FY2019 Runway Safety Action Team (RSAT)

OSU ATCT

DRAFT

Introduction

- Welcome to the Runway Safety Action Team (RSAT)
  - Air Traffic Manager: Deral Carson
  - Airport Director: Doug Hammon
  - Assistant Airport Director: Dale Gelter

- Please enter name, organization, and contact information on the sign-in sheet

Introduction

Also, please feel free to complete an RSAT survey for FAA Runway Safety

Agenda

- Runway Safety Briefing
  - Overview of the RSAT Process
  - Definitions and National Statistics
  - National Trends and Topics
- RSAT Open Discussion
  - Local Incident History
  - Local Action Item Review
  - Identify local risk factors and/or current initiatives
  - Stakeholder / User Perspectives
- Outcome: Develop RSAP and Action Items

RSAT Process Overview

- Purpose: To bring local stakeholders together at least once per year to identify and mitigate the risks of significant surface events at your airport.
- Process:
  - Review Incident History
  - Review Action Item History
  - Discuss Current Concerns
  - Create FY2019 Runway Safety Action Plan and Action Items

- If you have ever said concerning The Ohio State University Airport, ATC or pilot issues…

- “Somebody needs to do something about that.”
- Today is the day to bring it up.

Definitions

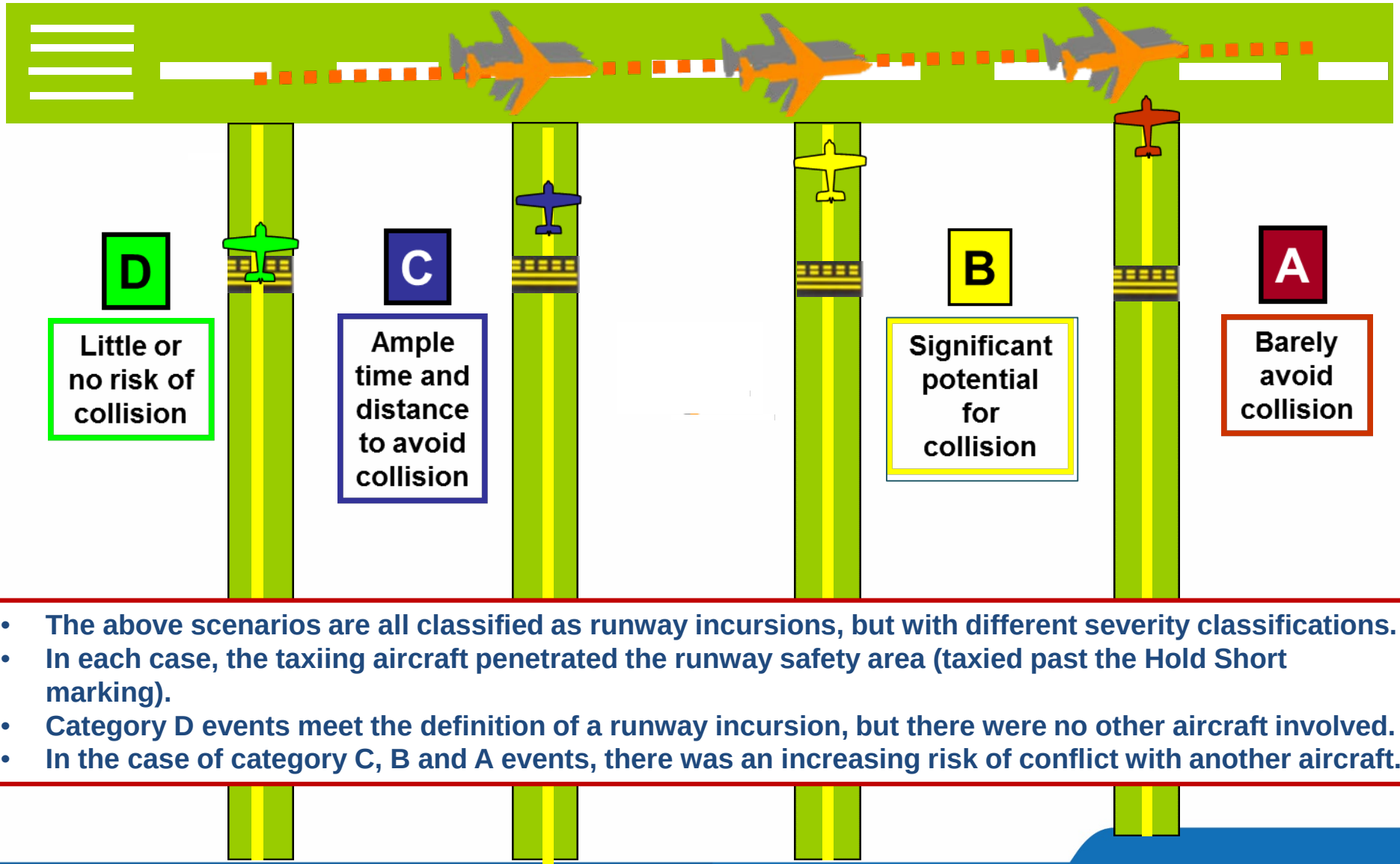
- **Runway Incursion**: The incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft. (This includes the Runway Safety Area (RSA).)
- **Runway Excursion**: A veer off or overrun off the runway surface.
- **Surface Incident**: Unauthorized or unapproved movement within the designated movement area (excluding runway incursions) or an occurrence in that same area associated with the operation of an aircraft that affects or could affect the safety of flight.

Definitions

Types of Surface Events:

- **Operational Incident (OI)** – A surface event attributed to ATCT action or inaction.
- **Pilot Deviation (PD)** – A surface event caused by a pilot or other person operating an aircraft under its own power.
- **Vehicle or Pedestrian Deviation (VPD)** – A surface event caused by a vehicle driver or pedestrian.
- **Other** – Surface events which cannot clearly be attributed to a mistake or incorrect action by an air traffic controller, pilot, driver, or pedestrian will be classified as “other”. These events would include incursions caused by equipment failure or other factors.

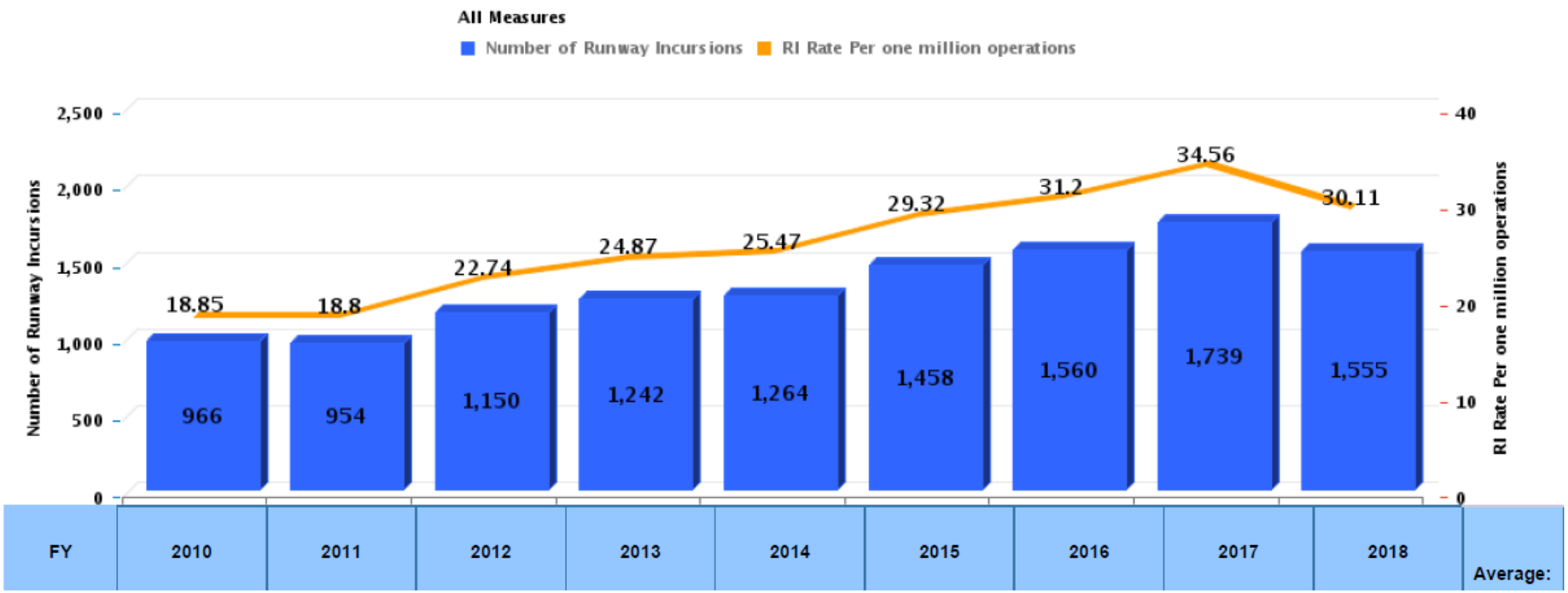
Definitions - Severity Category



- The above scenarios are all classified as runway incursions, but with different severity classifications.
- In each case, the taxiing aircraft penetrated the runway safety area (taxied past the Hold Short marking).
- Category D events meet the definition of a runway incursion, but there were no other aircraft involved.
- In the case of category C, B and A events, there was an increasing risk of conflict with another aircraft.

National Statistics

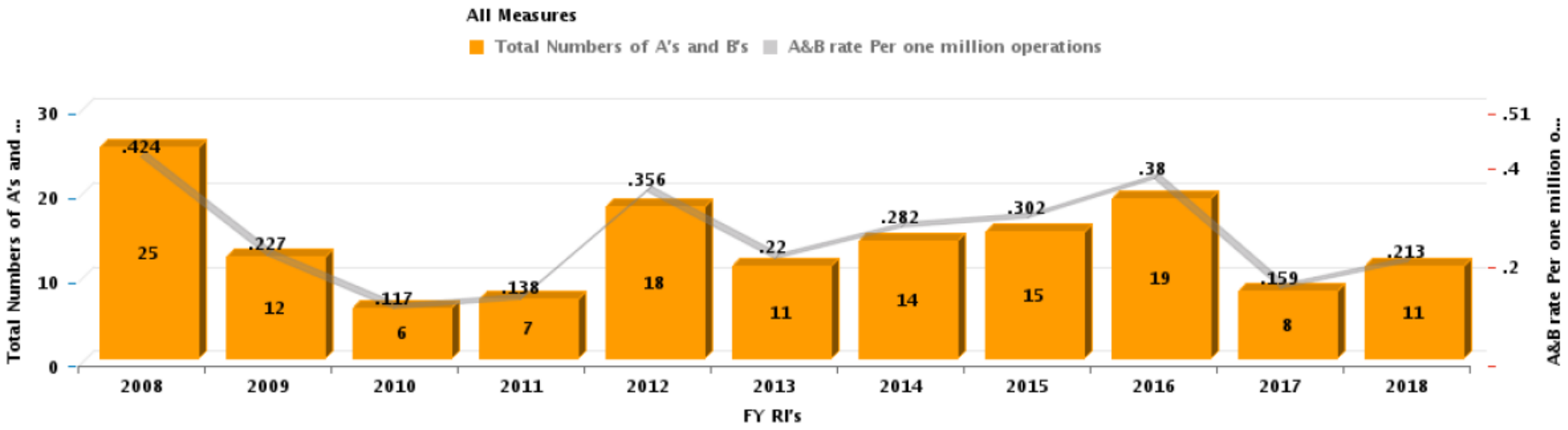
Total Runway Incursions by Fiscal Year



Data current as of 10/1/2018

National Statistics

Category A and B Runway Incursions by Fiscal Year



Data current as of 10/1/2018

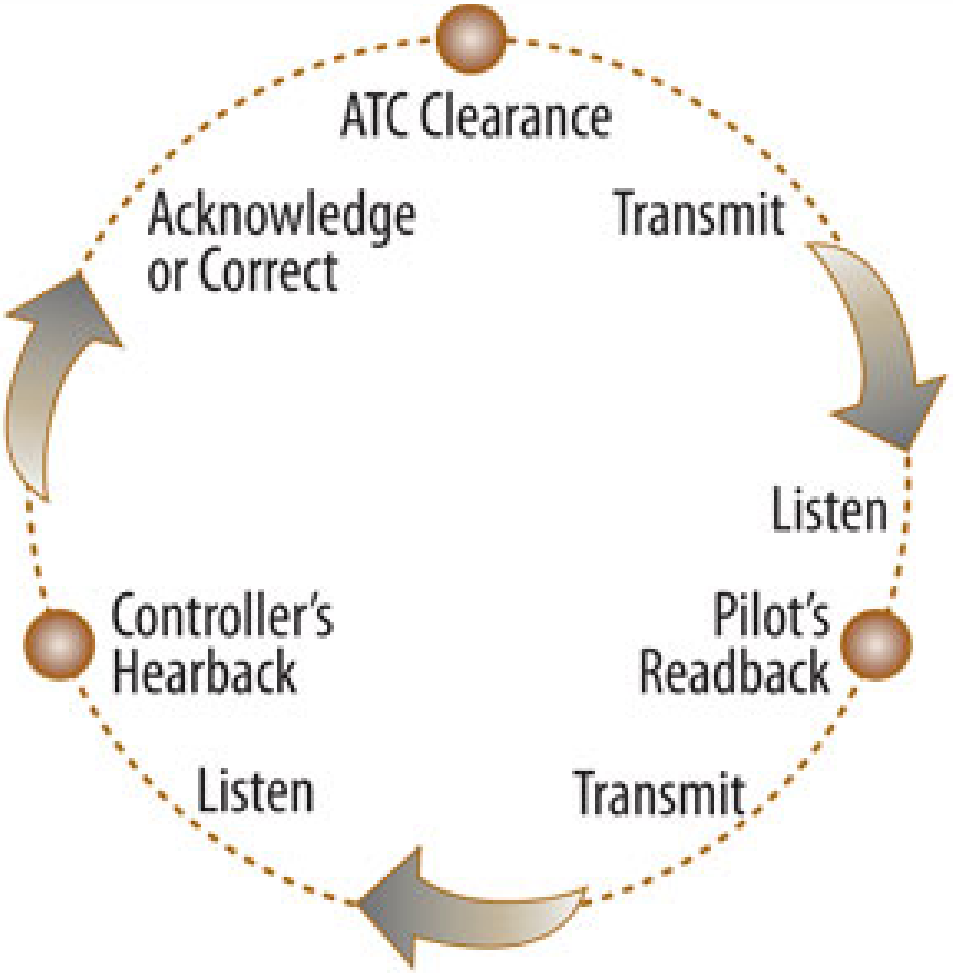
Communications

- Communication continues to be a contributing factor in many runway incursions.

Communications

- An example scenario:
  - Pilot taxies out to Runway (RWY) 9R.
  - Pilot calls ready for takeoff RWY 9R.
  - Controller instructs the pilot to cross RWY 9R, taxi to RWY 9L and expedite for landing traffic, intending for the aircraft to depart RWY 9R.
  - Pilot responds “RWY 9R, cleared for takeoff.”
  - Controller does not catch the incorrect read back.
  - Pilot taxies onto RWY 9R for departure.
  - Traffic short final for RWY 9R is instructed to go around.

Close the Loop



Communication Best Practices

- Pilots:
- Read clearances back *verbatim* (and Call Sign/Tail Number!)
- Maintain Situational Awareness – pay attention to transmissions to other aircraft/vehicles on frequency
- *Ask* for clarification when unsure of instructions

Communication Best Practices

- ATC:
- Complete Read back / Hear back loop
- Use Prescribed Phraseology and Standard Format
- Maintain Situational Awareness
- Employ appropriate Speech Rate
- *Ask* for clarification when unsure of instructions

Wrong Surface Landings

- Wrong Surface Landings include wrong runway, taxiway, and wrong airport landings.
- Common geometric factors include:
  - Parallel runways
  - Closely aligned runway ends
  - Parallel taxiways confused for runways

Pilot Expectation Bias

- Pilot expectation bias is the most common contributory factor in wrong surface landings, typically because the clearance received was outside of what he/she expected as “normal practice.”
- Examples of “norms”:
  - Full stop landings are assigned the runway nearest to the ramp.
  - Pilots switched to a different runway are normally changed to a different frequency
  - Pattern entry matches runway assignment, i.e. left traffic pattern = left runway.

Wrong Surface Mitigations

To mitigate the risk of wrong surface operations, every user of the airfield can:

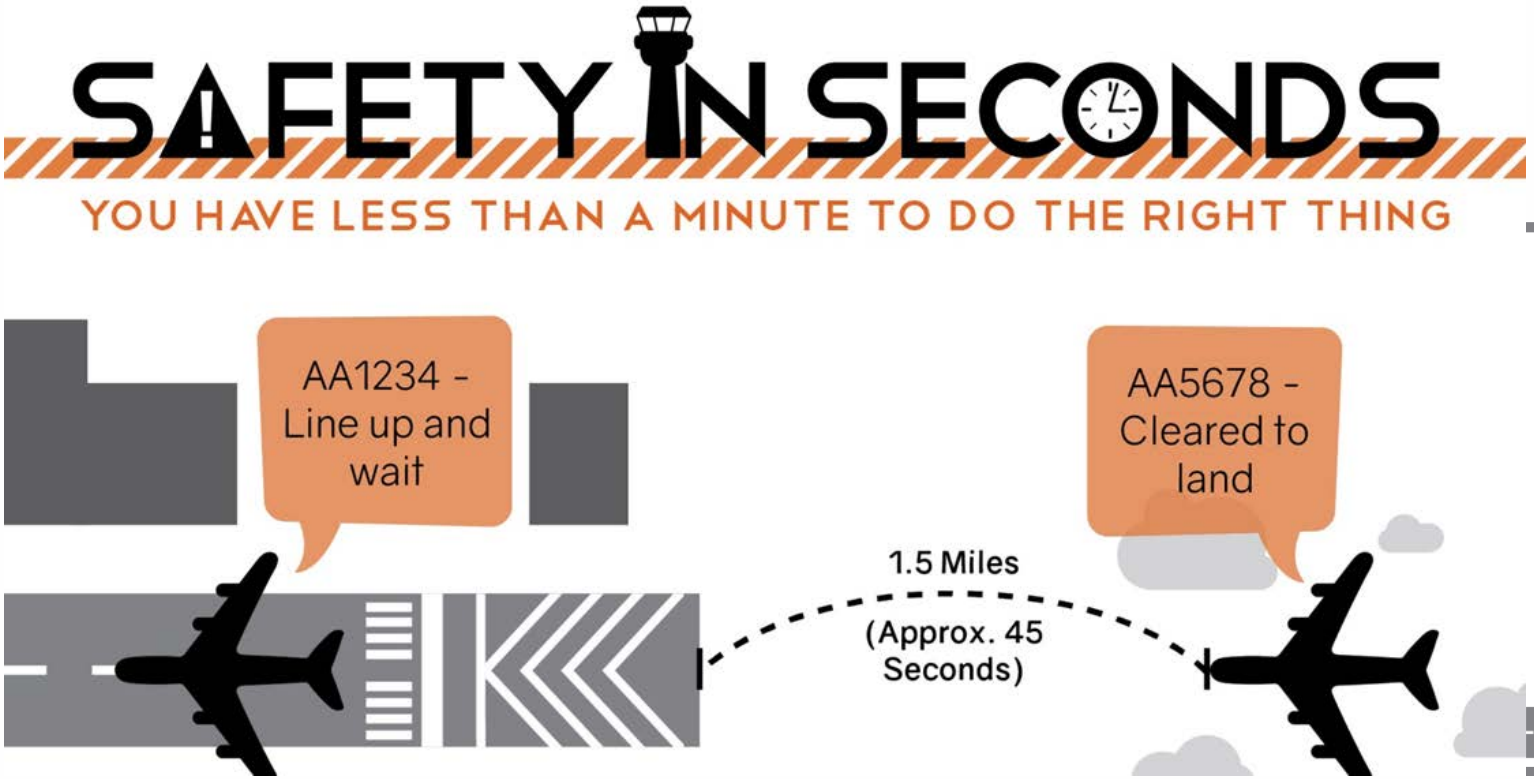
- Review the Airport Diagram prior to operation (better yet, take a free one with you)
- https://www.faa.gov/airports/runway_safety/diagrams/
- Review Visual Cues – Runway versus Taxiway
  - Paint: White or Yellow
  - Lights: White or Blue/Green
- Use common Verbal Cues – Use of “Active Runway”

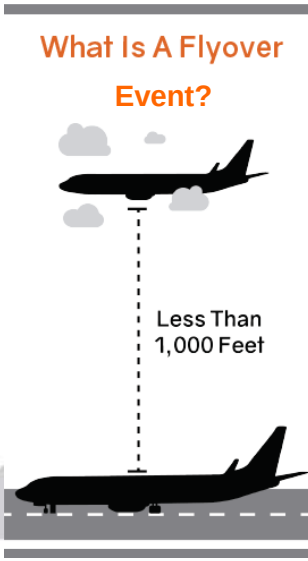
Wrong Surface Mitigations

To mitigate the risk of wrong surface operations, every user of the airfield can:

- Be familiar with Runway Holding Position Markings
- “Close the Loop” with Read back / Hear back

Flyover Events





Flyover Risk Mitigations

Air Traffic Control:

- Issue timely control instructions

Pilots and Vehicle Drivers:

- Listen to all transmissions on frequency when on a runway
- Clear final approach course prior to proceeding onto runway
- If you are in doubt that the runway is clear - *say something*

Runway Excursions

- Lead to more runway accidents than all other causes combined.*
- Estimated annual cost: $900 Million
- Causes
  - Unstable Approaches
  - Runway Contamination
  - Adverse Weather / Wind Conditions
  - Mechanical Failure
  - Pilot Error

Runway Excursions

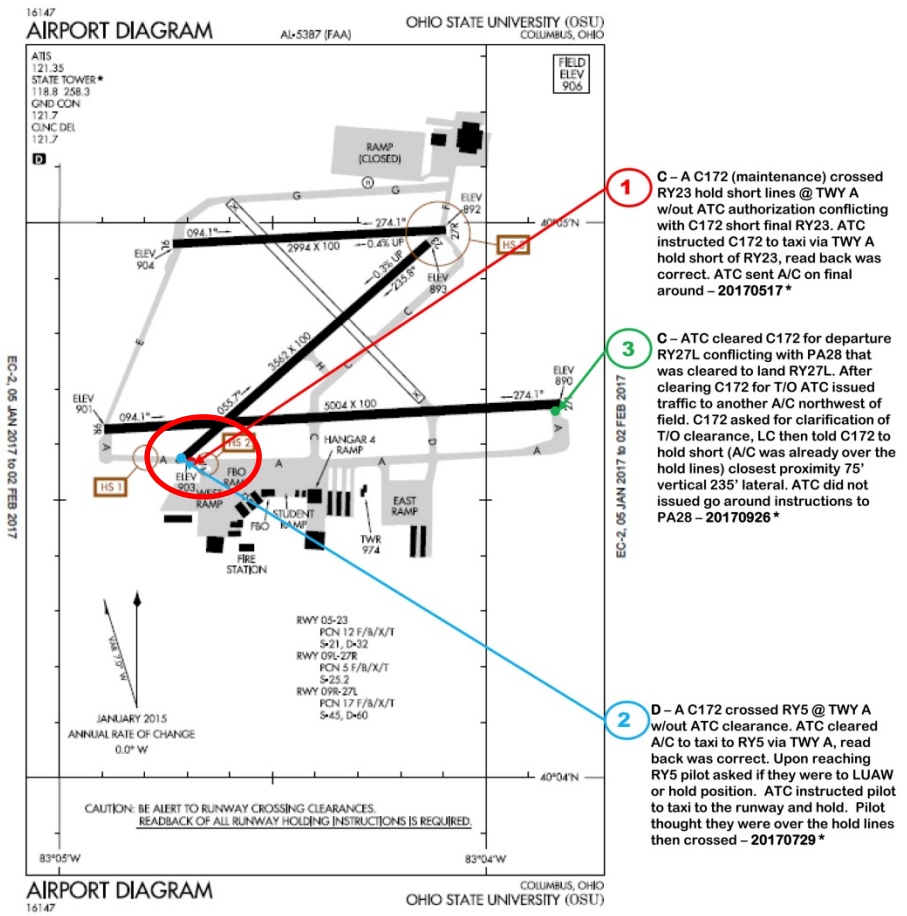
- Possible Mitigations:
  - Stabilized approach below 500’ in VMC and 1000’ in IMC
  - Minimize late runway changes and short approaches
  - Ensure timely and accurate weather and surface condition reports
  - Ensure proper runway selection given the conditions: runway length, contamination, wind speed and direction

Local Discussion Topics

- The following slides are provided to review local events and to promote discussion regarding local concerns, surface risks, and potential mitigations at this airport.
- Potential solutions (action items) will be noted and addressed in a later section.

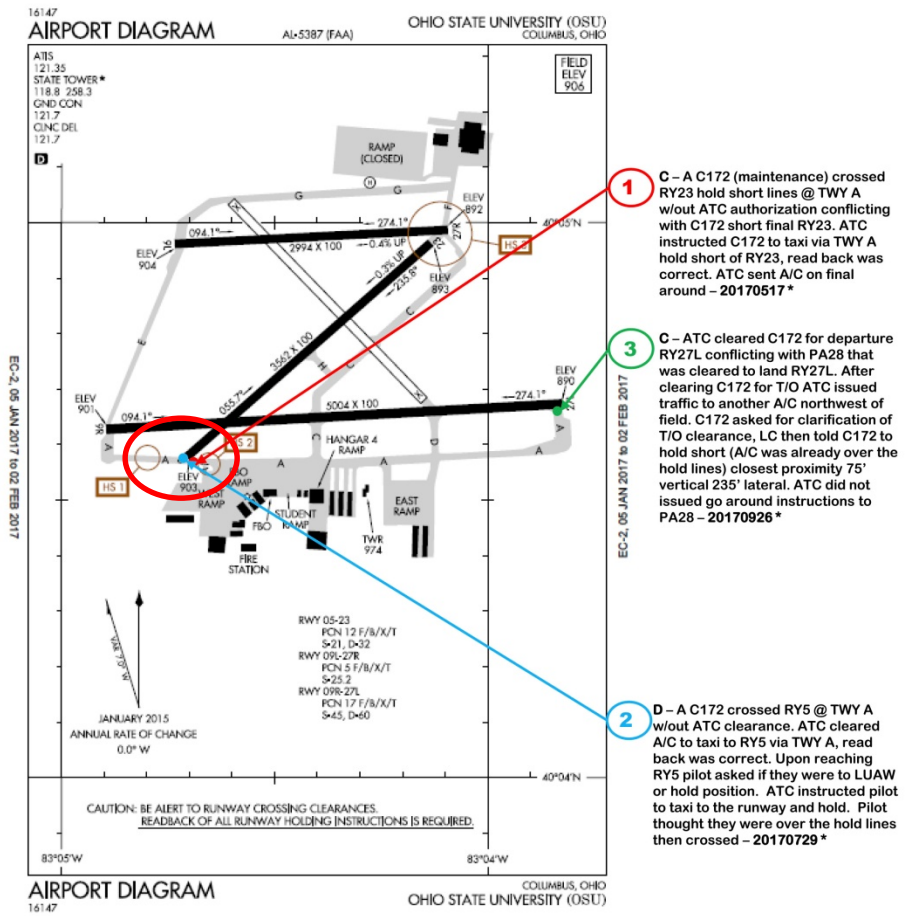
Local Incidents

1. C–A C172 (maintenance) crossed RY23 hold short lines @ TWY A w/out ATC authorization conflicting with C172 short final RY23. ATC instructed C172 to taxi via TWY A hold short of RY23, read back was correct. ATC sent A/C on final around –20170517 *



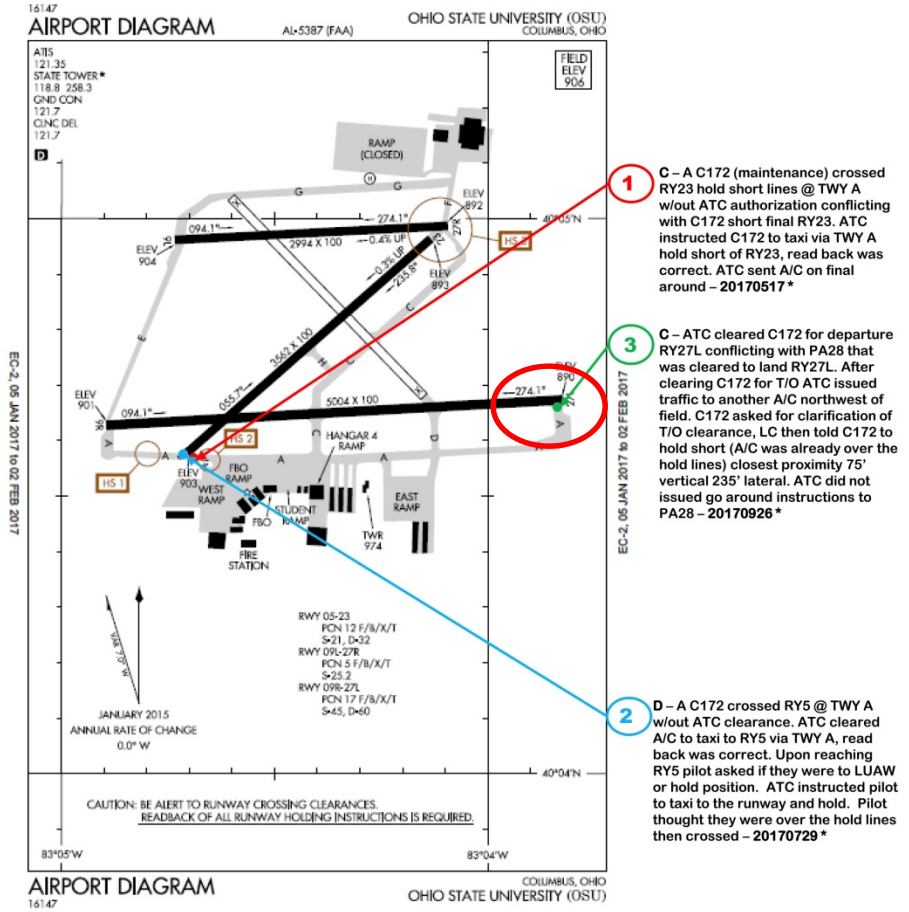
Local Incidents

2. D–A C172 crossed RY5 @ TWY A w/out ATC clearance. ATC cleared A/C to taxi to RY5 via TWY A, read back was correct. Upon reaching RY5 pilot asked if they were to LUAW or hold position. ATC instructed pilot to taxi to the runway and hold. Pilot thought they were over the hold lines then crossed –20170729 *



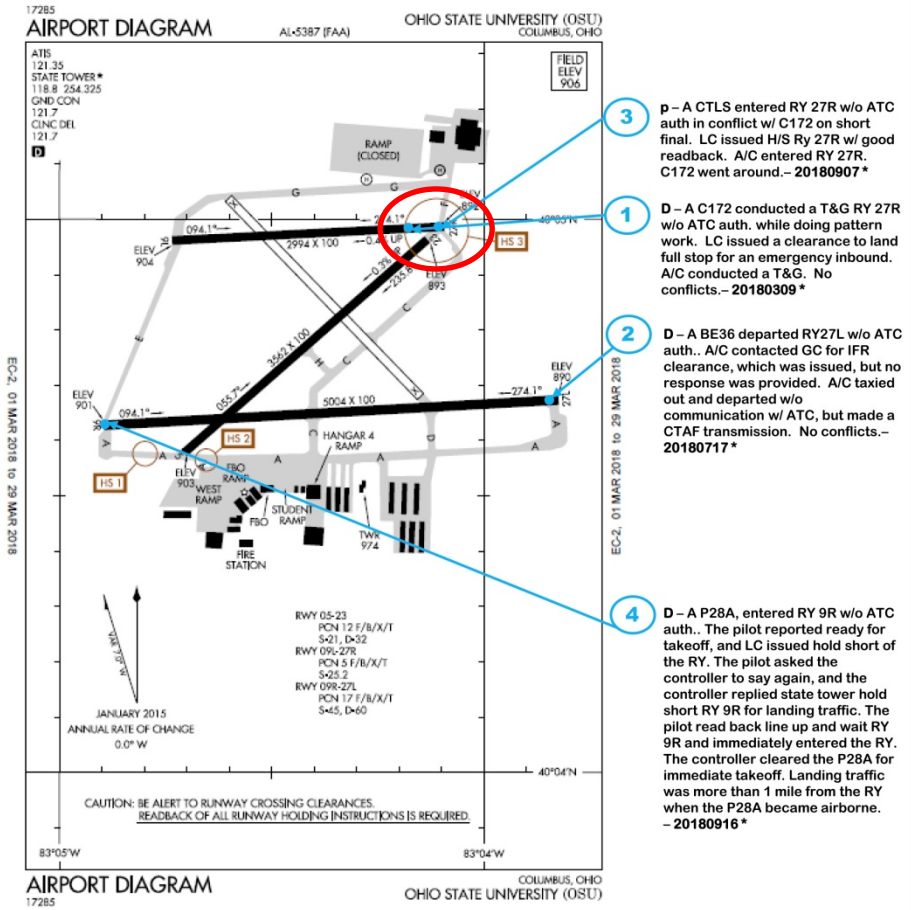
Local Incidents

3. C–ATC cleared C172 for departure RY27L conflicting with PA28 that was cleared to land RY27L. After clearing C172 for T/O ATC issued traffic to another A/C northwest of field. C172 asked for clarification of T/O clearance, LC then told C172 to hold short (A/C was already over the hold lines) closest proximity 75’ vertical 235’ lateral. ATC did not issued go around instructions to PA28 – 20170926 *



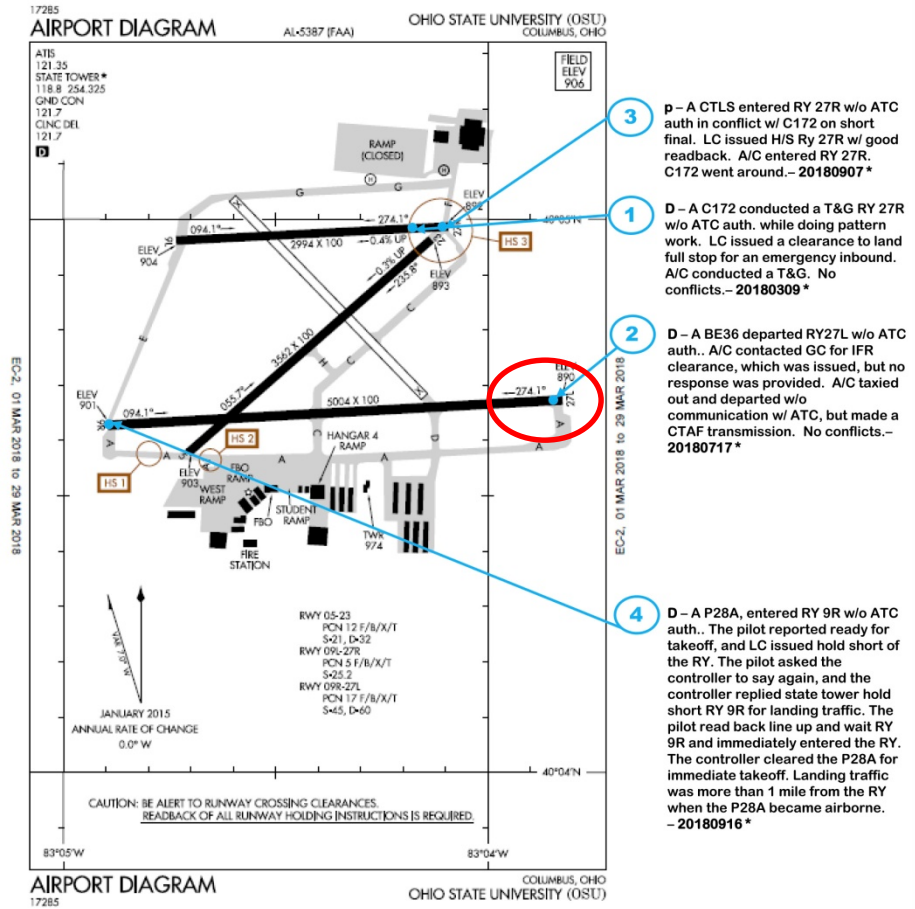
Local Incidents

1. D–A C172 conducted a T&G RY 27R w/o ATC auth. while doing pattern work. LC issued a clearance to land full stop for an emergency inbound. A/C conducted a T&G. No conflicts.– 20180309 *



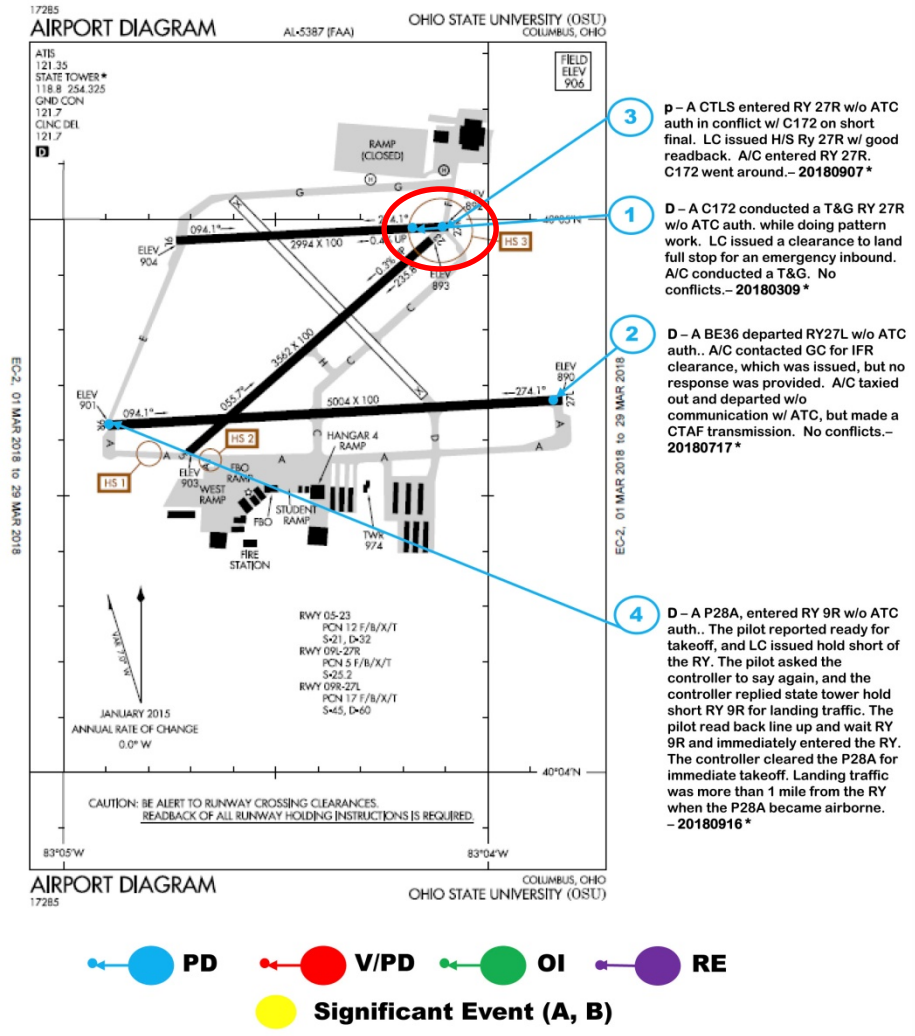
Local Incidents

2. D–A BE36 departed RY27L w/o ATC auth.. A/C contacted GC for IFR clearance, which was issued, but no response was provided. A/C taxied out and departed w/o communication w/ ATC, but made a CTAF transmission. No conflicts.–20180717 *



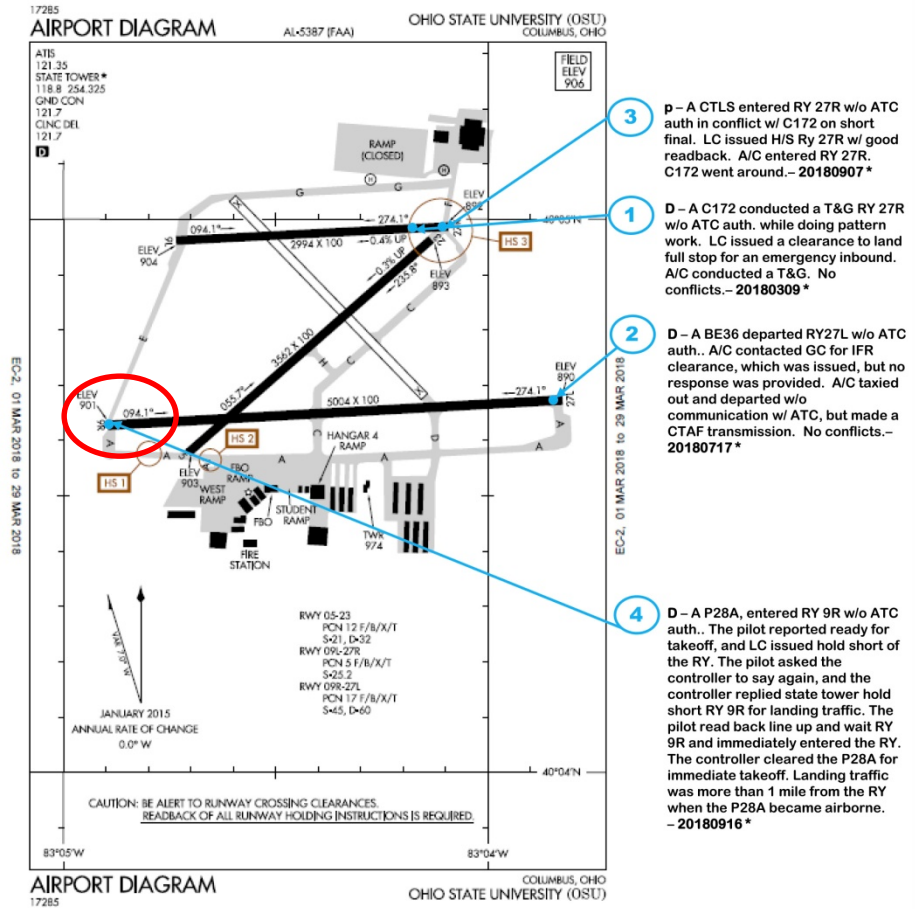
Local Incidents

3. A CTLS entered RY 27R w/o ATC auth in conflict w/C172 on short final. Local Control (tower) issued hold short Ry 27R w/good readback. A/C entered RY 27R. C172 went around.–20180907 *



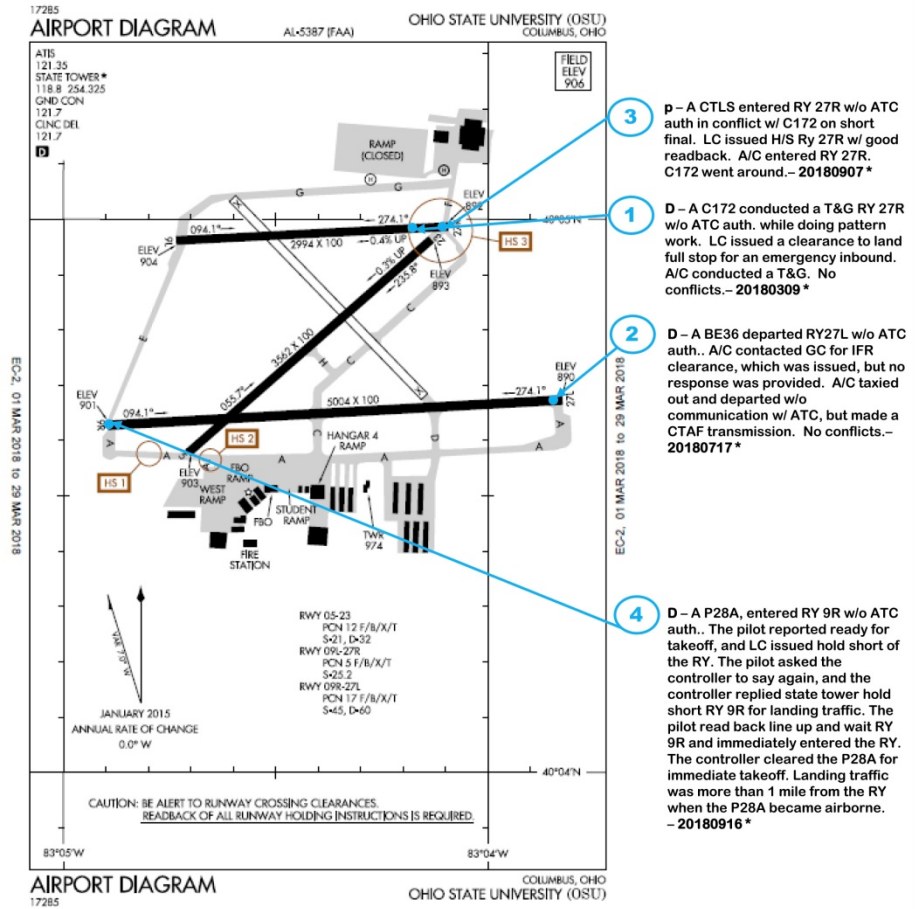
Local Incidents

4. D–A P28A, entered RY 9R w/o ATC auth.. The pilot reported ready for takeoff, and LC issued hold short of the RY. The pilot asked the controller to say again, and the controller replied state tower hold short RY 9R for landing traffic. The pilot read back line up and wait RY 9R and immediately entered the RY. The controller cleared the P28A for immediate takeoff. Landing traffic was more than 1 mile from the RY when the P28A became airborne. –20180916 *



Local Incidents

Events 1-4. What is the common issue?



3 **p** – A CTLS entered RY 27R w/o ATC auth in conflict w/ C172 on short final. LC issued H/S Ry 27R w/ good readback. A/C entered RY 27R. C172 went around.– **20180907** *

1 **D** – A C172 conducted a T&G RY 27R w/o ATC auth. while doing pattern work. LC issued a clearance to land full stop for an emergency inbound. A/C conducted a T&G. No conflicts.– **20180309** *

2 **D** – A BE36 departed RY27L w/o ATC auth.. A/C contacted GC for IFR clearance, which was issued, but no response was provided. A/C taxied out and departed w/o communication w/ ATC, but made a CTAF transmission. No conflicts.– **20180717** *

4 **D** – A P28A, entered RY 9R w/o ATC auth.. The pilot reported ready for takeoff, and LC issued hold short of the RY. The pilot asked the controller to say again, and the controller replied state tower hold short RY 9R for landing traffic. The pilot read back line up and wait RY 9R and immediately entered the RY. The controller cleared the P28A for immediate takeoff. Landing traffic was more than 1 mile from the RY when the P28A became airborne. – **20180916** *

PD V/PD OI RE

Significant Event (A, B)

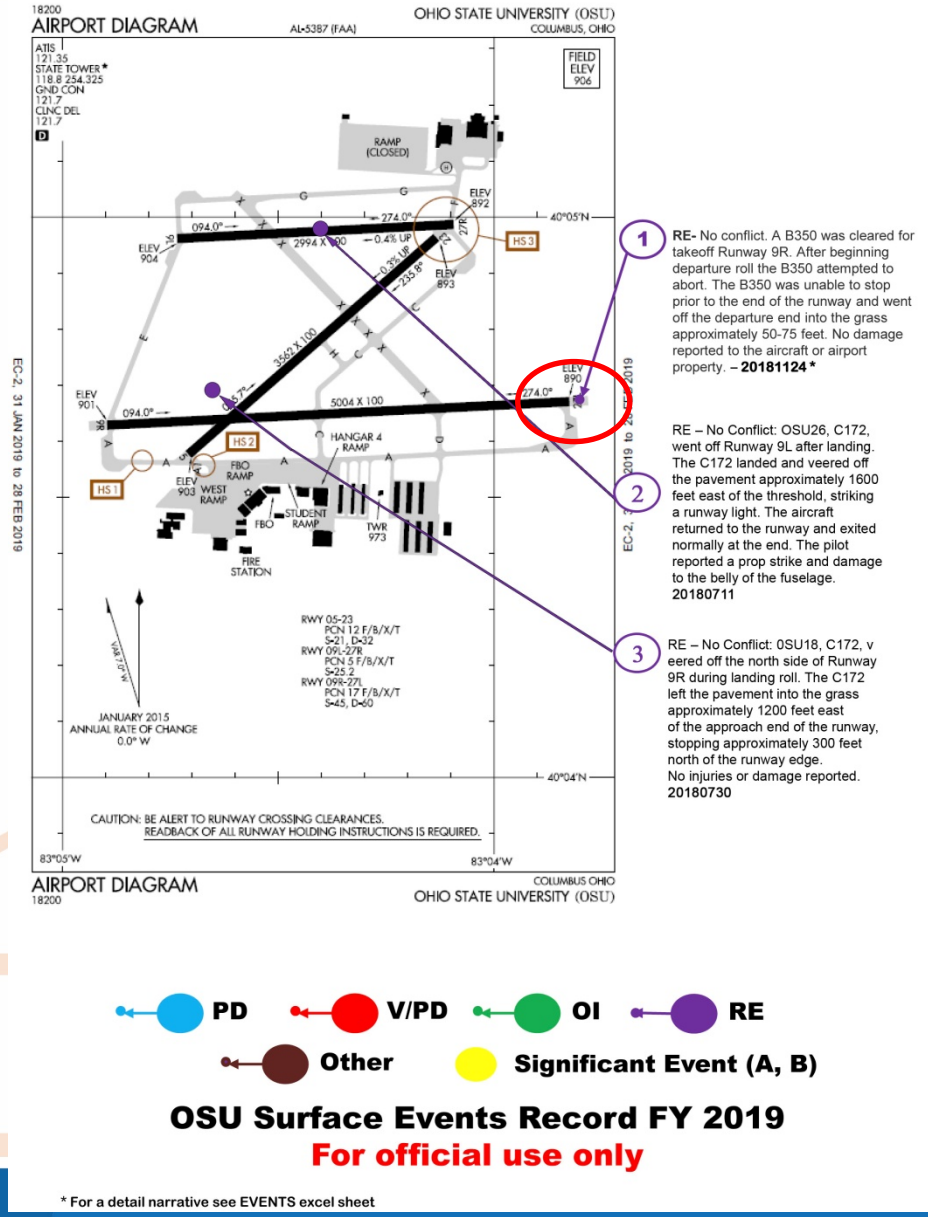
OSU Surface Events Record FY 2018

For official use only

* For a detail narrative see EVENTS excel sheet

Local Incidents

1. RE-No conflict. A B350 was cleared for takeoff Runway 9R. After beginning departure roll the B350 attempted to abort. The B350 was unable to stop prior to the end of the runway and went off the departure end into the grass approximately 250 feet. No damage reported to the aircraft or airport property. – 20181124 *



Local Incidents

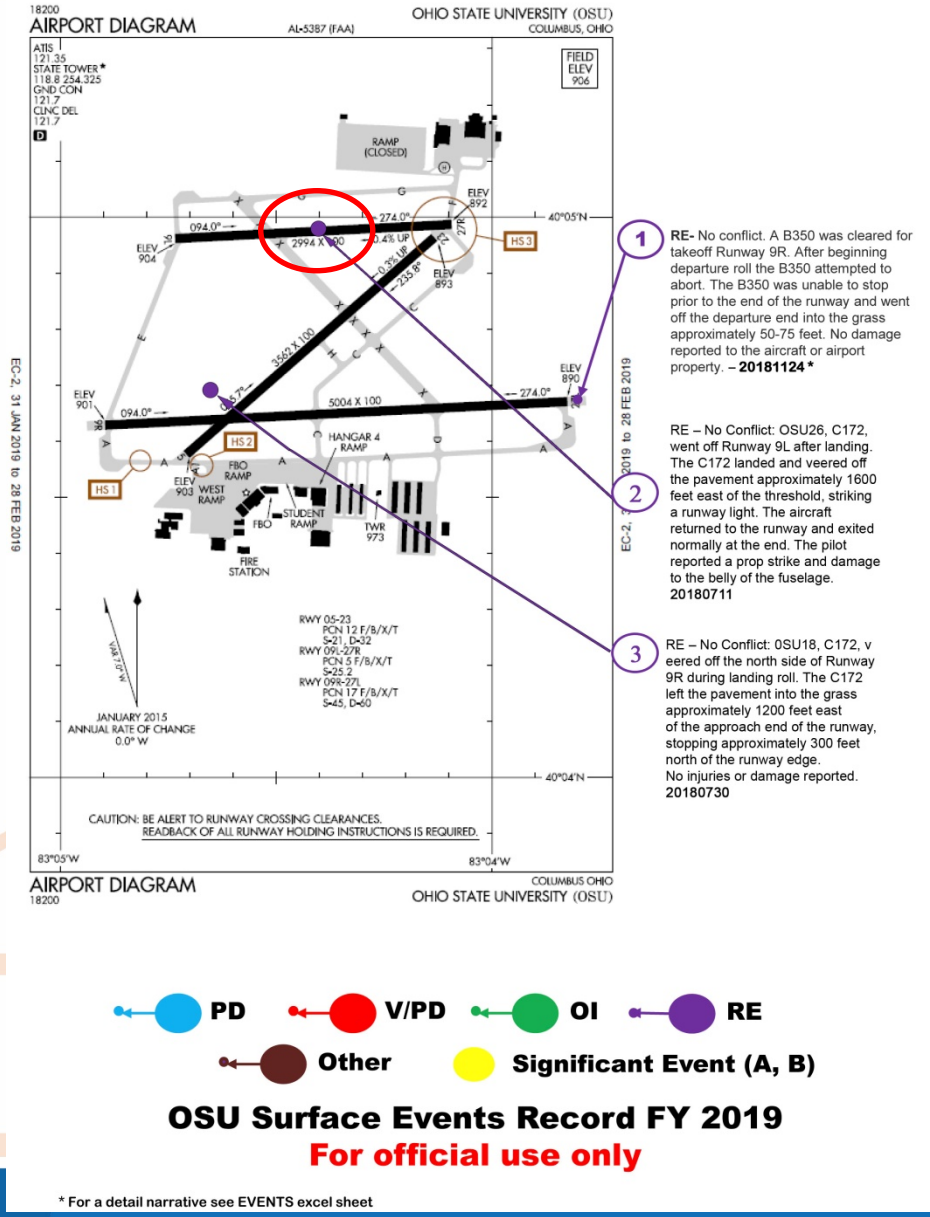
Local Incidents

Local Incidents

Local Incidents

2. RE – No Conflict: C172, went off Runway 9L after landing. The C172 landed and veered off the pavement approximately 1600 feet east of the threshold, striking a runway light. The aircraft returned to the runway and exited normally at the end. The pilot reported a prop strike and damage to the belly of the fuselage.
20180711

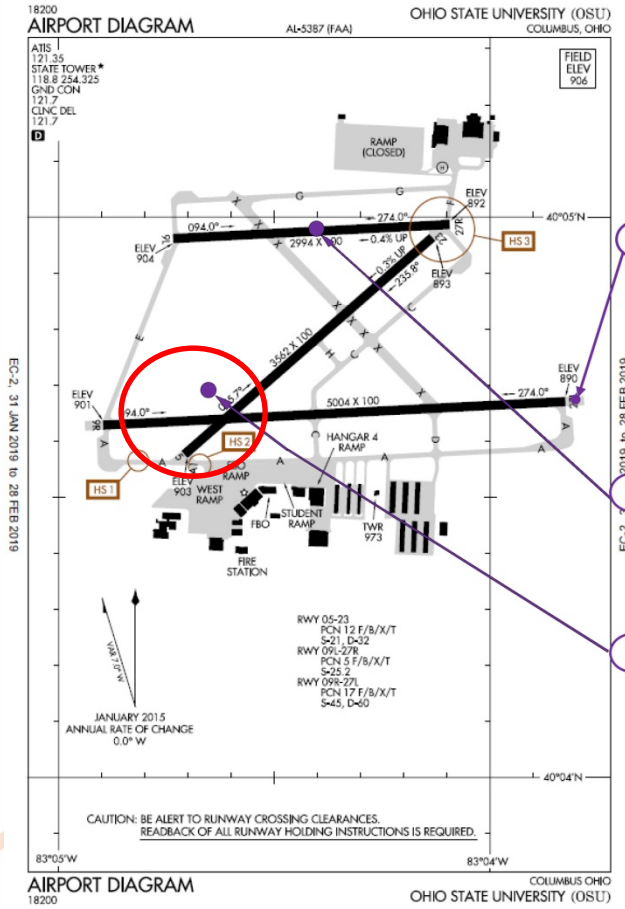
Wind: 01005KT



Local Incidents

3. RE – No Conflict: C172, veered off the north side of Runway 9R during landing roll. The C172 left the pavement into the grass approximately 1200 feet east of the approach end of the runway, stopping approximately 300 feet north of the runway edge. No injuries or damage reported. 20180730

Wind: 06006KT



1 **RE-** No conflict. A B350 was cleared for takeoff Runway 9R. After beginning departure roll the B350 attempted to abort. The B350 was unable to stop prior to the end of the runway and went off the departure end into the grass approximately 50-75 feet. No damage reported to the aircraft or airport property. – **20181124 ***

2 RE – No Conflict: OSU26, C172, went off Runway 9L after landing. The C172 landed and veered off the pavement approximately 1600 feet east of the threshold, striking a runway light. The aircraft returned to the runway and exited normally at the end. The pilot reported a prop strike and damage to the belly of the fuselage. **20180711**

3 RE – No Conflict: 0SU18, C172, v eered off the north side of Runway 9R during landing roll. The C172 left the pavement into the grass approximately 1200 feet east of the approach end of the runway, stopping approximately 300 feet north of the runway edge. No injuries or damage reported. **20180730**

PD V/PD OI RE

Other Significant Event (A, B)

OSU Surface Events Record FY 2019

For official use only

* For a detail narrative see EVENTS excel sheet


4

Action Item Review

CURRENT ACTION ITEMS:

Action Item Code: OSU-2016-001

Completion Due Date: 2020/10/01 (estimated)

Status: In Process

Action Item: Eliminate confusion through an intersection redesign at Hot Spot 3.

Action Item Rationale: The final solution to Hot Spot 3 issues can only be mitigated by a total redesign of the intersection. This intersection is published as HS3. Both runways 23 and 27R, and both taxiways charlie and foxtrot intersect at odd angles. ATC uses additional cautionary verbiage to departure clearances. However, the risk is not eliminated due to pilot confusion and disorientation. This is particularly true at taxiway charlie and departing runway 27R. This is evidenced by 2 wrong runway departure attempts after the hot spot was published, but before the additional ATC cautionary verbiage. A redesign of the intersection is recommended during the airport master plan update. It is simply identified in this RSAP as necessary in order to properly mitigate the wrong runway departure risk at Hot Spot 3. The OSU Airport Master Plan is currently underway and the complex geometry of Runway 9L/27R, runway 23 and Taxiways C and F is being evaluated. The Master Plan is expected completion is late 2019.

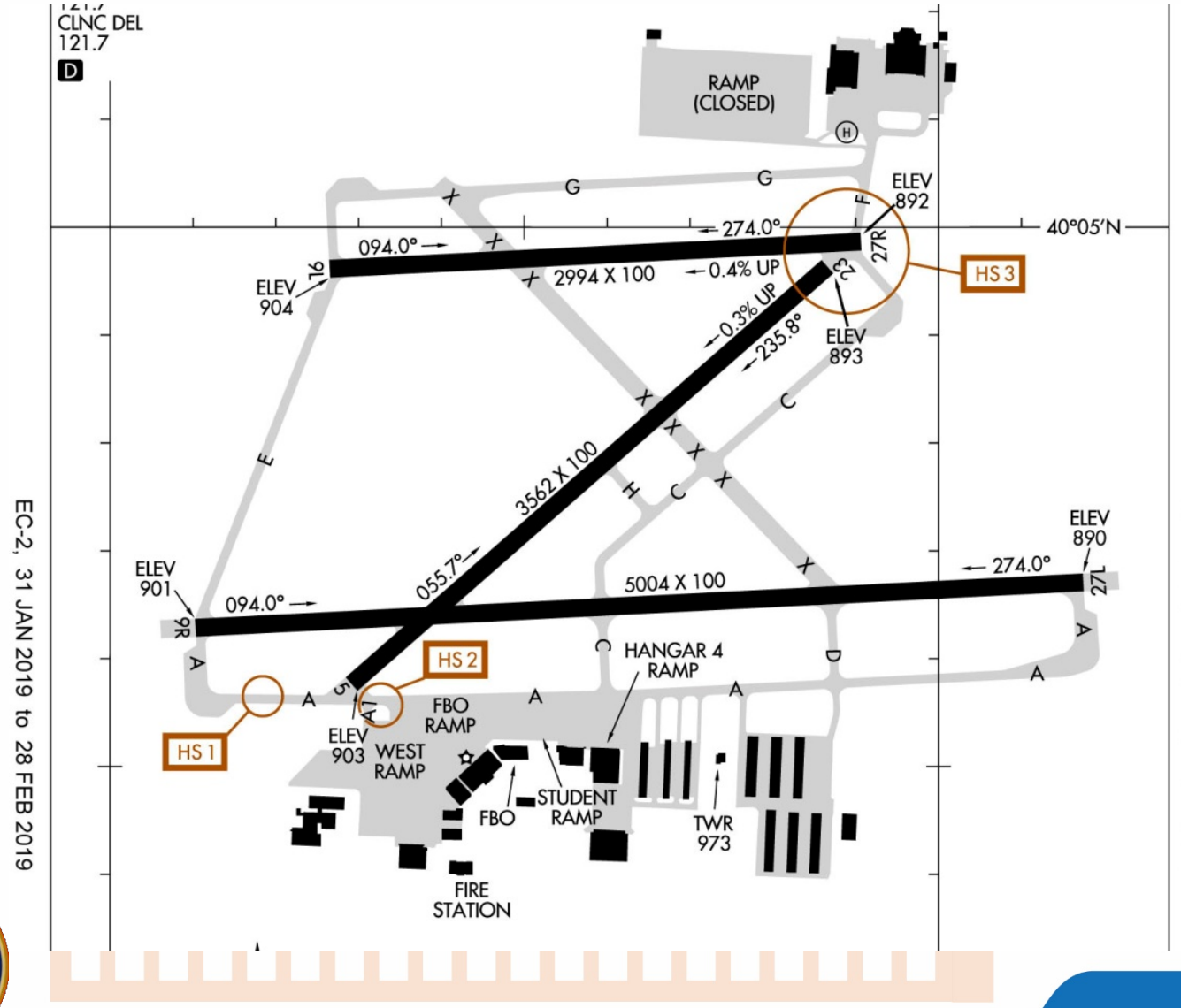
Point of Contact: OSU Airport --- Dale Gelter --- gelter.1@osu.edu

Geometry

Does your airport geometry:

- Have any collocated runway thresholds?
- Have parallel runways with offset thresholds?
- Lead to crossings in the middle third of runway (high-energy area)?
- Have unusual marking and/or signage placement?
- Lack a full length parallel taxiway?
- Have direct/short ramp to runway taxi routes?
- Have taxiways in-line with the runway?
- Have intersections with more than three directional choices?
- Have any wide expanses of pavement at a taxiway/runway intersection?
- Have any taxiways entrances at other than a 90 degree angle to the runway?
- Have any taxiways coinciding with the intersection of two runways?

Hot Spots


CLNC DEL
121.7
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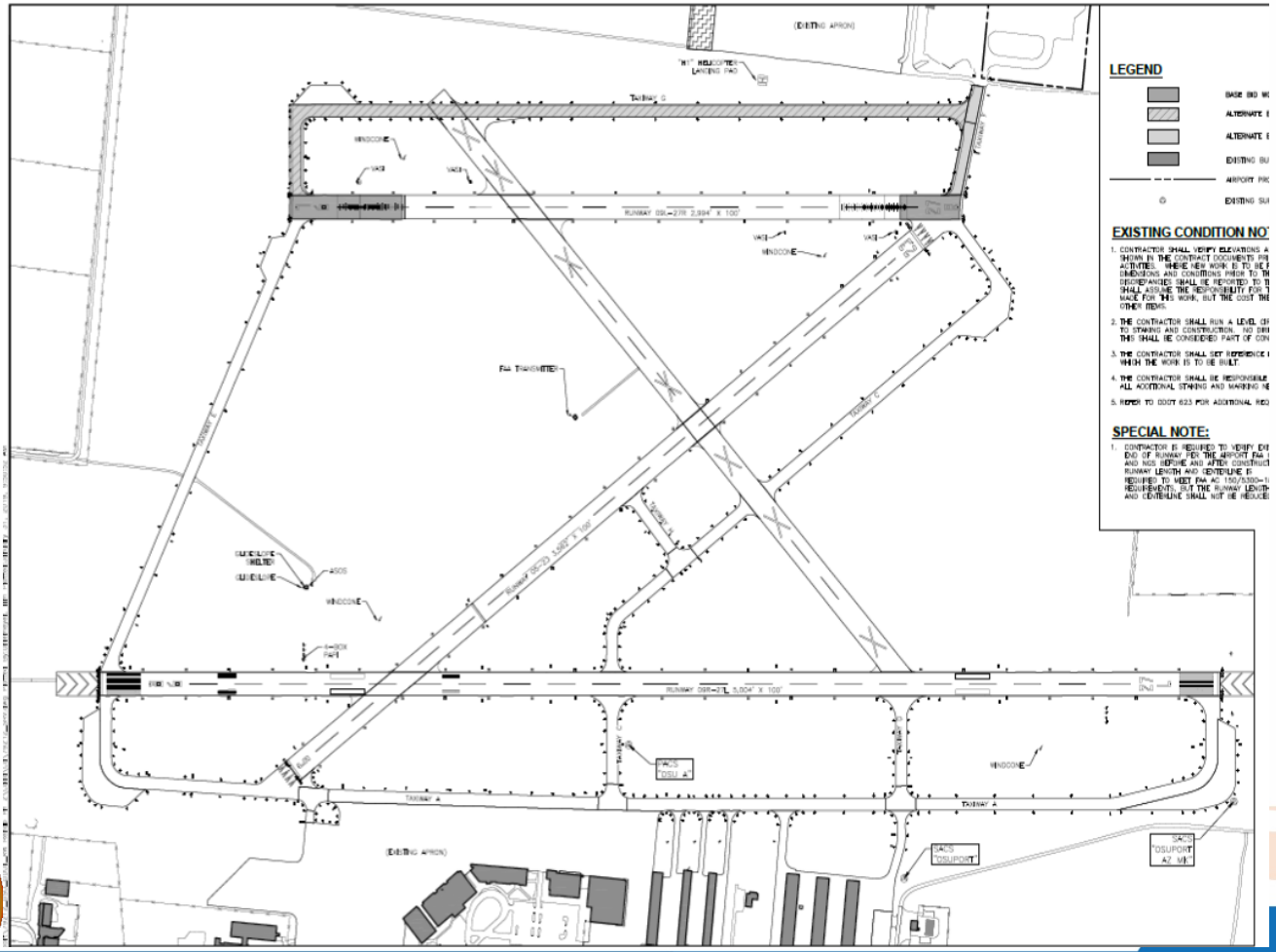
RAMP
(CLOSED)
ELEV
892
40°05'N
094.0°
274.0°
2994 X 100
0.4% UP
0.3% UP
235.8°
ELEV
904
ELEV
893
HS 3
HS 2
HS 1
3562 X 100
055.7°
5004 X 100
ELEV
901
ELEV
890
094.0°
274.0°
HANGAR 4
RAMP
FBO
RAMP
ELEV
903
WEST
RAMP
FBO
STUDENT
RAMP
TWR
973
FIRE
STATION
EC-2, 31 JAN 2019 to 28 FEB 2019
EC-2, 31 JAN 2019 to 28 FEB 2019

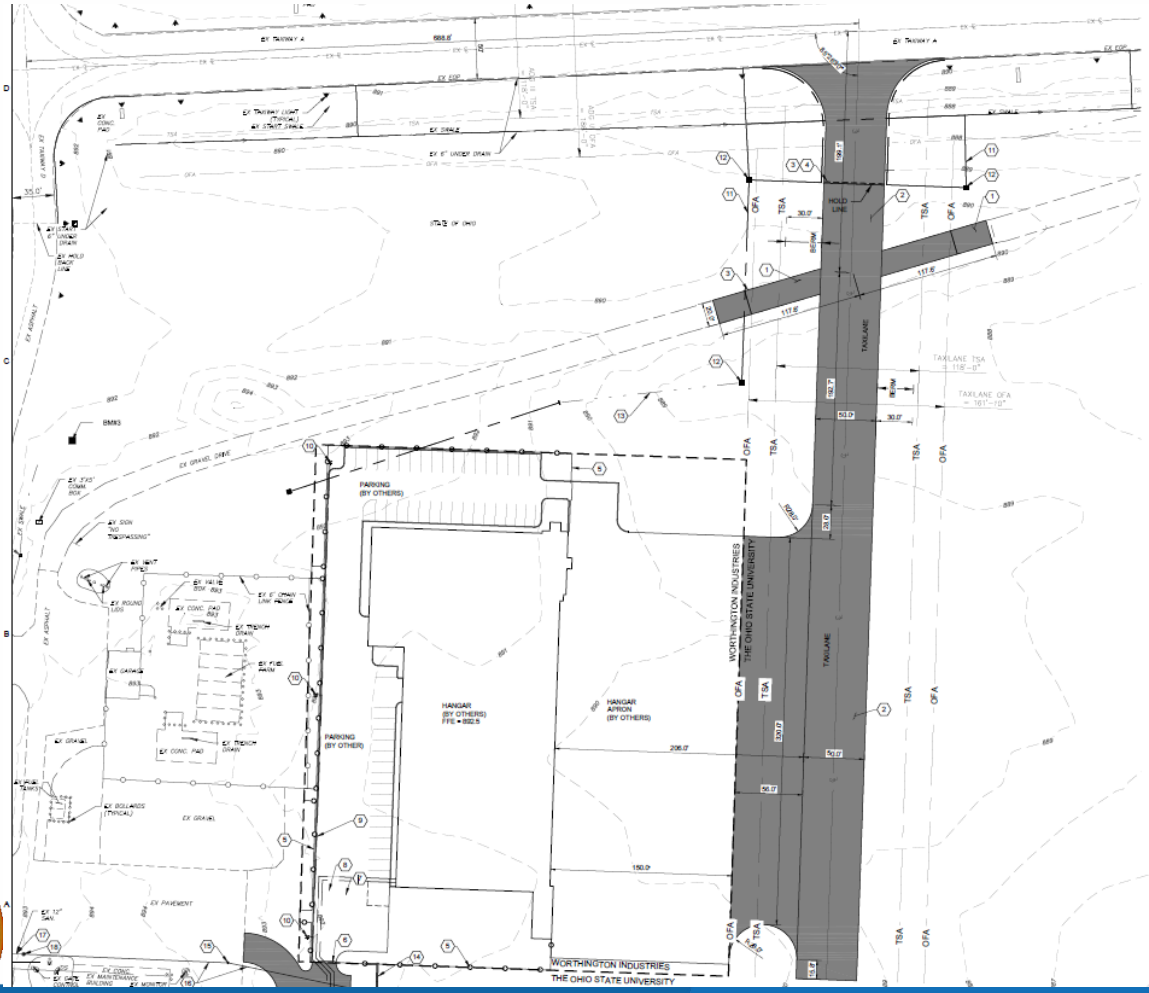
Construction

- North Runway Rehabilitation Phase 2



Construction

- East End Hangar Construction



Surface Safety Issues

- 0 Vehicle Incursions in 2018
- Taxiway G will remain closed until surface defects can be repaired and mitigated.

Weather

- Winter Operations

TALPA

- **Standardizes how Airports and Air Traffic Control communicate actual runway conditions to the pilots in terms that directly relate to how a particular aircraft is expected to perform.**
- **Airport operators will use the Runway Condition Assessment Matrix (RCAM) to categorize runway conditions; pilots will use it to interpret reported runway conditions.**
- **Introduces new Field Condition (FICON) NOTAM process. Contaminants are assessed in thirds of a runway (Touchdown, Midpoint, and Rollout).**
- **Airport Operations, using the contaminants from the RCAM, enters these assessments into the Federal NOTAM System (FNS).**

Vehicle Operations

- Driver Training 139.329
- Required initial and recurrent training for all personnel who access movement areas and safety areas and perform duties in compliance with the requirements of the Airport Certification Manual (ACM)
- Personnel who are involved in construction, maintenance, and inspection activities of the airfield.

Wildlife

- All personnel who access the field for wildlife mitigation will be trained every 12 calendar months under 139.329 and 139.337
- OSU no longer has a contract for an on-site biologist and airfield operations has assumed full responsibility for execution of the WHMP.

Letters of Agreement (LOAs)

- Pedestrians and Ground Vehicle LOA Changes
- No mowing in the safety area while runway has aircraft operations
- Mowing during off hours

National Part 139 Cert Alert #16-07

- **The RSA will normally be clear of people and equipment during aircraft landing and departure operations.**
- If situations require moving or stationary vehicles or equipment in the RSA during operations, these events need documentation in an LOA. ***This will be an exception to normal procedures.***
- A runway closure should be the first consideration if there are available runways before implementing the LOA. However, at airports with one runway, the LOA is a means of keeping the runway operational during aircraft operations. Certificated airports that elect to allow personnel into the RSA during operations must set up an LOA and send a copy for inclusion in the Airport Certification Manual.

Full text of the Cert Alert can be found here.

Best Practices

- Local FSDO and OSU ATC now work jointly on an annual basis to hold Wings meetings and discuss ATC communications, hot spots, hold bars and more.
- Controller speech rate is an SEI and is continually monitored during facility audits.
- The ATM has met with several clubs and organizations around the airport and the local area and this information is presented.
- Pilots are welcomed to the control tower for tours and open discussion with controllers.

Communication Best Practices

- Adopted Departure Procedure: *"Cross runway 23, runway 27R cleared for take off."*
- Adopted West Ramp Taxi Procedure: *"Not in sight, hold short of Alpha"*

New Action Items

- Action Items are non-regulatory, voluntary, and flexible.
- The party responsible for implementing and/or funding the action item must be in agreement with the Action Item.
- Each action item should be specific and include a point of contact and anticipated completion date.

Adjourn

Please ensure your contact information is on the sign-in sheet.

Thank you for your participation!