attitude indicator

VISIONAIR INTERNATIONAL

safety newsletter

Summer 2016

10 years how time flies...

Chief Executive Safety Message

Colleagues,

When safety and operational requirements are properly balanced and integrated, the aviation department is positioned to provide the best overall service. A Safety Management System (SMS) creates and maintains this integration and balance. Safety communication comes in several forms. Heard on an almost daily basis is the question, "Can we do it safely?" This may be asked verbally by a supervisor or another crew member. If the risk is marginal, what mitigation steps can we take to make the risk as low as reasonably practicable?

The safety reporting promotes communication within the department. It encourages discussion and information exchange .

Every employee should feel completely safe in expressing concern on safety matters without fear of retribution from supervisors. Errors in judgment, errors of commission and errors of omission should be openly admitted with the understanding that everyone can learn from the mistakes of others. The department that adheres to a "just culture" encourages open communication and takes advantage of teaching moment.

Editorial

Dear Friends

However exciting and adventurous aviation may be, one should never forget that the Nature has not designed human for it. Hence, there is a gulf between Human and Aviation. The special individuals that are able to build a bridge over that gulf, are called "Aviators". The construction of this bridge requires:

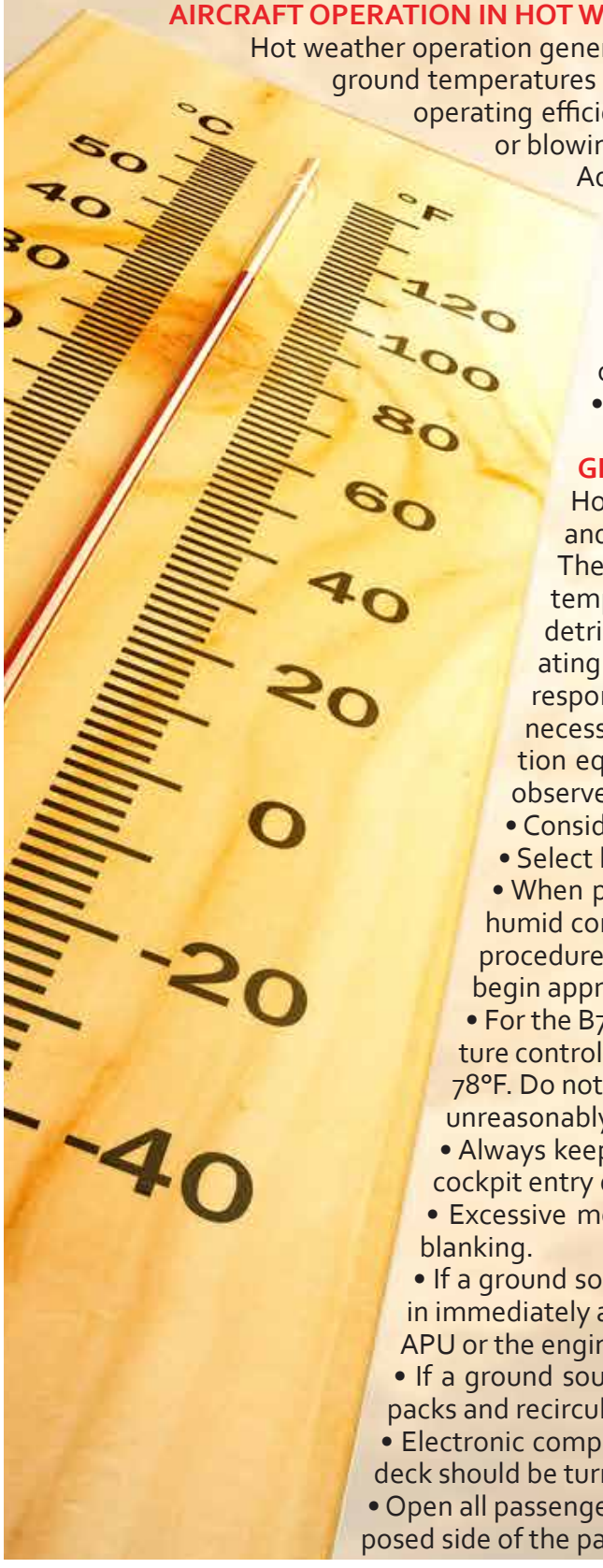
•Knowledge Base, thru extensive reading, used as a foundation
•Conceptual Skills, gifted by nature and sharpen by mental exercises, used to utilize the knowledge. Physical Skills, acquired by extensive practice, used to translate conceptual skills & knowledge into a real act.

The more experience one gets, he/she enhance on all the three mentioned above. But, at no time an aviator must forget that irrespective of experience and aptitude, an aviator can never-n-ever afford to put his/her guard down.

Sukaina Batul

Weather & Operations

Weather plays a very important role in our ability to provide both top quality service and a safe flight. The weather is one of the most important factors of safety in aviation, because it can affect aircraft on the ground and in the air. Keeping an eye on the weather forecasts combined with familiarity of the procedures designated in the company manuals helps prevent the occurrence of incidents that can cause damage to the aircraft and/or ground equipment, or even harm people.



AIRCRAFT OPERATION IN HOT WEATHER

Hot weather operation generally means operation in a hot, humid atmosphere. High ambient ground temperatures have a pronounced effect on aircraft and crew performance, and operating efficiency. High temperatures, alone or combined with high humidity or blowing sand and dust, will complicate normal operations.

Adequate protection and inspection of the aircraft while it is on the ground, and respect for covered precautions in hot weather section of the aircraft, will ensure the safest operation. High humidity condensation usually occurs throughout the aircraft, resulting in the following:

• Malfunctioning of electrical and electronic equipment. Fogging of instruments. • Growth of fungi in vital areas of the airplane.
• In extreme cases, pollution of lubricants, hydraulic fluid, and fuel.

GROUND OPERATIONS

Hot temperatures can have an negative effect on aircraft equipment and require special awareness by maintenance and the flight crew. The combination of ramp temperatures (usually well above ambient temperature) and the greenhouse effect on the flight deck can have a detrimental effect on aircraft electronic components. When the operating flight crew is not at the aircraft, the maintenance department is responsible for cooling and cockpit ventilation however, coordination is necessary. To avoid negative effects on flight instruments and navigation equipment due to heat and/or condensation in the cockpit, please observe the following guidelines:

• Consider External Power to reduce APU load.
• Select high pack flow.
• When preparing the Boeing 757 or Boeing 737s for departure in hot and humid conditions, and cockpit cooling is needed, begin the aircraft cooling procedure well in advance of the scheduled departure time. When possible, begin approximately two hours prior to departure.
• For the B757/B737: Operate both packs in automatic, leaving pack temperature control at midpoint position. Try to maintain the cockpit at a comfortable 78°F. Do not turn temperature control to full cold or set the temperature at an unreasonably cold temperature.
• Always keep all doors/windows closed as much as possible. This includes the cockpit entry door, cargo access area doors and cockpit windows.
• Excessive moisture in the cooling system may contribute to cockpit display blanking.
• If a ground source of conditioned air is available, the supply should be plugged in immediately after engine shutdown and should not be removed until either the APU or the engines are started.
• If a ground source of conditioned air is not available, use both air conditioning packs and recirculation fans.
• Electronic components which contribute to a high temperature level in the flight deck should be turned off while not in use.
• Open all passenger cabin gasper outlets and close all window shades on the sun-exposed side of the passenger cabin.

• Open all flight deck air outlets.
• Extending the landing gear early during the approach provides additional cooling for tires and brakes.
• In–flight cooling time can be determined from the "Brake Cooling Schedule" in the Performance–Inflight section of the QRH. During flight planning consider the following:
• High temperatures inflict performance penalties which must be taken into account on the ground before takeoff.
• Alternate takeoff procedures (No Engine Bleed Takeoff, Improved Climb Performance, etc.)

RECOMMENDATIONS FOR OPERATION IN HOT WEATHER

• Closely monitor strut servicing and aircraft level.
• Inspect for leaks where seals may have swollen.
• Limit the use of brakes during taxi and after landing to prevent overheating.
• Idle reverse thrust can be used on clean taxiways to help reduce brake usage.
• Examine the effects of high temperatures on aircraft performance, especially at high altitudes.
• Give time to cool engine after shutdown before installing Plugs/covers.

AIRCRAFT PERFORMANCE IN HOT WEATHER

Most aircraft flight manuals tend to represent the number of performance capabilities of the aircraft to the standard atmosphere, which is 29.92 inches of mercury at 15 ° C at the sea.

We can sensibly assume that it is the rarest of cases where an aircraft operates under the exact standard atmosphere. Therefore, we should always keep in mind that any increase in temperature or altitude will affect the optimal performance of the aircraft.

Temperature and air density have an inverse relationship. As temperatures increase, air density decreases. Hence, warmer air is less dense than colder air. Scientifically put, there are less air molecules in a given body of warm air than in the same amount of cooler air.

The same inverse relationship exists between altitude and air density. As altitude increases, air density decreases.

So, operation of an aircraft during times of hot temperatures, will require more power, more runway length for takeoff, may have a lower rate of climb, faster approach, or may experience a longer landing roll. Simply put, aircraft performance suffers. Equally so, is the case of operating an aircraft in higher altitudes. Operating at high elevation airports also requires more power, longer runway lengths for takeoff, and its climb rate will be reduced, its approach faster, and its landing roll longer.

Imagine if individually each element has such a negative effect on performance of aircraft, what the effect might be as a combination. Hot and high conditions are very dangerous, especially if the flight crew are not informed and prepared for it. The warm temperatures combined with high altitudes can significantly reduce aircraft performance.

The effects can include, but not limited to:
• Since fuel/air mixture is reduced, a reduction of the thrust output of the engines is likely.
• Thin air exerts less force on the airfoils, which will reduce the lift of the wings.

If all the effects above are taken into account, it is easy to understand that the takeoff distance required will

increase since climb performance is dramatically reduced.

Keep in mind that hot weather may also increase chances of humidity. Humidity can have an effect on aircraft performance since the increased amount of water vapor in the air means there is less air density in a given body of air. As indicated above, air is an important factor in aircraft performance, and therefore humidity also negative impacts on aircraft performance. Humidity can also affect equipment and avionics of aircraft.

When operating in hot weather, some helpful ways to increase aircraft performance are:

• Communication is key. Be informed and prepared.
• Reduce aircraft weight. Weight can be reduced by carrying only the necessary amount of fuel to reach your destination safely and/or to depart with less passengers/ baggage.
• Increase engine power. More power can improve an aircraft's acceleration and reduce its takeoff run. Keep in mind, however, that added power means added fuel, which means added weight. So it may not be the best solution.
• Wait until the temperature decreases. Temperatures are highest during the day around the beginning of afternoon. So aim to operate during the early morning or late evening

CONTAMINATED RUNWAYS OPERATIONS

Some people say that "life is never simple". Perhaps they are referring to operating high performance aircraft to and from airports with contaminated runways? Of course normally we would not operate flights using these runways if we could avoid them, but there are other factors involved, the main one being that we are not engaged in recreational flying our mission is commercial aviation and we do not fly just for the fun of it.

We must be objective about each and every flight we undertake and consider what is possible, disregarding what may or may not be desirable.

Safety is our paramount consideration of course and therefore we must carefully assess the risks involved during winter operations.

It is true to say that safety margins are reduced when aircraft are operated on contaminated runways, but that is not to say that these operations are "unsafe". We must be clear in our deliberations, calculating very precisely and professionally using all of the available data to determine the performance parameters applicable to each particular scenario.

Firstly we should revise the definitions:
• Wet Runway – shiny in appearance with depth of water less than 3mm (JAR-OPS 1.480).
• Contaminated Runway – more than 3mm depth of water, slush or snow covering more than 25% of the runway surface to be used. Or a runway covered in ice or compacted snow. (JAR-OPS 1.480).

Note that the maximum contamination which is acceptable for takeoff or landing is 13mm depth – or as defined by the particular Aeroplane Flight Manual if this is more restrictive. Dry snow maximum depth can be considerably more depending upon the manufacturer – B737 is 60mm maximum depth for takeoff.

Effects on Takeoff Performance

Contamination on the runway has adverse effects on acceleration before getting airborne and similar performance penalties for deceleration in the event of a rejected takeoff. Therefore a much lower V1 speed will need to be used to take account of these factors. The reason for the slower acceleration is extra drag caused by the increased "rolling drag" of the tyres and "impingement drag" of contaminant which is thrown up into the path of the advancing landing gear/airframe. In addition there is reduced directional control as the friction coefficient is less on the contaminated runway therefore often the manufacturer will set a lower demonstrated crosswind limit. Performance

calculations should be carefully checked to confirm that the conditions permit the takeoff to be made at the aircraft weight determined. Pilots should be aware that the reduction in acceleration is stated to be 20% with 6mm of contamination and 40% with 13mm. The reduction in V1 can be as much as 20 knots.

Pilots should also consider the fact that reports of contamination have been known to be unreliable at some airports and if there is any doubt, then it would be wise for the operating pilots to make an assessment themselves to corroborate, or otherwise the information they have already received. For example there is a significant difference between wet snow and dry snow. 'Dry' snow crumbles to powder in your hands when you try to compact it, whereas 'Wet' snow will form easily into snowballs. The wet form of contaminant is the more dangerous of the two for aircraft performance calculations.

There are recommended techniques for each aircraft type when dealing with takeoffs from contaminated runways and these are all detailed in the appropriate FCOM or FCTM. For example during taxi out (pretakeoff) along contaminated taxiways, Boeing recommends delaying the extension of takeoff flap setting until at the holding point. This is to prevent the flaps being contaminated with snow and slush which is displaced by the manoeuvring of the aircraft on the ground – thrown up by the landing gear and jet efflux. Proactive CRM and Situational Awareness are paramount here to keep the operation safe and to ensure that the aircraft is correctly configured for takeoff after arriving at the holding point for the runway in a non-standard config. The pilots should take time to check and double check all calculations made regarding takeoffs from contaminated runways and if there is any doubt, then they should contact their appropriate Flight Operations Manager to confirm the validity of the technical data they have been supplied with. Commercial pressure should be resisted to be sure that the safety margins are not eroded further than by the difficulties posed by the operating environment. Finally it is worth mentioning that if the pilots are finding the takeoff calculations getting close to the absolute limits, then they have to ask the question, "Why not delay the flight until runway conditions improve?"

Effects on Landing Performance

Landing Distance Required (LDR) is increased by up to 40% when the runway is wet and potentially by up to 300% when the runway is contaminated. In reality of course this means that if an aircraft required an LDR of 4000 ft under normal circumstances, this may become 12,000 ft and could exceed the available length of paved surface… The results of a runway 'overrun' are obvious – See picture below The performance effects of runway contamination for landing aircraft are 'decreased deceleration' (less effective braking action) and 'reduced directional control'. The combination of these could result in an aircraft leaving the paved surface after landing, especially in the event of landing with a crosswind. All manufacturers publish reduced crosswind limits with wet, contaminated and slippery runways and pilots operating during the winter should be familiar with these.

An example table from Boeing is depicted below:

Runway Surface Conditions	Crosswind Component
Dry***	36
Wet	32
Standing Water /Slush	20
Snow - No Melting	25
Ice - No Melting**	15

Remember that the crosswind limits published in the Flight Crew Training Manual (FCTM) for the aircraft should be used as guidelines and not absolute limits. If the amount of crosswind is approaching the limit then a prudent Commander may exercise his better judgement and decide Page 5 to divert to the alternate airport.

Assuming that the pilots are in possession of accurate information and that their calculations have sufficient safety margin in them to permit the landing on the contaminated runway, then it is vitally important that the recommended technique is used. Again the FCTM refers to this and should be consulted by the pilots.

Some important factors to bear in mind are as follows:

- Plan to use maximum retardation aids as recommended by the FCTM.
- These may include, Max reversers, Max Ldg flap setting, Max autobrake
- Excess IAS on touchdown = extra landing roll +1000ft per 20 kts fast
- Excess height at threshold = extra runway +1000ft per 50ft high
- Groundspoilers are essential – increase braking effect on the wheels by 70%
- If a/c is going to land beyond 1000ft point – Go Around!

There will be further operational considerations also – for example most operators will recommend leaving flaps extended after landing all the way to the ramp so that engineering department may inspect for damage.

Finally it must be borne in mind that for many operators operating in winter conditions with various contaminated runways is perfectly normal. Providing our pilots take similar care regarding performance calculations and operating techniques, the operations will be performed safely. If in any doubt, the Flight Operations Management here in Athens is always ready to advise and support the operating teams out in the field. Sometimes just a telephone call is all that is necessary to clarify a specific course of action and Dispatch/Operations is open 24/7.

References : http://www.gainjet.com/

Contribution From Quality Assurance Department

The purpose of Quality system installed is to monitor the compliance with, and adequacy of procedures required to ensure safe operation practices, Airworthy airplanes and customer satisfaction this includes the continued compliance with CAR-OPS 1 and any other requirements specified by law or Authority.
The compliance monitoring system includes a feedback system to the Accountable Manager to
ensure corrective actions as necessary.

The aim of Quality system is to avoid mistakes, improve the working process and last but not least to satisfy our customers without infringement of any law or regulation.

The Quality system, including the regularly performed audits and inspections is not meant to blame someone in this turn of duty, but it should instead:

- Include all company departments and improve communication.
- Aim to reach Quality not only by inspection or corrections.

Quality Policy

Taking in account the safety of work and environmental situation by:

- Giving operational safety the highest priority.
- Being one of the most reliable and customer oriented company.
- Attaining, and maintaining trust and respect by the customers.
- Fulfillment of laws and regulations.
- Reducing accident/incident risk.
- Secure company product against bad deliveries by suppliers.
- Clear defined working sequences.

A trust basis to customer.

Do you know the answers...

1 Which chapter of the FOM Part A covers the Duty Time / Rest Time Limitations?

a Chapter 3 b Chapter 5 c Chapter 7

2 In which part of the FOM are the Route Airport Instruction and Information provided?

a Part C b Part B c Part D

3 When used in the FOM Part A, "Should" means?

a The application of a rule or procedure or provision is mandatory

b The application of a rule or procedure or provision is recommended

c The application of a rule or procedure or provision is optional

4 Which chapter of the FOM Part A covers Fuel Planning?

a Chapter 8 b Chapter 3 c Chapter 5

5 Smoking is permitted on all VIS Flights

a True b False

6 When used in the FOM Part A, the abbreviation "CBW" stands for?

a Crew with Baby

b Crew Body Weapon

c Chemical / biological weapon

7 According to our FOM Part A, landing or take off is not permitted on any runway when the friction coefficient is

a 0.30 or less

b 0.30 or more

c 0.25 or less

Submit your answers to aijaz.faizi@visionairintl.com Not realy!

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