

EDITORIAL

In this issue of the TACARE Newsletter, there are 10 local and international cases included.

The 4 cases regarding flight operations are as follows:

- Duty Time Limitation For Flight Crewmembers
- Legal Concerns Regarding Outdated Insurance Certificate Onboard An Aircraft
- Encroachment
- "One to Go"

There are 3 cases regarding cabin operations:

- Limitations For In Flight Cellular Phone Usage
- Use Of Mobile Phones
- "The Aft Jumpseat Had Broken..."

One case is regarding ATC operations:

- Suggestions Regarding Tao-Yuan Airport's Tower Controlling Procedures

One case is regarding airport operations:

- Suggestions Regarding Taxiway Naming Procedures At Tao-Yuan Airport

One case is regarding maintenance operations:

- Flight Delay Caused By A Few Nuts and Bolts

In an attempt to increase safety awareness for aviation personnel, starting from 13th issue, the TACARE Newsletter will add a new section, the "National Aviation Safety Information". This section will introduce procedures and information regarding aviation occurrence investigation, and an update on the progress of on-going investigations. Furthermore, summaries of completed investigations will also be

provided to share our findings on these events.

It has always been the objective of TACARE to uphold the spirit of "voluntary, confidential, and non-punitive" so as to provide an open forum where information can be freely exchanged. Through the collection, analysis, and sharing of information, we aim to enhance Taiwan's aviation safety by gradually eliminating possible risk factors that may impede flight safety. It is our sincere hope that our readers will continue to provide us with support and recognition, as well as enthusiastically offer us suggestions so that together, we may improve Taiwan's aviation safety.



TACARE ADVERTISEMENT

Beginning in July of 2007, the TACARE Office has introduced billboard advertisements in both Taipei and Tao-Yuan International Airports. We hope that the introduction of these advertisements could increase flight crews' awareness of the TACARE Program. Picture of the advertisement is as follow:



It is the hope of TACARE Office that through the advertisement, we would attract more of your attention to the TACARE Program. When you identify any potential hazards to flight safety., please do not hesitate to report to TACARE. Your participations are

essential for creating a safer sky.

NATIONAL AVIATION SAFETY INFORMATION

Progress on Current Investigations

Recently Completed Investigations

The complete report is available at ASC's website (<http://www.asc.gov.tw>).

Bombardier BD700 N998AM veer off from the D taxiway of Kaohsiung International Airport

The ASC has completed and published an investigation report regarding an occurrence of a Bombardier Aerospace BD700 aircraft. The report has issued ten findings and four recommendations.

On December 9th, 2005, a BOMBARDIER AEROSPACE BD700 aircraft, registration number N998AM owned by Select Aviation Corp, and operated by Corporate Jets, INC. (CJI) departed on a ferry flight from Tao-Yuan International Airport to Kaohsiung (KHH) International Airport. A total of four crewmembers, two pilots, one engineer, and a flight attendant were onboard the aircraft.

The flight crews completed the before landing checklist at 1442 Taipei Time. The aircraft's auto brakes were set at "medium", and flaps were fully deployed. The weather condition in Kaohsiung was fair, and the aircraft prepare to land on Runway 09. At 1446:22 the main gear touched down with an airspeed of 110 kts, vertical acceleration of 1.08g, and the hydraulic system operating normally. At 1446:23 spoilers were fully deployed and pilot monitor (PM) felt pulsation of the brake and then questioned pilot flying (PF) if the auto brakes have been disconnected. The PF indicated the auto brakes were still engaged. At 1446:31, the nose gear touched down, both thrust reversers deployed normally and the auto brakes were disengaged.

At 1446:36, with groundspeed of 77 kts, one red warning and several yellow caution messages appeared on the EICAS Screen in the cockpit. The pressure of hydraulic system 2 and 3 has dropped from 3,000psi to approximately 500psi. At 1446:46 with groundspeed of 45 kts, PF retracted both reversers while PM announced the hydraulic pressure on system 2 and 3 was low, the right reverser still deployed, and the nose steering system failed. By then, the PF attempted to maintain aircraft directional control and vacate the runway by applying differential brake pressure using the failing manual braking system.

At 1447:17, with groundspeed of 14 kts, the aircraft began veering to the right. Approximately 10 seconds later, the aircraft made a right turn into Taxiway D and continue veering to the right. PM then indicated "Be careful! Stop! Stop!" while PF responded "Aircraft uncontrollable! Uncontrollable!" The aircraft veered out of Taxiway D with a groundspeed of 7 kts and came to a complete stop on the grass 30 meters right of Taxiway D. None of the crewmembers were injured.



The ASC has determined the probable cause was due to mechanical failure. An improperly installed internal seal on the number 2 main landing gear wheel's Brake Control Valve (BCV) caused the separation of the rubber particle from the seal. This resulted in the jamming of number 2 BCV. The hydraulic powered braking system operated normally upon touchdown. Under normal circumstances, when the number 2 main landing gear wheel's speed is lower than that of the aircraft (when the wheel begins rotating), the BCV

will release brake pressure to avoid wheel jamming. However, since the number 2 BCV has malfunctioned thus causing its failure to release adequate brake pressure. As a result, the wheel was jammed during landing roll.

The friction between the jammed wheel and the runway caused the tire to burst. The debris of the blown tire severed hydraulic lines causing the failure of hydraulic system 2 and 3. The nose gear steering system and brake system also failed as the result of the hydraulic systems failures.

Since the aircraft is designed with a hydraulic reservoir for the brake system, the reservoir is capable of providing pressure to the brake system when normal hydraulic system failed. In this case, although the hydraulic systems have failed to provide normal braking, the backup system has provided an additional 1,500psi of hydraulic pressure. This enabled the PF to use differential braking pressure to turn the aircraft onto Taxiway D. However, the reservoir pressure was depleted after the turn resulted in the overrun of the aircraft.



The ASC has issued the following recommendations to BOMBARDIER AEROSPACE: To improve the quality of the BCV internal rubber seals assembling, and to improve the capability of sustaining the FOD for the hydraulic tubes, electric wires, torque tubes above the main wheels.

Besides, the condition of the movement area was also a critical part of this investigation. The investigation

has revealed that Runway 09/27 were equipped with the uncovered V-shaped ditches or walls. Several taxiways were also equipped with the said V-shaped ditches. Such practice did not comply with the Civil Aerodrome Design and Operation Standard and could cause damage to the aircraft during a runway excursion. Thus, the ASC has issued a recommendation to the CAA. The CAA has already corrected the uncovered V-shaped ditches prior to the publication of the investigation report (see figure below).



On Going Investigations

There are three aviation occurrences under investigation as of the date this article was written. Details of these events are available at ASC's website.

The three occurrences are as follows:

	Information	Brief Description	Status
1	2006/05/11 A300-B4622R Incheon to Tao-Yuan International Airport	Aircraft experienced cabin altitude warning message during cruise. Crew executed an emergency descent and executed a safe landing.	Factual data report published and analysis in progress
2	2006/07/14 MD-83 Hua Lian To Taipei	Aircraft exited runway on landing roll, destroying five runway edge lights. All crew and passengers were unharmed.	Factual data report published and analysis in progress
3	2006/11/16 B757 Tao-Yuan International Airport to Jeju International Airport	Aircraft experienced a near air missed, crew performed traffic avoidance maneuvers following TCAS advisory and landed in Incheon Airport. 21 persons were injured.	Factual data report published and analysis in progress

REPORTS RELATED TO FLIGHT OPERATIONS

Duty Time Limitation For Flight Crewmembers

The contributor indicated that according to Article 33 of the Aircraft Flight Operation Regulations: "Flight crew members shall not accumulate more than 100 hours of flight time in a period of one month". However, the regulation was referring to calendar month (from the first day to the last day of each month). The contributor believes this practice could result in questionable flight time calculations.

The contributor had accumulated 130 flight hours in a 26-day period between mid November to mid December of 2005. A colleague of the contributor had accumulated more than 140 flight hours during 2006. Such practice has clearly deviated from the original intention of this regulation.

The civil aviation regulation of United Kingdom clearly states that flight crewmembers could not accumulate more than 100 flight hours in 28 consecutive days. In addition, many major air carriers in the United States and Europe limit their flight crew members not to exceed 100 flight hours in a 30 day period. The contributor believes such frequent flight duty could cause fatigue and error in flight.

TACARE Office

According to the CAA official, under the current regulation, it is possible for the reported situation to occur. Since some foreign crew members only operate 15 days each month, thus it is possible for flight crew members to accumulate 150 to 160 hours in a 30 consecutive day period. This is a clear deviation from the original intent of the regulation.

The CAA is currently planning on amending the existing regulations. The amended version will allow

flight crew members to accumulate no more than 90 hours in a 30 consecutive day period, 270 hours in 90 consecutive days and 1,000 hours annually.

Legal Concerns Regarding Outdated Insurance Certificate Onboard An Aircraft

During preflight check, the contributor noticed the aircraft has changed its registering country to the United States, and all certificates have been updated with an N registration with the exception of the insurance certificate. The contributor expressed concerns and questions the legality of operating an aircraft with an outdated insurance certificate.

TACARE Office

According to Article 38 of Republic of China's Civil Aviation Act, an aircraft should have the following documents onboard for operations: Aircraft Registration Certificate, Airworthiness Certificate, Aircraft Logbook, Passenger Manifest (passenger flights only), Cargo/mail Manifest, and Aircraft Radio station license. Notice, the preceding regulation does not include aircraft's insurance certificate.

In addition, according to Article 7 of Regulations of Civil Air Transport Enterprise, an air carrier is required to provide proof of insurance when applying for an operation certificate. The CAA would inspect the proof of insurance prior to approving the operation certificates. Thus, the insurance certificates onboard the aircraft are provided by the air carrier or the insurance agency. These certificates are not subjected to CAA inspections.

In conclusion, CAA would allow an insured aircraft continue its operation without a current insurance certificate onboard. However, since the said aircraft has changed its registration under the United States, it is therefore under FAA's jurisdictions and authority to determine the legality of this issue.



Encroachment

—Quoted from ASRS CALLBACK No.327

Although an air carrier crew showed laudable caution in trying to confirm a clearance to take the runway, accepting the clearance without hearing a call sign tripped them up.

- We were on Taxiway B enroute to Runway 28R. We were #1 for that runway, and no other aircraft [were] around. We completed the Before Takeoff checklist then switched to Tower control as we approached the end of the runway. We heard Tower say a call sign (which we thought was ours) 'cleared for takeoff.' Because we had just switched over, and the transmission seemed a little garbled, the First Officer said confirm company number cleared for takeoff Runway 28R. Then we heard an 'affirmative.' We continued around the corner into position on the runway, but didn't quite have a warm and fuzzy [feeling], since we didn't hear the controller repeat our call sign when we were confirming our takeoff clearance. So we stopped at the normal position and hold area on the runway, and asked Tower please confirm company number cleared for takeoff. Then the controller stated 'negative,' you are not even cleared to be on the runway. We taxied clear immediately...

The Tower controller was apparently working two separate frequencies and had cleared someone on the other side of the airport for takeoff. The 'affirmative' the controller gave...was for another aircraft on the other frequency...The lesson learned...is that...we should have gotten [ATC] to say our call sign and repeat the clearance before crossing the hold short line. Fortunately final was clear and there were no other aircraft around and no conflicts.



“One to Go”

—Quoted from ASRS CALLBACK No.328

We were descending to reach [fix] at 11,000 feet and 250 knots. I was distracted making a PA for landing when the First Officer gave me a #1 finger sign in which I thought he meant flaps one, not “one [thousand feet] to go.” I didn't realize we were over our Flaps 1 speed when I brought the flap handle out of the 'up' detent, but brought [it] back to 'up' when I immediately recognized the speed. The handle never reached the Flap 1 position and we both did not see any flap needle movement or any red overspeed warning on the ADI [Attitude Director Indicator]. As a precaution the First Officer disconnected the autopilot when he saw me raising the flap handle. We both felt there was no need to write a [logbook entry], since we believe there was no stress on the aircraft and the flaps did not deploy. I am submitting this safety report to share with others that proper communications as well as both pilots constantly being “in the loop,” even with distractions, is paramount.



REPORTS RELATED TO CABINS

Limitations For In Flight Cellular Phone Usage

The contributor, a cabin crew of Carrier A has discovered a passenger using cellular phone in flight. The contributor informed the passenger that cell phone usage in flight is prohibited. However, the passenger questioned the contributor and indicated that the cell phone is under “flight mode” and other cabin crews have allowed cell phone to be used during his previous travel experiences.

The contributor inquires the current regulation regarding this issue, and whether the usage of cellular

phone with “flight mode” is allowed in flight.

TACARE Office

According to the regulation of the Republic of China, unless with prior authorization, the usage of all electronic devices that are capable of transmitting and receiving radio signals (i.e. radio transceivers, cellular phones, and radio control devices) are prohibited on both domestic and international flights. Other electronic devices such as personal audio/video devices, cameras, radios, video gaming devices and computer devices (i.e. laptop/PDA/electronic dictionaries) are prohibited on domestic flights, and not allowed on international flights below an altitude of 10,000 feet. In other words, the usage of cellular phone is prohibited in flight until cabin door is opened unless prior authorization was obtained.

Many newer generation cellular phones have also combined other capabilities such as PDA, multimedia player, gaming, and cameras. These cellular phones also incorporated with a “flight mode” in which the transmitting functions are turned off.

CAA official has indicated each carrier has discretion to allow passengers to use cellular phone under “flight mode” in flight. However the carrier must ensure that such cellular phone under “flight mode” would not interfere with aircraft navigation and communication signals. Furthermore, clear written procedures must be published for cabin crews and passengers to reference.

Before the corresponding procedures being made, the current practice is to prohibit all cellular phone usage in flight.

Use Of Mobile Phones

—Quoted from *CHIRP FEEDBACK No.81*

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 refueling truck was attached and in the process of refueling. 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 Office

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.

"The Aft Jumpseat had Broken..."

—Quoted from *ASRS CALLBACK No.330*

The presence of Flight Attendants in the cabin during landing ensures that in case of an incident (such as an aircraft evacuation), safety leadership will be provided to the passengers. When a Flight Attendant jumpseat breaks on a full aircraft, that Flight Attendant must be seated somewhere else for landing – but where?

- About 3/4 into our flight we received a call from the 'B' Flight Attendant. She informed us that the aft Flight Attendant jumpseat had broken and was now uninhabitable and unsafe to occupy. Apparently it had come off of a support mechanism and was leaning at a steep angle toward the floor. For this flight, we had 137 passengers, 3 Flight Attendants, and one rider on the fourth Flight Attendant jumpseat.

We queried if the jumpseat would be safe to occupy for landing. They all agreed it would not be safe.

The First Officer and I discussed having the 'B' Attendant and fourth rider sit in the cockpit jumpseats for landing. We both felt that this was the safest alternative. Of the 137 passengers, there were none authorized to sit in the cockpit. We decided to have the 'B' Attendant and fourth rider in the cockpit for landing for their safety.

I did think of the fact that in the event of an evacuation, there would be no Flight Attendant at the rear of the aircraft. However, I felt that I needed to opt for the safety of the Attendants during the landing and rollout portion of the flight. I did not want them just holding onto something in the back for the unlikely event of an evacuation.

We arrived [at destination] uneventfully and the aft jumpseat was deferred via the MEL. Additionally, we informed Ground Operations of our situation.

This situation probably had no perfect solution – but what would you have done?

REPORTS RELATED TO ATC

Suggestions Regarding Tao-Yuan Airport's Tower Controlling Procedures

The contributor indicated that tower controllers in Tao-Yuan International Airport often assign specific runway exits during landing roll. The contributor believes that flight crews are capable to choose proper runway exits with ATC's assistance. In several occasions, tower controllers have given runway exit instructions when the aircraft ground speed was above 60 kts on its landing roll. The contributor suggests tower controllers should issue such instructions with landing clearance to avoid interferences with operations and unnecessary

miscommunications.

TACARE Office

The TACARE Office has received a similar report on March 16th, 2006. In that report, the contributor indicated that upon touchdown on Runway 06 with a ground speed between 100 to 120 kts, the tower controller suddenly instructed the crew not to use Taxiway S5 to vacate runway. The PF did not acknowledge the instruction since he was concentrating on aircraft control. While the contributor (PM) only understood that Taxiway S5 are not to be used. Thus PF was told to vacate the runway via Taxiway S6. The TACARE Office has forward this report to then the CKS Airport Tower.

The TACARE Office has contacted and forwarded the report to Taipei Airport Tower and indicated that the TACARE Office has received similar report during 2006. According to Taipei Airport Tower, the controller has the responsibility and authority to instruct aircraft to use specific taxiway to vacate active runway after landing. However, it will request tower controllers to issue such instructions prior to aircraft landing roll. In addition, flight crews are encouraged to report to controllers if they could not comply with any ATC clearance.

REPORTS RELATED TO AIRPORT

Suggestions Regarding Taxiway Naming Procedures At Tao-Yuan Airport

Several Taxiways at Tao-Yuan International Airport are named with two letters, including the northern Taxiways NC, NP, southern Taxiways SS, SC, SP, and Taxiways WC, EC which connects the airport from north to south. The contributor believes that most international airports simplify the naming of its taxiways. For example, taxiways that are parallel to

the runway and individual taxiways are named with only one letter. The contributor believes such naming practice will aid flight crews' understanding on taxi routing and reduce workload.

TACARE Office

According to Part 5.4.3.35 and Part 5.4.3.36 of the CAA Civilian Airport Design and Operation Regulations, the principles of naming of the taxiways are: a. one letter; b. multiple letters; c. combination of one letter or multiple letters with one number. The regulations also indicated that letters "I" "O" and "X" are not to be used in taxiway naming, since they are easily confused with numbers "1", "0" and the sign "X". The regulations also suggest words such as inner and outer should not be used in taxiway naming.

According to United States FAA AC 150/5340-18D, have the following suggestions for taxiway naming procedures: Taxiways should be named in a simplified and logical manner. In general, taxiways should be named using one letter; two letters are used when one letter is insufficient. Shorter taxiways such as high speed exits should be named using one letter and one number i.e. N1.

The reason for using two letters to name taxiways in certain airports in Taiwan is not due to excessive taxiways. Often, the first letter indicates the orientation of the taxiways. For example, several taxiways on the northern side of Tao-Yuan Airport have the first letter N with southern taxiways being with letter S. Such practice does not violate ICAO regulations. However, the frequencies of using two letters to name taxiways are higher in Taiwan as compared to other nations. The TACARE Office has forwarded this information to CAA for further analysis.

After consulting several flight crew members, the effects of two-letter taxiway names to flight crews understanding of taxiing instructions are unclear. An academic study is suggested to clarify such claim.

TACARE also welcome flight crews' input on such subject matter.



REPORTS RELATED TO MAINTENANCE

Flight Delay Caused By A Few Nuts and Bolts

—Quoted from ASRS CALLBACK No.328

For an MD-80 flight crew, the discovery of a "mystery" coffee cup and cannon plug cover in the cockpit led to an extensive flight delay. More from a Captain's report to ASRS.

- While preflighting we discovered a coffee cup sitting in the cup holder by the cockpit jumpseat with 3 small screws in the bottom of the cup. Also we found a cannon plug cover on the cockpit floor under the Captain's rudder pedals. We entered this information into the maintenance log and requested that maintenance come out and remove the screws and cannon plug cover. Unfortunately, what appeared to be a simple issue turned into a major delay with what we thought was going to be a grounded airplane, since nobody could determine where the screws came from...In summary, it was determined that the screws and cannon plug cover were 'spare hardware' that was the result of an ACARS printer installation the night before. Apparently once the installation was done, the spare hardware was left behind and not removed from the airplane. This is of concern to me as it indicates...a general lack of care and due diligence in the way our airplanes are being maintained.

This maintenance oversight may have occurred during a shift change, when one technician started the job and another finished it. It's good shop practice to account for all 'spare' parts used in a job.



Previous Issues

Articles from previous issues could be obtained via our website www.tacare.org.tw or a paper copy could be obtained by calling 0800-075-085 or 0800-TACARE (822-273).

請選填下列資料。在收到您的初報後，我們會儘快依照您選擇之聯絡方式與您聯繫。

Please fill out the blanks. TACARE office will contact you via the method chosen.

報告人資料 Information about Reporter

姓名 Name	聯絡電話 Contact Phone ()	職稱 Job Title
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服務單位 Firm	<input type="checkbox"/> 航管 ATC	<input type="checkbox"/> 飛航組員 Flt. Crew	<input type="checkbox"/> 空服員 Flt. Attendant	<input type="checkbox"/> 機務 Maintenance	<input type="checkbox"/> 航務 Flt. Ops.	<input type="checkbox"/> 其他 Others _____
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聯絡方式 Preferred Way of Contact

打電話給我 call me, 號碼 Number: () _____

我來找你們 come to your office, 日期及時間 date & time: _____月 M _____日 D, _____點 H _____分 M
(安排面談確認電話號碼 phone number for appointment confirmation: () _____)

已敘述如下，不必再聯絡 Describe as following, no further contact is necessary

摺疊線

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台灣北區郵政管理局登記證

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行政院飛航安全委員會

飛安自願報告系統工作室 收

23143 台北縣新店市北新路3段200號11樓



摺疊線



此面朝外
Outward page