Confidential Human Factors Incident Reporting Programme

FEEDBACK

Issue No: 43 **July 1997**

Editorial

In the period since the last issue of FEEDBACK around 8,000 Licensed Engineers and Approved Maintenance Organisations have received letters notifying them of the expansion of the UK Confidential Reporting Programme to include maintenance and engineering, with copies of report forms enclosed. One of the questions that I have been asked most frequently by engineers is "Why include engineering now?"

In the last seven years, three UK registered aircraft have been involved in a serious incident/accident in which a maintenance error was one of the principal causal factors. The incidents were BAC 1-11 Windscreen Loss, B-737 Loss of Oil and A-320 Loss of Roll Spoiler. All of these incidents occurred in organisations with established quality systems and were associated with individuals working under the sort of time pressures that are commonplace in the air transport industry. In each case a major accident was avoided by the skill and judgement shown by the flight crews concerned.

It is important for each of us to remember that the ramp/hangar can be a lonely place between 2 and 5am in the morning, when the pressure to prepare aircraft for early slots is at its highest and often the availability of technical support is minimal. All of the above incidents were not solely errors by an individual, they were the failures of the system to support the individual with adequate processes and procedures.

We all know that there are weaknesses in our respective systems. In normal circumstances we often compromise successfully to get the job done and managements acquiesce to these examples of initiative. It is, unfortunately, a different situation when one or more compromises act in combination with other factors and result in an accident. The challenge for those employed at the "sharp end" - engineers, air traffic controllers and flight crews - is to identify these potential "gotchas" and report them by the most appropriate means. The challenge for managers is to review the issues that are identified in an open and just process and implement the changes that are necessary to facilitate completion of a task in a correct and timely manner.

One thing is certain, we will all continue to make mistakes - flight crews, air traffic controllers, engineers and managers alike. Consequently, we must seek to ensure that our safety processes are sufficiently robust to prevent a single error/omission from going undetected, and to make our colleagues aware of our mistakes so that they might avoid making the same error. The contribution that CHIRP can and will make is to seek the resolution of safety related issues raised by you and to raise the awareness of your colleagues to potential problems.

With specific reference to maintenance/engineering issues, I am pleased to confirm that David Johnson, a senior engineer with a wide experience of airline and third party maintenance/engineering organisations, has now joined the CHIRP team.

E-Mail

Following a number of enquiries regarding the transmission of FEEDBACK by e-mail, we are now able to send FEEDBACK to you as a Microsoft Word document by e-mail as an alternative to the postal service. If you wish to take advantage of this service, please send your full e-mail address to: KirstyB@chirp.co.uk together with your present postal address.

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CHANGE OF ADDRESS?

PLEASE NOTIFY US BY:

- **POST:** FREEPOST, RAF SAM, Farnborough, Hants GU14 6SZ

or **FAX:** 01252 543860

or **E-MAIL:** KirstyB@chirp.co.uk

A Reminder on the Magazine Format:

The following fonts are used:

- Disidentified reports. These are reproduced with minimum text changes
- *CHIRP Comments are italicised*
- Verbatim Third Party responses are printed in SWISS type

FEEDBACK - COMMENTS

FB42 - ATCO Familiarisation

The report titled ATCO Familiarisation which was published in the last issue of FEEDBACK prompted a number of responses, which highlighted several issues. The following reports are representative of the range of views expressed.

(1)

The subject of ATCO familiarisation is a contentious issue amongst controllers in NATS. Many of us believe that familiarisation should be a requirement of the job, but some controllers are not prepared to give up their rest days for something they believe management should require or give them time off in lieu. The local conditions under which these flights are taken has also varied from unit to unit causing resentment.

Until our present staff shortages are overcome, there is a great reluctance by our management to sanction them in duty time as we need everyone to man operational positions. I'm sure your contributor would not like to be delayed because a number of controllers were off taking their familiarisation flights. As a regular taker of familiarisation flights I do not need convincing of their value. In the recent past, I spent over 12 hours of my rest day on one such flight and I'm sure I and the crew learnt things from each other.

We try to teach our students not to interrupt crews immediately after take-off but there are a growing number of occasions where crews, by their lack of understanding of the ATC system, do not help themselves or the controller. Your writer complains about pilots first contacting London Control and the information they have to give. What they fail to appreciate is that on first contact all pilots are required to give their cleared level. Whilst it is understandable that they may not feel there is any need to include a final SID level, the number of altitude busts that have been reported over the last few years has indicated that pilots giving their final SID is a reinforcing reminder to both parties of which level the aircraft is climbing to.

In addition, the first ATC radar frequency has an obligation to check the height readout coming from the transponder is correct. Some messages might seem to be of minor importance to crews but can be of major tactical operational importance to the controller.

My colleagues and I have been increasingly concerned about the quality of calls we're getting. It's no help to receive calls like. "Hello ###, G-GABC with you", "G-GABC on frequency" or just a call sign as we too often get. Where departures from two or more airfields call on the same frequency, e.g. Heathrow and Gatwick or Heathrow, Luton and Stansted, it is of great assistance to the controller to find the target on the screen if the departure airfield is included. I would appreciate an initial call to be something like, "G-GABC, airborne from ### on a (Standard Instrument Departure), passing 2000 for 5000". As a departure controller this gives me all the information I need to correctly locate and identify the target, handle the flight strip and check the height of the readout.

But familiarisation works both ways. During the many years I have been a controller, and especially during the years I have worked in the busy London TMA, I could count in the tens, instead of hundreds, the number of pilots we have had visit us from the major British airlines. I have also handed out visiting cards at the end of each of my familiarisation flights with offers of visits, but have NEVER had anyone call to take them up. I have always felt that this shows an unprofessional attitude on behalf of those crews that can't be bothered to find out what ATC do. We are always ready to let pilots join us for a shift and show them our problems, perhaps if more were willing to give up

some of their rest days, as we do, then we would all work better together.

******

(2)

I read with interest the article on ATCO familiarisation as we had a recent visit from crews of one airline and they cited the same problem.

I think as commercial pressures increase less time will be allowed for professional matters like familiarisation flights.

What your NATS reply didn't point out was that not only are familiarisation flights voluntary but they're in your own time and it's usually on a standby ticket which can mean hanging around at airports - none of this is designed to encourage us to take part in them.

On the other side of the coin I cannot remember when a crew from some of the major UK airlines came and sat in on radar here at this major ATS unit. On our Watch we encourage pilots to visit as a group and they sit in on radar in the morning and then have a go on our simulator in the afternoon. All light hearted but does a lot to educate both sides as to each others problems.

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(3)

The comments on ATCO familiarisation of cockpit workload and interruptions by ATC at critical times are to be commended. Even the more senior controllers who completed a full PPL training are perhaps not as familiar with modern aircraft operations as we would all like. But where are the opportunities to gain this experience? Emergency and continuation training is carried out during the winter months on the ATC simulators to practice unusual operating procedures. Why not include a briefing by an airline training captain?

Familiarisation works both ways as well. When was the last time a pilot visited an ATC unit? And I don't mean the local tower. What about the control centres? (For example, where is Shanwick Oceanic located?).

The CHIRP reply required clarification:

The familiarisation flight programme is available not only to controllers but certain grades of ATS Assistants and other relevant grades. A budget that is set aside for the purpose would only cover the costs for a limited number of staff on each unit to undertake flights. It is impossible to undertake a long-haul flight without at least one night stop. No restrictions are placed on the relevance of those flights to the controllers. - Does an airfield controller need to undertake a transatlantic flight, or an oceanic controller a flight across Europe?

In order for a familiarisation flight to be of use it requires more formality. Many controllers do not undertake them because of the hassle trying to board a flight for which no-one appears to be expecting you! Then the process has to be repeated again in some foreign country for the return journey.

Please follow the lead of one major UK carrier and treat us as one of the crew. This airline arranges for us to fly both outbound and return with the same crew. Accommodation is arranged at the crew hotel so there are plenty of opportunities to chat about each others problems.

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(4) A Rotary Plea

FEEDBACK 42 - ATCO Familiarisation. Could ATCO's please be reminded of how helicopters are flown.

Many, probably most, helicopters are flown single crew. Helicopters require both hands (and both feet) to manoeuvre in the hover and during the take off and landing phases.

I almost always receive critical information such as Runway, Wind Velocity, QFE, QNH, Transponder Code, Altitude, Frequency Heading, other traffic in multiples during taxi or on take off.

It matters little whether one is operating at a major international airport or at a small grass strip, controllers simply don't realise that the pilot must either memorise all the information given, or land to write it down, the latter rarely being practical.

I don't believe this is particularly dangerous for typical rotary wing

operations but there are, quite clearly circumstances where safety could be compromised.

Helicopters are tricky little devils to fly so, therefore please give us rotary pilots a break and be aware that we need both hands unless we are on the ground or well clear of it.

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FB42 - Need to Know

It's not just the French ATC controllers who can filter out traffic. At #### we have had this facility for many years.

Many of the controllers here filter out traffic in exactly the same way as the French, so they see only their own traffic. A number of potential incidents have been avoided by controllers (who have not filtered the traffic) pointing out the confliction to their colleagues.

To make matters worse, although it is a requirement to inform the controller taking over the radar position of the filters in use this is seldom done. So the new controller assumes he will see all the aircraft, but because of the filters, he will not.

This report has been passed for information to ATS service providers.

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FB42 - Automated Flight Deck Training Effectiveness

Further to the article 'Automated Flight Decks - Training Effectiveness' in FEEDBACK 42.

Some time ago the local operator upgraded their fleet from 737-200's to 737-400's. For some two or three months following the changeover there were a number of instances of aircraft snaking and deviating from assigned inbound and outbound tracks, and intercepting the final approach in a series of swooping 'S' turns. In all cases my queries to the crew were answered by comments such as: "Yes, we're turning back shortly, just want to try something out", or "It's OK, the Captain's experimenting with something". There was even the memorable "We'd like an SRA sort of approach but we'll try and let the aeroplane do it; just keep a close eye on us please".

None of these occurrences caused any ATC problems - it's Class G airspace round here and a busy day if there are two aircraft on frequency at the same time, but they are a telling comment on the training set-up, if pilots feel it necessary to carry out experiments on revenue flights.

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FB42 - ATC Procedures

The comment made in "ATC Procedures" (FEEDBACK 42) leads me to suppose that the pilot concerned was departing from the Southside of ###, where the position of the holding point is a considerable distance from the edge of the runway.

It is important that pilots realise that we are extremely limited with concrete at the respective Runway Holding Areas in comparison to the volume of traffic. We have to give multiple line ups so that we can ensure that the aircraft are ready and in all cases anticipate the move forward to the runway.

I would love a champagne dinner for each time that after giving a line up instruction the pilot has replied "We are not ready" "We haven't got our figures" "We have a problem. Can we hold somewhere?". If this type of information was delayed until only one or two aircraft were ahead, it would lead to delays for up to 10 or 12 aircraft behind.

We don't think that it is too much to ask that pilots count B757's if it means we can keep aircraft moving/informed/ready so that EVERYONE encounters less delay.

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FB42 - RT(F) Phraseology - A Correction

It is pleasing to note the FB42 Feedback on Feedback relates two success stories.

However, I do question both your correspondents and your own interpretation of the RT or R/T (should be RTF) phraseology applicable to a requirement to make a report of some kind.

I agree with the reporter on the subject matter and the solution, but do not agree with either of your *(CHIRP Comment)* read back statements taken from CAP 413 and MATS Pt 1.

The latter states that pilots are to read back in full messages containing any of the following items: Level Instruction, Heading Instruction, Speed Instruction etc. It does not say (as you printed) messages containing Heading, Level or Speed information.

CAP 413 wording is similar to the ATC document *(MATS Part 1)* in that pilots are to read back in full any ATC messages listed below etc etc.

So in neither case is there a suggestion that a read back is required of where to report - only that all messages must be acknowledged and often the call sign is sufficient for this purpose.

The requirement to make a report on vacating or reaching an assigned level is covered in a different way, through the AIP, which demands a report on reaching a clearance limit.

Humble Pie! The comment regarding the wording of the requirement is correct. Regrettably the word "instruction' was incorrectly transcribed as 'information'.

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FB41/42 - Keeping Abreast of Change

With reference to the availability of AIC's *(Aeronautical Information Circulars)*, it is a CAA requirement that AOC *(Air Operator's Certificate)* holders should promote access for flight crews at their normal operating base to the UK AIP (Air Pilot), AIP Supplements, the ANO *(Air Navigation Order)*, NOTAM's and AIC's where such information is not READILY (my emphasis) available at an AIS *(Aeronautical Information Service)* unit. Despite this, the AIC's in my crew room have been un-amended for at least a year.

Why don't the CAA Flight Ops Inspectors check this?

A very pertinent question that has been passed to CAA (SRG)

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FB 42 - Which QNH?

Like the contributor to FB42, I too wrote a paper on Regional QNH some years ago, arguing that Forecast Regional QNH was not required at all in the UK, because it is a poor second best to using actual QNH from the nearest reporting aerodrome.

Almost needless to say, nothing happened, it seemed that dropping Forecast Regional QNH was too radical a step, especially for entrenched views within the military in NATS. Incidentally the Forecast QNH system is expensive to run, a Meteorological Office forecaster has to issue them on a 24 hour basis and forecasters cost civil aviation a lot of money. Furthermore, the QNH's take-up valuable teleprinter channel space.

As a result of several reports relating to Regional QNH settings, we will seek the views of the relevant agencies as to whether a further review this aspect of altimetry might be beneficial.

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ATC REPORTS

Call Sign Confusion

Towards the end of a relatively busy and complex morning shift

ABC 4499 on departure. For some reason I, and I believe the flight crew, confused the call sign "ABC 4499" with an earlier flight with the call sign, "ABC 4449". This flight had departed some time earlier and was not on the frequency. After several instructions addressed wrongly by me, but corrected on each occasion, I managed to transfer the aircraft to the next sector without further incident, despite my perceived workload being significantly increased.

Several factors had a bearing on my difficulty in using the correct call sign (as printed in front of me on the flight progress strip):

1. I was becoming tired after a busy and complex morning shift, which had included the handling of an emergency.
2. I had controlled "ABC 4449" earlier and it was thus still "in my mind".

3. The similarities in the call signs "4499" and "4449" (try saying them yourself) and the aircraft types.
4. The UK phraseology which requires each numerical digit to be spoken individually.

Hands up, I admit I got confused. A classic HF incident? You be the judge.

I get the impression that some flight crew are not happy with the four digit call signs either.

To alleviate this type of situation may I suggest the use of slightly American type phraseology such as "double four, double nine" or "triple four, nine". Or even the pairing of digits such as "forty four, ninety nine" might help.

Failing that, perhaps we should revert to the use of three figure call signs to reduce the possibility of confusion.

National Air Traffic Services Ltd (NATS), in conjunction with CAA (SRG) is currently conducting an Aircraft Call sign Confusion Evaluation Safety Study (ACCESS). The objective of the study is to collect data to ascertain the magnitude of the problem and identify causal factors.

Full details of ACCESS are contained in AIC 112/96, together with recommendations for operators, flight crew and controllers to reduce the incidence of call sign confusion.

Flight crew are requested to report incidents of call sign confusion using company Air Safety or other designated report forms where applicable, or standard CA1671 MOR forms submitted in accordance with standard company procedure. Controllers are requested to use either the standard CA1261 report form or the dedicated NATS abbreviated call sign confusion version where available, submitted to the SDD in accordance with standard procedure.

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Readback Confusion

The sector was fairly quiet and I was handling inbound No.1 to ### *(Standard Arrival Reporting Point)* who called on frequency, descending to the standing agreed level.

Ahead of this flight was a second inbound (No.2) also proceeding to ### and so I planned to drop inbound No.1 on top of inbound No.2. My R/T call to inbound No.1 was "Descend to FL180, expect FL100 by ###" but the pilot read back "Descend to FL100" and I did not pick this up.

I next noticed that Inbound No.1 had descended to below what I thought was it's cleared level and queried with the crew what they were doing. An R/T exchange then took place over what the clearance had been and what had been acknowledged. Fortunately, the tracks of the two aircraft had crossed and for this reason no loss of separation had occurred.

When I listened to the tape my instructions had been clear but read back wrong and I didn't pick it up. The Captain subsequently rang and said he had been on the PA to the passengers and hadn't heard the clearance which the co-pilot had read back wrongly.

I am never going to use the phrase "Expect FL123 by ### again!"

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FLIGHT DECK REPORTS

Disorientation - An alarming Experience

It was a clear night when I finally left AAA, a light wind and about 30km visibility.

I was in a twin engined helicopter, certified as single pilot IFR and had a current instrument rating, approximately 5000hrs in helicopters of which 900hrs were on type. My destination was a private landing site which I had only been to once before, but BBB *(UK International airport)* was nearby and available if required.

The Met Office had issued a Fog warning, valid from the early hours of the next day until late morning, so I was not too concerned as I departed on a direct track for my landing site at around 2000hrs.

I climbed to 2000ft and felt relaxed under a RIS *(Radar Information Service)* enjoying the fact that I was the only aircraft talking to them at that time. After 15 minutes

clouds began to appear below me, but I was not yet concerned as I could still see the lights below, through and around the clouds. A few minutes later it was solid cover and I was flying VMC on top. It became clear that my landing site was going to be overcast possibly in mist. Well that was still OK, I had people on the ground with crossed headlights and data from my previous trip had allowed me to work out the difference between QFE and QNH, best approach headings etc. I also had a Radar Altimeter and sophisticated GPS *(Global Positioning System)* which one could couple to the Autopilot, or just use on the HSI *(Horizontal Situation Indicator)*. My escape routes were worked out, BBB was nearby and AAA was in the clear, I'd give it a go.

I changed frequency to BBB and was positively identified and given a Radar Information Service.

I informed BBB of my intentions and set myself up for the first approach, Radar Altimeter 'bugged' to 500ft.

At 500ft there was no ground contact, so I went around setting the 'bug' now for 300ft and commenced another approach. All was well, heading, rate of descent, distance to run. I reached 300ft and had not broken cloud although I could see dark patches of ground through what was obviously a thickening mist. I had just decided to go around when the crossed headlights appeared 500m away in my two o'clock. I immediately lowered the collective, flared and commenced a turn to the right, applying right pedal. My eyes were glued to the lights and it was then that they disappeared. At this time I was probably below 300ft at about 50kts, in a turn with a rate of descent with no references whatsoever. I knew I was in big trouble.

I transferred back onto instruments and simultaneously raised the collective as high as it would go, and rolled back the bank, expecting the ground to hit me any second. After the second or two it took me to assess the instruments I was confused. The Rate of Descent had decreased and was showing a proper response to the applied power by beginning to show a healthy Rate of Climb of 1000ft/min, but the AI *(Attitude Indicator)* was showing a wild oscillation in roll of about 20 degrees left then right and in pitch 15 degrees nose up and down, but most alarming was the DI *(Direction Indicator)* which was spinning so fast that I could not tell which direction, let alone read the headings. Airspeed was zero.

I corrected the AI to 'wings level' re-checking the rate climb. I was still IMC and **** scared. The yaw pedals were useless as the Tail Rotor had clearly 'broken away'. I had no idea which way I was rotating. I had enough height (1200ft) now to do something about the Airspeed and lowered the collective a little and pushed the nose gently forward. After what seemed an age the ASI *(Airspeed Indicator)* began to indicate, the rotating began to slow and eventually stop. I found myself IMC at 1500ft straight and level at about 110kts.

With immense relief I commenced a climb to VMC on top and broke cloud at 1800ft. The stars were very bright, but I had a further horrible moment when it appeared the moon was overtaking me and for a moment I thought I was travelling backwards. I suspected that my inner ear was still adjusting.

BBB gave me a vectored ILS pronouncing clear skies and greater than 10km visibility. The aircraft remained there overnight and I took a taxi home.

I confessed to an Engineer that I may have 'overtorqued' the main rotor head and it was inspected the next day before I flew it home. I hadn't.

Disorientation often occurs in a most unexpected way and, if and when it does, it can be one of the most frightening experiences in a pilot's entire flying career. Moreover it has no respect for age, experience, or seniority and can easily kill the unwary.

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Commander's Decision?

It is a CERTAINTY that I would lose my job if my identity was revealed. Other pilots are and have been in the same situation.

This report has been prompted by one particular incident, however, it reflects a trend that I have observed not only in my

own company but others with the same type of operation.

During a period of foul weather, I made a decision as Captain that the weather conditions were unsuitable for the intended task and elected to ground the helicopter until conditions improved. I had already flown once on a similar task and deemed it unsafe to continue. The conditions at the airfield I fly from were reported as being right on the limits, however, the task involved an operating area in which the weather conditions were worse than those reported at the airfield.

I was subsequently summoned before a senior member of my company to explain my actions, as there had been a complaint by a manager representing the contracting agency, who was not one of the contractor's personnel aboard the aircraft I may add, all of whom were happy with my decision. He was concerned that the aircraft had been grounded with the weather being reported as "just on the limits" at the airfield and why had I taken this decision. I explained that in my experience, which is extensive and so far accident free, I considered it unsafe to continue flying.

I was informed that I would have to "watch out". I felt uncomfortable with this situation and felt it was a thinly veiled threat, implying that I should be prepared to fly in conditions worse that I considered to be safe, the consequences of not doing so being left to my imagination. Though with the departure of pilots who have previously "offended" a contracting agency, I have no doubt I would be seeking alternative employment. I am also left wondering what the consequences will be if I ground the aircraft due to technical reasons, or am I expected to ignore MEL's? I hold an ATPL/H with in excess of 7000 hours flying. I am unaccustomed to having my decisions about the safety of the aircraft that I fly, questioned by people the CAA regard as passengers.

There is a pamphlet disseminated by another similar operation under the guise of a flight safety publication, allegedly mirrored on CHIRP. In one issue a report questioned the safety aspects of a pilot flying in poor weather and his subsequent let down procedures. What truth there is in it remains to be seen, but if there is any, perhaps he had been subject to the same pressures that had been brought to bear on me! What would have been his "passengers" reaction if he had aborted the flight and returned to base with an uncompleted mission?

Do any of us question the flying conditions, technique or decisions that an aircraft Commander makes when flying us as passengers? Perhaps the flying of an aircraft and associated decisions, should be left to the highly qualified pilots who are selected for their extensive experience and ability. I find this type of "commercial" pressure that is insidiously creeping into some areas of aviation a very worrying situation indeed.

Have we learnt nothing from previous accidents?

The ultimate responsibility for the safe operation of a flight is properly and legally the responsibility of the aircraft commander. Whilst it is appropriate that a commander's decision may be reviewed subsequently by management, the review should be based on the safety related criteria that were available to the commander and should not be influenced by other factors, such as those present in this report. It is wholly inappropriate that management pressure of the type described should be imposed on an individual in an attempt to influence his/her future behaviour.

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Time Pressure

The aircraft was late leaving the stand due to a problem with a sick passenger. During taxi-out ATC advised that our slot expired in approximately five minutes. Had to advise cabin crew of a quick taxi. As the flaps were selected the First Officer noticed a partial failure indicated on his EFIS panel. Whilst deciding if this was acceptable ATC offered us a re-route.

Sigh of relief as problem was sorted and cleared into position and take-off just in time. As power applied co-pilot said "STOP". Flaps were at 20deg, not 15deg!

Conclusions - distraction at flap selection meant wrong flaps set. When checking flap in Pre Take-off check I had put my hand on the lever and looked at the gauge

but failed to notice the actual reading - the needle was pointing to the right as usual. I had responded without actually reading the gauge! First Officer's good look-round as we started take-off saved the day.

Only pride hurt THIS TIME.

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Heard ... Not Understood

Descent into ###*(European major airport*) via standard arrival.

ATC fairly quiet. Descended to 5000', radar heading 180°.

Controller declared, to our total surprise, that she had been trying to call us, and to contact approach controller. We had heard nothing, in English anyway ...

On calling approach, controller declared "ABC 123, turn right heading 180°, maintain 5000'".

I confirm that we are heading 180°, and maintaining 5000'.

ATC (voice raised) "ABC 123, turn right NOW, heading 180°, maintain 5000'".

I declare again "this IS ABC 123, we ARE maintaining heading 180°, 5000'"

ATC (voice now agitated) "ABC 123, IMMEDIATE right turn, heading 180°".

Now very confused and worried, I declare "are you confusing us with another aircraft? We ARE ALREADY HEADING 180°, 5000'".

ATC "Do you not understand delaying action? I say again, TURN, turn right heading 180°".

Me: (with relief!) IMMEDIATE ORBIT RIGHT, to heading 180°".

Conclusion: Perhaps I was slow (end of a tiring schedule) but is there a correct non-vernacular way of saying 'orbit'? Why not initially say "turn right, 360°" and then "continue turn, heading 180°". We had TCAS, and no traffic near, but ...

Next time I'll know what they mean!?!

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Error Prone

The short stopover schedule to US destinations continues to be the source of reports which detail errors being made towards the end of the return sector, when crew's levels of awareness may be somewhat reduced:

(1)

UK to USA 'bullet' (scheduled 24hr rest period in USA). On the return sector to UK First Officer was P1.

On three mile final selected landing flap as requested by First Officer. Red warning lights, and audio warning alerted us to the fact that WE had BOTH forgotten to select the landing gear down. After discussion we decided that the contributing factors were:

1. Delay on outbound flight giving only 19 hours in hotel
2. Overtired on arrival in hotel resulting in disturbed sleep
3. On approach into London pre-occupied with traffic spacing on preceding widebody a/c, which touched down when we were only 1.8nms out.

[What is the reasoning behind establishing safety related flight time 'limitations' and at a later date applying variations for commercial reasons?)

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(2)

After a long night flight, I was flying the approach for the co-pilot's landing. All crew members were very tired and all had commented on the effect of repeated out and back North Atlantic sectors which are a feature of our lifestyle.

Required to enter hold at ### but during join told to "Return to ### and leave on Heading 090". I dialled-up Heading 090deg, and as a consequence ended up nowhere near ###.

Controller was very miffed! However, neither of my co-pilot or flight engineer picked up the error.

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Taxiway Designators

I am at a loss to understand why it has been necessary to re-name all the

holdings points and taxiways with a two letter code, as opposed to the old system of single letters.

The taxi instructions from Ground frequency have now become more complicated and the chance for error has increased. For example "Taxi Hotel Lima, Hotel for Hotel November". It used to be "Taxi via Six, inner for Sierra".

The other safety point which I feel is more important is the introduction of two 'Hotel Kilo' (and also Hotel Alphas) points. One being a runway holding point, and the other directly opposite a taxiway entry point.

I can imagine the situation on a foggy winter day with a crew unfamiliar with the field taxying through the wrong 'Hotel Kilo' and straight back onto the runway.

In this day of Human Factors I thought the idea was to make things as less complicated and less open to ambiguity as possible to avoid human error.

We have received a number of reports similar to the one published above, citing individual cases where the new taxiway/holding point designators may be confusing. If you are aware of any such examples, please advise CAA (SRG) or us so that the issue can be reviewed before we enter the season of reduced visibility operations.

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Departure Chart Complexities

A number of Standard Arrival/Departure Charts now contain a wealth of information to cater for both R Nav and non R Nav equipped aircraft. Although these rarely present problems to regular visitors, complex procedures can contain traps for the unwary occasional visitor, particularly when flown in combination with Lateral/Vertical Navigation Autopilot modes, or when amended by NOTAM action. Two such examples follow:

(1)

It was my leg, so I briefed for our departure from Geneva. We were to use the Dijon 8A SID *(Standard Instrument Departure)* off Runway 23. The NOTAM information included a note which modified the published departure to, 'Ahead on GVA 226R *(Radial*) at 7000 ft but not before GVA 8D *(DME range*)' ... (then as published SID).

One of the Notes at the top of the SID had information about climb gradients, which are quite impossible to monitor in flight. The final part of which stated, 'if unable to comply, at PAS continue on Tr226M, to GVA 10d/PAS 2.3d and enter holding pattern. At 7000 or above, follow SID'.

I commented that we were a relatively light aircraft, and that I was sure that we would easily make the gradient published. Should an engine fail there was a published emergency turn, so that contingency was covered. My captain agreed commenting how in the days of the old 'Ground Grippers', they would very regularly have to enter a climbing hold at PAS.

The ATIS wind for T/O was reported as 190/05. We took off with considerable de-rate, and climbed out at Vref+20ish to 3500 feet (2000 Agl), at which point I called for V NAV, CLIMB power. The aircraft took a long time to start accelerating so that I could commence flap retraction. We both commented on how the wind had swung right around now to the North, so we were now experiencing a tailwind during the clean up acceleration.

Eventually had the flap up, but still conscious of very slow acceleration. Having once previously had a stick shake with a clean aircraft in mild turbulence as a result of the very slow VNAV acceleration, I was keen to get some more speed on the clock. Eventually made 250 knots and started to think about the next part of the departure, the turn to the North.

We had the left VOR in manual so that we could monitor the GVA DME. At 8 DME we were not yet at 7000 feet. The climb was still slow and I saw 10DME approaching, and we were still not yet at 7000 feet. I now felt very uncomfortable, as I could not remember if it had said categorically anywhere, "If you have not made 7000 feet by 10DME, turn left and enter hold", as I am sure that it used to in an earlier version of the SID plate. I looked quickly to the left, and saw the captain, obviously in the same dilemma

scanning the notes at the top of the SID page.

In the end we did not turn left and continued to 7000 feet which we reached at about 11 miles, then turned right to follow the rest of the SID.

In discussion afterwards, we re-read all the published data, and felt that we were still not entirely certain what we should have done, although we strongly suspected that we should have turned left at 10DME, climbing in the hold to 7000 feet, then headed off to the North as the old plate clearly stated, before these two lots of rather muddy information were published.

I could have increased the climb angle of course by reducing the speed a little, and increased the climb thrust, but I suspect that by the time I had noticed that we were not going to make the altitude by 10d, it would have been too late to have much effect.

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(2)

This is to remind us all that although we look, read and recite charts we can easily be misled.

Our departure from Schipol was a LEKKO departure R/W 19L.

On the Departure chart (10-3F) which depicts this departure. The SID instruction gives two instructions based on SPL VOR/DME. The third instruction is based on SPY VOR/DME. *(See Chart extract below):*

19L	185° track, at **500'** turn LEFT, intercept SPL R-165, at D6.5 SPL turn RIGHT, intercept SPY R-187.

The chart shows SPL but not SPY. The chart also contains a specific warning relating to FMCS Navigation equipped aircraft and the requirement to cross-check with conventional navigation aids.

If FMCS navigation is used pilots should connect FMCS and autopilot as early as possible and do cross-checks by conventional navigation aids.

We took off and engaged FMCS NAV mode at the time of the third instruction (which is actually based on SPY). The A/C took up the appropriate SID track. Due to the note on cross-checking and looking at the chart. I assumed that LNAV was tracking incorrectly and used heading to maintain the published track off SPL VOR - NOT SPY. This error resulted in an error of 3-4 miles west of scheduled departure and at Amsterdam, a busy airfield - could have been lethal.

Although a very infrequent flyer to AMS, and having in general utmost confidence in my aircraft equipment, errors creep in. Lesson of reading - studying and understanding were all lost on this occasion.

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Inspector Morse at your service!

Earlier this year, I and a number of colleagues were operating, at night, into a minor UK Airport, which can get busy for short periods throughout the night.

Handover to this particular ATC unit is from an adjacent major Airport, which is usually achieved in an efficient manner. Upon handover, information given by the ATC unit varies but is mainly advisory i.e. Runway in use, type of Approach to be expected and range etc.

Why should this evening be any different?

ATIS of Minor Airport gives main ILS runway as duty runway.

Major Airport says call ### on ###.## and pass assigned radar heading. (Clue one)

I carry out call to be informed that duty runway is opposite to ATIS.

OK, no problem, slow things up, brief pertinent points on SRA approach plate.

Recall ATIS, 010/5kt 2000m ovc 700ft light rain. Note SRA Minima 720ft (Clue two).

Form plan, make SRA Approach, if missed, use ILS the other end, brief First Officer.

First Officer's first handling sector for some time and not very experienced on type (Clue three).

Aircraft speed not reducing, First Officer slow to respond to Radar headings, more time/distance lost (Clue four).

Check list now being rushed, Aircraft not in approach configuration, Radar giving Heading changes constantly (Clue five).

Landing gear and flap selected, descent initiated, high on profile but adjusting slowly, checks now complete and clearance to land given by Radar Controller.

Finally arrive at MDA *(Minimum Descent Altitude).* I call visual reference, take control and land.

Normally after rollout a backtrack to runway exit is executed without recourse to the Tower ATC after Radar Approach. At runway exit Radar says "Call Tower". Upon frequency change, Tower chews my ear for not calling him for backtrack as he has an A/C (small) at the hold for quick departure. Ignoring my chewed ear, I continue onto the stand.

Once in the terminal, a phone call to ATC elicits the following: Radar and Tower did not liaise and staffing problems had led to reduced ATIS updates. Organisational changes had eroded co-operation with other ATC agencies and controllers were not given adequate training/information on larger aircraft departure and arrival cockpit workloads. This is not a cry for help, it is a huge shout.

Whilst speaking with ATC on the telephone a senior colleague arrived at my elbow with a burning desire to talk to ATC. It transpired that his experience with ATC that evening had been much the same as mine.

Inspector Morse's report concludes that:

1. Timely communication of pertinent information will reduce the possibility of similar occurrences like this happening again.
2. The provision of video tapes showing crew workload on Departure/Arrival flight segments would help air traffic controllers tremendously in making their transmissions to aircraft in critical phases of flight.
3. Air traffic controllers are subject to external pressures which can and do affect the quality of their service to flight crews.

It comes as a surprise to me that ATC Training Units do not have access to adequate videos of Flight Deck activity which would serve to reinforce the understanding by ATCO's to flight deck operations during critical phases of flight and to importance of not interrupting the flight deck routine during the take-off roll and rollout after landing, unless there is imminent danger.

The telephone call to ATC after landing highlighted this point as the individual admitted there had been zero positive response from requests to several airlines for cockpit videos of SOP's. I can understand a reluctance on a cost basis but this I am sure can be overcome in the interests of Flight Safety. The unspoken block to this, may be, the tape falling into the "wrong hands" and political mileage made out of it, not to mention the legal implications if an aircraft of the type shown on the video suffers an incident and the tape is presented as evidence.

Can this be overcome? I sincerely hope so.

Video tapes of flight deck operations can be a valuable training aid for ATC staff. A number have been produced by individual agencies to meet specific training objectives. We are investigating whether these might be made available for use by other ATS units.

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Robin (or) son

We at our Aero Club operate a fleet of Avions Pierre Robin aircraft. It is becoming increasingly obvious that many air traffic controllers and pilots, when hearing the aircraft type described as "Robin" type misinterpret the type as a "Robinson" (a helicopter - not fixed wing!)

Why has this come about? My opinion is that it has become accepted practice, especially in some ATC units to abbreviate Robinson to Robin! The possible implications of confusion between these fixed wing and rotary aircraft types, is obvious.

To illustrate the point one of my students on a qualifying cross country was cleared to route direct to the helipad. A bit difficult in a fixed wing a/c!

As a means of assisting in this problem I always instruct my students and others to refer to Robin a/c as Robin DR400, Robin

R2160, etc. in the hope that others will realise we are fixed wing and not rotary.

So, not an earth shattering problem, but one that does need addressing in order to minimise confusion among air traffic controllers and pilots alike.

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ENGINEERING AND MAINTENANCE REPORTS

FEEDBACK 44, to be published in October 1997, will include reports from Engineers. Each report will be fully disidentified prior to publication and only with the express approval of the reporter. Reports of a sensitive nature or those which cannot be fully disidentified will be acted upon, but will not be offered for publication.

The confidential reporting process is complementary to other methods of reporting that are available and should not be regarded as a substitute. However, if you wish to discuss an issue or require guidance as to whether to submit a report please telephone David Johnson or Peter Tait. A freephone telephone number is available on 0800 214645.