

CHIRP FEEDBACK

Issue No: 81

Winter 2006

EDITORIAL

SECURITY - AN UPDATE

In the last issue we summarised the concerns expressed by flight crew and cabin crew members in confidential reports about the manner in which the revised security procedures had been introduced in August 2006 and, perhaps of more significance, the inconsistent standards that had been and continued to be applied to these professional groups by UK airport security agencies.

After the **CHIRP** Air Transport Advisory Board had had the opportunity in October 2006 to review a selection of the reports received, the reported concerns and the potential flight safety implications of the continuing frustrations that some individuals were experiencing on a daily basis were represented formally to the Department for Transport (Transec).

In their response DfT (Transec) stated that the variation in the standards across the UK, which is the principal source of frustration to crew members, is due to airport managers applying additional local restrictions to the minimum National standard set by DfT. We understand that this same point was made during a meeting between representatives of DfT and CAA (SRG) to discuss reported concerns about the impact of the revised security measures on flight crew members. DfT and the CAA have concluded that these difficulties should be resolved by companies at a local level.

The anecdotal evidence from reports submitted to this Programme raises serious doubts whether the DfT/CAA conclusion will lead to an effective resolution of an ongoing problem that has potentially serious flight safety implications. It is acknowledged in Human Factors that if an individual is subjected to a stressful situation, whatever the cause, his/her subsequent human performance is likely to be adversely affected. In a recent survey of a group of UK pilots, around one in three reported experiencing a sense of frustration as a result of the application of the revised security procedures that rendered them less able to perform their primary duty. Following the publication of FEEDBACK 80, we have been made aware of similar frustrations being experienced by Licensed Engineers seeking to gain airside access.

The enviable safety record of the UK air transport industry has been established on the basis of assessing threats to safe operations then developing

and adopting 'best practice' solutions. From the relatively small number of reports received in comparison to the pilot/engineer/cabin crew populations, it is difficult to judge how widespread the ongoing problems are. **If you are continuing to experience problems, please take a few minutes to let us know. It is only by having sufficient evidence that we can seek to persuade the relevant agencies to ensure that the proper balance is maintained between security and flight safety.**

Peter Tait

ENGINEER REPORTING

The **CHIRP** - MEMS Programme is promoting an initiative to gain more information on engineering/maintenance related incidents/errors that are not reported through company/MOR schemes to improve awareness/learning. (See **Engineering Editorial on Page 9**). A survey form has been distributed with Engineers' copies of this issue to seek comments/suggestions from engineers as to how CHIRP might best encourage such reports; the survey can also be completed on-line at www.chirp.co.uk

Number of Reports Received Since the Last Issue and Report Topics:

ATC - 8

RTF Phraseology on Departure
Introduction of Common Strip Display
Concerns about increased use of overtime
Comments on Standing Agreements

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##### Flight Crew - 54

Comments on ATC Standing Agreements  
Electronic distribution of NOTACs  
Altimeter Setting Procedure - SID  
Calculation of V1 speeds  
More ATC Pressure to Vacate Active Runway  
Allegedly Poor Rostering  
Lack of Duty of Care  
Airport Security Procedures

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Engineer - 10

Airport Security Procedures
Tech Log - Defects Not Entered
Ground Pressurisation Procedures
Comments on Engineering Reports

AIR TRANSPORT FEEDBACK is also available on the **CHIRP** website - www.chirp.co.uk

An Air Transport Safety Newsletter

from **CHIRP** the Confidential Human Factors Incident Reporting Programme

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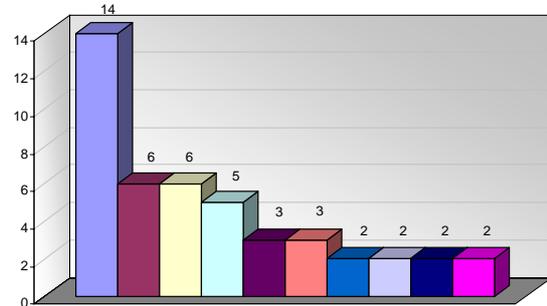
FEEDBACK is published quarterly and is circulated to UK licensed pilots, air traffic control officers and maintenance engineers.

Registered in England No: 3253764

Registered Charity: 1058262

ATC REPORTS

Most Frequent ATC Issues Received 12 Months to December 2006



■	Communications - External (Pilots)
■	Procedures (Use by Others, Adequacy, Use By Reporter, Lack of)
■	Handling/Operation (Operation of Equipment, Airmanship)
■	Company Policies (Operational, Safety Reporting)
■	Duty (Length, Rest)
■	Resources (Manpower/Personnel)
■	Air Traffic Management (Separation)
■	Documentation (Suitability/Adequacy)
■	Training (Technique, Adequacy, Examination/Assessment)
■	Relationship Management (Managers, Team/Shift/Watch)

CLIMB CLEARANCES

Report Text: I am an approach radar controller at a regional airport outside CAS. I am aware that, on a number of occasions, pilots in receipt of an airways joining clearance, which had been delivered and read-back correctly, have called the area centre climbing to a level above their cleared level. The common factors in these occurrences were:

- The airways clearance has contained an initial level followed by an instruction to "Climb to FL ... with radar".
- The pilots' first language was not English.
- The first call to the area centre was climbing to the 'Climb with radar level' rather than the initial level.

We counter the possibility of this error occurring by repeating the initial level prior to transferring to the area frequency. I think it would be simpler for the airways clearance to only contain one (initial) level; it would reduce R/T and eliminate the cause of the problem. Do other units like us suffer similar problems?

CHIRP Comment: Although the Manual of Air Traffic Services - Part 1 permits the phrase "Climb to FL ## when instructed by Radar" (not that quoted above), this instruction is not normally used by ATCOs at major UK airfields.

Our enquiries would suggest that it is good practice to issue only the first cleared altitude/flight level in the ATC airways clearance instruction, with further climb clearance issued following transfer to Approach/Area Control.

RTF DISCIPLINE - PHONETICS

CHIRP Narrative: We published an item in FEEDBACK 79 titled "A Further Word on RTF Discipline" in which the reporter commented on the infrequent use of phonetics; this prompted a number of comments similar to the following:

Report Text: I agree with your correspondent's points about the speed of delivery and the avoidance of colloquialisms, but wonder about his comments on the pronunciation of numbers. Yes, numerals should be pronounced correctly (it's "one zero", not "ten", etc) and clearly and distinctly, but I would query his comment about the function of phonetic pronunciation.

The phonetic pronunciation is copied directly from ICAO and, surely, is published by that body to indicate the approximate normal pronunciation for non-English speakers? There is no suggestion that we have to pronounce various words in a rather strange Dalek-type fashion just for RTF use.

What do the phonetics WUN or TOO contribute to an English-speaker's understanding of the correct pronunciation of "one" or "two" on the RTF? To a non-English speaker, however, it will make all the difference from being totally unintelligible! Similarly, "five", "nine" would be pronounced quite differently by a Spaniard or Italian, and many languages do not include the English "th" as in "three", hence its approximation as TREE.

CHIRP Comment: The use of phonetics for the transmission of numbers is most important even in cases where both the issuer and the recipient are natural English speakers. A NATS analysis of RTF confusion occurrences shows that 17% were between the numbers "two" and "three".

It is also worth noting that the level of background noise on a flight deck can vary considerably depending on the type of aircraft and the headset used; this can adversely affect the clarity of incoming RTF messages.

WHY NOT A PROCEDURAL SERVICE?

Report Text: ABC123 was given an Advisory Route (ADR) clearance by myself; the aircraft departed and transferred to ### (Military) Radar.

During a subsequent co-ordination call I heard in the background that ABC123 wished to stop climb at FL65. ### Radar granted this request as the Delegated Controlling Authority for the ADR in that section. ### Radar advised the pilot that service may have to be reduced to a Flight Information Service due to lack of radar cover. This type of service is not appropriate for a participating flight on an ADR. Outside radar cover area a procedural service would appear to be more appropriate. (Aircraft in Class 'F' Airspace and not 'G'). A recent AAIB bulletin (7/2006) described an incident in which the same level of service had been offered to the aircraft involved.

As a civil ATCO providing an Approach Control Service in Class 'F' and 'G' Airspace, I must provide a separation service to participating IFR flights in Class 'F' Airspace. Flight information is NOT a separation service, so why the difference between civil and military? There may be quality as well as safety issues here.

CHIRP Comment: Military ATCOs provide an IFR separation service whenever practical; however, military radar coverage is not complete and military ATCOs are not trained to provide procedural separation. Thus, in cases where there is no radar contact or contact is intermittent due to height/range, a Flight Information Service is the only option.

The alignment of civil/military ATS provision is one of the issues identified in the Air Traffic Services Outside Controlled Airspace [ATSOCAS] review; the recommendations of the ATSOCS Working Group are expected to be published for consultation in 2007.

A FURTHER REMINDER ON SPEED CONTROL

Report Text: I was acting as Director with extremely challenging southerly crosswinds affecting the final approach (40kts at 3-4000ft). So it's a challenge sorting out the spacing. You guys want minimal delays; our lot want slightly larger than minimum gaps; I want to go home!!

However, I like a challenge and am working with a very attractive colleague, so here I am fighting to achieve the necessary spacing; already I've had several aircraft that I know have altered their speed from that assigned.

ABC123 is on final at about 8-10 nm and I enquire:-

"ABC123 confirm you are still at 180kts (assigned speed I'm sure I did this for a purpose!)

ABC123: "We're 160kts reducing - pause - do you want us to maintain 180kts?"

"I DID, but since you haven't bothered; not below 160kts to 4DME!!"

I immediately slow the traffic following, to maintain the eroding spacing. I don't mind altering speed at all, particularly in these conditions - but please TELL ME FIRST.

The "...do you want us to MAINTAIN 180kts?" question quite befuddles me! YES, that's why I gave it! You guys stick to heading instructions (you ask to change them e.g. for weather) so how come speed gets left out? The response "Yes, I DID want you to maintain 180Kts; did you want me to bother about separation?" springs to mind!

ABC123 was by no means the first and certainly won't be the last - but if we could just think about speed CONTROL (spot the word CONTROL), it will help!

CHIRP Comment: Speed control is one of the principal separation tools for ATC in the management of approach sequencing, not only at the major UK airports but also, as traffic levels rise, at UK regional airports. It is essential that pilots comply with ATC speed instructions and request a speed reduction before doing so.

Some major UK ATSUs now have a Mode S capability that permits the indicated airspeed of suitably equipped

aircraft to be displayed continuously on the controller's radar display.

From a flight deck point of view, most company SOPs specify height/range criteria by which the aircraft must be stabilised at the relevant approach speed on the glidepath; consequently, information from ATC as to the range to which an ATC speed instruction is to be maintained would be most helpful.

DESCENT PROFILES (FB80) - AN ATC COMMENT

Report Text: I'd like to comment, if I may, on an issue raised in the last issue of Feedback (No: 80).

Under the title "Workload, RTF congestion ..." on page 6, reporter (1) says "We seem to be getting more and more requests to be at a level x miles before a waypoint".

This is probably true - but the reporter needs to know why. He/she should pay their nearest ATC centre a visit and the reason would become clear; we have more vertically banded sectors now than ever before. We also have restrictions on which aircraft may or may not enter certain sectors; in the vicinity of BCN, for example, Manchester TMA inbounds are not permitted to enter the high level sector (above FL335) so such aircraft are descended below.

What I teach my trainees to do is, if you are going to give a level restriction by a point then don't clear an aircraft direct to a later fix. In the original example I would give a routing of EXMOR - MONTY and then a subsequent descent restriction of FL330 level EXMOR. If, however, the aircraft has been cleared direct MONTY, then we (the ATC community) have been led to believe that it is easier for you, the pilots, to be given a restriction that is still current on your FMS (i.e. 100 miles before MONTY). If it's just as easy to say abeam EXMOR then please use this forum to tell us which you'd prefer - it makes very little difference to us.

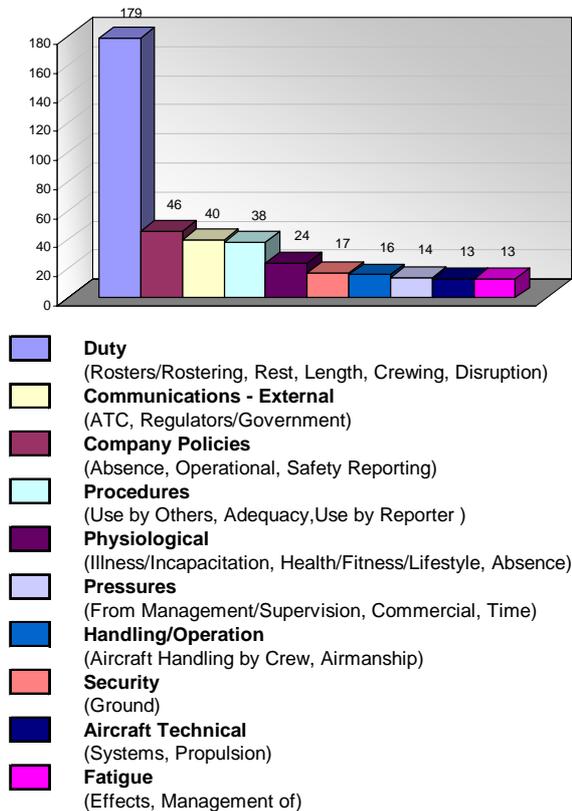
Reporter (2), also on page 6, raises the issue about nominating additional waypoints to identify descent restrictions, an issue that we have supported for many years. Unfortunately sector boundaries are constantly under revue; what may be good today probably won't be tomorrow! We have had an inbound level restriction to the London area from the West (FL140 level 40 miles before OCK) for many years now and we still haven't been able to get that position named! The week after it finally happens I can guarantee that either the En-route or Terminal Ops departments will decide that aircraft should be level 5 miles before that position to solve an as yet unheard of separation problem! I'd love a fix for every position that I need aircraft level by but I'm not sure there are enough five-letter words to cover Europe let alone the world!

CHIRP Comment: Many Flight Management Systems delete intermediate waypoints when a pilot executes a 'Direct to.....' entry to a further waypoint. Consequently, as the reporter recommends, flight crew can accommodate an intermediate descent restriction relatively easily, provided the ATC instruction references a waypoint that has not been deleted by the flight crew following receipt of a prior 'Direct to....' instruction.

Given the difficulty in nominating additional waypoints, as mentioned in the last issue, any other suggestions for improving the current procedure would be welcomed.

FLIGHT CREW REPORTS

**Most Frequent Flight Crew Issues Received:
12 Months to December 2006**



MORE PRESSURE TO VACATE

Report Text: Landing at a UK regional airport, wet runway, close to max landing weight. The landing aircraft behind us had been asked to reduce to minimum approach speed as one aircraft was going to depart between us and the aircraft following us - so we were aware that we needed to spend minimum time on the runway.

Shortly after we touched down 'Tower' asked us to vacate at an intermediate intersection, a turn off greater than 90 degrees - it was just not going to happen at our weight on a wet runway and with a short turn-round where brake temperatures may have been an issue. We were then asked to expedite off at the end of the runway. Because of this request I approached the turn off at a higher speed than I was comfortable with, but we did vacate safely.

I find it very distracting during the busy landing phase on a relatively short runway to have the tower requesting unsafe turnoffs. I also believe that being asked to expedite off the runway (especially where the turnoff is at 90 degrees, on a wet runway) will eventually end up with an aircraft sliding off the end. There cannot

be a pilot flying commercially in the UK that does not realise that runway occupancy is an issue. This sort of thing is happening more and more in the UK these days and I think it is only a matter of time before it ends up with an incident. To be fair, I did telephone the watch supervisor after landing and discussed the instructions we had been given during a busy phase of flight, and he was very receptive.

Please, can Tower controllers desist from asking us to expedite vacating - especially if there are no rapid exits, but if they are going to ask - please do so before we land, and have some idea as to the performance of the aircraft and the prevailing conditions.

CHIRP Comment: As the reporter acknowledges and has been mentioned previously, high intensity runway operations are part of everyday life at most major airports; however, in cases where an ATCO anticipates that an aircraft should vacate the runway at an intermediate exit using other than a high-speed turn-off, advising the flight crew as early as possible will allow the pilot to assess whether the conditions will permit the aircraft to vacate safely at that exit and to plan accordingly.

TOO MANY CONDITIONS?

Report Text: During taxi at a major UK airport, we were cleared to the holding point behind a non-UK MD 80; on the right-hand side of us a company aircraft was holding and one other aircraft was holding on the Rwy.

I was most concerned when Tower ATC gave a series of instructions that started with, 'Clear take-off' to the aircraft on the runway, then gave conditional line-up clearances to all three other aircraft at the holding point. As we were last in the queue we had to wait for all three other aircraft to depart prior to lining-up. As clearly there was no inbound traffic I seriously question the wisdom of this form of clearance at so vital a time (i.e. entry to an active Rwy).

After discussion with my F/O, we felt very much dislocated from the normal situation of receiving a clearance instruction from ATC, with a clear time condition attached.

At a time when the two major problems associated with poor RT practice (level busts and unauthorised entry to an active Rwy) are being so actively reviewed, I just cannot believe that this is ATC-RT 'Best Practice'. A simple 'line-up' to each A/C in turn at the appropriate time, is clear, simple and unequivocal, and is also what we used to expect! I am not happy that ATC put so much extra onus on flight crew to line-up in a sequence, when their job is to keep us apart! There may certainly be reasons for this clearance I am not aware of, but ATC-RT 'Best Practice' - I think not!

CHIRP Comment: The reporter's concern was raised with the ATS provider, who provided a detailed response, summarised as follows:

The reporter raises an important issue and one which is currently subject to much consideration and two operational trials.

Whilst there may be a large gap in arriving traffic, conditional clearances are still important to ensure we maximise the

departure capacity and do not miss opportunities. It is possible to depart 3 consecutive aircraft in a 10-mile gap but only if Tower obtains prompt release from Radar/TMA and pilots are responsive to line-up and take-off clearances.

Due to complexity of airspace and confliction with other airports, ATC at XXX have to co-ordinate the majority of departures immediately before take-off with TMA and/or XXX Approach. The Tower controller therefore needs to carefully manage R/T and telephones whilst achieving one-minute departure separations. It is likely that the sequence of events in these circumstances is:

- 1) Clear No. 1 to take-off,
- 2) Issue conditional line-up to No. 2,
- 3) Co-ordinate the release of No. 3 to ensure it can actually be lined-up
- 4) Transfer No. 1 to TMA/Radar
- 5) Clear no 2 take-off,
- 6) Issue conditional clearance to no 3, co-ordinate next aircraft in sequence, and so forth.

Conditional line-up clearances also provide situational awareness to pilots that they are next in the sequence and therefore can complete their pre-take off checks and be ready when cleared. It also provides the opportunity for crews to confirm if they are not ready, as due to the very short taxi distance from some stands to the full length holding points at this airport, it is a frequent occurrence that crews are not ready on reaching the holding point, as the cabin is not ready. In such a case the order can be quickly rearranged.

From a situational awareness point of view we also believe that a pilot who has just commenced a take-off roll would prefer to hear 'ABC123 after the departing xxx line up runway xx', rather than 'ABC123 line up runway xx'.

SID STANDARD OPERATING PROCEDURES

Report Text: When departing CCC (UK regional airport) the SIDs have a stop level of FL70. After take off ATC routinely ask for our passing "level". This is normally around 3,000ft. Given that we are climbing rapidly to a Flight Level we already have 1013mbs set and therefore quote our passing Flight Level. Our company SOP is to set 1013mbs as soon as possible after the acceleration phase has commenced (1,500ft usually) as a barrier against forgetting to do so.

Some controllers accept this but others insist on an altitude, resulting in an unpleasant altercation on the RT with some crews re-setting QNH whilst rapidly approaching the cleared Flight Level, a sure recipe for a level bust. Other crews with local knowledge delay setting 1013mbs until receiving the "passing Level?" request, again risking a level bust.

The ATC definition of "Level" appears to be either Altitude or Flight Level depending on aircraft vertical position in relation to Transition Altitude but ATC need to realise that we must have 1013mbs set when climbing to a Flight Level and if they require Altitude then they should convert the Flight Level report themselves.

CHIRP Comment: For the reasons stated above, many operators' SOPs require that the Standard Pressure

Setting (SPS) be set when obstacle clearance is no longer a factor.

If the purpose of the ATC call is a radar check, the standby altimeter reading should suffice. However, if the call is to verify Mode 'C', vertical separation as displayed to the controller is on the basis of QNH below the Transition Altitude (TA) and the SPS above the TA. In the latter case, if it is not possible for ATC to verify Mode 'C' prior to the aircraft reaching 1,500ft, delaying the check until the aircraft has climbed above the TA would seem to be worthy of consideration.

The matter has been raised with the ATSU concerned.

VHF INTERFERENCE - SOME ADDITIONAL THOUGHTS

Report Text: With reference to the report 'VHF Interference - An ATC View' in FEEDBACK 80 I agree with all the points made both in the report and in the reply comment by CHIRP. However, I think some more practical points need to be made if this issue is to be rectified.

Firstly, "pilots should observe the designated operational coverage (DOC) for that particular frequency, as published in the UK AIP". Of course pilots must obey this; unfortunately the UK AIP is not kept in the crew room or on board aircraft. Also the DOC values are not written in any documents that are kept in the crew room or on board aircraft. This means that crews are unable (practically) to reference and therefore obey the DOCs. Even if the documents were available, it would be impractical for crews to be faffing around looking for such information whilst checking-in in the crewroom and the fact that we needed to do this for a particular airfield (i.e. the fact that there is no ATIS available) would need to be highlighted on the paperwork at check-in. To reference such information in the cockpit whilst in-flight is also impractical if it is buried in the middle of some text manual and most of us would forget until it was too late anyway i.e. as we went to transmit near to or during descent.

I regularly fly into DDD (UK regional airport). On the approach plates underneath the approach frequency there is a note saying "contact approach at least 10mins before ETA". It does not specify that this is only for certain flights (e.g. only G/A, or those without a flightplan) and neither does it specify a reason for the procedure. Therefore, I always call at least 10mins before ETA on Box 2 and it is likely that I am outside the DOC on each occasion. Does this procedure at DDD and other airfields with similar local procedures need to be reviewed?

CHIRP Comment: The reporter raises two relevant points; the availability of DOC information to flight crew and the compatibility of DOCs with current flight crew SOPs.

As regards availability, there would appear to be merit in providing some information on DOCs in the general section of approach plate booklets.

The reporter's second point is also worthy of further consideration. Most company SOPs require an approach briefing to be conducted prior to commencing descent; in some cases this can be at around 120-130nm. Where no ATIS broadcast is

available for the destination airfield, the flight crew's options for obtaining this information might be limited. This raises the question whether the DOCs promulgated for Approach/Tower frequencies are compatible with current operations.

Both points merit further consideration by the relevant agencies.

MAINTENANCE STANDARDS

Report Text: The maintenance at ##### is causing a great deal of concern. Faults are often carried (with nothing in the Tech Log) for days until the aircraft night stops at the main base (AAA). Apparently, perfectly legally, daily checks are only carried out at 48hr intervals.

A recent incident is indicative of the problems. A pilot reported intermittent low oil pressure on the last sector of the day. The aircraft continued to destination and the fault was entered in the Technical Log. Seven quarts of oil was added to engine and a high power ground run carried out with no problem evident. The Tech Log entry was cleared and the aircraft declared serviceable. I think the reason was the aircraft had done more than 20 sectors since its last 'daily' check.

CHIRP Comment: A captain's legal responsibilities include the recording of defects at the end of the sector on which they occurred.

The interval between 'Daily' checks can extend to 47hr 59mins (the start of one 24-hour period to the end of the subsequent one); however, a company operating a number of short sectors should have appropriate procedures in place to monitor consumables such as oil contents. Also, the aircraft captain has a legal responsibility to ensure that the aircraft departs with sufficient oil to complete the sector; however, in cases where short turn-rounds are scheduled, the practicality of flight crew checking engine oil levels may be a factor, particularly in the case of engines with specific time constraints associated with the check. In such cases, the operator must ensure that the captain's legal responsibilities can be met.

NEW TECHNOLOGY - NOT FOOLPROOF

Report Text: We were scheduled to depart AAA (a major UK airport) in a new corporate jet that is equipped for a paper-free operation. The First Officer (FO) was the Pilot Flying.

I had acquired the clearance and asked the FO if he would load the Flight Management System (FMS) while I went in and paid for the fuel. The truck had arrived late and I wanted to be sure not to miss our departure slot. When I returned to the aircraft, the FO had loaded the FMS and I reviewed with him the clearance including the departure SID using the aircraft's new 'paperless chart' display screen with the SID on it. The unit displays a default enlarged view of the SID which obscured the name of the SID.

We departed runway ## and were in a right turn and climbing out of 5,000ft when ATC called us and inquired what SID we were flying. I went to the display unit and reduced the SID presentation and saw that we were

flying the XXX1B departure. At that time ATC gave us a left turn and a climb to 8,000 feet. We thanked them for their help.

We had been cleared for the YYY3B departure; however, the FO had inadvertently entered the XXX1B SID, commenting later that the XXX1B was the SID he usually flew when departing AAA.

We learned a couple of things from this experience. While our briefing of the flying of the SID was perfect, it was the wrong SID. We should have reduced the size of the SID presentation on our display unit to confirm the name of the SID. It is also easy to sub-consciously enter what we usually do rather than what we are now supposed to do. The new technology combined with a little time pressure contributed to an incomplete review of the total SID page.

Our future use the 'paperless chart' display will include reducing the chart presentation or scrolling through the entire SID to confirm all elements of the SID including the SID name.

123.45 MHz - A COMMENT

Report Text: I note that your Autumn 2006 issue contained a comment about the use of 123.45 MHz as an air-to-air RT frequency not being permitted in UK airspace.

The problem is that transatlantic aircraft that use 123.45, as approved by Shanwick/Gander, have a VHF footprint that covers the UK when the aircraft are at altitude. The CAA has been totally obstructive in removing the frequency from ATC use, despite being aware of the problem for years. Indeed some years ago Southend had to abandon the use of 123.45 because of such interference. Why does the CAA persist in this King Kanute attitude to 123.45 and not follow international practice. How do we expect others to standardise on ICAO if we do not!!

P.S. I believe 123.45 is allocated now to an oil rig in the North Sea!! Hardly unchangeable.

CHIRP Comment: The fact that two aircraft at cruise altitude on opposite sides of the UK FIR can legally converse with each other on 123.45MHz in accordance with ICAO standards and recommended practices (SARPs) calls into question the rationale for the UK difference. Given the CAA's intent to minimise the number of UK differences to ICAO SARPs, this one merits an early review.

AN ASSUMPTION TOO FAR

Report Text: I was contracted to carry out a survey task overseas. It being my first time flying in this area I tried to buy maps only to find that the ICAO map 1/500,000 is out of date and out of print whilst the Jeppesen although aeronautically current and up-to-date has very little topographical info; not ideal for low level survey flying. Being freelance I had no real back-up although I had been given an airspace brief on arrival.

On the first two days the observers had the areas to be surveyed marked on road style maps. This was very helpful as it enabled me to be spatially orientated and with the aid of the GPS (no moving map) to give

accurate position reports to ATC. On the third day I was accompanied by the senior observer, who had been participating in this type of helicopter survey for many years; he had no maps, a very broad accent, and was very over confident. That afternoon we were operating in an ATZ (Class C Airspace). I had considerable difficulties liaising with ATC as the GPS went u/s and I could not understand what the observer was saying; also map reading was not possible at the low attitudes that we were operating. ATC must have been getting really fed-up with my inability to communicate effectively.

With only one task remaining, we had to land due to rain and I could hear fixed wing aircraft taking avoiding action from large build-ups in the area. The observer was keen to complete the task once the rain ceased but as I did my walkround I heard thunder. The observer tried to persuade me it was quarry blasting but after the second rumble he phoned his control centre who confirmed lightning activity - who says CRM is not necessary single pilot!

Once airborne he briefed for the next survey task to the "city dump". I asked him to give the location in some reference that ATC would be familiar with and was told "every local knows the city dump" so I requested clearance to the city dump. The clearance that I received did not include the phrase "city dump"; however, I read it back knowing that the ATCO could not have misheard "the city dump" and assuming that the controller knew the city dump and had given me the best clearance possible for other traffic to know where I was going. I was not comfortable about the situation but I knew that at the height I was flying I could not possibly be in conflict with other traffic except that I could cause a TCAS alert.

Once having started the survey task, I had little idea of my location but ATC requested it as I crossed a low ridge, I suspect giving a brief SSR return. By this time I could see I was approaching what had to be the city dump and reported so but was told by ATC in no uncertain terms that my clearance had not been to the city dump but to a point several miles away.

I was clearly in the wrong and should not have started the last survey task but with no maps of a suitable scale (1/250,000) with obstructions/power lines marked, no GPS available and no local knowledge my options were limited but my biggest problem was the observer. I was operating in his local area on a task with which he was intimately familiar, but I could not get him to understand that I needed to know where I was and where he wanted me to go!

CHIRP Comment: The key lesson to be learned from this report is that reliance on local knowledge and a single item of navigation equipment is no substitute for detailed planning. A lack of preparation can leave an individual vulnerable to a subsequent unanticipated failure/change.

A particular point that the reporter highlights is that, in the absence of a challenge from ATC, he assumed that he was clear to proceed. If in doubt, always confirm the clearance with ATC and possibly save yourself the greater subsequent embarrassment.

HASSLE, HASSLE

Report Text: I was rostered for a morning standby duty until reporting for duty in mid-afternoon to fly two sectors.

Around one hour before my scheduled report time, having just set out for work, I received a call from crewing telling me that the crew would be required to self-position in a hire car from our base to another UK regional airport, then position the aircraft to AAA ((another UK regional airport)) to fly two sectors to BBB (UK) and back to AAA. Crewing then asked me to get to the airport as quickly as possible. I explained that I was en-route already and that I could not give any guarantees but would be there by my rostered report time.

I arrived at the airport security to be greeted by one cabin attendant who explained that the cabin crew had also been called early and that the other pilot had gone to collect a hire car. When the cabin crew were all present I called crewing to let them know and advised them that as soon as the hire car was sourced we would set off. I was then informed that we would now only be positioning the aircraft to BBB and operating the return sector to AAA.

As soon as the hire car arrived we set off. Having been in the car some two minutes, the time now being our original report time, I received another call from crewing asking if we had set off. I confirmed that we had just departed. They then asked if we could get there as soon as possible as operations wanted the scheduled return flight to AAA to be delayed as little as possible. I explained that the en-route rush-hour traffic would be busy but that I would consult with my colleague, who was driving. He had guessed the content of the call and as a crew we all agreed that we would not be unduly rushed but would make our best efforts to get there in good time by pooling our knowledge of the route and to make the best we could of the journey.

After another half hour or so we received another call asking for an updated ETA). We made an informed guess that we would be about another 35 to 45 minutes, as we were still in relatively heavy traffic. On arriving at the airport, we had to find a petrol station to fill the car, as crews had previously been warned that if hire cars were returned unfilled the crew member responsible would have the cost difference charged to them personally.

On arriving at the airport, whilst looking for the car hire return car park, we were called yet again by crewing asking if we could hurry up and get there as soon as possible, as Operations were asking for an ETD for the positioning flight. I asked them to get Operations to call us directly in another 10 minutes to discuss the aircraft refuelling to help expedite our departure.

Now being approximately two hours late and having been constantly harassed during our journey, on talking to the ground staff we discovered that both Crewing and Operations had known that we needed to position the Aircraft several hours before we were called. We could have had additional time to make the journey

without then running late and without the pressure being applied to constantly hurry up

In the event we then had a technical problem to deal with on our departure, which further delayed the flight by 30 minutes, as we checked the problem, ran the appropriate checks and talked to Maintenance about the correct procedures for departure.

Finally, we briefed the departure, which involved some recent changes to our company SOPs. Subsequently, during the take off roll, I felt that as a crew we had not allowed ourselves adequate time to brief our new roles and responsibilities. No problem developed but had we not been put under constant pressure to rush I believe that this situation would not have arisen.

I feel that as a result of the lack of planning by Crewing and Operations earlier in the day, flight safety could have been compromised as a result of the pressure that had been applied to us, in spite of the fact that as a crew we kept the attitude that we would not be unduly rushed.

CHIRP Comment: It can be very difficult in a situation such as that described to resist pressure to take short cuts 'in the company's best interest'; in this case the crew correctly resisted the pressure from crewing.

In such circumstances it is particularly important that the aircraft commander takes sufficient time to ensure that the pre-flight briefing is sufficiently comprehensive to ensure that all members of the crew are no doubt as to the SOPs and their safety responsibilities.

FLORIDA TWO VARIATION

Report Text: My company uses the "Florida 2" Variation on flights returning from Western Canada to the UK. This permits the pilot complement to be reduced to 2, instead of the 3 that would otherwise be necessary (third pilot acting as "relief", allowing sequenced rest to be taken).

These flights follow a long duty from the UK the previous day, which involves positioning after the Flight Duty Period (FDP) by a local airline to another city, then an 18-30hr rest period before reporting for the flight back to the UK (not necessarily to your home base).

The Florida 2 Variation allows pilots who are "not acclimatised" to work a longer FDP than would otherwise be the case on flights from (quote from our FTL Scheme) "UK to Florida/Caribbean". The whole point of this Variation is that the crew are "not acclimatised", and this is reasonable in the context for which it was designed, the relatively benign time zone change between UK and Florida/Caribbean being max 5hrs.

However, despite the flight time to Western Canada being not dissimilar to Florida, the time change of 8hr exacerbates the problem of achieving proper pre-flight rest for the return sector because a crewmember "not acclimatised" usually awakes early in the morning local time. One then cannot sleep and remains awake until early afternoon when it is time to report for the flight back to UK. It is not uncommon to commence a 10 or 11hr FDP having already been awake for 8hrs or so. The absence of the third pilot removes any chance of rest if one needs a 20 min "shuteye" during the night.

This commercially-driven decision ignores physiological issues associated with long haul operations traversing many time zones. As UK charter airlines venture ever further afield without proper crew rest facilities, I feel that flight safety is coming second to commercial gain.

CHIRP Comment: The FTL Variation quoted in this report was introduced to permit a two-man crew to operate the longer sectors to/from the East Coast US and Caribbean destinations on the basis that they remained 'unacclimatised' during the stopover. The Variation includes some protections in the form of other duties/rest both prior to and subsequent to its use. Any significant factor affecting the duties, such as additional positioning or extra time zone changes, should be subject to agreement with the CAA Flight Operations Inspector designated to oversee the company's operations.

'Napping' does not require a third pilot to be present as the reporter infers; the CAA has approved procedures for flight crew to take short naps. Where this involves a two-crew operation, the procedure includes a regular check of the operating flight crew member by a cabin crew member. Each operator is responsible for deciding whether to adopt a policy on napping; where it is permitted, the precise arrangements and procedures should be promulgated.

The matter has been referred to CAA (SRG).

LGW ATIS

Report Text: On the LGW ATIS frequency variable winds are announced as follows: "150 degrees 10 knots variable between 100 to 250 degrees".

This last bit (variable between ONE ZERO ZERO TO TWO FIVE ZERO degrees) is very confusing. I am a regular visitor to LGW and have got used to it now, but I can imagine this is really confusing to non regular, non native English visitors (as it was to me the first day I heard it).

At other airfields the word "AND" is used. Maybe this is an idea for LGW ATIS as well; wind information is a safety issue and needs to be clear to all pilots using the airfield.

CHIRP Comment: The reporter's comments were passed to the ATSU management, who subsequently confirmed the terminology quoted above.

A change to the automated phraseology software is to be introduced as soon as practicable.

CABIN CREW REPORTS

USE OF MOBILE PHONES

Report Text: This isn't the first time I and the whole crew have been led by the flight deck crew and ground staff underneath the wing and tail to get to our suitcases and crew transport. This time, however, a refuelling truck was attached and in the process of refuelling. One crew member was on the phone and didn't even bother switching the phone off but went ahead and walked talking all the way.

CHIRP Comment: The CAA strongly discourages the use of mobile phones in the vicinity of aircraft, because of the risk of distraction, aircraft system interference and possibly fire. Whereas the risk of a spark of sufficient intensity to ignite fuel vapour released during fuelling is extremely remote, the risk of a mobile phone user becoming distracted is much greater and may result in physical contact with the aircraft and injury. Signals from mobile phones can also interfere with fuel gauge readings and navigation equipment, and may cause spurious fire/smoke warnings in cargo/baggage holds.

ENGINEERING EDITORIAL

CHIRP-MEMS - MAKE A DIFFERENCE!

None of us have immunity from mistakes; human errors will always occur. The real art is in trying to isolate the events to ensure that the consequences of our errors do not have a significant impact.

The key point to remember is that in aviation we are all involved in the safe dispatch of aircraft. Whether an individual works in a support role or a front line operational function, all are links in the proverbial chain.

In engineering this ranges from technical engineers who are responsible for the Approved Maintenance Programme and monitoring airframe and engine systems reliability, to the planners that schedule the tasks and of course the certifying licensed engineer at the 'coal face' and finally, the administrators who invariably 'feed' the IT systems that help to manage the engineering function overall. These are the links in a very complex chain and inadvertent errors can be made in any part of it.

In recent years statistics indicate that in the UK, the overall level of maintenance errors is in decline, something engineers can take pride in. At the same time the numbers of operating aircraft has risen, particularly in the commercial air transport sector.

Training requirements have also seen a number of changes, largely due to a change in licensing standards. In effect there is now a two-tier system, one task oriented and the other a more in-depth review of the aircraft systems and their operation.

In addition, the syllabus includes among other things a heightened awareness of what can go wrong by teaching human factors as a separate topic, which is repeated at two yearly intervals as a requirement for continued qualification as a certifying engineer.

However, from the analysis of maintenance events during the last ten years, it is apparent that very similar basic errors are still repeating themselves, for example,

- **Installation errors** – failing to follow approved data adequately, omitting key stages in disassembly and subsequent re-assembly
- **Handover errors** – failing to provide adequate communication to others who will be continuing the task, perhaps on another shift

- **Poor inspection standards** – failing to inspect an installation adequately resulting in subsequent operating failure
- **Poor supervision** – failing to supervise or provide mentoring to less experienced engineers resulting in certification of substandard work
- **'Blind stamping'** - acceptance on trust of another's work, resulting in certification of a task unseen leading to operating failure

So why do we keep making the same basic errors?

Leading organisations are already seeing the benefits of investing in their people, keeping them informed and by encouraging their involvement in what will soon be mandated, a company Safety Management System. This will provide managers and staff at all levels with an awareness of the risks they face and provide an open debate for feedback on possible solutions for long term fixes.

This process should provide a common sense approach to what is a very practical maintenance world, supporting an open culture to discuss what in the maintenance environment is equivalent to 'Airmanship' on the flight deck and develop the key skills that our maintenance industry needs.

The **CHIRP**-MEMS group was established to provide a focus for reviewing the causes of error and to act as a channel for feedback from individuals who are interested in contributing to an informed debate that we would like to open with you.

Professional engineers who would like to see the skill base move forward can help develop a safety culture across the industry that helps everyone to learn from their own experiences. All information will be treated in the strictest confidence in accordance with the **CHIRP** policies and procedures.

Significant errors that are identified during operation are normally reported by aircrew or engineers through the company or CAA MOR reporting scheme and investigated by the Quality department. However, there are invariably events which arise that could be considered as a 'near-miss', where an error is detected and rectified before any serious consequences result. There is a significant amount to be learnt and shared from these near misses if they are reported

As with pilots and ATCOs, **CHIRP** is interested in hearing from engineers who have made errors themselves, which probably have not been reported through the company scheme but nonetheless, are experiences from which others could benefit. The lessons learned from this type of event are equally as important as learning from the results of a formal investigation. As stated earlier, confidentiality is guaranteed and all individuals are protected by the **CHIRP** policy.

This is an opportunity to advise an influential industry group what it is you would like to see improved, and where possible, provide a considered approach as to how a solution to the issue can be found.

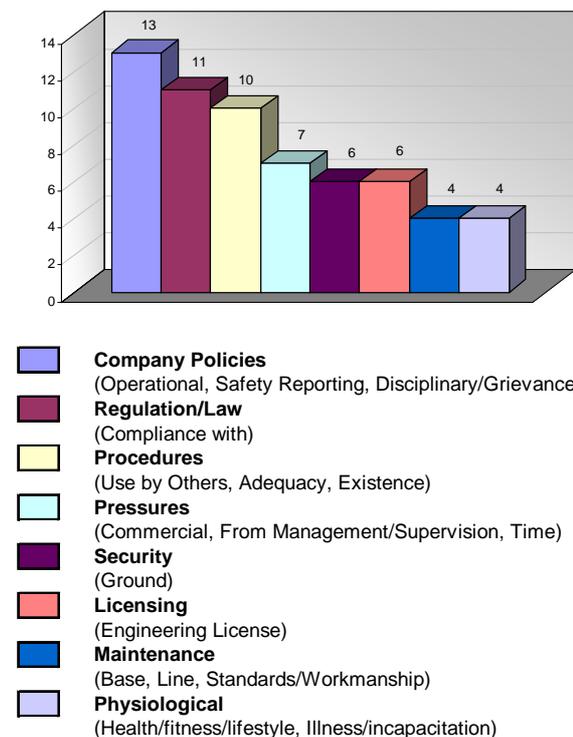
If you are interested in joining this 'skills' debate, please complete the attached confidential

questionnaire. All submissions will be reviewed by the **CHIRP**-MEMS team.

Mick Skinner

ENGINEER REPORTS

Most Frequent Engineering Issues Received: 12 Months to December 2006



DEFECT REPORTING

Report Text: I was tasked with 3 "jobs" by the Engineering control centre

1. FOD by rudder pedals
2. Fit deck table filaments
3. Dome light

When I arrived at the a/c, the Captain was doing the pre-flight walkround and the First Officer (FO) was sitting in the right-hand seat.

The Technical Log showed "NIL DEFECTS" I asked the FO why nothing had been entered in the Log - especially the "FOD" defect. His reply was that I should talk to the Captain!

The FO reluctantly entered the defect regarding the dome light. I entered the defect regarding the table lights as an engineering entry. I proceeded to rectify the two defects and subsequently signed them off.

When the Captain appeared, he said he saw an apple roll and disappear by his feet under the rudder pedals. I asked why there was no entry to that effect in the Tech Log as it was an obvious threat to the safety of the aircraft? His reply was that he had sent an "ACARS" message and called Engineering on VHF, but hadn't bothered to enter it as a defect "in case nobody turned

up" he also said something like - "I didn't think it would matter".

I insisted that he should make a Tech Log entry due to the serious nature and eventually he did.

After some time, and a second engineer attending the aircraft, a green apple was found in the forward avionics compartment.

CHIRP Comment: The reporter's concern regarding the flight crew's apparent reluctance to enter defects in the Technical Log was raised with a senior manager, who agreed to issue a company notice emphasising the importance of doing so.

ENGINE RUNNING - SAFETY PROVISIONS

Report Text: Can you please advise me if there is any civil regulation that specifies engines must not be running when personnel are boarding/disembarking aircraft?

Additionally is there any civil regulation that specifies that engine guards are to be used when engines are running for ground maintenance checks, or is it left to the operator to decide?

CHIRP Comment: There is no regulation that precludes personnel from boarding an aircraft with the engines running although many airlines' Standard Operating Procedures preclude the boarding/disembarking of passengers past an operating engine. The approved maintenance data for the aircraft type will normally give guidance on safe areas and distances from an operating engine.

Also, there is nothing in aviation regulation that requires the use of ground running guards. Guidance on the preferred location of ground running personnel, e.g. on head sets etc, or those involved in making ground running adjustments to fuel controls, etc., should also be available in the manufacturer's approved data.

There are obligations under existing health and safety legislation. The Health and Safety at Work Act requires an employer to provide suitable clothing, protective gear and equipment to cater for the activity. However, this does not necessarily mean that safety guards are required under these provisions either.

A responsible operator, acting under an employer's duty of care to employees, might go further and provide specific ground running facilities to minimise the environmental aspects of ground running, e.g. detuners, and, where extensive ground running takes place, then provision may also be made for safety guards to be part of the ground equipment.

GROUND PRESSURISATION MAINTENANCE CHECKS

Report Text: During a recent investigation into a pressurisation defect I and another engineer were subject to repeated ground pressurisation cycles. A total of 7 cycles were completed in my shift to prove the defect was cleared prior to issuing a release to service.

Prior to the check AMM precautions were followed with regard to safety personnel and medicals for operating

engineers. After the maintenance I experienced headaches with an associated blocked nose type symptom, this was confirmed by my colleague. The following day my ears cleared with a painful 'pop' similar to that experienced when pinching one's nose and trying to breathe out. The pain in my ears continued for some days following the maintenance.

I concluded the problem was due to participation in repeated pressurisation cycles inside the aircraft during the preceding maintenance check. After enquiries with my company, no risk assessments or control measures for this procedure could be found; the company concluded that the procedure was not hazardous and was adequately covered with safety precautions in the AMM; also, pilots and passengers experienced multiple pressurisation cycles without incident. I found they did not understand the differences in pressures and rates of pressure changes experienced by pilots during normal flying and ground crew on maintenance checks.

During flight the cabin air pressure reduces from an ambient ground air pressure of 14psi to a cabin altitude of 8,000ft (approximately 11psi) during the climb the aircrew experience a maximum cabin pressure rate of change of 600ft/min in climb and 425ft/min in descent. This is controlled by the aircraft pressurisation controller in the 'detent' position on my aircraft.

Whilst on maintenance the aircraft is pressurised to 6psi above the local ambient ground pressure. The engineers are subject to a pressure of 20psi internally in the airframe, nearly twice that of aircrew. This rate of change is manually controlled by the engineers on board the aircraft.

During the leak rate test the air supply is terminated to determine the leakage rate of the aircraft. The rate of change during this part of the test is uncontrolled by the engineer and is totally dependant on the status of the airframe seals. I have experienced rates of change in excess of 2,500ft/min back down to equalisation at ambient. This rate of change is up to 4 times that experienced by aircrew.

My company and I have carried out research including contacting my local HSE and CAA SRG medical specialists but advice has been minimal. There is still no risk assessment or control measure instigated for this procedure, so I have chosen not to do more than 3 cycles in any shift to protect myself. I would be surprised if other engineers had not experienced the same ear problems during these checks. I invited my managers to come and experience this procedure personally to determine for themselves if it was hazardous. They politely declined citing a lack of a pressurisation medical as the reason!

I would be grateful if CHIRP could find any information in regard of this procedure so that my company could put in a procedure that might officially protect us engineers.

CHIRP Comment: The reporter's concern was represented to the CAA, who provided the following response:

'Pressurisation checks to verify the adequacy of system operation are an essential part of proving aircraft serviceability. The reporter clearly identifies the key risk to

those performing such checks, the absolute pressure reached and the rate of change. The maximum differential pressure on a specific aircraft type varies and can reach as high as 11 psi above ambient pressure. This in itself does not pose a problem, underwater diving can subject an individual to much greater pressures. It is the rate of change of pressure during pressurisation cycles, both the increase and decrease of pressure, that poses the risk. Even when conducting a leak test, the rate of change should be controlled by the allowable leak rate; a general integrity test for door seals/undetected damage should be performed before shutting off the air supply.

Clearly, individuals involved in pressurisation checks should be medically fit. Companies often have general medical requirements for engineers performing such functions; however, an individual still has a duty of care to ensure that there is nothing of a temporary nature that would impact that general level of health. Whilst the checks carried out appear to have observed the proper AMM practice for rate of change etc. the example given serves to show that sinus problems can still occur even if obvious symptoms, e.g. colds or blocked nose, are not noted at the start.

Any function check carries an element of risk with it. The possibility of a sudden depressurisation event occurring during the ground pressure check is certainly one scenario that should be considered. Others would include the possibility of an engine fire or surge during the run which would give rise to an emergency situation whilst possibly at maximum pressure.

These may not require a formal risk assessment under present rules, however, they need to be considered by those carrying out the ground run during their preparations and by the company under their duty of care to their employees.'

CAA (SRG) ATS Information Notices are published on the CAA (SRG) website - www.caa.co.uk/default.aspx?categoryid=33 and click on the link 'Search for a CAA Publication'

CAA (SRG) FODCOMS

The following CAA (SRG) FODCOMS have been issued since October 2006:

16/2006

Redistribution of Passenger or Freight Load Whilst Airborne

17/2006

The Provision of Routings for En-route Traffic Outside Controlled Airspace

18/2006

Changes to ICAO Technical Instructions Affecting All Operators

19/2006

Winter Operations

20/2006

CAA Winter Break 2006/07 - Provision of Emergency Service to AOC Holders

21/2006

Carriage of a Certified True Copy of the Air Operator Certificate (AOC)

22/2006

Publication of CAP 768 Guidance Material for Operators

23/2006

Ground Handling - Operator's Responsibilities

24/2006

Prevention of Delay into Service of New or Additional Aeroplanes to an Operator's Fleet

25/2006

The Potential for the Inadvertent Ignition of Cigarette Lighters in Passengers' Baggage

1/2007

Revised Definition of 'Runway Incursion'

2/2007

SAFA Ramp Inspections on UK Aircraft

CAA (SRG) Flight Operations Department Communications are published on the CAA (SRG) website - www.caa.co.uk/default.aspx?categoryid=33 and click on the link 'Search for a CAA Publication'

CAA (SRG) ATSINS

The following CAA (SRG) ATS Standards Department ATSINS have been issued since October 2006:

Number 92 - Issued 31 October 2006

Winter Operations at Aerodromes

Number 93 - Issued 3 November 2006

Wake Turbulence Separation and Flight Planning Requirements for the Airbus A380-800

Number 94 - Issued 9 November 2006

Visual Completion of IFR Approaches

Number 95 - Issued 10 November 2006

Winter 2006/07 (Christmas Break and New Year)

Number 96 - Issued 24 November 2006

English Language Proficiency Assessment of Air Traffic Controllers.

Number 97 - Issued 30 November 2006

Medical Certification Requirements for Unit Training Plan (UTP) Verifiers

Number 98 - Issued 8 January 2007

Revised Definition of 'Runway Incursion'

Number 99 - Issued 22 January 2007

Operations from Reduced Length Runways: Risk Assessment and Safety Management

CHANGE OF ADDRESS

If you receive FEEDBACK as a licensed pilot/ATCO/maintenance engineer you will need to notify the department that issues your licence of your change of address and not CHIRP. Please write (including your licence number) to Personnel Licensing, CAA (SRG), Aviation House, Gatwick Airport South, West Sussex RH6 0YR:

Flight Crew	Post - as above
	Fax: + 44 (0) 1293 573996
	E-mail: fcweb@srg.caa.co.uk
ATCO	Post - as above
	Fax: + 44 (0) 1293 573974
	E-mail: ATS.licensing@srg.caa.co.uk
Maintenance Engineer	Post - as above
	Fax: + 44 (0) 1293 573779
	E-mail: eldweb@srg.caa.co.uk