International Civil Aviation Organization

MIDANPIRG/18 and RASG-MID/8 Virtual Meetings

(15-22 February 2021)

Agenda Item 4.2.4: Outcomes of the ASPIG/2 meeting

FAA AERODROME SAFETY EFFORTS

(Presented by the United States)

SUMMARY

This paper presents an overview of Federal Aviation Administration (FAA) Airport Safety best practices to mitigate incursion and excursion risks at airports in the United States.

1. INTRODUCTION

1.1 The U.S. FAA's Office of Airports has been identifying runway incidents and formulating solutions to improve aerodrome safety. Aerodromes free of operational risk starts with sound design and clear operational guidance. The FAA acknowledges the existence of non-standard conditions that contributes to risk in aerodrome operations. Reporting of incursion incidents and data collection is key to understanding the incursion, and to be able to formulate a solution. Our records show that improvements in design methods and changes to operational ~~practices~~ procedures has reduced ~~unsafe~~ risk in aerodrome conditions, and mitigated runway incidents to minimal levels.

2. DISCUSSION

2.1 Runway safety is multifaceted – reduction in aerodrome risk levels requires comprehensive assessment of its movement area. 1) Recording of the risk incident. 2) Evaluating the risk incident. 3) Application of a solution to the risk location. Collaborative efforts between the operator, the carrier, the consultant, and the regulator is paramount to implementing safety solutions. The support the FAA receives from the International Civil Aviation Organization (ICAO) continues to be valuable; enabling the FAA to share its experiences, and lessons learned, and help improve aerodrome design and safety practices worldwide.

2.2 An important function of air traffic controllers is to record and report a runway incursion and surface incidents. At non-towered airports, it is the responsibility of the aerodrome operator and its users to record and report ~~an~~ unsafe incidents. Observing ~~and~~ recording and reporting of an incident is a critical element of our runway safety program to produce effective solutions. The FAA encourages and rewards (a safety culture) reporting of unsafe incidents, i.e., runway incursion incidents, etc. Reporting ~~should~~ is not ~~be~~ punitive in nature, but a way to highlight risk and develop solutions to mitigate that risk.

2.3 Evaluating the risk is a collaborative effort at each aerodrome. In the United States, a Runway Safety Action Team (RSAT) convenes at a minimum once a year to assess reports of ~~unsafe~~

Runway Incursions and Surface incidents in the movement area ~~incidents~~. The Air Traffic manager, airport operator, members of the various airlines, FAA technical operations staff, and staff from the FAA's airport district office participate in the RSAT meeting. The RSAT reviews the incidents and their locations, and then examines the most effective solution(s) in the short, medium or long- term.

2.4 Some solutions may culminate in designating a trouble area as a "Hot Spot" on the airport diagram. See attached (sample) diagram in which the Hot Spots are labelled as "HS". This graphical depiction allows air traffic, service vehicle drivers and pilots to heighten their attention at these locations. Another short-term solution could be a change of a local air traffic procedure. Technical solutions to mitigate incursion incidents could lead to the placement of hold bars with "wigwag" lights at the runway entrance, improved taxiway information signs, etc.

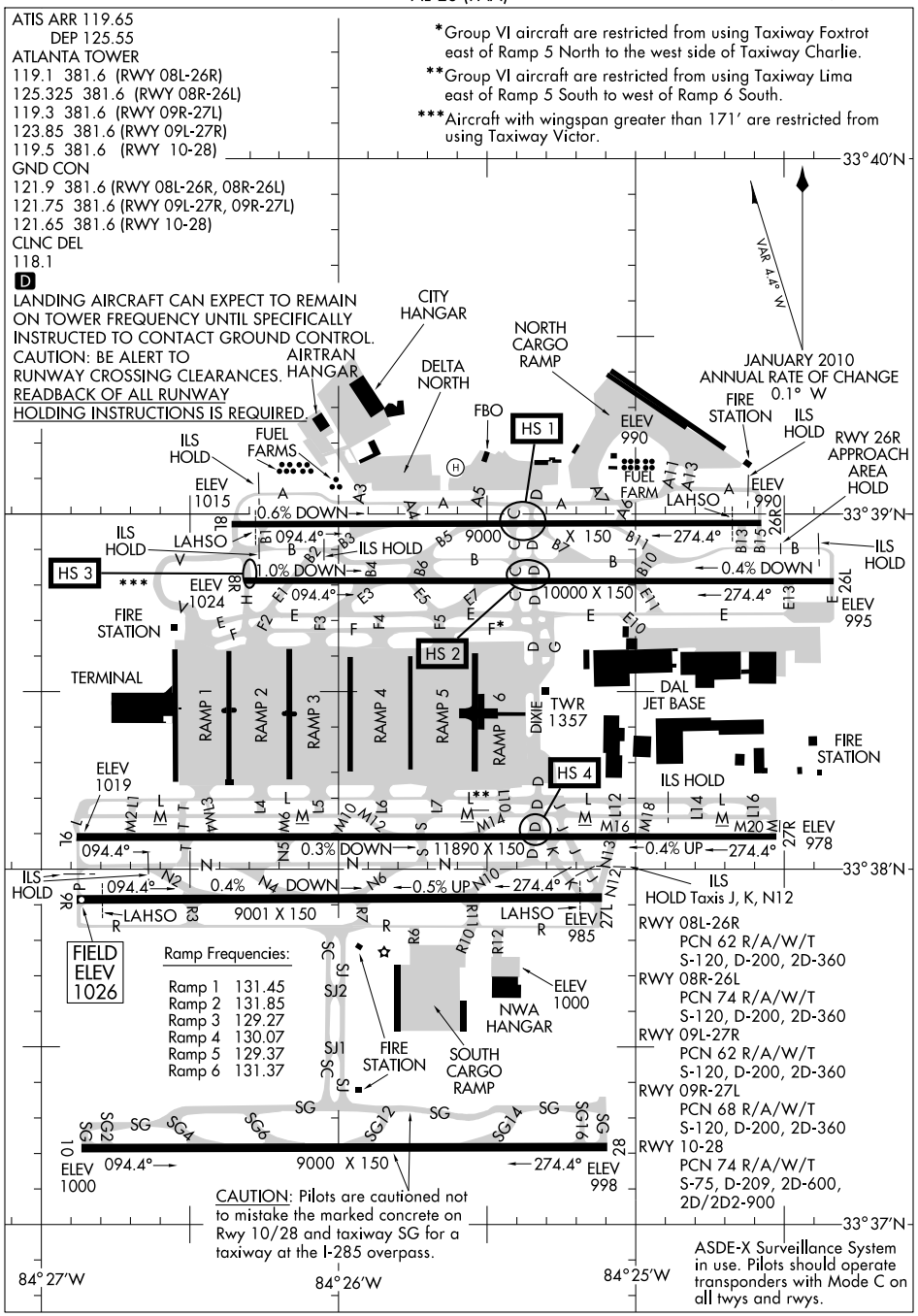
2.5 Other more expensive mitigations such as long-term construction improvement projects have proven to eliminate incursion incidents. Improved design of taxiway-to-taxiway intersections and taxiway-to-runway entrances contribute to much lower incursion incidents. For example, multiple taxiway intersections that are more than "three node" – straight, left or right, is confusing to pilots and may lead to disorientation. Wide expanse of pavement near a taxiway entrance to a runway reduces the pilot's situational awareness of his or her proximity to a runway entrance, thus failing to stop in a timely manner and ~~committing~~ contributing to a runway incursion. Design of a taxiway width to the appropriate airplane design group (ADG) produces improved pilot visual conspicuity to runway and taxiway information signs; as such, signs are much closer to the pilot's line of sight. Data show that very wide taxiways tend to induce unnecessary wander to smaller taxiing aircraft. What we deduce from this fact is that the appropriate size taxiway width at a runway entrance does reduce runway incursion incidents as well. See FAA Advisory Circular AC 150/5300-13, *Airport Design*, for further details. It can be found on the FAA website at: https://www.faa.gov/airports/resources/advisory_circulars/.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:: 1) note the information provided in this information paper, 2) recognize that the United States is committed to sharing lessons learned on this subject, and 3) encourage States to implement similar and proven solutions at aerodromes.

AIRPORT DIAGRAM

ATLANTA/ HARTSFIELD - JACKSON ATLANTA INTL (ATL)
AL-26 (FAA)
ATLANTA, GEORGIA



SE-4, 23 SEP 2010 to 21 OCT 2010