with.

Many items of equipment are time expired e.g. CCTV (Closed Circuit Television) between Heathrow and LATCC.

There was an airmiss to the south west of Midhurst VOR about two years ago. Since that time various ATCOs have been trying to have the bases of Controlled Airspace properly shown on the Radar Video map in this area. Although the ATC Technical Committee agree and have requested the change, nothing has been changed. There are plenty of excuses though.

We have a highly responsible job, we are directly responsible for the lives of hundreds if not thousands of people. The ATCOs are becoming fed up with all the problems.

Over the past two years the traffic has increased by something approaching 20%. Another increase of 10% is forecast for this year. All this with equipment one does not really trust, using maps and documents which are out of date. If LATCC was an aeroplane or an airline it would be grounded by the CAA. NATS should be independent of the CAA and the CAA should then properly regulate NATS.

In summary many problems are going to be with us for a number of years. A large amount of money will have to be invested in new equipment, but also a new system will have to be decided on. The present system is creaking.

I just hope the air misses that happen, including the ones which go unreported do not turn into something more drastic.

HI TECH

We have a system of automatic data transfer to Scottish high level sector 26 by the 9020 computer. Whilst generally effective as manual passing of estimates it is not as fail safe as it should be. When an aircraft is activated, in this case by the LYD sector as the aircraft climbed out of Paris, a live level is input into 9020. For the purposes of estimate passing to Scottish however the 9020 passes the aircraft's requested cruise level in this case 350. So at all times we have two active levels in 9020, the actual level of the aircraft and its requested cruise level. In this case the 9020 printed all our Flight Progress Strips on the Irish Sea Sector with 350 as the level passed to Scottish. It does this well in advance of actually passing the estimate. If the aircraft requests a different level, the information is input into 9020 as an ACT input. In this case none was needed as the aircraft climbed in my airspace to 350. However back over southern England the LYD sector had amended the requested flight level to FL270 and this was the level passed by 9020 to Scottish NOT the level printed on my strip of 350. The point being that any change input to 9020 only produces a 3 line update message - the assistant or ASC who receives it then has to realize this also changes the ACT level and then has to re-input the original requested level. This is far too fail orientated and there have been numerous problems with it. No amount of reporting seems to change anything, we are simply fed all these complications as they are found and told to change this or that as required. The computer now requires more complex understanding than the traffic situations and is causing more and more problems during handovers.

* * *

LO TECH

As an ATCO, my actions as a radar controller are governed by rules and regulations. At LATCC by far the most relevant document is the Manual of Air Traffic Services Part II. This document details the procedures for controlling on all ALTCC Sectors; co-ordination - releases agreed levels - deemed separations etc. To keep this document up to date Temp: Operating Instructions are issued.

My cause for concern is this :- At the moment there are approx 260 T.O.I's. The oldest goes back to June 1982. When does temporary become permanent? It is becoming impossible to keep up with the flood of new T.O.I's and makes life very difficult for trainees. Some procedures between units do not agree, as a recent incident between LATCC and Heathrow revealed.

Pleas to Management bring promises of improvements tomorrow, yet they never arrive.

When there is an incident, the investigating officers in the quiet of their offices go through the Manual with a fine tooth comb. If our Manual PT II was up to date - simpler and accurate - we might have less incidents to investigate.

* * * * *

WHAT COMES IN

TOTAL NUMBER OF REPORTS SINCE LAST FEEDBACK	53
FATIGUE/ FLIGHT TIME LIMITS./ COMM. PRESSURES	14
OWN ERRORS	3
ATC RELATED	8
ATC-REPORTS	16
TECH	4
CREW CO-ORD	2
MISCELLANEOUS	3
SMOKING ON FLIGHT DECKS	3

Happy Easter - back in August

GUARANTEE
NO RECORD OF YOUR NAME AND ADDRESS WILL BE KEPT

NAME.....

ADDRESS.....

.....

.....

PHONE No.....

DATE OF RECEIPT AT THE R.A.F. INSTITUTE OF AVIATION MEDICINE

WE ASK THAT YOU GIVE YOUR IDENTITY ONLY TO ENABLE US TO CONTACT YOU IF WE ARE NOT CLEAR ABOUT ANY PART OF YOUR ACCOUNT.

IN ANY EVENT THIS PART OF THE FORM WILL BE RETURNED TO YOU, AS SOON AS POSSIBLE, TO CONFIRM THAT WE HAVE RECEIVED YOUR REPORT.

YOURSELF
CREW POSITION
TOTAL FLYING HOURS
HOURS ON TYPE

THE AIRCRAFT
TYPE
No. OF CREW

THE FLIGHT
DATE
FROM :-
TO :-
IFR/VFR
TYPE OF OPERATION

THE INCIDENT
TIME (PLEASE STATE LOCAL/GMT)
DAY/NIGHT
LOCATION
PHASE OF FLIGHT
WEATHER (IMC/VMC)

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

SEND TO: CONFIDENTIAL REPORTS, FREEPOST, RAF IAM, FARNBOROUGH, HANTS. GU14 6BR
YOU CAN ALSO OBTAIN MORE DETAILS BY TELEPHONING ALDERSHOT (0252) 24461 EXT 4375