

## **Essential procedures for safe taxi operations.**

Before airplanes take off they must travel from the parking position to the RW and vice versa from the RW to the stand after landing. Pilots should know how to taxi safely to or from the RW. Safe taxi operations may be affected by aerodrome layout, airplane type, weather and surface conditions, time of the day, language skills and so on. When taxiing pilots must avoid other aircraft, obstructions and people maintaining necessary separation. But unfortunately accidents occur during taxiing. Taxi incidents are dangerous. They affect airport operations, result in personnel injuries and damage aircraft, facilities and ground equipment or cause delays. Actually, taxiing (like other stages of flight) may be safe and pleasant when responsible pilots follow procedures. So pilots must plan and coordinate taxi route (surface movement), listen, understand and follow ATC taxi instructions accurately, maintain situational awareness, use outside aircraft lights during daytime as well as nighttime operations, keep communication rules and always be careful and attentive. Following operating procedures increases safety of taxi operations.

- **Avoidance of a collision on the apron area.**

Ground collision is a serious threat for flight safety. To prevent collisions on the apron area controllers must monitor traffic situation non stop, give accurate clearances, if necessary provide pilots with detailed (progressive) taxi instructions. In their part pilots should read back and follow strictly all the clearances, taxi at an appropriate speed and follow ground markings and special lights.

- **Avoidance of a collision on the RW.**

A Tower controller is responsible for everything what happens on the RW. First of all he must monitor the RW constantly. No aircraft or ground vehicles are allowed to enter any RW without air traffic controllers' permission. A controller gives a clearance for takeoff and landing, gives taxi instructions along the RW for vehicles and aircraft. In case of any alert the controller should react quickly and take necessary measures to prevent a collision on the RW.

- **Reasons for safety incidents on the RW.**

The main reason, I think, is a human factor when the aviation staff doesn't know documents, procedures and doesn't keep the rules and enters the active RW without controllers' clearance. Then it may be may be poor visibility or a wet, slippery surface conditions, foreign objects on the RW.

- **How do pilots maintain their situational awareness at the aerodrome?**

When taxiing pilots need to be aware of their location on the airfield, intended taxi route, relation to other aircraft and vehicles operating at the airfield. It's a "Situational awareness". To maintain situational awareness pilots should use an airport diagram, know the meaning of the visual aid, such as airfield markings, signs and lights. Also they should listen, understand and follow ATC instructions and clearances.

- **How important is the knowledge of aerodrome markings, signs and lights?**

Airfield markings, signs and lights assist pilots in navigation around the airfield and during landing and takeoff. Pilots should know and understand meaning (colour) of the markings and follow them strictly. RW markings are white, TW markings are yellow. Airfield signs show how to get from another safely. There are location, instruction, direction and destination signs. There are different lighting combinations, like RW edge lights, RW center-line lights, TW lights, PAPI. They are of different colours. They may be steady, flashing, alerting.

- **Could you explain the term "RW incursion", please?**

The ICAO definition: "Any occurrence at an aerodrome involving incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and takeoff of aircraft".

RW incursion is situation/phenomenon when an aircraft, a vehicle or a person enters the active RW illegally/without ATCO's clearance. In such a situation there is a serious danger to any airplane which may be taking off or landing. It can cause great damage and human loss (loss of lives).

- **What are the reasons for RW incursions?**

The main reasons, I think, is a human factor: air traffic controllers' errors, pilots and vehicle drivers deviating from controllers' instructions and RTF. Poor language skills, high rate of speech, frequency congestion, long instructions also can cause RW incursions. Also it may happen in poor visibility or due to bad condition of airfield markings and signs.

- **What are the ways of preventing RW incursions?**

First of all, the aviation staff must know and comply with the rules, regulations and standard operating procedures, also undergo regular training and operate in close coordination. Proper condition of ground markings, signs and lights will help to prevent RW incursions. Both pilots and controllers should use standard RTF and speak clearly, distinctly. When necessary controllers should give progressive taxi instructions and monitor readbacks. Also, I think, it's very important to use one language on the frequency.

- **What are the reasons for RW confusion?**

Runway confusion occurs when pilots enter, take-off or land on the incorrect runway. It may happen due to callsign confusion when a pilot can take a clearance instruction issued/intended for another aircraft. Also due to complex airport layout (for example, with parallel RWs), loss of situational awareness or operations in poor visibility conditions and at nighttime.

- **How to avoid RW confusion?**

Pilots always should be attentive (in “heads up” mode), learn the airfield charts and diagrams carefully, strictly follow ATC instructions and airfield markings, signs and lights. It’s also important to visually identify the correct runway before entering or landing on it.

(Humans make mistakes, plenty of pilots have landed at the wrong airport or on wrong runway even taking off on the wrong runway, fact of life and it can never be eliminated!)

- **Could you give explanation of the “Follow-the-Greens” procedure?**

“Follow-the-Greens” is guidance system for taxiing aircraft. It automatically illuminates/turns on TW centerline in front of the aircraft and also automatically switches off lights in the areas where they are not necessary.

- **How useful is the “Follow-the-Greens” procedure for controllers?**

The system has many benefits for controllers. Firstly, it increases situational awareness and safety, controllers can expect less taxi route deviations. Also it greatly decreases controllers mental workload. Especially this procedure is convenient in the dark (time) and in poor visibility conditions.

- **What are pilots’ actions after receiving taxi instructions?**

Once taxi instructions are received (after receiving taxi instructions) pilots must read back all clearances/instructions with the (particular) aircraft callsign. If a pilot expects a delay or is unable to comply with the instructions he should advise/inform the controller about it.

- **What instructions must be read back?**

Pilots must readback the entire/complete taxi instruction including taxi route, TW intersection, RW designator and callsign; also all hold short instructions and clearance to enter the RW.

- **What are pilots' actions if the RW for landing is occupied?**

If a pilot observes any obstruction on the RW he usually makes decision to go around and informs the controller about the situation. Also he may proceed to a holding area until the RW is clear. No aircraft can land on an obstructed RW.

- **In what situations do controllers issue "Line up and wait" instruction?**

This instruction is issued when the RW is (occupied)/not clear, then when (time) separation with just departed aircraft is not provided. Also it may be a bit early to give takeoff clearance in accordance with the flight plan departure time.

- **You ever had/heard of a situation connected with safety violation on the ground?**

Fortunately, I have never had such situations in my experience, but we will never forget deadly/the worst accident when KLM and Pan American aircraft (747s) collided at the Tenerife airport killing about 600 people.

The next accident involving Falcon 50EX F-GLSA aircraft occurred at nighttime under foggy conditions. Shortly after takeoff it collided with the snowplough which (executed RW incursion) entered the active RW without controllers' clearance. Four people were killed. To a great pity the list such accidents could go on/could be continued.