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FEEDBACK

Issue No: 49 **January 1999**

Editorial

CHIRP Survey - As many of you know a Charitable Trust was formed in 1996 to oversee the CHIRP Programme. At that time it was concerned solely with flight deck and ATC, though it has since expanded, at the request of the Civil Aviation Authority Safety Regulation Group, to include Licensed Engineers and maintenance personnel. It is possible that in the near future Approved design and production companies will be incorporated. This has certainly enhanced the Programme, but it remains of the utmost importance that CHIRP provides a balanced contribution to flight safety both for the original professional groups and the new domains.

Since 1982, the Programme has disseminated information principally by publishing reports in the FEEDBACK newsletter. Every report that we receive is acknowledged, reviewed and, where appropriate, followed-up with/on behalf of the reporter. No action is taken on a report without the specific prior approval of a reporter. Similarly, no report is published in FEEDBACK without a reporter's prior knowledge and concurrence. In 1996, the number of issues of FEEDBACK was increased from three to four per year. Even so we are still unable to publish more than a selection of the reports we receive, though all reports are dealt with to an appropriate level of detail.

From time to time we receive comments from individuals on the style, presentation and content of FEEDBACK. As an example, we have received comments in favour of the decision to combine engineering reports with flight deck and ATC, though others seem to prefer a separate publication. As the comments that we have received may represent a small proportion of the groups served by the Programme, we have decided to undertake a survey to ensure that the Programme and the manner in which report information is published remains correctly focussed.

All UK based recipients of past issues of FEEDBACK will find a one-page survey form and a Freepost envelope enclosed with this issue. It is important that we receive as many responses as possible to ensure that the Programme remains relevant to your needs. **Even if you are content with the present arrangement, please give us your views, so that we will receive a balanced opinion.**

CHIRP Reports - Over the last year or so that we have received fewer confidential reports from flight crew on incidents involving human error. The reports we now receive are invariably of a high standard and provide detailed accounts of error incidents. Some straight forward incidents, which previously might have been the subject of a CHIRP report, are now reported through airline reporting systems, reflecting the enlightened approach to safety reporting that many UK operators have successfully pursued. This more open approach is to be welcomed, though information on these types of incidents may be limited to the airline concerned. We would wish to emphasise that one of the benefits of CHIRP is that disidentified information that we receive is disseminated widely and is available for analysis by third parties.

CHIRP Web - Recent issues of FEEDBACK may now be accessed through a CHIRP web address. The site also contains information on the Programme and copies of report forms. There is no provision for electronic reporting to protect reporters' confidentiality. The site address is **http://www.chirp.dircon.co.uk**

INSIDE THIS ISSUE:

OUR POSTAL ADDRESS HAS CHANGED TO:

CHIRP, FREEPOST (GI3439), Building F131, Room 129,

Farnborough, Hants GU14 6BR, UK

Fax: 01252 543860 or **E-mail:** Kirsty@chirp.co.uk

Please notify us of your change of address in WRITING only

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

Musical Runways (FB48)

ATC are to be applauded in their attempts to offer straight-in approaches wherever possible, particularly when the R/W is not that continually in use. However, there are many occasions when, frankly, we can be on the ground sooner, and having burnt less fuel (presumably the two criteria in the ATC controllers' mind) if we continue at high speed past the landing airfield and position onto finals behind the Number 1 aircraft. What we need (as pilots) is "situational awareness" i.e. the picture in the air traffic controller's mind and knowledge of the type of aircraft in front. I have been using TCAS for a few years and this device is particularly helpful in providing an overall picture that is, I am sure, of benefit to us all, controllers and pilots alike.

Although TCAS may assist in enhancing situational awareness, remember that it will not always provide a complete picture. For example, aircraft with non-compatible and non-operating transponders will not be 'seen'.

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Level Busts (FB48)

Several comments were received on the item "Level Busts" (2) in the last issue. The following is representative of the views expressed:

Reference Level Busts (2), the reason for passing exact flight levels is so that ATC can verify the Mode C altitude readout. In answer to the reporter's questions: Yes, this is new teaching and yes, he/she is old fashioned.

The latter raises a serious point, however, in that new procedures and requirements are not always adopted by established aircrew, for example many pilots still report "clear" of the runway when the correct word has been "vacated" for quite some years now. In my own airline, many of the old hands use an incorrect radio callsign. There needs to be a procedure for training established aircrew (and perhaps controllers?) in new procedures and requirements.

UK AIP ENR 1-6-3-1 States:

Para. 1.3 (e) When reporting levels under routine procedures or when requested by ATC, state the current altimeter reading to the nearest 100ft. This is to assist in the verification of Mode C data transmitted by the aircraft.

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A Common Aeronautical Language (FB48)

I was the Captain in this incident. The French ATC would appear, according to the French authorities, to be blameless in this incident at Charles De Gaulle ... Well, let's see:

We DID NOT fail to follow a reduced speed instruction, at least one given in English. Maybe one was given in French? This has happened on more than one occasion when things get fraught at CDG - the local controllers revert to native language.

A further incident may illustrate the problem and, I am sad to say, maybe show how a major incident is waiting to happen if the French ATC continue to be constrained by Ministerial Order No 7. The visibility at the time was 2,000m and low cloud base. As usual at CDG, chatter was heard in French and English. A B757 *(UK airline)* was cleared for take-off ahead of us, we were immediately given clearance to line-up, followed by immediate take-off clearance. The First Officer informed Tower that we needed the standard separation for wake vortex. Again more chatter was heard in French. We were then requested to vacate the runway as an Air France B737 was approaching on very short finals.

This raises the point that had transmission been made in English, as a crew, we would have been able to build up the "mental picture" of the situation. In this instance knowing we would have to wait on the runway, we would have

declined the clearance to line-up knowing the B737 aircraft was on short finals.

As it is, the simple fact that French is used in RTF transmissions has cost our company fuel for go-round in the first incident and more taxi fuel and an extra 20-minute delay in the second. More importantly, the use of two languages has caused flight safety to be eroded.

Is this a case of Nationalism over safety?

We have received other similar comments on this matter and will seek the support of CAA to once again represent these concerns in the appropriate forum. It is important to report formally every occurrence of this type that prejudices safety.

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Getting the Job Done?

As a multi-X licensed avionics engineer who now finds himself involved in the management of a maintenance organisation, I read with interest the number of reports that you publish where the licensed engineer in question often feels that he is put under extreme pressure from management to perform miracles whilst working excessive hours. Whilst I sympathise with those individuals I think it is about time that "the management" had the opportunity to have a say.

This organisation has capacity for a number of wide-bodied aircraft and my department consists of a significant number of engineers including avionic licensed engineers with various licence coverage and approvals. Many of the aircraft programmes that we undertake are here for several months. I like to think that at no time have I unreasonably pressurised any of my licensed engineers to work excessive hours. However, just like everywhere in this industry there are times when, due to previously unforeseen circumstances, including sickness, it is necessary to work what could be classed as excessive hours i.e. late nights, extra days, ghosters *(A nightshift immediately following a dayshift)* etc. in order to meet a deadline. So far I cannot recall ever having had a problem in finding a genuine volunteer who is willing to help out. The facts are (a) people like the extra money and (b) if people enjoy their jobs they don't mind putting themselves out occasionally to help a company or department achieve a goal.

Licensed engineers are a very important part of the team, but only part. If everyone works hard to get an aircraft ready for delivery then often peoples' individual drive and pride makes them work whatever is required to get that aircraft into the air. From what many of your letters indicate "the management" should never expect or allow anyone to work unreasonable hours. But its not a one-way thing - in health and safety law - "Every supervisor (and this includes most licensed engineers) has a duty of care to ensure that, as far as is reasonably practicable, no-one is put at unnecessary risk".

So come on guys - We ALL have to take some of the blame for the fact that in this industry excessive working hours can sometimes be necessary. Perhaps, if none of us had ever worked anymore than 40 hours a week, the industry would have trained more engineers in the 80's, so that there would now be licensed engineers everywhere!

This report exemplifies the problem that many sections of the industry face. A "can do" attitude can provide mutual benefits; improving company performance on the one hand and providing additional remuneration on the other.

However, this type of culture can also be a threat to safety in that it tends to reduce awareness among both managers and the relevant workforce to the increased potential for significant errors to be made when working extended duty periods. Lack of recognition of this fact can leave the individual and the organisation vulnerable to the consequence of human error.

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To Fix...or Not To Fix (FB48)

(1) The Theory?

I read with great interest the report "To Fix or Not to Fix" in the October issue of FEEDBACK. Your correspondent would be well advised to become familiar with the logic used in the design of the CMC/EICAS. If a fault affects aircraft dispatch it is displayed as a status

message and must be actioned. If it does not affect dispatch it is not displayed on EICAS but is stored in the CMC for later retrieval. An operator's maintenance schedule should state a time period at which non-FDE's/Existing Faults/Fault History items should be checked and actioned.

For aircraft on transit further guidance can be found in the 'EICAS messages' section of the MEL which lists all EICAS messages applicable to the subject aircraft, the reason for its display (e.g. valve open when commanded closed) and an MEL reference for dispatch relief or the words No Dispatch. It is important to note the distinction between status and caution/advisory messages, as they may be treated differently by the MEL.

Present Leg Messages/Existing Faults without a corresponding Caution/Advisory/Status message do not affect aircraft dispatch and need not be actioned on a transit, even at main base (unless, of course, it is company policy to do so).

I hope you will be able to pass this on to the author and that it will be of assistance to him/her.

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(2) The Practice?

I have had similar experiences to the reporter of "To fix ... or not to fix" (FB48).

Most Licensed Aircraft Engineers I've spoken to have been of the opinion that present leg non-FDE's (Non-Flight Deck Effects) are unimportant and can be ignored. To work these defects is considered a waste of time and to make a "serviceable" aircraft unserviceable.

Even when enquiring with our technical engineering group, I have not received clear guidance. Only selected ATA chapters are reviewed at regular intervals. Apart from this there appears to be no place in the Maintenance Schedule to review or action non-FDE's. I have heard that one airline has a special engineering team whose entire function is to rectify non-FDE's - at least they think these defects are important enough to look at.

Personally, I consider it part of my job to review non-FDE's during a turnaround (together with all present leg faults) and to action those that I consider should be rectified - especially those that can cause a Flight Deck Effect if another redundant system fails. Recently I discovered a hard non-FDE that should have been rectified or at least deferred for a limited period as a defect with performance implications. In fact it had been ignored for several sectors.

Surely a policy on non-FDE's is required before an avoidable accident occurs.

From the reports that we have received on this subject and our subsequent discussions, there may be discrepancies in some organisations between what is thought to happen in the recording and resolution of CMC messages and what actually takes place.

One problem would appear to be a lack of knowledge and/or understanding among some Line engineers as to the relevance of the fault information that is provided and the interaction of passive defect conditions on primary systems. There is evidence to suggest that this can result in hesitation to take appropriate maintenance action on some occasions.

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ATC REPORTS

Sharing the Problem

I have spoken to a number of my colleagues in area control and most have experienced problems with the relatively poor climb performance of the #### *(new generation twinjet).*

The problem is that for a long time we have dealt with new generation jets that all climb well and we have adapted our techniques to take this into account. Obviously we still get poor climbing older 747's and Tristars with the odd 1-11, but these are getting few and far between on a lot of routes. Now we are faced with this new jet operating on routes that have been previously operated by fast climbing jets. It is getting to the stage where we are treating them like 1-11's. This will mean that they get stopped off at intermediate levels more often and for longer periods and it is feasible that we may not give them their ideal cruise level at all simply because we are not prepared to "bust a gut" to get them up.

This is most noticeable on some UK routes. Pilots still request FL350, but take much more distance to reach this level and then to top it all they require an earlier descent than the #### *(previous type operated)* as well. As you can imagine this can increase our workload significantly.

Is it not possible for operators to operate these aircraft with less ground speed and more climb performance? This is of course less economical, but so is being stopped off and not even reaching the most efficient cruise level.

In addition to this problem in the climb, we recently had a problem with this type in descent. The aircraft was given descent clearance from FL350 to FL310 this due to crossing traffic ahead at FL330. No "Level by" restriction was given as descent was given so early it seemed inconceivable that the aircraft would not be level by the conflict point. The pilot reported leaving FL350 straight away, but was still passing FL338 approximately five minutes after leaving FL350. The crew was asked to increase the descent rate, but nothing appeared to happen over the next minute or so. The crew were then told to expedite the descent and traffic information given as there was now only 20 miles to go to the crossing track conflict point.

The aircraft was then transferred to the next frequency, which was also in contact with the conflicting traffic and although the rate of descent had increased it was still much less than was expected by the controllers. The aircraft then appeared to level off at FL316 and passed about six miles ahead of the other traffic (too close for comfort on crossing tracks).

When asked about his descent rate the pilot advised that, as his descent had started before the *(planned)* Top of Descent point the aircraft had only descended at 100 fpm and when asked to increase the rate, 500 fpm had been selected on the FMS. We did not ascertain why the aircraft had appeared to level off at FL316, but it is probably safe to assume that the crew could see the other aircraft and decided that they had missed it and were now trying to regain the most economical descent profile.

This incident occurred towards the end of duty periods, where both controllers and crew were tired. This initial slow descent rate could have been missed and the aircraft may have come much closer.

When we ask for descent earlier than normal it usually means we have traffic in the way. We also want a descent rate of at least 500fpm and if expedited we want a minimum of 2500 fpm.

This crew appeared to have had only one thought and that was to achieve the descent profile at almost all costs. Don't forget that we require five miles or 2000ft *(separation)* above FL290. It is not good enough for the crew to decide that they have enough separation. We have a system called SMF that records any occurrence where certain minima are not achieved, the controller being required to explain why he/she did not provide standard separation.

The airline was not aware of the effect that the different performance had on the particular routes referenced and, when advised, acted promptly to set up a dialogue with the ATS Unit to agree how the impact of the different aircraft performance might be minimised.

The specific descent case is indicative of a less than satisfactory operational technique by the crew concerned. ATC expects an aircraft to climb/descend at a minimum rate of 500fpm when changing levels. (UK AIP ENR 1-1-3-1 Para.2.1.1 refers). If you can't achieve this, let ATC know as early as possible.

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Over the past few months, we have received several further reports from operational air traffic control officers related to occupational pressure. Almost without exception the reporters acknowledge the quality of the UK ATC system and the excellent reputation that it has justifiably earned, for which they and their colleagues have been largely responsible. However, the reports reflect an ongoing concern as to whether the continuing traffic capacity demands being placed on the system can be accommodated without adversely affecting the quality of the service that they provide. The following reports are representative of the views expressed:

(1)

Typical morning duty on the ### sector. Only medium traffic loading on my outbound radar side, therefore I have spare capacity to cast a weather eye over my colleague's predicament with inbound traffic. He is preparing to cope with a traffic situation resembling the charge of the light brigade from Europe.

An extra controller arrives to assist my beleaguered colleague, but meanwhile he is still struggling to sort out the melee. I have spotted traffic that is destined for my area of responsibility and that I can take early to assist his traffic loading, when I overhear that it is being cleared down to the level already assigned to another inbound which is on a closing heading. Assuming that the other inbound must have also received descent clearance, I scanned the inbound strip display, only to discover this is not the case. Via the sector crew chief, I now urgently try and attract the attention of the inbound controller to instruct him to stop the descending traffic at a safe level.

The good news was that we managed to alert him to the problem, but the bad news was that the RTF frequency was obliterated by some other individual giving his life history!

A potentially serious confliction was just avoided as the frequency cleared in the nick of time.

As an ATCO with considerable experience in various fields, I think there are two main points arising from this incident.

Firstly and most importantly, is the standard of RT technique employed by aircrew on busy ATC frequencies. In many cases, crews (even British-based) do not listen out before transmitting, do not respond promptly and succinctly to ATC transmissions and do not appear to have the slightest regard for the fact that they are just one of up to as many as twenty other aircraft all fighting to gain the attention of the poor devil on the ground. A recent example was a British carrier who failed to respond to eight ATC transmissions from a very busy sector controller and then, when finally contacted, calmly advised that he had been listening all the time! In this instance, the increased workload to the controller and the inconvenience to other traffic caused severe difficulties on the sector.

Secondly and perhaps most alarming, is the continuing problem with traffic flows into British airspace. Despite the fact that an awe-inspiring array of high technology analysis and prediction devices are available to the CFMU in Brussels and my colleagues at LATCC, it is still apparently impossible to avoid traffic bunching within the parameters of sector capacity constraints. These are defined rates through fixes adjacent to FIR boundaries and are expressed as numbers of aircraft per hour. However, the hourly rates can at best be averages and if one hour's traffic arrives during a period of fifteen minutes, as happened recently, the sector concerned becomes rapidly and irrecoverably overloaded.

This situation is now a relatively common feature of everyday working on certain sectors. Although it may give us all a warm feeling to file an MOR after the event to register a sector overload, the resultant apathetic response from above that average sector traffic restrictions were not exceeded, does nothing to alleviate our concerns that the next overload may be disastrous.

Despite continued assurances by senior management that our ATC system is the best in the world and would never be allowed to become unsafe, potentially hazardous situations are seen regularly and the system and the controllers, who have to endure the system, are often stretched to the limit.

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(2)

I have always believed that the safest way to separate aircraft is on the ground, and it is from this principle that departure separations from aerodromes are developed. The vital factors are of course the route and speed of the aircraft concerned, the idea generally being to send a fast aircraft ahead of a slow aircraft on the same route, for obvious reasons. This principle is now under attack at ### *(a UK airport),* again due to the commercial pressure.

Runway utilisation is of course at a premium, and a Tower controller can depart two aircraft in two minutes if he

does not have to wait for a vortex gap for a turboprop behind a jet, and he is under pressure to do so. In addition, some airline managers will demand to know why their turboprop was kept at the holding point for an extra minute to allow a jet to depart ahead, irrespective of whether this is required under the departure separation criteria. This is all very well, and improves the movement record on the runway, but the problem only moves six miles along the track, where the jet is large in the turboprop's mirror, and noise restrictions prevent the Radar controller from solving the conflict laterally. Combine this with a SID track that routes departing traffic through the final approach track at glidepath height, and the possibility of a traffic confliction is significant.

All controllers involved in this are being forced to take on more and more non-standard situations at a time when air traffic is growing steadily, all due to commercial pressure being brought to bear on what are, after all, supposed to be MINIMA. If it continues like this, one day the minima upon which the public rely, and the capacity of the controllers to cope with the traffic loading, will have been eroded so far that it will only be good fortune which prevents a serious incident from occurring.

If the worst happens, it will of course be the controllers or pilots concerned who are pilloried for their actions, not the commercial interests which, slowly but surely, are eating away at safety.

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FLIGHT DECK REPORTS

Caught out by the Checklist

On departure from *an overseas location*, our performance out of the airfield was very limiting due to our take off operating weight.

We were cleared to line up and take off by ATC. The wind speed/direction passed by ATC gave a tailwind component that had not been given on the ATIS *(Automatic Terminal Information Service).* As we were unable to accept the reported tailwind, we vacated the runway and completed the After Landing checks. These included, among other things, turning off Pitot Heat and de-pressurising the aircraft.

A busy period followed working out RTOW's *(Regulated Take Off Weights)* for the reciprocal runway and different flap settings. ATC then offered us clearance for Take Off on the original planned runway as the tailwind had now eased.

The Before Take Off checks were then re-commenced as we lined up, also putting away manuals etc. The flaps were returned to the T/O position and off we went. It was in the latter stages of the climb that I noticed that the Pitot Heat was still off and the FLT/GND switch was still in ground - thankfully the a/c pressurised automatically.

The implications of leaving the pitot heat off are obvious - thankfully we did not encounter icing conditions.

A good example of a crew error that resulted from a non-normal situation. The items that were not actioned were not referenced in the Take-Off checklist.

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Assume or Check?

I had only been to DFW twice before this flight. Prior to departure I called for the Ground Engineer to confirm a deferred defect. Two engineers employed by the servicing contractor arrived but were unable to answer my questions. A third engineer subsequently arrived and resolved the problem. The External Check was then completed in preparation for departure.

On start-up and push back, in heavy rain and low cloud, the engines were started, and the After Start check called for.

At the GROUND ENGINEER/EXTERNAL INTERCOMM DISCONNECTED Checklist item, the tug could be seen moving away through my side window and a man in yellow wet-gear holding a red strip, which I assumed to be a gear pin. In fact he was a marshaller holding a red baton. I assumed that he was the Ground Engineer, not knowing what he looked like, and that he had removed himself quickly without verbal acknowledgement because of the downpour. I responded by saying "Tug seen and engineer I think". I released brakes and moved a foot or two, when I was overcome by great doubts and

stopped. I then saw a Ground Engineer in an ordinary jacket, not wet-gear, giving me a "serious" look as he walked away.

The problem in my eyes was brought about by the following factors:

1) Unfamiliar airfield and taxi procedures.

2) Different ground handling procedures and engineers.

3) Weather - poor visibility, low cloud, heavy rain.

4) Ground Engineer removing tug without permission and acknowledgement.

5) Pressure of busy ATC, expect to hear taxi, join queue.

6) An assumption by me that all was complete without acknowledgement.

Perhaps someone else can be saved this embarrassment and possible harm.

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A Lesson Re-learned

The night was black with no visible horizon. I landed on the well-lit helideck of the platform. After some 10-15 minutes on deck the First Officer and I completed the Pre Take-Off checks in accordance with the Normal Operating Procedures. This requires the non-handling pilot (in this case the First Officer) to call when a positive rate of climb and indications of increasing airspeed are seen. Our take-off gross weight was well below the maximum for the type.

The aircraft was lifted into the hover, checks completed, and the departure initiated. Visual clues from the helideck were lost almost immediately and the departure continued by sole reference to instruments. Coincident with the loss of visual cues, the First Officer confirmed my instrument indications by calling "positive rate of climb, positive airspeed". I then increased collective pitch to cruise settings for the transit to the next oil rig.

Shortly after this, both crewmembers noted a high rate of climb with NO airspeed. I lowered the nose to 10° nose down to recover airspeed and noted our departure point below and just ahead of us.

Altitude was now about 400' with an increasing airspeed. I continued to climb out to MSA to settle down, before continuing to the next stop.

I believe that, after the First Officer's call of 'positive rate' and my application of collective, the airspeed decreased due to the tendency of this aircraft type to pitch up in response to an increase in collective pitch, I failed to notice this in my scan.

The lesson is, I believe, more concentration on instrument scan after leaving a well-lit helideck, even if one is at a fairly light TOGW.

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One, Two...Or Just Two?

I was commanding a flight, operating UK to Orlando (MCO).

Our flight-plan route was over the Kennedy Space Centre from the Ocean.

On first contact with Miami Control we were routed to the South as there was a Shuttle practice taking place (nothing in NOTAMS!), and were advised that we would be given Radar vectors around the restricted area.

During our descent the Controller gave us approximate mileage to run, and advised us that we could expect several direct routings to expedite our arrival. (I think they were aware that there was nothing in NOTAMS, and that most Transatlantic flights don't have much spare fuel for unexpected extended radar vectors at low level). The weather was beautiful, with visibility of 100 miles and cloudless skies.

Approaching the coast, descending through 17,000', we were cleared to turn right on to a North-Westerly heading and to descend to 2,000', which I acknowledged.

We were a little surprised with this clearance as the landing direction was Southerly, but assumed that we might be offered a landing to the North (MCO has three runways and the wind was light from the East).

Descending through 10,000' we heard ATC ask a light aircraft if he had visual contact on us, which he did. We were then advised of his position - in our 9 o'clock at 9,500'. This grabbed our attention a little. The light aircraft was

not transponder equipped (or it was not working). We maintained good visual separation.

Shortly afterwards we were changed to MCO approach and were cleared to 7,000'. It was only at this stage that we realised to our horror that the previous controller had actually cleared us to 12,000' and not 2,000'.

The Controller never picked up our descent through our (assumed) cleared level.

The terminology used in the States for all altitudes above 10,000' is "one-two thousand feet", which is so easy to mistake for " two thousand feet! Which is exactly what I had done. I had replied "descend to 2,000'", and the controller had in turn, misheard my reply.

I am a great fan of having transition at 18,000', as there are fewer distractions to miss-setting altimeters. Even though it can be a little tiresome to keep resetting altimeters in the descent and climb to the local QNH, at least the opportunities for having a climbing aircraft on QNH, with other aircraft on standard, as in the UK, is reduced. However the possibility of misunderstanding a cleared level is a weakness of their system.

If they used the terminology of whole numbers (eg. "Twelve thousand"), there would appear to be less room for error.

In the meantime, perhaps other crewmembers could learn from my error.

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Cleared? Maybe Not

On a routine westbound commercial transatlantic flight, at about 200nm from our destination we were instructed to "Cross ### VOR, level at FL200". As our calculated descent point was still some way ahead we set up the FMC to achieve this, but did not descend immediately. Some minutes later we were instructed to "Maintain FL330 - descend now".

We left FL370, advising that we were doing so, and since we were now not far from our planned descend point we decided to continue to FL200, albeit with a slightly reduced rate of descent, rather than level off for a few miles. When we were passing FL335 we were instructed to "maintain FL240". We replied that we have already been instructed to descend to FL200. We were told in reply that our new clearance had been FL330 and was now to FL240.

We had not appreciated that the "Descend now" instruction countermanded the earlier descent clearance.

I believe this is just another confusion generated by the subtle (and no so subtle) differences between English and American ATC. I would much prefer 'Climb' or 'Descend' to 'Maintain' a flight level or altitude as 'Maintain' implies you are already there, and denies an extra piece of information contained in 'Climb' or 'Descend' instructions.

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Hung Out to Dry?

We had been operating a scheduled pax service the evening before, pulled for two extra sectors (quite common) and were on standby the next day together. On returning to base we were told to report next morning at 0930 (local) - minimum rest - to position a/c, ex-maintenance, to ABC and passenger back on our own scheduled flight later. No problem.

Both arrived well ahead of report time, no engineer available for next hour to tell us whether a/c was tech or checks completed etc but eventually got away by mid-morning. In the latter stages of climb we got a call (from company) to divert to DEF. The a/c arriving there was going to be tech on arrival. They wanted our aircraft, we were to position the tech back to base. Very helpful ATC helped us to get to DEF. ILS u/s - expect SRA to visual. Approaching inbound holding point, told to take-up the hold at last minute, scrabbled about, just about established in the hold, hold cancelled, vectored onto the SRA. Very turbulent, multi-cbs. Landed without incident, so far so good.

Our handling agency completely abandoned us. We had asked our Ops to fax through nav logs for the next leg, order us some crew meals etc but on arrival, all that was waiting was a copy of the FPL (we did have a nice meal though). Two hours later, we were ready to go. It had taken one and a half hours to get to the other a/c, review the tech problem

(minor engine defect), chase the fueller several times etc. We managed to botch-up the nav log from the flight plan. Discovered that we'd had a slot for an hour before, which nobody had told us about. Started-up (my leg), recalled by Ground ATC to confirm our destination, we said XYZ(*base*) they said ABC and that a new FPL was in the system. Much swearing.

So, having briefed for expected SID to XYZ, shut down engines, re-cleared to ABC, botched-up another nav log (luckily DEF-ABC is a standard route and was already programmed into our nav computer), in 20 minutes we were ready and eager to go. Re-briefed the DIFFERENT SID as we taxied out. Took-off ..... Altitude Bust. Great!

Captain was watching engine instruments like a hawk, because of the tech problem. I had wrong nav aids set. I'd said in my brief "Stop alt 5,000' then?" Captain replied "I suppose so". Immediately into turbulence/IMC/ icing. Re-set nav aids on my side. Called passing 3000' in the SID.....should've stopped at 2000'! Both thoroughly *****d off.

My fault, but not helpful circumstances.

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ENGINEERING REPORTS

Shingled Out for Stress

At the start of the night shift I was informed that several fan blades had to be replaced on an engine due to them being shingled. *("Shingling" occurs when the clappers or spacers, integral chordwise features of some fan blades, which normally abut each other, become overlapped, often as a result of a birdstrike).* Company Engineering Development Department requested that all blades be removed and repositioned for fan balance.

In spite of job time being limited no planning had been done to position aircraft to start work.

On reading maintenance manual procedure and checking store found no fan blade boxes or fan blade lubricant available at base.

On commencement of task it became apparent that the fan blade part numbers and moment numbers supplied by Engine Development and parts fitted to engine differed.

Subsequently, after a three-hour delay, a modified plot *(of fan blades)* was faxed to me. Time now one and a half hours before aircraft required on stand.

After blades lubricated and refitted, the aircraft was handed over to dayshift at time due on stand, task still incomplete.

One wonders why my company employs a Planning Department as no action was carried out by them causing unnecessary stress on the actioning engineer.

Planning shortcomings identified in this report were taken up with the organisation concerned. We understand that appropriate action has been taken.

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Spaced Out?

Due to an acute shortage of certifying engineers I found myself working a "ghoster" *(a nightshift immediately following a dayshift).* During the daily inspection on a nightstop aircraft the No 1 mainwheel tyre was found to be "Worn to Limits". The mainwheel was replaced by myself and the paperwork completed.

A mechanic then took the unserviceable mainwheel to the Goods outwards area. It was then that he noticed a locking spacer still attached to the unserviceable item, which should have been transferred to the replacement mainwheel.

The situation was quickly rectified with the spacer being fitted to the aircraft. If the spacer had it not been fitted, the mainwheel would have been free to move along the axle and disengage from one of the rotors on the brake pack. I had not noticed my error and, with hindsight, was too fatigued to safely certify the task and the aircraft. Unfortunately, "Engineer out of hours" is not an accepted reason for delaying an aircraft or losing a sector.

The consequences of tired engineers will make the headlines just as much as tired flight crews. When will the industry learn?

Shortly after this report was received another aircraft of the same type, operated by a non-UK airline lost a mainwheel during take-off from a European airport.

Spacers feature frequently in wheel assemblies and get left off all too frequently. It should not be beyond the skill of design engineers to produce an assembly where, if a spacer is required, the wheel cannot be fitted without the spacer in position, or best of all, design out the spacer in the first place.

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Taking A Stand

Sunday morning. Our airline's (xxx) aircraft arrived at 0350 and parked on one of several airbridge-serviced stands. The crew debriefed me - no defects. Just a routine Daily/Weekly check to do and as the aircraft is not due to fly again until 0850, plenty of time to do it.

At about 0510 a handler from (XYZ Co) approaches me *(to move the aircraft).* No reason, no apparent sense of urgency. Given the time of the morning and the amount of time before this aircraft flies quite reasonable. This allows me to continue to a logical break in my checks/inspections and prep the aircraft for towing.

Within five minutes (Airport Authority) Operations Landrover arrives in a hurry, lights a-flashing. Man appears and demands to know why this aircraft has not yet been moved. I inform him, quite firmly, that I will finish my checks first. He informs me that the aircraft due to come onto this stand is on "finals" and that "my" failure to comply will mean that he will issue me with a "ticket". *(Issue of a "ticket", for infringement of Airport Operating Instructions, on more than one occasion can result in being refused an airside pass).* I return to continue my work and find a possible defect. This now increases the pressure and still some checks/inspections to perform. The Authority man now relocates me and informs me that this aircraft will still have to be moved and that he is still issuing me with a "ticket". The aircraft due on this stand has now just pulled up on the next stand. A team of handlers have arrived on my aircraft and started to connect up the tug, ready for towing. I am then presented with the Airport Operating Instruction *(re permission to commence maintenance on aircraft)* and a "ticket" stating my failure to comply and my "not interested" attitude.

I was allowing myself to get wound-up by the whole situation and rightly or wrongly began to tell him exactly what I thought of him and the Authority. I explained that my aircraft had been there nearly an hour and a half before I had been asked to move it. I indicated that if told immediately on arrival or soon after there would have been no problem. I found the whole situation distracting from my task of inspecting the aircraft prior to release to service.

The Airport Authority seem to be lacking in understanding the safety chain. They seem to believe that safety of the aircraft stops with the airline concerned and that the airlines are there to support the airport and not the other way round.

I was astute enough to see that the pressure was building upon me. I went and took some time out and calmed down. I assessed what I had done/was doing and what was left to do on my return to the aircraft. The fact that subsequently the aircraft was towed and later departed for flight without incident is testimony to me having the presence of mind to do my job as a certifying engineer - safety above all. If an incident had occurred who would have been blamed? Not the Airport Authority or the handling company - the engineer of course

This incident was originally reported through the reporter's company, but the non-compliance notification was not withdrawn. The specific circumstances of the incident were brought to the attention of the Airport Authority concerned. A thorough review of the incident was subsequently carried out and clearer guidelines issued as to the application of Airport rules. The engineer was cleared of any infringement of the rules and the notification of the alleged infringement withdrawn.

The reporter is to be commended for recognising he was starting down a possible path to make an error by being 'wound-up', and stopping, taking stock, then getting on with the job calmly.

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Computer Aided?

At the start of the Winter heavy maintenance programme, the company railroaded into place a computerised

maintenance and integrated engineering and stores, planning and labour recording system. No training was given on the operational system only on a unit under test. Consequently we do not look at airplanes any more just VDU screens, filling in fault report forms, trying to order parts the system does not recognise, as the stores system was not programmed with *(aircraft type)* components (the company wanted to build a data base as equipment was needed).

When the computer informed us the 'C' check was complete and issued the CRS certification forms, I requested a task and certification report so I could convince myself that the work had in fact been recorded correctly. I was told this couldn't be done. After refusing to release the aircraft, the systems people managed to miraculously find one. The record had numerous faults, parts not recorded as being fitted, parts removed with no replacements, parts been fitted two or three times, parts removed by non-engineering staff, scheduled tasks not called-up by planning, incorrect trades doing scheduled tasks and certifying, and worst of all the record had been altered by none certifying staff after the CRS signatories had closed the work.

Quality Airworthiness Department were advised of these deficiencies and shown actual examples. We were advised by the management that these problems are being addressed but they are not, we still have exactly the same problems today. What am I to do without losing my job and career. In a closed community like aviation, troublemakers and stirrers do not keep jobs and the word is spread around. If I refuse to sign the CRS somebody who has not worked on the aircraft will be found to clear it (contravention of ANO?). *(Air Navigation Order).*

Finally I would like to make it clear, I am not a luddite. I am a great believer in computers as tools to help me, but by allowing such a corrupt system to keep operating is surely illegal and a danger to aircraft safety.

The Company concerned was approached on this issue and responded that they had become aware of the difficulties being experienced. At the time this report was discussed they were just introducing a scheme whereby staff could report problems and get feedback on progress as part of their policy to encourage an open reporting culture. The certification procedures were specifically addressed.

However, this would appear to have been another example of a complex computer system being introduced, or upgraded, without ensuring that the staff, who ultimately have to operate it, being consulted and trained properly at the outset.

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A Pleasing Footnote

From a retiring recipient of FEEDBACK:.....

As FAA's Assistant Administrator for Aviation Safety (1976-79), I am familiar with the FAA/NASA voluntary safety reporting program instituted in 1976. I am aware of the difficulties in administering such programs. Indeed, yours has grown and improved, as has NASA's Aviation Safety Reporting Program. May you continue to prosper.

M Roscoe - 3 December 1998

CAA (SRG) Flight Operations Department Communications

The latest CAA (SRG) Flight Operations Department Communications have been issued since October 1998:

14/98

1. The Carriage of Aircraft Equipment and Spares That Are Dangerous Goods

15/98

1. Relocation of the Gatwick Regional Office
2. RT Procedures
3. Guidance Material on the Transport of Dangerous Goods by Air
4. Applications for Airworthiness Directive Compliance Variations
5. The Relationship between the CAA and the JAA
6. Information Update

16/98

1. Letter of Consultation: Carriage of a Ground Proximity Warning System in Turbine Engine Aeroplanes

17/98

1. Letter of Consultation: Proposal to Amend the Rules of the Air Regulations 1996