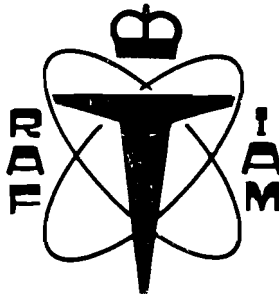


CONFIDENTIAL HUMAN FACTORS

INCIDENT REPORTS

FEEDBACK

Nº 15



CHIRP is now five, and still seems healthy despite some nasty rumours to the contrary. We expect that you will find some familiar themes in this FEEDBACK, but as long as you keep sending in the reports, we'll keep on publishing them. We get some strange reports, but they really do not compare with one recently received by our sister scheme in the States. "I was supposed to spray this field and saw two Black Angus bulls had strayed out of their pasture onto the field. On my second pass attempting to herd the bulls out of the field I reckon I got too low. This one bull made a lunge at me and my left gear hit him in the hayed. He knocked my left gear off but I killed him dayed, I flew around to burn up some gas and then flew over to another airport and landed on the soft sod alongside the runway. Wiped off my left spray boom on the landing, but otherwise no damage to me or the aircraft. I retrieved the gear, got some new parts and was flying again in a couple of days. After talking with various people, I am now in heavy discussion with my insurance company."

Whilst on the subject of the US scheme, they have just produced their 100th edition of "CALLBACK" (the American version of FEEDBACK). Although their bulletin is printed monthly, we feel that such a sterling effort deserves our congratulations and best wishes for the future.

We'll be back in April, and that issue will contain more ATC reports. In the meantime, have a good Christmas. Safe flying.

DECEMBER 1987

FUEL SHORT CUT

At an early point in my basic flying training I can recall my instructor telling me that the only accurate information to be obtained from an aircraft's fuel gauges was that the aircraft in question was equipped with them, and that only old pilots checked the tanks visually.

As I progressed to bigger toys, fuel-flow meters, totalizers and dipsticks were introduced but the basic principle remained - don't trust gauges.

Imagine my concern then when learning that my present employer pursues a policy of almost total reliance on aircraft fuel gauges. "Impossible", I hear you say "The CAA would never allow it", but read on.

I fly a Short 360. It is my employer's policy to base fuel planning entirely on the A/C gauges supplemented by a rough check against totalizer consumption. This check is conducted on the basis of the previous sector's figures which are based on the one

previous to that and so on.

The CAA approved Shorts Maintenance Schedule in use requires the tanks to be dipped and the indications compared with the gauges prior to the first flight of the day. Unbelievably THIS IS NOT DONE, on the grounds that it is a difficult procedure (high wing aircraft with fuel cells in the roof). Hence the accuracy of the gauges (or otherwise) is unchecked between major inspections.

This policy is dangerous and stupid - witness the engine flameout and subsequent diversion of a 360 due to a fuel gauge error and consequential dry tank - not so funny as it was over the Sea with 30 on board at the time.

MY REMEDY:-

Require the engineer performing the inspection to record the discrepancy between "indicated" and "actual" tank contents on the Tech Log.

PROBLEMS OF BEING SINGLE

In retrospect I do not consider that an adequate margin of safety can be maintained when single crew aircraft are operated in areas of high traffic density.

One nasty night approaching 28R at LHR I demonstrated this to myself most forcibly. Having seen the lights at decision height I throttled back to land only to hear the sound of the undercarriage warning horn. Luckily I had enough height to select gear down and get 3 greens in time to land normally; but how close I came to blocking that runway still gives me the shivers whenever I think about it.

So much for the "Confessions of an aged Single Crew Operator". It is not safe enough in my opinion, whether it be in pursuance of Charter work or Scheduled services with or without passengers.

*

A FILTHY DAY, low cloud - strong wind very turbulent. THE AIRCRAFT, an old Aztec - no autopilot, No2 Altimeter on the extreme right of the instrument panel. THE FLIGHT, an air taxi positioning flight Luton

to Cherbourg (456ft AMSL) via Southampton (44ft AMSL) for Customs. THE LOG SHEET, our standard company log, with which I was totally familiar. The weather columns were side by side for different airfields.

I arrived at Cherbourg and carried out a procedural ILS - no radar. Outbound I set QFE on No1 altimeter but did not cross check with the QNH set on No2 as it was very turbulent and No2 altimeter was difficult to see. Inbound I checked outer marker glide slope height against the chart - it was correct - I thought. My first realization that all was not well was when the middle marker went off at 600ft QFE. We then broke out of cloud and landed. What had I done? Only set the Southampton QFE instead of the Cherbourg and I had got the outbound outer marker height instead of the inbound and by sod's law they checked with the QFE error! I shook for several minutes after landing. I was very lucky.

*

Letting down into Beauvais from the north, I was cleared for an ILS approach to 31, to call overhead the VOR outbound. (We all know the VOR is situated on the C/L of 31, a mile short of the threshold). This was one of those clever turbo twins in which NAV 1+2 could be swapped over, the indication being a green annunciator on the extreme left of the panel.

It seemed sensible to set up the VOR inbound on No.2 and the ILS on No.1, giving plenty of time to check ident's etc., then all I had to do was to switch them over on the single switch at the overhead and continue with the ILS.

On the outbound leg the glide slope flag was up, (not unusual due to aerial screening), but it remained up as I completed

the procedure turn, inbound. Check ILS ident on No.1 again - loud and clear. Ask tower if G/S radiating - affirm. Established Localizer and fumble for GS out OCL, start descent late at marker, check ident again. Break out just above DH - OK you've guessed it. I had forgotten to switch back NAV 1 to LHS and had flown what I believed to be a Localizer only ILS, which was in fact a VOR radial.

Moral: When flying single crew, - keep it simple.

P.S. I was reminded of this occasion recently when reading an accident report in the USA where an aircraft seemed to have been closing a VOR radial in the belief that it was an ILS localizer.

..... AND OF NOT BEING SINGLE

I was flying in Command with another Captain as P2 who was slightly more senior than myself. Our attitudes and manner were substantially different and this always caused tension when we flew together particularly when I was in command. On the day in question conditions were marginal and whilst I wished to do everything possible to complete the task the P2 who had an after duty engagement was only concerned with ensuring the flight finished back at base. It was with some relief that the flight neared its end as we were radar vectored down wind for an ILS. We became visual and the P2 who was the handling pilot requested a visual join that was approved. I started the approach and landing checks but was repeatedly interrupted on the RT both by ATC and Company due to an industrial dispute having just occurred on our ramp. During the approach I was overloaded and received

little assistance from the P2 who made a fast approach. As we flared over the runway a strange noise occurred which I could not identify - but I did notice that the gear was still up and a down selection stopped the noise just as we came to the hover.

The relevant points I believe are:

1. Crew incompatibility which I find is particularly a problem with two Captains flying together.
2. The audio warning. Having never heard the undercarriage audio warning I did not respond. Either audio warnings should be heard preflight test or now on AVAD.
3. A Challenge and Response check system is far from foolproof. If the person making the challenges is interrupted and continues the checks at the wrong place the error will only be noticed by a commonsense look around the cockpit.

757 ERGONOMICS

Following the start of the second engine, the "memory" check list calls for the APU to be switched off. As I reached up for the switch there was some distraction. When I turned the switch I looked up again and I had in fact turned the Standby Power

Selector to "off". No real problem - but the error brought home to me the poor ergonomic layout of the 757 overhead panel, where the multitude of identical switches serve different systems.

FATIGUE

On landing I "deployed" the thrust reversers instead of the speedbrakes, even though I had briefed myself moments before that this aircraft had manual speedbrakes, as a reminder to deploy them.

I realised later that I was not thinking properly and hadn't been for the last several days and had got by on experience! I have subsequently had several days off and now feel back to normal.

I have been in the charter business for 11 years and have read the many CHIRP reports on fatigue but had not experienced it until now. Reading about it is one thing, recognising it is another and doing something about it is a third.

The Air Navigation Order tells us that we may not operate when fatigued but omits to define what fatigue is!

*

After being released from previous duty at 1030 local, 5th night duty running. Company telephoned at 1900 to advise of 0500 report following morning. Went to bed at 2100. At 2150 company again telephoned to advise of 0100 report. I had to get up at 2400 to be in work for 0100. Departed for rig at 0200 local.

I had difficulty concentrating on the outbound sector, as on approach where I made errors of judgement of closure speed and height. On return to base we had 45 mins. prior to planning the next trip. That trip departed at 0800, 15 sectors landing 1330. After landing from second trip I advised operations that the pilots were unfit for further flying. The company was upset as the crew still had three and a half hours duty rostered. Runs of night duties or early starts are extremely taxing and increasing work in the dark with long duty hours with high sectors is very worrying.

*

I would like to see more investigation into fatigue in the area of night flights. I am particularly concerned about the apparent disappearance of FTLB. I find that on more than one occasion I have been so tired that I have changed frequency and either forgot to check in or checked in and then not replied to air traffic's response.

*

No problems on this flight. Returning to LHR after six days in the Caribbean. Pick-up was at 1650 local in Kingston, and neither the Captain nor I slept beforehand; the E/O managed half an hour. Luckily the aircraft has a bunk behind the flight deck. During the quiet phase I lay down for two hours but did not sleep; better than nothing.

Approaching Ockham at FL80 with INS NAV selected, I noticed the VOR needle pointing way over to the left; I had forgotten to switch the VORs to Auto to update the FMS as we approached Land's End. This was easily put right. After leaving Ockham on a heading we were cleared down to 3,000ft and given vectors for 27R. I selected more and more flap and gear down, but the aircraft didn't want to descend. Ah - perhaps if I took the power off we might descend more rapidly? Again, easily rectified. Landed without incident.

Since I made only two errors on this occasion, and they were not compounded by technical, terrain or weather problems, I suppose I can chalk up another uneventful flight, but somehow I'm not convinced.

Returned home to find Feedback No.14. In view of the above, I would like to propose the acronym FLOGs for fatigue reports. It evokes, for me, an image of flogging a dead horse (i.e. pilot or overworked controller).

Speaking of dead horses, I read recently of a study which determined that long haul pilots in the USA who retire at 60 live an average of two and a years after retirement, while short haul pilots live thirteen years. I keep hearing of a similar study undertaken by the RAF IAM for the UK, the findings of which were suppressed. Are you permitted to tell me whether there has been such a study? If so, what are the findings.

*

I have found the reports interesting; particularly those relating to fatigue on night sectors. This I believe to be the single most corrosive factor in relation to flight safety.

Best wishes for the future.

A General Observation Only.

1. It seems to me that an Operations Dept. can ask a pilot to be on duty, in virtually any circumstances, in the short term, regardless of total cumulative duty hours. This is because the overall duty hours only have to be brought into line later.
2. The 28 day cumulative total is far too high - 200 hours - should be reduced to 160.
3. Not enough account is taken of night duties. A pilot who has done 2 consecutive duties will not be properly alert.

*

This Summer, I have become progressively more fatigued and I find that the time off is insufficient to "recharge" the system. Combine fatigue with inherently dangerous approaches such as Corfu at night and you have a deadly cocktail.

Also, for the first time in 24yrs of military and civilian flying, I have had to resort to the taking of sleeping pills in order to get some sleep before the next night

..... AND SCHEDULED DISCRETION

The truth is that there is NO system at present which will alert the CAA to flights which consistently exceed the max. scheduled FDP. It is plain that the XXX-ZZZ-XXX consistently, although by no means always, exceeds the max. scheduled FDP. As the aircraft very rarely has to tech. stop the 2 hours limit is seldom, if ever, breached.

Therefore, unless the Company puts its house in order which in this case it appears unwilling to, there is no way this schedule, which it must be emphasized consistently breaches the law, is going to be changed.

You may remember that we ran a snappy-title-for-fatigue-reports competition in the last FEEDBACK; we were inundated with three entries and one complaint that we shouldn't be making fun of a serious problem. We do sympathise with such a fatigue-induced sense of humour failure, but we can't help agreeing with Clive James when he writes that "common sense and a sense of humour are the same thing, moving at different speeds. A sense of humour is just common sense, dancing. Those who lack humour are without judgement and should be trusted with nothing".

We have also received a couple of inquiries about pilots dying prematurely though we appreciate that the question invokes a value judgement. There is, we are afraid, no IAM study, either suppressed or unsuppressed, but we have come across a couple of other bits of research. One was carried out by BALPA, and the other by United. We're given to understand that both of these suggest not that pilots die too soon, but rather the opposite - that retired pilots are more healthy than average - perhaps because their health has been monitored and maintained throughout their lives.

flight.

This is the first time in my career that I have put pen to paper on such a matter but, I feel that something must be done.

The odd long duty period is of little consequence. It's the combination of many such periods allied to near minimum rest periods (often involving trying to sleep during the day) that induces in insidious and deep tiredness.

I would, in conclusion, like to make the following points:

1. CAP371 is a monstrous document. The duty periods we are allowed to work are simply ridiculous when considered in conjunction with the minimum rest regulations.

2. Captain's discretion should only be used away from base to counteract exceptional circumstances e.g. ATC delays, technical delays. At the moment the use of discretion is becoming almost normal routine.

3. Taxi journeys after a flight should be included in the Flying duty period (presently that ends at chocks).

The only way that this is going to change is by REQUIRING a written report for ALL uses of discretion. A much more realistic picture would then emerge.

*

Although Captains are required to "NOTIFY" the Company if discretion is used, no written report is required under 2 hours.

Because of this, a flight which regularly goes into discretionary time due unrealistic rostering cannot be identified by the CAA because the 2 hour limit is rarely breached.

CALLSIGN CONFUSION

ATC strike Barcelona, lucky to get slot level at FL120 mod icing and turbulence and plenty EMB CB's painting on radar. Request higher from London. Callsign is MX 4785 and assuming reply received as we hear "...785 climb FL200", 20000 selected on AP MCP climb initiated as I reply "MX 4785 cleared FL200". 5 seconds later London replies "AB

785 you were blocked out, say again cleared FL200". At this time we are at FL123 climbing. Climb is stopped by FL125 and London requested to confirm our clearance. Sure enough we are to maintain FL120. We were both sure it had been for us. Next time I'll have to be doubly sure and not allow wishful thinking to influence a clearance.

In the last FEEDBACK we printed a report that highlighted the confusion that can arise when aircraft use similar call signs, and which called for co-operation between airlines to obviate such problems. BA has pointed out to us that such co-operation already exists, but also points out that "If, in flight, a callsign problem occurs such that immediate remedial action is essential, the aircraft identification can be changed, in agreement with ATC, for a specified duration until the aircraft has left the ATC sector or IFR concerned. ICAO Annex 11 allows such a temporary change providing this is agreed with ATC." The report above suggests, unfortunately, that the worst problems are likely to occur before anybody realises that a confusion exists.

THIS RUNWAY ISN'T BIG ENOUGH FOR BOTH OF US

At Aberdeen, helicopters generally commence their take off from halfway down runway 35/17, entering at Holding Points Charlie and India. I always WINCE at the instruction to, "Line up after the departing (or landing) -----". A helicopter lining up in the path of a fixed wing aircraft seems to be an accident just waiting to happen.

The practice is not new, but most recently I had just changed to tower frequency as my helicopter arrived at Holding Point Charlie, when I was instructed to "Line up after the departing 748". It was raining at the time, the visibility was not too good and my cockpit windows were misting up. As I acknowledged the ATC instruction, a 332 crossed my nose on take off. I had to think for a moment; I was to line up after a departing aircraft and one had just departed, but it was a 332 and not a 748. With a bit of window rubbing and peering, I saw a fixed wing begin its roll from the full length - yes, line up after THAT one.

Am I the only person who's heard what happened at Los Rodeos?

Consider our position:

- 1) An aircraft using the full length of the runway.*
- 2) A helicopter intending to enter the runway near the mid point.*

3) An instruction for the helicopter to line up.

4) A conditional instruction not to carry out instruction 3) immediately.

5) The helicopter crew seeing an aircraft coming down the runway.

Items 1), 2) & 3) will produce an incident while items 4) & 5) should prevent its occurrence. The example related above shows how weak items 4) & 5) are. "Oh come!" I hear someone say, "That's as likely as a 7000 ton ferry sinking because nobody closed its doors".

Recently I was cleared to line up after the landing DC8. When the aircraft came into view it was in fact a VC8, or to use its more readily understood name, a Viscount. I frequently am given a clearance of "line up after the landing" and do not see what use this is, it is only laziness on the part of the controller who is trying to be too efficient and be ahead of the game, when it can lead to confusion and misunderstanding. ATC only has to wait until the aircraft has landed and then clear the other to line up. No time is lost by waiting and one less R/T call has been made, which is one less R/T call which could be misunderstood.

COMMENT ON C172/AZTEC INCIDENT - AUGUST 87 EDITION

The pilot-in-command of the Cessna may well have been at fault in commencing take-off without clearance. The CAA may also be at fault in diluting the more effective phraseology "line-up and wait" specified by ICAO. However, in this sort of situation it should be quite obvious to ATC that the possibility of a pilot error exists and that the

potential is aggravated by the runway threshold being out-of-sight of ATC. This type of incident could probably be avoided by use of traffic information, e.g. "line-up and WAIT; traffic crossing the intersection", and in these circumstances this ought to be a requirement.

[q.v. the conditions for a "multiple line-up" situation (MATS Pt 1 page 2-6, para 11 refers)].

We get a steady trickle of reports from pilots who have been tripped up by some form of "Line up after..." instruction. It would seem clearly safer not to issue such conditional instructions, but we published (in FEEDBACK 12) the Heathrow tower supervisor's comment that "The procedure is necessary because ATC is committed to a scheduled movement rate of 71 aircraft per hour and time wasted by slow crossers is a luxury not available". You seem to feel that it is not a luxury and should be available. The use of "Line up and wait" as described above seems reasonable, but we have also published a report that described how this was confused with "Line up one eight". Runway incursions look like a problem that will grow as pressures on runway utilisation increase. Perhaps it is time for a serious review of the standard calls and procedures involved.

CAN YOU HEAR SOMETHING?

I was deadheading to the M.E. The a/c was cruising, and shortly after the Captain announced on the PA that we were passing Belgrade, I HEARD another a/c. It was quite loud but I dismissed it as an air conditioning glitch.

The following day I met the operating co-pilot in the hotel lobby. He mentioned a "near miss" near Belgrade. The other a/c passed underneath the 747 and the radio altimeter went down to 50ft.

I asked what ATC had said but the crew did not report the incident. Apparently the Captain thought - least said soonest mended.

I feel this attitude is wrong. Reporting procedures are for our protection. Glad to be alive.

*

We were cruising at F330 from EGKK through France and Spain en route to ALMERIA. Approx 15 miles before Malia VOR we heard the Spanish Controller screaming in Spanish. Neither of us spoke Spanish so we didn't take much notice. We had two passengers viewing the cockpit. I was looking out of the window when out of the haze appeared a Caravelle on the reciprocal heading at F330. I always thought that there would be sufficient time to attempt something but it was over in a flash.

The Caravelle was so clear and close I would say there was no more than one hundred feet between the wing tips. I asked the controller what the Caravelle was doing at F330 and why they didn't speak English. His reply was "there was no worry". The passenger asked if we normally fly that close - I found it hard to answer

AND FINALLY

During the final approach at four and a half nms from touchdown, the usual transmission was made :- "four and a half miles from touchdown, your height should be 1400 feet, the QFE threshold 993 mbs". This QFE was immediately queried by the pilot. I replied confirming it was correct. In fact IT WAS 9 MILLIBARS OUT. The correct setting was 1002 millibars.

After landing the pilot queried the pressure setting again, saying his altimeter was reading about plus 270 feet. It was only then that I discovered my error. I still haven't discovered WHY I made it. I wasn't tired; I was enjoying the watch; I was feeling fit; and of all things I had the correct QFE THRESHOLD WRITTEN IN CHINAGRAPH ON THE FACE OF THE RADAR SCREEN IN FRONT OF ME.

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 ADDRESS.....

 PHONE No.....

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TOTAL FLYING HOURS
HOURS ON TYPE

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)

THE AIRCRAFT
TYPE
No. OF CREW

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