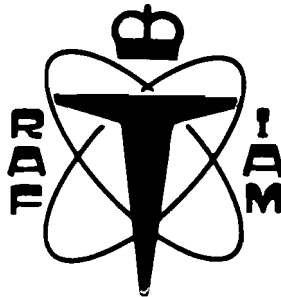


CONFIDENTIAL HUMAN FACTORS INCIDENT REPORTS

FEEDBACK №8



CHIRP reports come in from all over the place, but the great majority are submitted by commercial flight deck crews. Our sister scheme in the USA (ASRS) canvasses reports from the whole aviation community, including air traffic controllers, maintenance personnel, cabin crews and even passengers. It is a bit debatable which of these approaches is the better, but CHIRP could be criticised for seeing only part of the picture by not being easily available to controllers. There's talk at the moment of expanding CHIRP to include them - if you've got an opinion on the matter, we'd be grateful if you would let us have it.

To some extent, we already get your opinions by travelling around and meeting you personally, and one thing that always strikes us is that almost everyone has a story that would make a good CHIRP report. Even if it doesn't seem important to you, why not take the trouble to write it down and send it in. It might just be that we have one or two other reports like yours, and, taken together, they could enable us to get something done.

Since the last FEEDBACK, in which we asked you to notify us of your changes of address, the phone has hardly stopped ringing. We hope that our address list is now in better shape, but if we have still got yours wrong, do give us a buzz.

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

BACK IN DECEMBER - SAFE FLYING

AUGUST 1985

OH WHAT A BEAUTIFUL MORNING

After 10 hours of uneventful flight LAX A.T.C. first delayed our descent then requested speed not above 250kts (NORMAL 280) with the usual crossing ht. requirements on the profile descent. To achieve this descent rate speedbrake was selected. The weather was beautiful, the views spectacular & P.A. a must. Combined with the usual requirement to "look out" for Gen Aviation traffic the speedbrake was forgotten as we levelled at 7000' & not until turning finals with flap 20 degrees was it noticed.

On this occasion no harm was done but excellent visibility often equals less than excellent crew drills especially after a long duty day.

*

THE OLD ONES ARE THE BEST

Background: Ex-professional, Ex-military, Ex-Flight Safety, Ex-CFS, Ex just about everything, desk job, flying about 100 hours/annum and Extra careful 50 year old.

Business trip to the Western Isles taking wife and teenage son along for weekend. Son, reasonably proficient at straight and level, in copilot seat - wife, ex-Service officer, in back giving advice.

The Flight: Three hours airways with son (who is actually 12) doing a bit before a bumpy NDB into rainy first stop. Business slightly protracted but careful met brief followed by full flight planning. File IFR with ETA just 5 mins before published closing time of destination. Cruise along above 8/8 cover, locked to destination NDB, with their VOR & TACAN off the air. Talking to destination and cruise down to min safety level which is just above cloud tops. Son holding ADF on the nose. Wife complains of ear ache. Son told to maintain altitude and continue homing. Sympathise with wife and instruct her (again) to keep jaws moving without making a sound. Success; her ears clear and peace descends. ETA expires, take control from son and continue homing.

P2 handling cleared to FL 240 from FL 280. Manual flying high speed descent approx 3000ft/min. Lovely weather with co-pilot and captain admiring the view and P3 initiating descent drills.

Passing FL 205 P2 realised that he was below cleared FL and started to climb aircraft, captain negotiated with ATC and we were then cleared to FL 75 and informed that we were laterally clear of other aircraft. No further action.

Needless to say the crew were very shaken, hence the report. All crew members were well rested, experienced and I believe well trained. Sixty seconds of relaxation, looking out of the window, produced the above result.

The reason that I write to you is that this is my third failure to level at the correct FL in ten years and that I believe that if I do it lots of other pilots must be doing it as well.

Growing doubts about headwind component as minutes tick by with ADF needle firmly on the nose, coding correct, and controller wanting to go home. Cloud thins and breaks to reveal .. SEA! Must be a very strong headwind. Drone on westwards, more sea. Perhaps the islands have sunk. Suddenly spot that ADF is actually pointing to 180. Return from Atlantic, apologise to controllers, pay extra fees for keeping airfield open after hours and lecture son on hazards of distractions and also of making "facts" fit.

Give "distractions" a cuddle and drive to hotel THINKING.

A DAZZLING IDEA

LOSS OF "NIGHT VISION". 1. Have any other pilots reported being dazzled by strobe lights switched on before takeoff? (Usually in holding areas). 2. May I suggest that consideration be given to connecting the lights to undercarriage switches so they illuminate just after rotation? Dazzle effect would then be minimal.

MORE FINGER TROUBLE

The 3 reports in "Feedback No.7" concerning incidents of selecting the wrong switch reminded me of an incident which happened to me some years ago. I was a co-pilot on BAC 1-11 aircraft having converted from another type some 3 months previously. We were descending into XXX airport for an ILS approach, lots of RT chat & other distractions - changes of frequency etc.. About 40 miles from touchdown whilst descending through cloud the "ICE" warning light came on. I selected the engine & airframe anticicing on and cancelled the warning then returned to tuning the ILS etc.. About 2 mins. later in comes the Chief Steward to report "cabin secured for landing". Fine, except that I don't remember switching on the cabin notices! What I had done of course was select the cabin notice switches on instead of the identical & adjacent engine anticice switches, an error which could have been serious had the engines started to ice up. I should of course have checked the anticice pressure gauges but at a time of high workload neither I nor the Captain noticed the error.

Why do aircraft manufacturers install so many identical switches so close together? Probably because they look neat & tidy that way. The error was mine but the cause could have been avoided by making

Our contacts at British Aerospace always give detailed and considered attention to the CHIRP reports that we send them. They are concerned to get the design right, and they appreciate that their aircraft will be operated by tired pilots in poor conditions, but they do point out that it's a matter of good airmanship to check that the control you operate has the desired effect. However, there's an altogether more robust way of looking at these ergonomic problems as the following extract from a letter which we received from an operator makes clear.

Whilst considering that an anonymous forum such as yours can fulfil a useful safety function, in my opinion many reports in recent issues have degenerated to mere whingeing. Aircrew should be expected to be reasonably intelligent alert human beings who are able to assimilate that they are liable to normal human error. Consequently, they should be prepared to accept these errors are their own responsibility and not palm everything off on some aircraft designer or management who expect a fair

switches with different functions look and FEEL different especially if they are close together.



Captain flying. On landing roll I noticed no.2 H.P. cock in start position - not in open position, as I retracted flaps. I had started the engines. Neither I nor the Captain had any knowledge of this up to this point.

On reflection I had pointed out to the Captain on take off an unusual amount of throttle stagger with no.2 further back. No.2 engine burned about 200kg more than no.1 during the flight (Not unusual). No other effects were apparent. The H.P. cock had almost certainly been in this position all flight. This flight was the seventh consecutive early morning departure I had done (starting between 6am & 8am local). I started the day feeling tired and with noticeably less clarity of thought than usual although I had been to bed at 9-0pm the previous night.

I do not feel inclined to complain to my company about fatigue but in general I feel that we are pushed too hard during the summer.

day's work for a fairly generous salary. A crew member who by his own admission is previously aware that the switch positions are reversed on two similar aircraft is surely capable of considering mis-selection as soon as a problem appears.

The company by whom I am employed operate British and American aircraft where all the switches operate in the reverse sense. The same crews (including myself) operate these aircraft without apparent difficulty.



WHAT'S THAT NOISE?.....

WHERE'S MY S

VERY EXPERIENCED 737
CAPTAIN-MORE THAN 2500 HOURS ON
TYPE

Climbing out, very black night - in cloud. Erratic EPR due occasional icing. Passing 23000, we overheard an a/c transmitting blind an all stations call on 116.1 and 121.5 that he was climbing from FL330 to FL370, on Route Tango 116 (XXXX to YYYY), ETA position LLLL 0029z. I called the a/c on VHF and his current position was 090 degrees AAAA 170 DME. Our position was 113 degrees AAAA 85 DME, and we were intending to cruise FL 330. Thus a potentially dangerous traffic confliction had occurred, because AAAA ATC Service had failed to advise us of known conflicting traffic. If we had departed a few minutes earlier the other a/c and ourselves would have crossed tracks at 90 degrees to each other at same altitude IMC.

Soon after this incident the cabin altitude warning beep sounded, and initially both the F/O (handling) and I looked at each other and exclaimed "What the hell's that?". My initial reaction was that a pitot heat failure had occurred and that we had an iced up pitot system causing an overspeed false warning. As we were around FL 323 climbing for FL 330, I told the F/O to fly attitude and I started to look around at C/B panel to pull the MACH overspeed C/B. The F/O (correctly) said "No, that's not an overspeed". I do not know why I associated the altitude (cabin) warning with pitot failure because one is a distinct clacker, the other a Beep Beep. In the 737 the cabin altitude warning is the same as the take off warning (flap, out of trim etc.).

About 15 seconds after the Beeping began, I looked at the cabin altitude reading and it was showing 13000 ft. I called "Pressurisation problem, OXY masks on, close the outflow valve" which is basically the Boeing drill. Whilst donning my OXY mask I knocked my "look-over" glasses off, and they fell to the cockpit floor somewhere. My second pair of glasses were in the cabin (useless place, I agree). The instrument panel readings were difficult to see in the dim cockpit light and I had no hope of focussing on the cockpit upper panel on the F/O side, where the pressurisation panel is fitted. I announced emergency descent to the F/O, but I realised he was experiencing Oxy mask/intercom problem and couldn't hear me. We had both forgotten to turn up

full volume on the overhead speakers. That lost us 30 seconds of time. All I wanted to do was get the aircraft down to 14000 quickly and sort the problem out at a lower Level than 330... I tried to do too much, too rushed, leaving the F/O to investigate the pressurisation problem. I sent out an all station call on VHF 116.1 and 121.5. Later, we ascertained that the ATC Operator really had no idea of what I had transmitted and he had never heard of an emergency descent.... I called "Emergency descent from 33000 to 14000 - Position 113 degrees AAAA 120 DME". No reply from anyone. I then made a PA calling for hostesses to return to seats, standby for OXY Mask Drop - will advise - and added that we were descending to a lower altitude due pressurisation fault. In retrospect it was a poorly constructed PA. In any case no OXY masks fell out because the cabin never reached 14000 cabin pressure! I was still plummeting the 737 down with idle thrust and full speed brake, absolutely complete IMC in cloud and as black as I've ever known.

Passing around 26000 I was aware of a tremendous pressure build up in my ears - it was quite distracting. I had difficulty clearing my ears with nose blowing because I couldn't squeeze through the hard ridge of the mask. I had no idea what the F/O was doing in his switch flicking as I was totally concentrating on instrument flying with the radar now showing some heavy clouds close below (into which I began to worry we might penetrate). I told the F/O to take control of the descent whilst I located my glasses. A few seconds later I found them at the base of the control column and donned them forthwith. I then assumed control. The ear pressure was now severe and I looked up and over at the pressurisation panel, and was puzzled to see the cabin altitude now reading 3000 feet. We had obviously overcome the cabin loss of pressure, and had gone the other way!! From 13000 cabin pressure to 3000 pressure in about one and a half minutes. No small wonder our ears were hurting. I was particularly concerned about my poor passengers including one 80 year old lady.

I levelled off at 24000 feet, double checked that the F/O had gone to "Manual" control of the outflow valve and all was relatively well. I called the senior hostess to the flight deck, explained the event, and she confirmed that apart from the ear distress all was OK down the back.

As we had a few hours of overwater night flight ahead with no alternates in between, I decided to return to our departure point AAAA to sort out the pressurisation fault on the ground.

We landed about 20 minutes later at 0130 local. Prior to the landing I made a further PA to the passengers apologising for the inconvenience they had experienced.

The cause of the pressurisation fault is not known at the moment although the crew on the previous route sector reported cabin pressure fluctuations in the "Auto" pressurisation mode. They completed that sector in "Standby". Technical staff changed the pressurisation controller during the 3 hour turn around, it appears the "New" cabin pressure controller was also faulty.

I write this report in some detail because there were obvious lessons for me. Firstly, the Boeing Ops 737 Manual states "don't rush" when discussing pressurisation failure. Although I had practised "Rapid Depressurisation" followed by "Emerg. Descent" in the simulator (1 year ago), and had been asked questions during route checks, I was completely taken by surprise by the beeper. The accent in simulator checks is on rapid decision making and never addresses the situation where you are given the opportunity to sit back, OXY masks on, and simply evaluate the problem systematically. The scenario is always an urgent problem, rapid pressure loss, get it going downhill as quickly as possible. I certainly rushed into the descent, even though I feel the F/O would have accepted staying at 330. I realise now that under black night total IMC the Captain must take over handling, as he simply cannot operate and evaluate the pressurisation control switches. He cannot see the outflow valve needles and simply cannot monitor the F/O flying AND investigate the problem. This would lead to no one monitoring the IMC Descent. In this situation the Captain is almost totally dependent on the F/O to toggle various pressurisation switches, and the F/O must

also evaluate cabin pressure needle movement. In our incident, the F/O closed the outflow valve fully when, in fact, he could have tried "Standby" initially - to see if the cabin pressure could be controlled. Admittedly the "Rapid Depressurisation" drill by Boeing does say "Outflow Valve Switch - Close", but, in this case, - fully toggling the switch to close caused immediate pressure restoration of around 10000 feet per minute. This added measurably to my problem. I had never experienced such ear pressure changes before and as I was fully concentrating on instrument steep descent, it was being classically wise in retrospect to say that I should have monitored the F/O action more closely. Again, I believe simulator practices should be realistic, in that the F/O should be given responsibility of pressure controller operation, despite the fact it may be the Captain under test. I believe, too, that simulators should be used for instruction and practice during periodical renewals - not, as is often the case, the simulator is an instrument of test and licence renewal minimum exercises.

I considered myself a pretty hot pilot - having the ability to consistently do smooth landings at correct touchdown areas etc., and I am an avid reader of accident reports and good "gen" articles (such as Feedback!!) - and I enjoy reading my 737 Ops Manual cover to cover once every 3 weeks or so - BUT the above incident really shook my confidence in my ability to evaluate the unexpected quickly and efficiently. In other words I'm not as good as I fondly hoped I was ... Back to the books

Incidentally - the 80 year old lady was quite unperturbed by events. After we returned to AAAA - she asked the hostess "Are we in BBBB already?". After all - it was still night outside.

Final lesson learnt - I now keep my second pair of glasses in the cockpit, within instant reach.



Reads like Hoffnung, doesn't it? Wrong identification of an audio warning, poor cockpit communication, dropped glasses, ear pain....we couldn't help wondering how much of this could have been imagined by the investigators if our reporter hadn't got away with it. We also thought that the point about simulator training was a good one. Most airlines now appreciate that you can do more with the simulator than just go through the emergencies..does yours?

THE SLEEP SPOT

You can see from the table on page 7 that we still receive plenty of reports about fatigue - we could literally fill each FEEDBACK with them. Once again, however, we have limited ourselves to just this page.

I read your Helicopter reports about people snoozing with interest. It was my habit, and also many other rig pilots at that time to take a quiet cat-nap during low activity periods. On this occasion we had just done our rig crew change, refuelled, and were inbound to an en route stop before the final sector to base.

We were at 500 ft "below", drizzle, squalls etc. - normal weather! The Co-Pilot and myself alternated flying and had finished the excellent meal supplied by the rig. I made sure the Co-Pilot knew he was in control and had my 10 min cat-nap. When I awoke the Co was fast asleep! Mercifully the aircraft was at 400 ft on course, Automatic Flight Control System engaged (but no height hold). Over the years I have heard a number of similar hair raising stories. It amazes me, that no one has flown into the sea yet. (To be both asleep unintentionally is even worse and not unknown.)

This particular Co-Pilot was one of a number who had consistently been doing 80-90 hours a month. Anyone doing this amount of Helicopter flying continuously becomes entirely automatic in action and only half with us.

I think mainly due to consistent high vibration and noise, the fatigue factor in flying Helicopters, especially on longer trips (excess 5 hours) would appear to be much greater than comparative modern fixed wing/jet aircraft, and apparently is not appreciated by a large number of people in the Aviation field.

Though I have no axe to grind here as

Naturally, not everyone thinks there is a problem!

I am a Senior Captain / Base Training Captain on the 747. I retire soon.

This coincides with your sending me one of your reports FEEDBACK NO 7 FINALLY CORRECTLY ADDRESSED. I have previously seen one or two which arrived by roundabout routes but on the Long Haul scene we do not sit around airports or crew rooms so correct addressing is important. I have spent my whole career flying, RAF and UK civil much of it in an

I no longer do this form of Aviation, I feel the Helicopter maximum and accumulated permitted hours should be reviewed in kind (ie specially for Helicopters) and new legislation should be introduced to reduce the maximum to a realistic 60-70 hours a month. (60 Accumulative - 70 monthly maximum).



I read Feedback with interest each issue. I just wish to make a comment on CAP 371. During the past 16 years I have flown mainly long single sectors. During that time I have :-

1) Flown on an aircraft over the Atlantic where I was the ONLY person awake on the entire aircraft and I was only the navigator.

2) Fallen asleep on finals.

3) Frequently felt so tired that I really ceased to care about the operation of the aircraft.

Fortunately I am now a captain and can regulate the fatigue more easily. To this end I insist that any crew member having difficulty staying awake has a sleep of 20 minutes duration and preferably an hour. I know no other way of safely operating some sectors unless a heavy crew is carried. This is acceptable on 3 crew aircraft but on 2 crew long range operations or all night multiple sector operations there must be times when it is definitely dangerous. As for the limitations on single pilot operation - they are ridiculous and should be reduced considerably.

instructor capacity and appreciate your good intentions. I have found it difficult though to quite frankly believe some of the incidents in past issues. I obviously have always existed in a totally differently regulated environment.

I enjoy my work, my flying and my job. I have never had a sleep problem, and look forward eagerly to a few more years. Any help in Safety though is good, keep it up.

OUR MISTAKE

"It's not me ..." C/U ON AFD BY 757 P1 (FEEDBACK NO.7)

757 crews will have noted that the switched off R/T switch should have been the A/T switch (auto-throttle). Non video arcade drivers would find nowt wrong with turning off radios in the middle of a go-

Our 757/767 readers will guess that the above letter is not the only one which we received pointing out the error in the previous FEEDBACK. Our mistake, but it's nice to know that so many of you spotted it. By the way, Mr Boeing does get FEEDBACK. Hope he spotted the mistake.

around - it does after all, cut down the chatter the procedure incurs! But the scene of a disengaged auto-throttle during what was supposed to be a fully automatic overshoot will at least cause a chuckle amongst those flying more conventional aeroplanes!

P.S. Hope that Boeing receive your excellent newsletter.

AND FINALLY

From time to time we receive reports that are particularly disturbing, but about which we can do little without prejudicing confidentiality. Since the last FEEDBACK we have had a handful of such reports, which indicate two potential problem areas. The first one concerns the occupation, by unqualified persons, of the P1's or P2's seat during critical phases of flight, such as take-off or landing.

The second problem concerns foreign airlines (often with Brits among their flight crews) operating in a dangerous and unacceptable fashion in UK airspace.

If any of you have experienced any such difficulties we would be pleased to hear about it them. Should it prove that the examples we have already received are not isolated, we may be able to get some action. All reports received will, as ever, be treated in utmost confidence.

WHAT COMES IN

The number of reports we receive between FEEDBACK issues appears to have settled down to around the 50 mark. Most of these seem to be triggered off by the bulletin itself coming through the letter box. All reports are welcome.

TOTAL NUMBER OF REPORTS SINCE LAST FEEDBACK 48

REPORTERS: TYPES:

CAPTAINS	32	WIDE BODIED	11 (747,A310,757,767,L1011)
FIRST OFFERS	13	TWIN/TRI JET	14 (737,727,TRIDENT,BAC 1-11)
F. ENGINEERS	2	TWIN PISTON/TURB	9 (BE 90,330)
NOT KNOWN	1	HELIOS	8 (S61,A365,PUMA)
		4 JET	4 (707,DC8)
		LIGHT	2 (CESSNA)

BROAD AREAS OF CONTENTS:

FATIGUE/FLIGHT TIME LIMITATIONS/COMMERCIAL PRESSURES.	14
OWN ERRORS	11
ERGONOMIC PROBLEMS	6
ATC RELATED	5
CREW CO ORD	4
MISC	8

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	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