



Confidential Human Factors Incident Reporting Programme

FEEDBACK

NOVEMBER 1991

NUMBER 25

For some time now, we have been trying to put CHIRP on a firmer financial and administrative footing. These efforts should be finalised within the year. We are also planning to recast our database of incident reports to make them more useful in human factors research. The most noticeable change, however, will be our new arrangements for distributing Feedback. From next year, you will receive Feedback and Flight Safety Focus in the same envelope. The reasons for doing this are obvious, and the only connections between CHIRP and the Flight Safety Committee are a very similar readership and a mutual need to minimize costs. We intend to produce three issues of Feedback a year, on a more regular basis than in recent years. So watch out for your first bumper pack of incident reports and flight safety articles. If it does not materialize by April, then write to us. We will do our best, but, to be realistic, we should expect a few mistakes when we amalgamate address lists. The list of addresses is derived from the CAA list of current licence holders as either professional pilots or air traffic controllers but we would like your help in notifying CHIRP when you change your private postal address. Please do not use "care of" addresses, such as flying schools, because it makes subsequent distribution difficult.

* * * *

NO CHANCE.....

Surely someone can identify the problem areas and come up with a system of giving "arrival" slots instead of departure slots. I have too often seen aircraft travelling at breakneck speeds along busy piers and taxiways in order to get airborne within a slot - whatever happened to safe taxi speeds, pre-departure checks, overheating tyres and brakes, etc, etc?? Equally, in a world where oil is running out and we are supposed to be environmentally friendly, I have often seen aircraft at the holding point for ten-plus minutes pumping all sorts of horrible things from engines burning ineffi-

ciently and disturbing the neighbours.

I always understood that pilots were perfectly capable of either piling on the power to make up lost time, or cruising gently in order to lose time. Why not give pilots a time to arrive, and save the problems caused by departure slots. If the pilot wants to get airborne early and relax in a slow cruise, let him!

CHIRP has it on good authority that EATs may soon be available more often at London's airports, which will help some frayed nerves.

I'M ALL RIGHT JACK

It was the evening of a Saturday. A pilot of a private aircraft at a N. England aerodrome did not like the slot time we had given him. He took off on a re-filed plan to leave the airways before the fix notified for flow control. He therefore flew through 2 LATCC sectors as an "extra" to the flow rate. I had a short discussion with the pilot about flow control, and I quote, "When I got to the aerodrome THE PASSENGER was jumping up and down with impatience and I had to take-off or lose my job."

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HOW CLOSE IS "CLOSE"?

L101 took off 1450Z, BA11 lined up behind departing L101, inbound B737 at 7 miles, which allowed me to plan a further departure - another BA11. I instructed the second BA11 to line up after departing 1-11. However when the lined up BA11 was given take-off clearance he advised he would like to wait a further 60 seconds for wake vortex separation. Because of this the second BA11 was told to hold, and the B737 eventually got landing clearance at half a mile - approx 400 QNH (200ft QFE) when the departing BA11 was airborne at 1453Z. (By this time the L101 was over 12 miles away!)

ATC Manual Part 1 (ref 1-21) allows 2 minutes minimum time separation at time a/c are airborne if a/c are departing from the same point irrespective of wake vortex category of preceding a/c.

This is not the first time by any means that this situation has arisen, and whilst I do not dispute any pilot's right to ask for greater separation from wake vortex it can play havoc with runway utilisation. Had the inbound B737 been closer would the BA11 pilot have refused to take off (therefore necessitating a go-around) or rolled before he was happy with the wake-vortex separation? Is this an area where pilots feel the minimum separation allowed is not great enough?

I would be interested in hearing comments

from pilots. On occasions there seems to be a discrepancy between how ATC calculate these time separations and how pilots do. ATC work on 2 minutes separation when the 2nd a/c lifts off. This therefore means by necessity clearing the 2nd a/c for take-off only 75-90 seconds after No1 has rotated. I believe stop watches are started in the cockpit when No1 rotates, but the take-off roll won't start until 2 minutes are up. Am I right?

This is no great incident - but it seems to be an area of difference between ATC + pilots.

The required spacing between the types L101 and BA11 is three minutes on the approach, and two minutes on take off. A CAA analysis of wake vortex incidents (CAA Paper 91015) showed that the BA11 is one of the more sensitive types. The CAA paper suggested that further research was required on the factors affecting recently introduced aircraft types so that safe separation standards could be maintained, and recommended that monitoring through incident reporting should be continued and given the appropriate publicity.

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RULES ARE FOR.....

The first day of ATCO Limitation of hours. Four validated ATCOs are required to fill all positions but one ATCO is off sick and this fact has not been communicated by Management to the Operational Staff. All three management staff are away from the Unit, (2 on courses, one on A/L) leaving one "TEMP" typist in the office. The sick ATCO will be away from duty for the rest of the cycle. In my position as Senior ATCO on duty I am responsible (but with no authority for approving overtime or days in lieu) for attempting to find staff to cover the Contractual duties. No spare time is available to allow me to carry out these duties away from the boards. I have a 'phone number for the Manager Engineering (the deputy to the Manager ATS). Whilst attempting to carry out the above responsibilities from my position as the

ADC ATCO I came very close to clearing a second aircraft to land when I had already cleared the preceding a/c to land. The secondary duties had distracted me from my primary responsibilities but fortunately half way through the "Clear to land" transmission I was able to correct myself to a "Continue No.2". The following a/c landed 2 minutes behind the preceding a/c.

From the enclosed report you will note that ATCOs at "OTHER UNITS" are expected to fill secondary duties which ATCOs at "MAIN UNITS" would fill in allocated periods for admin. rather than whilst "on the boards". Actual traffic handled should not be the only fact covered when considering how stressful an ATCOs job may be.

Stress can come from many directions and it is most noticeable that the extra stress is normally placed upon the older, more senior ATCO.

From the report you will note that for cost reasons some units do not have dedicated Supervisors or Watch Managers - these responsibilities are placed on the shoulders of the Senior ATCO on duty.

* * *

DOES THE LEFT KNOW WHAT THE RIGHT IS DOING?

B737-400 - ABOUT MIDNIGHT - LANDING RUNWAY 17 - APPROACHING ON HEADING 030, weather good, except previous aircraft reported 2,000 feet W/V as 270/25kt. Runway W/V 250/3kt.

From experience, I planned on definite tailwind of 15kt around 800 feet, shearing to calm. I was PF. Young Ethnic F/O continually chatting to passengers on PA at inappropriate times, despite my gentle hints re priorities (as a non-national I am aware of political implications if I remonstrate too obviously with F/Os). At 19,000 feet on descent toward the airfield, ATC said track to en route VOR.

F/O selected the VOR in FMS. I selected the VOR on VHF NAV RAW DATA. No VOR indications! Told F/O to ask ATC if

VOR u/s, and F/O confirmed with me that no NOTAM applicable. ATC got another inbound aircraft to check the VOR, who said VOR working OK. F/O advised me that this VOR sometimes unreliable at this altitude (now 9,000 feet, 20 miles from VOR). I said this is news to me, as I find it always OK. Other aircraft then said that this VOR now on a new frequency!! No wonder I couldn't receive it!! F/O had NOT checked NOTAM, I took his word for it.

I requested track miles to run, as we were abeam airport by 7 miles by now, speed reducing.... my estimate about 22 to touch down. We were heading 030 degrees. ATC said 27 track miles to go in English, then talked in local language, F/O replied in the same language, total chat time 10-15 seconds, sounded jocular, and I ASSUMED talkative F/O was making friendly chit-chat to controller. Then in English, ATC controller said turn right to 150 degrees, this will give you 6 mile final intercept. I immediately queried F/O, who had accepted from ATC using the local language, a considerably shortened approach without asking me first. I was annoyed, but took immediate action to dirty up, but as the turn to intercept put me on an oblique right base, with the outer locator needle position on the nose and therefore no help as to intercept judgment, it was difficult to immediately assess profile. Noted 25kt T/W on heading toward intercept - now 6 miles from runway - and then spotted runway visually by peering though F/O side window. Obviously visually high, requiring full flap glide - and could see myself being sucked into very low final stabilisation altitude. Decided to go around immediately, and simultaneously ATC said, if you are too high, clear to orbit left - and resume approach your discretion. I orbited left 360 degrees, (gear/flap down) and made sure that next profile was properly stabilised.

Afterwards I asked the F/O what was the gist of the conversation which he had conducted with ATC. He said that ATC had given us the option of normal radar vector to 8-10 mile final - or turn right immediately to short final (6 miles in our aircraft). He accepted short final without

reference to me - and obviously without any comprehension of the revised configuration/profile needed.

* * *

AN UNUSUAL ATTITUDE?

My argument for unusual attitude recovery proficiency, is based upon the early recognition from instruments that you are, in fact, in an unusual attitude. Thus if you can barrel roll a simulator on instruments - you can be taught how to interpret those instruments for correct recovery. Granted that the control forces may not exactly represent the real thing - but the flight instruments will. In fact one can stop simulator motion - and merely practice the ADI/HSI interpretation - because by appropriate switch selection the instruments can be made to operate, with the motion stopped. I have seen the erosion of airmanship and pure handling skills in glass cockpit pilots at first hand. At least one European Aviation Authority even permits instrument rating tests and renewals to be executed with full time use of the autopilot. Most of the F/Os I crew with have never hand flown the aircraft above 5000 feet so you can see why I doubt their ability to successfully recover from an emergency involving a severe roll/pitch attitude.

I know that in simulator sessions some kindly instructors will allow 5 minutes of "fun" - barrel rolls, split-arse circuits etc. In fact, the barrel rolls are unusual attitudes, and paradoxically, there may be a lot of real value in terms of basic roll interpretation of the ADI sky pointer presentation. It is precisely this sort of basic instrument practice I would like to see taught during initial conversion to type (B767, 757, 737 etc.) - especially for first time jet pilots. The additional cost of training - zero

I believe a lot of incidents involving unusual attitudes go unreported - exactly as many other hairy incidents are kept in-house. I have a friend who was recently an Inspector on B737-300 aircraft. His example shows how a simple malfunctioning autothrottle can lead to a sudden roll problem:

"Levelling after climbing to about 20 grand only one throttle retarded in response to the autothrottle command. Of course at that height there is plenty of surplus power so the throttle moved right back to idle in an attempt to hold the speed. The autopilot could not hold the attitude and we were about 30 degrees of bank before the crew grabbed it."

I heard of one other similar case and fortunately both times were day VMC - night and a busy crew things could have developed. And just for a simple failure.

Two of you think that it might be useful to look at instrument presentations at unusual attitudes, and to practise the recovery procedures in the simulator. Any more comments on this?

* * *

TO ERR IS HUMAN...

A nice day - no weather problems and a fully serviceable a/c. At Rotate on the previous sector I noticed an amber leading edge flap warning light flash on for a second. This is normally caused by a slightly misaligned proximity switch.

On the next take-off, with the F/O flying, I watched the flap warning light carefully for a recurrence of the fault. After rotate the F/O called for "gear up" and I reached straight for the Flap Lever. The F/O called out, I realised what I was doing and slipped the Flap Lever back into the detent.

I thanked the F/O and my lucky stars and vowed never again to allow minor fault diagnosis to distract me from the task in hand.

* * *

REF CAP371 LIMITS

With the very demanding quest for profit, profit, profit, many operators are now scheduling rosters right up to 371 limits. Then they expect Capts + Crew to extend into "Capt's discretion" to achieve the task. Flt Crew extend for fear of action against

them should they not extend. Many have no protection against the Operators. Many Flt Crew that I have spoken to admit the long days and nights are DANGEROUS and "Only a fool would attempt a manual landing", always opting for an autoland.

AN ACCIDENT WILL HAPPEN unless we lower the 371 limits - that is assured.

I am lucky, I am not rostered yet up to the limits, but many of my friends are. I speak boldly for them.

* * *

SAY AGAIN ALL.....

Please can you update us on the plans for SATNAV & SATCOM on the Atlantic routes. We now have the ludicrous situation where the "drivers" are on HF trying to decipher the crackle & hiss and negotiate FL410 whilst the punters are talking on the phone in the back to their granny or mistress as though she were in the next room! It is sometimes worth a try I feel, going back and getting on the phone to the HF controller and asking for a climb instead of using the HF!

According to the CAA, satellite communications should be available for ATC in the North Atlantic and Pacific Oceanic Areas from 1996/7.

* * *

SAY AGAIN, AGAIN

I don't know if it's old age creeping up on me and my imagination is playing tricks on me, or if, as I prefer to believe, that ATC instructions have become more complex over the last few years. Speaking to other pilots on the subject, they support my view.

What do I mean? Messages containing three or four different elements are not easy to assimilate, and constitute a flight safety hazard. Let me give a few examples. "C/S, on Radar Heading __, clear to Flight Level __, expedite through Flight Level __, and call London Control on _"; or "C/S, on Radar

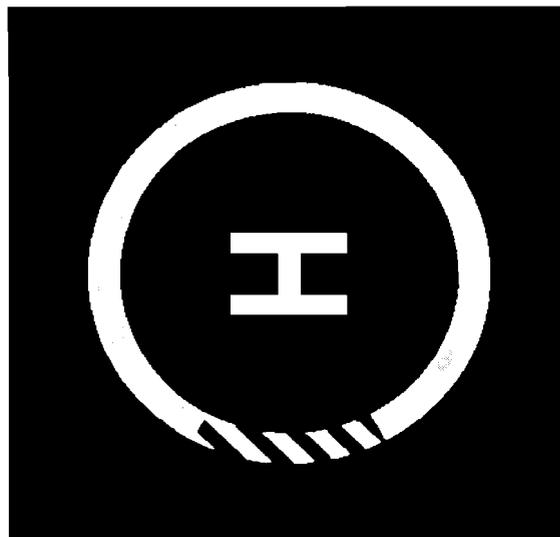
Heading __, clear to Flight Level __, to be level 10 miles N(S) of Brecon, once steady on Radar Heading, clear to Flight Level __, to be level at Wrexham and to cross Monty FL180 or above". Numerous other examples could be cited, and they would all highlight the same fault, namely, that, especially in a 2-crew concept, one or more elements of the message could be lost or corrupt, giving sod's law an opportunity to cause an airmiss, an altitude bust, or, God forbid, worse.

So, why can't we keep it simple and reverse this trend to these complicated messages which may give controllers the "TCIC" insurance, but is far removed from flight safety principles.

* * *

NORTH SEA HELIDECK QUIZ

CHIRP has received reports on helideck approach problems. The IAM is also involved in a possible revision of the guidelines for helideck markings. Some interesting ideas on what the current markings mean have turned up in the course of this work, so we thought we would give you an opportunity to test your own knowledge.



Q1. What does the red hatched area on a helideck circle mean?

- A. Don't land with your tail in this sector.*
- B. Don't land with your nose in this sector.*
- C. Don't land with your nose or tail in this sector.*
- D. Don't know.*

Q2. What information or instruction is embodied in the 'H'?

- A. Helicopters only.*
- B. The cross bar bisects the safe approach sector.*
- C. Line up with the verticals for landing.*

Answers at the bottom of the page

75% SAID; "DON'T KNOW"

After 30 mins delay due ATC separation requirements, we arrive at holding point at 1422(Z) for a slot of 1423-1425(Z) airborne. All checks complete and we are cleared to line-up.

As we taxi into position "Status" is displayed on primary EICAS so I inform Captain and select the Status page on the lower EICAS. Normally we have no Status messages on despatch but we know there will be one there which is deferred in the tech log. In addition we have the message

" Misc Equip Card". The Captain looks and says we will go and sort it in the air as it is "minor". (We are cleared to take off during these actions). As I have had this problem three times before, I remind the Captain that it is a No Despatch item, and he says that he can't say either way but that it would be a surprise if it were so. He asks to check the MEL - it is.

Thereafter, with a quick call to engineering, we are able to clear the status message and dispatch.

In discussion later we all agree that a No Despatch item, such as the Miscellaneous Equipment Card which has very many Air Conditioning and Pressurisation Control Functions, should either be better named e.g. Essential Equip Card (Ess Equip Card) or that we should be presented with a star or asterisk against these messages (e.g. on our Advisory Messages, the messages are split into two groups:-

1. Caretted Messages i.e. those with > before them which indicate that there is no associated check list for this item.

2. Non-caretted - which means that there is.)

Whilst there was no incident here, I was the only person of the four on the flight deck who had seen the message before. On, what is generally, a very well designed man-system interface, this must be a glaring hole in the safety concept. I believe that there are so many messages able to be displayed to the pilot (5000 plus) that they must mean something to us when they are displayed.

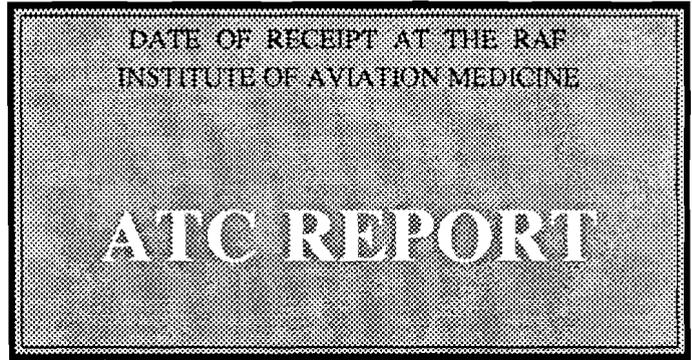
THE "CHIRP TEAM" WISH YOU ALL A VERY MERRY CHRISTMAS AND A NEW YEAR FREE FROM HUMAN ERROR.

Helideck Answers: The answer appears to be 'B' in both cases. But beware, the guidelines are not easily interpreted and some helidecks may have been painted using a slightly different interpretation.

GUARANTEE NO RECORD OF YOUR NAME AND ADDRESS WILL BE KEPT

NAME _____
 ADDRESS _____

 PHONE No _____



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 INCIDENT	
HOW LONG AN ATCO	DATE	ATC SERVICE(S) BEING PROVIDED
HOW LONG AT PRESENT UNIT	TIME	IN WHAT TYPE(S) OF AIRSPACE
ON DUTY AS	LOCATION & NEAREST REPORTING POINT	USING WHAT TYPE(S) OF RADAR
HOW LONG VAL DATED ON THIS POSITION	TYPE(S) OF AIRCRAFT INVOLVED	WEATHER
	AIRCRAFT IFR OR VFR	

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

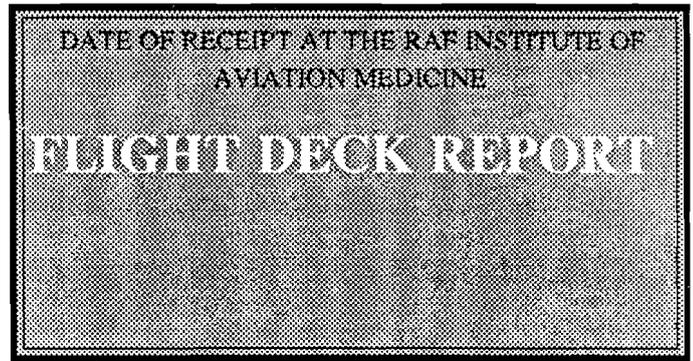
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YOURSELF	THE FLIGHT	THE INCIDENT
CREW POSITION	DATE	TIME (PLEASE STATE LOCAL/GMT)
TOTAL FLYING HOURS	FROM:-	DAY/NIGHT
HOURS ON TYPE	TO:-	LOCATION
THE AIRCRAFT	IFR/VFR	PHASE OF FLIGHT
TYPE	TYPE OF OPERATION	WEATHER (IMC/VMC)
No OF CREW		

Please use this space to write your account, using extra paper if you need to

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