JIG Learning From Others (LFOs) Toolbox Meeting Pack
Pack 22 - July 2017

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Learning From Others
How to use the JIG Toolbox Meeting Pack

• The intention is that these slides promote a healthy, informal dialogue on safety between operators and management

• Slides should be shared with all operators (fuelling & depot operators and maintenance technicians) during regular, informal safety meetings

• No need to review every slide in one Toolbox meeting. Select 1 or 2 slides per meeting

• The supervisor or manager should host the meeting to aid the discussion, but should not dominate the discussion

All published packs can be found in the publications section of the JIG website at www.jigonline.com
Learning From Others
For every slide in this pack, ask yourself the following...

• What impact could this issue have on our site?

• How do our risk assessments identify and adequately reflect these issues?

• What prevention measures are in place (procedures and practices) and how effective are they?

• What mitigation measures are in place (safety equipment/emergency procedures) and how effective are they?

• What can I do personally to manage this type of issue?

If you would like further assistance or information relating to the contents of this pack, or if you have any information you feel will help others, then please contact JIG at http://www.jigonline.com/contacts/
High Potential Near Miss: Taxiway Incursion

LFO 2017-10

Summary

An E 70 aircraft was taxiing in single engine mode to the Juliette parking area. After having exited taxiway “B” and turned to the east left side “E” area, a fuelling vehicle, identified by the pilot, suddenly emerged from the aircraft’s left side at the service road point between GE4 and GE5, and then crossed this road without respecting the mandatory stop and continued at a significant speed on to taxiway “E” in order to cross it. The Aircraft Captain was forced to brake suddenly and finally stopped less than 3 metres from the fuelling vehicle. The Captain checked with the on board crew that nobody was hurt.

Causes

• The fuelling vehicle did not respect the service road signals, nor the priority of the taxiing aircraft.
• The speed of the fuelling vehicle was already too high when it arrived close to the taxiing aircraft.
• The driver experienced a blackout whilst driving. Medical examination concluded that he was suffering from severe chronic abdominal pain, requiring a specific antispasmodic medication.

Toolbox Discussion Points

• Are you aware of the consequences of causing a moving aircraft to brake suddenly, especially to cabin crew and passengers?
• Are personnel subjected to appropriate periodic medical examinations?
• Do you inform your manager when you feel unfit to work, or if you are under medical treatment?

Can you think of a similar situation that you have experienced or witnessed and did you report it?

14/08/2017
Lost Time Injury – Fall from Height
LFO 2017-11

Incident Summary

A fuelling Operator used the small steps shown in the photo for an over-wing fuelling. He was standing on the top platform as illustrated. On the completion of the fuelling, the Operator did not use the intermediate step to descend but stepped from the platform directly to the ground. As he attempted to step down, the Operator fell to the ground with his full body weight pushing against his arm, resulting in a fracture of his left wrist.

Causes

• Operator failed to use the intermediate step to descend from the platform to the ground.
• The step ladder that was used does not allow the 3-points of contact rule to be implemented. The height of the step ladder was not appropriate for the aircraft being fuelled.

Toolbox Discussion Points

• Is the right piece of equipment being used, in accordance with JIG standards (JIG1, 3.4)? Where equipment with more than 1 step and platform is used, does it allow for 3-points of contact to be maintained?
• Are 3-points of contact always maintained whilst ascending or descending steps and platforms?
• Are the Operators aware of the “1+1 type” principles that mean to first use the step and then the platform?
• Does the equipment in use allow all Operators to reach the correct height for the task without stretching?
• Are steps and ladders subject to periodic condition and serviceability checks as required by JIG (JIG1, 4.24)
• Does your equipment have anti-slip surfaces?

Can you think of a similar situation that you have experienced or witnessed and did you report it?

14/08/2017
Lost Time Injury – Fall from Height

LFO 2017-12

Incident Summary

On completing a fuelling operation, the Operator climbed the stairs to deliver the fuelling receipt for the Pilot’s signature. The aircraft’s portable stairs had been deployed (the B737 “Air stair”). The aircraft’s passenger door was partially closed in the “cocked” position as a result of the wet and windy conditions. As the Operator approached the door, the flight attendant suddenly opened the door and knocked the Operator off the stairs. The aft (top) handrails and support bar of the stairs had not been deployed and the Operator fell into the gap, sustaining serious head injuries that required surgery.

Causes

• The cabin crew did not check if the platform behind the passenger door was free from obstacles before opening the door.
• The Operator ascended the stairs when the top handrail and support bar were not in place. These could have prevented the fall from height.
• Due to the wet and windy conditions the cabin crew had partially closed the door. It remains uncertain if the wind caught the door forcing it to open in an uncontrolled manner.

Toolbox Discussion Points

• Discuss the avoidance of “risk normalisation” with all Operators. Climbing and descending aircraft staircases is a common activity and complacency can set in. Re-emphasise the ‘STOP-THINK-DO’ approach and the importance of maintaining “three points of contact”.
• Do any Operators have experience with the use of aircraft portable staircases such as the B737’s “Air stair”? Are these always fully deployed with the handrail and support bar fully in place to provide the required fall prevention barrier?
• What is the normal procedure for gaining access to the aircraft if the passenger door is closed or partially closed after a refuelling? Do they communicate with the flight attendants? Have Operators had similar experiences to the conditions that led to this incident?

Can you think of a similar situation that you have experienced or witnessed and did you report it?

14/08/2017

Joint Inspection Group Limited - Shared HSSE Incidents
Incident Summary

A technician attempted to move a fueller into the workshop. After starting the engine the air in the air brake system was too low to allow him to drive away. He waited a short time to allow the air to build up sufficiently to move the fueller but became impatient and left the vehicle running in the yard whilst he returned to the workshop. The technician had released the parking brake and placed the fueller in gear (Auto gearbox).

Whilst in the workshop the air built up in the fueller’s air system sufficiently to release the brakes, resulting in the fueller moving across the yard and impacting a light pole on the depot perimeter.

Causes

- The technician left the vehicle in gear with the parking brake disengaged after leaving the cab.
- The technician failed to chock the vehicle after leaving it unattended in the depot, as per site rules.

Toolbox Discussion Points

- What are your current procedures for leaving vehicles running and unattended?
- Is the loss of air from the braking system a continuous problem? Can this be repaired?
- What safeguards do you have in place to avoid leaving a vehicle unattended with the engine running?
- What might have happened if someone was walking across the depot at the time of the drive away?

Can you think of a similar situation that you have experienced or witnessed and did you report it?
Aircraft Incident / Personal Injury

LFO 2017-14

Incident Summary

During landing of a MD-82, the wheel of the aircraft seized, which caused skidding of the tyre during taxiing for about 2km. Due to the significant forces of friction during taxiing, the tyre was severely damaged as shown in the photo. The subsequent investigation led by the local Civil Aviation Authorities (CAA) of the airport, revealed that a CAA officer, the ramp agent and the aircraft crew were standing next to the landing gear of the aircraft when it was parked on the stand, about 45 minutes after landing, when the tyre burst. The blast from the tyre blew the CAA officer to the ground and almost caused him to cease breathing as he swallowed his tongue. Thanks to the instant intervention of a ground handler who had been trained in first aid, the CAA employee eventually recovered his breath and was moved to the local hospital, where he remained for 2 days. The pilot of the aircraft suffered some minor injuries from the blast.

Causes

- The causes of the wheel blockage are not yet known
- The aircraft crew and ramp agents did not realise that the temperature of the damaged aircraft tyre had been rising, presenting an explosion hazard, even 45 minutes after landing.
- The aircraft crew did not give any warnings to those present or take any precautions after aircraft’s landing
- No procedures for keeping a safe distance from the damaged tyre were followed nor were any known to those present
- The procedure for activating the aircraft’s fusible plugs, which is expected to melt and deflate the tire before dangerous pressures are developed, was not known to those present, and therefore not followed

Toolbox Discussion Points

- Is training on emergency procedures for hot brakes, tyres and wheel fires provided to those concerned?
- Are Emergency response procedures in place for ground handling personnel?
- While checking aircraft tyres, is a safe distance kept in accordance with the aircraft OEM’s procedures
- Are employees working on the ramp trained in first aid?

References:
Civil Aviation investigation report (with permission): http://lgir-sm.blogspot.gr/2017/06/occ1703-040517-1.html#more
Rescue and fire fighting, section 12.2.3 for Hot brakes and wheel fires - ICAO DOC 9137 Part 1 AIRPORT AND SERVICES MANUAL

Can you think of a similar situation that you have experienced or witnessed and did you report it?
Hydrant Pit Fuel spillage
LFO 2017-15

Incident Summary

A fuel spill covering an area of 20m² (less than 20 litres) was detected around a hydrant fuel pit (see photo) by a Ground Handling employee, who immediately notified the Airport Company who then called the Hydrant Operator who immediately closed the motor operated valves at the spillage area and sent the technical team on site to clean up and investigate the incident with the Airport Company Safety Person. Following the spillage stopping and clean up as per airport’s emergency procedures, no further spillage was observed into the pit, even during several tests carried out by pressurising the pit valve equipment or by using the hydrant leak detection system. So, it was decided to dismantle the mechanical equipment of the hydrant pit and it was found that the spiral wound gasket at the 6”x4” reducer was mechanically deformed (see photo), allowing fuel to escape.

Note: The Hydrant Emergency Stop Button was not pushed by the person observed the spillage.

Potential Causes

The obvious cause of the fuel leakage was the defective gasket, but the reasons for such a defect could not be positively identified. Potential causes could be the following:

- The gasket might have been defective before being installed and the technicians failed to observe this.
- The method for installing the gasket (torque applied using torque wrench, sequence in tightening the nuts, etc.) might be wrong, creating a small defect to the gasket which, under surge pressure during fuelling, resulted in further deterioration of the gasket.

Toolbox Discussion Points

- Are the technicians properly trained for the job as per written work instruction, e.g. checking the gasket integrity before installation, using the proper method of installation (tightening smoothly the nuts in a “cross” method and several times “around the clock” until the correct torque value is reached)?
- Are the nuts tightened to manufacturer’s recommended torque value using a calibrated torque wrench?
- Are the hydrant pits inspected regularly in order to prevent spillages?
- Are spillage emergency plans in place? Are the apron operators trained to push the ESBs in case of emergency?

Can you think of a similar situation that you have experienced or witnessed and did you report it?
Incident Summary

An operator was preparing to refuel an aircraft. He arrived early at the stand, connected the hose and waited for the aircraft technician to arrive. While waiting, the operator wanted to dry his raincoat which was wet from the earlier rain of that day. He decided to use the aircraft air vent system to dry out his raincoat. Unfortunately he did not realise that the air vent he was using was the aircraft’s air inlet. Suddenly, his raincoat was sucked into the inlet of the air vent.

The operator immediately called his supervisor and informed him of what had happened. When the aircraft technician arrived he called and informed the ground aircraft engineer of the incident. When the engineer arrived he checked the aircraft and informed the operator that he could start the fuelling. He also informed the operator that the raincoat would be removed after the aircraft’s return to the airport.

Potential Causes

- The operator was not aware of the function of the aircraft inlet duct.
- The operator decided to use the aircraft as a coat-hanger!

Toolbox Discussion Points

- Could this scenario happen at your location?
- Are Personnel trained not to interfere with any part of the aircraft that is not strictly related to fuelling operations?
- Do you report any (un)planned manipulation to the aircraft to the appropriate airline crew or airline representatives?

Can you think of a similar situation that you have experienced or witnessed and did you report it?
Refuelling ATR in “Hotel Mode” – Near Miss

LFO 2017-17

Near Miss Summary

The following Near Miss report was issued by an into-plane operator describing the situation approaching an ATR aircraft at starboard. “The beacon was switched off, the propeller was stopped, but the engine was still running. The operator moved the hydrant servicer to the staging area and looked for the pilot. The pilot told him that the aircraft is in “hotel mode” and that he cannot proceed with the refuelling yet.”

For this type of aircraft, it was confirmed that the beacon is switched off when the aircraft is in the “hotel mode”. The operator updated the refuelling procedure for this type of aircraft and raised awareness to other fuelling operators on the prohibition of fuelling when an aircraft is in ‘hotel mode’. In addition to the “ATR Hotel Mode”, the investigation revealed that the location of the aircraft’s vent point is above the hydrant servicer’s elevating platform.

Potential Causes

• No clear indication when an ATR aircraft is in Hotel Mode (Beacon vs Wing light).
• No proper procedure in place regarding refuelling an ATR aircraft at Hotel mode

Toolbox Discussion Points

• Is the JIG 1 (6.8.3) prohibition of fuelling aircrafts in “Hotel Mode” known to all operators?
• Does the “Hotel Mode” apply to more aircraft types than ATR and have they been clearly identified by the airliners?
• Is this a possible scenario that could happen at your location?
• What provisions are in place when the aircraft vent points are positioned just above the refueling vehicle’s elevating platform?

Can you think of a similar situation that you have experienced or witnessed and did you report it?
Overwing Fuelling Nozzle Adaptors

Summary
It has been reported to JIG that, on several occasions, fuelling Operators have been requested by airline personnel to use devices such as adaptors or funnels, in conjunction with the wide (selective) Jet fuel spout, for the completion of an overwing fuelling, where the wide spout does not fit into the aircraft’s fuelling orifice.

JIG does not support the use of any devices (such as adaptors, funnels etc.) that attach or are used in conjunction with the clearly defined spouts in JIG 1 para 3.1.8, negating the effectiveness of the misfuelling prevention procedures defined in JIG standards.
Examples of suitable Jet fuel spouts are shown in the photos.

Main concerns and Toolbox discussion points
- JIG standards clearly define in 3.1.8 the fuelling nozzles and spouts that can be used for overwing fuelling. The use of any different device does not conform to JIG standards.
- The use of a smaller (non-selective) Jet fuel spout for an overwing fuelling eliminates one important misfuelling prevention control, and shall be subject to additional controls and documented procedures, in accordance with JIG1 (3.1.8, 6.5.5, A10).
- The use of fuelling equipment that is not owned by the fuelling Operator but offered by a third-party, may result to liabilities and risks for the Operator and shall be subject to appropriate Management of Change (MOC) procedures, site assessments and training of personnel, as a minimum. As an example, the following require careful consideration:
  - origin, suitability for the intended application and compatibility with Jet fuel
  - whether the device has been selected and purchased against JIG specifications
  - whether the device has been evaluated by the end user
  - whether a device is endorsed by the manufacturer of the Jet fuel spout to be used with
  - whether the device is periodically subjected to proper condition and serviceability checks
- An adaptor will add an additional length to the nozzle, which may add ergonomic issues with fuelling
- JIG bonding best practice “Insert the fuelling nozzle and keep the nozzle in contact with the neck of the fill point throughout the fuelling operation” is likely to present a challenge and this may present a further safety risk, when an adaptor is used

Can you think of a similar situation that you have experienced or witnessed and did you report it?
Hinged Hydrant Pit Lids Lay Flat Safety Considerations

LFO 2017-19

Concerns for potential injuries, following a Pit Lid Modification

JIG Bulletin 90 introduced the requirement for all non-lay-flat hinged pit lids to be modified or replaced by lay-flat lids (by Year-end 2018), with support from the manufacturers of the non-lay-flat hinged hydrant pit lids. Some of the different types of proposed modifications that have been reported to JIG, include pit lids that open into a lay-flat configuration, in 2 or 3 steps. For those designs, the lid will initially open to 120 degrees and then be pushed downwards to the ground until it is lay-flat or pulled upwards and be rotated against a second hinge before it’s pushed towards the ground. In both cases, it has been identified by operators that the potential hazards associated with these modified pit lid designs is to ‘jam’ and injure the operator’s foot or operator’s fingers, when the lid is left or pushed downwards, to lay flat into the ground, due to the heavy weight of the lid. In addition, the operation of these lids may introduce additional manual handling issues that need to be properly evaluated and managed (e.g. back injuries).

As it is expected that the main users of the modified pit lids are the into-plane operators, the good cooperation and communication between the hydrant operator (owner of the hydrant pit lid modifications) and all into-plane operators is critical for the effective implementation of the updated design and shall be based on effective management of change (MOC) plans and appropriate training programs.

Considerations and Toolbox Discussion Points

- Is Management of Change (MOC) been followed prior to any modification or replacement of hinged hydrant pit lid are done?
- Are all potential foreseeable injuries included in the MOC?
- Have all relevant stakeholders been requested to provide input into the MOC as required, incl. the into-plane operators and Airport Safety Committees?
- Does the MOC include provisions for appropriate trials before full implementation?
- Does the MOC include appropriate commissioning procedures prior to release of the new or modified pit lids for use?
- Is JIG Bulletin 90 fully followed during MOC execution?
- Are written instructions provided by the equipment manufacturers for all new or modified pit lids?
- Are the instructions properly communicated to those affected and are effective training plans in place for all hydrant pit users?
- Have the into-plane operators been requested to provide input in the MOC plans?

Can you think of a similar situation that you have experienced or witnessed and did you report it?