

53rd Weather Reconnaissance Squadron

2025 Season Recap

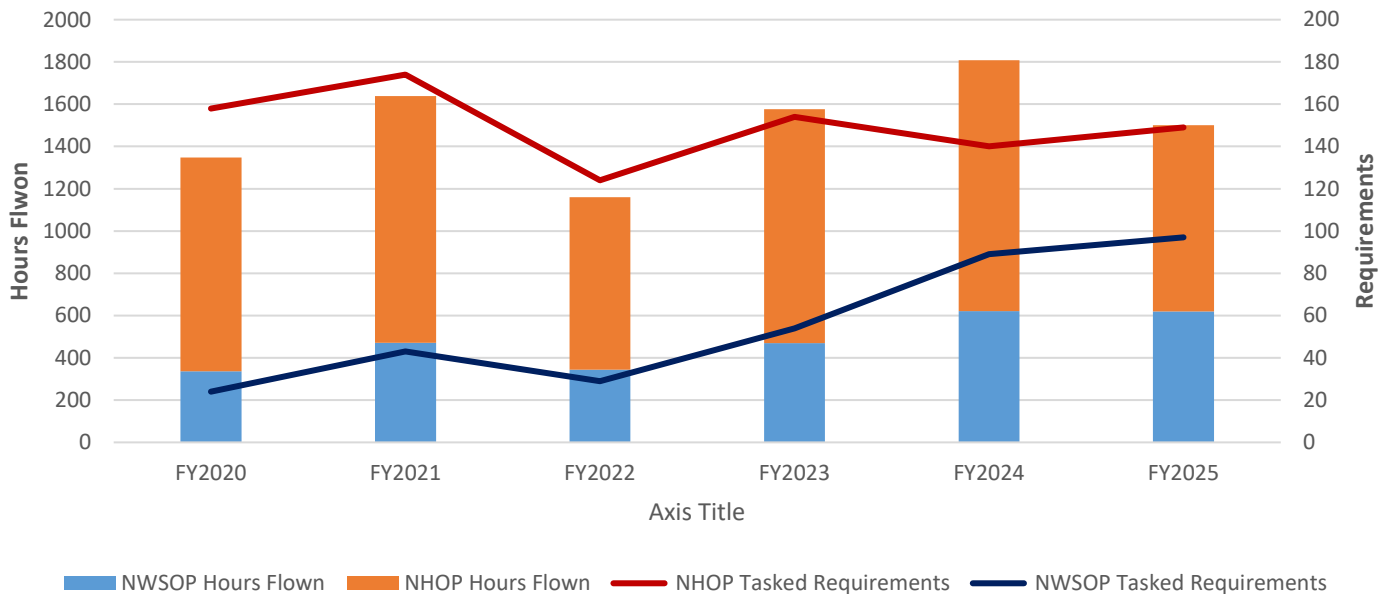
Maj Amanda Nelson





Hurricane Season Statistics

Weather Recon DSCA Hours Flown and Requirements by National Operaton Plan

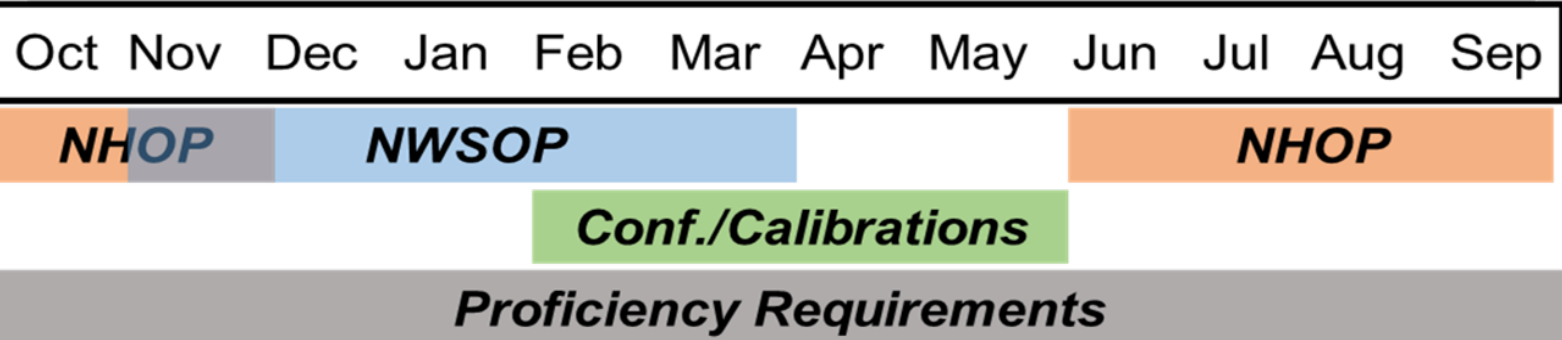


2025 NHOP flying hours saw a 25% decrease over 2024, but tasked requirements increased

2025 NHOP Season Totals	
1 Jun - 30 Sep	
	Total
Fix	125
Invest	15
Synoptic/Surveys	6
Buoy	3
Radar	0
Rqmts Levied	149
Rqmts Cancelled	35
Total Rqmts	114
Rqmts Requested but not Tasked	1
Total Demand	115

Storage

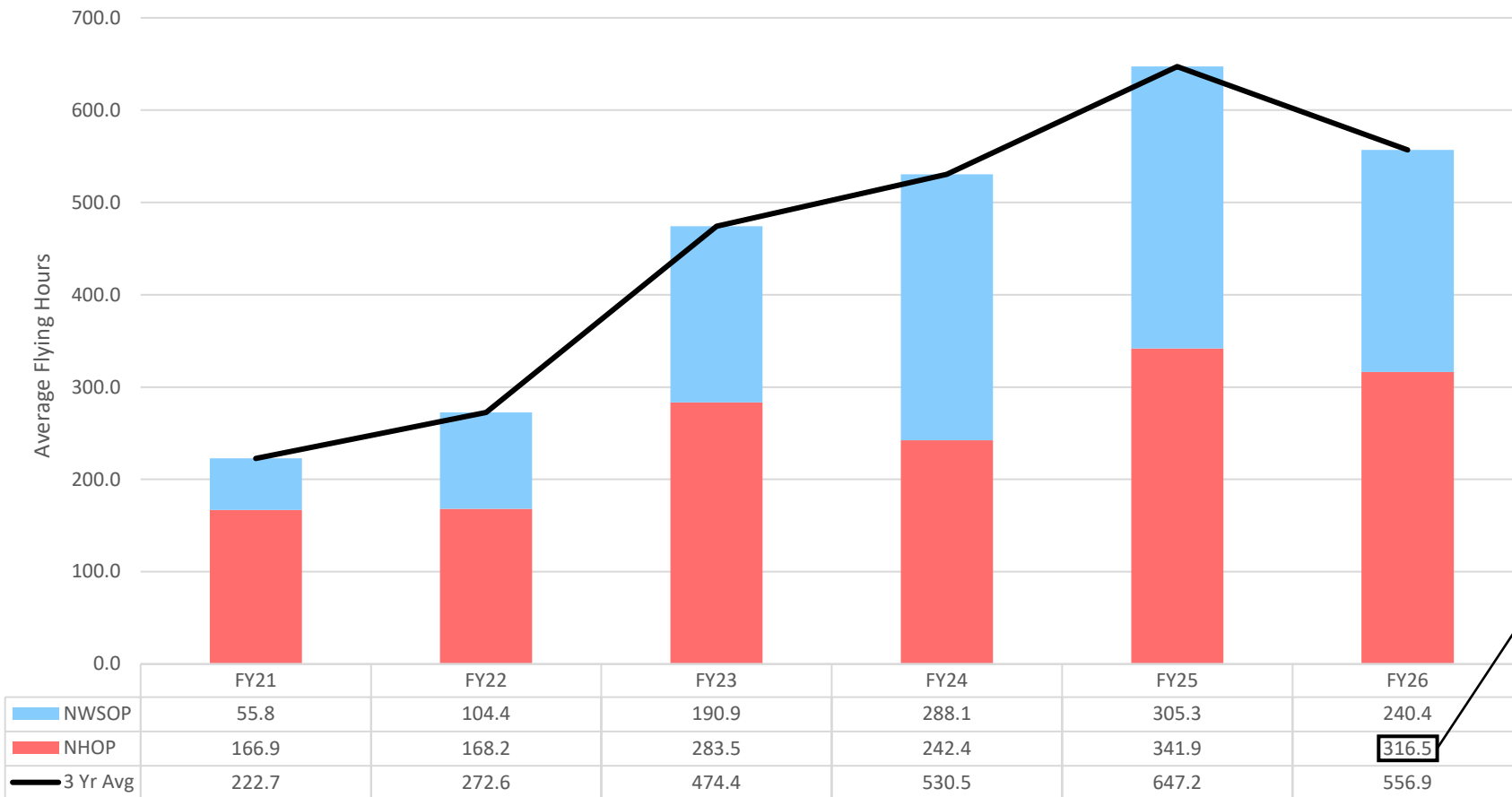
- Barry
- Chantal
- Erin
- Fernand
- Gabrielle
- Humberto
- Imelda
- Jerry





Gov. Shutdown and 1st Quarter Impacts

Oct-Jan Rolling 3-yr Avg Flying Hours



316 NHOP flight hours in Oct FY26 (2x FY25 Oct hours) and all during the government shutdown.

Home Station Missions

Hurricane Erick: 2 missions, 18 June

**Tropical Storm Barry: 3 missions,
28 – 29 June**

**Tropical Storm Chantal: 3 missions,
4 – 6 July**

Earth

© 2010 Earth
Data, NGA, GEBCO

Hurricane Erin & TS Fernand

Forward operating location: TISX, 13 August – 26 August

Operational Taskings:

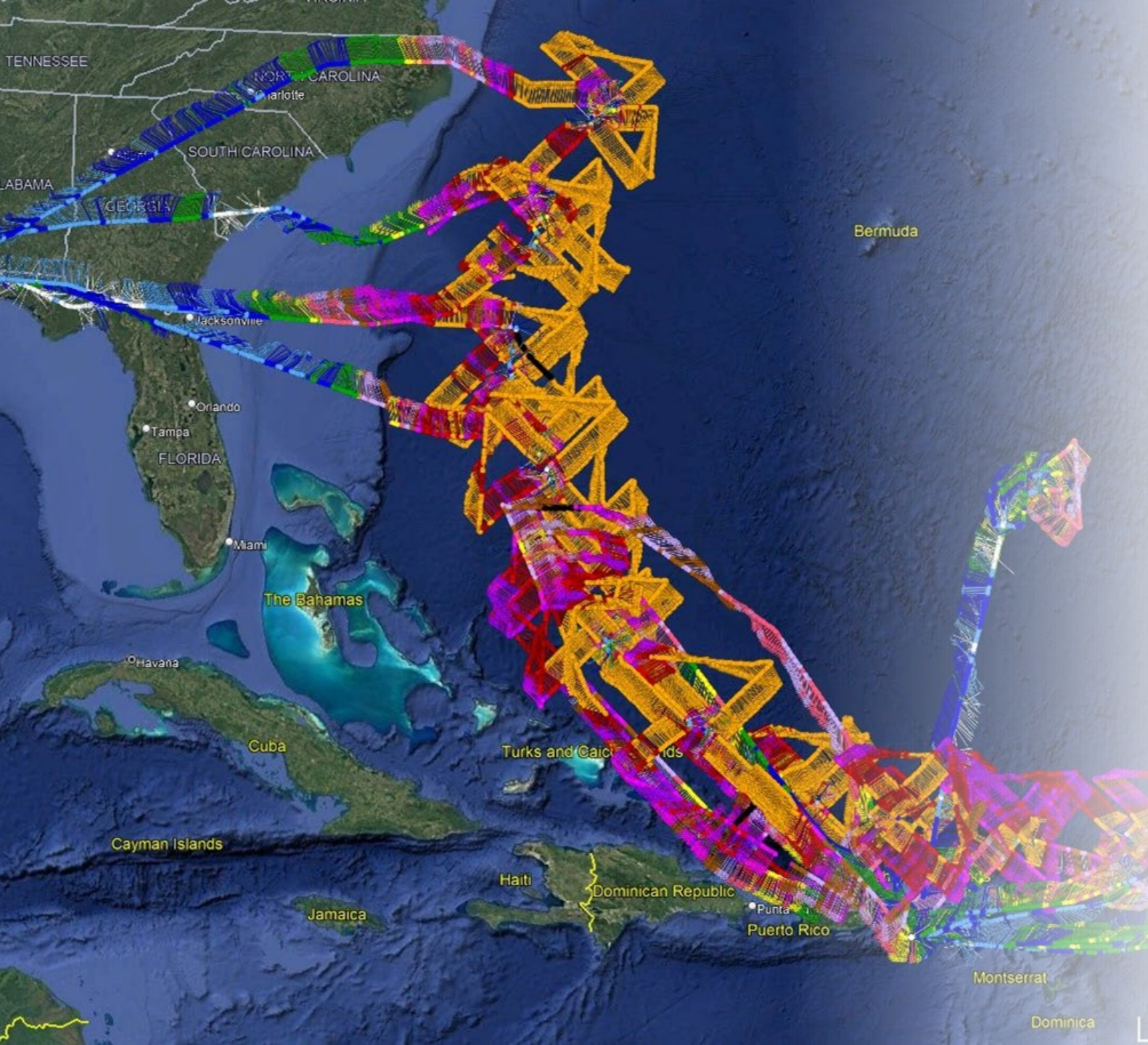
Hurricane Erin: 15 missions,
15/0600Z – 21/1730Z

TS Fernand: 1 mission, 23/1800Z

Details: Flew majority of missions out of TISX, with the final 4 Erin flights being flown out of Keesler AFB.

Challenges: Fell during 2 different blocks, which required crew swaps partway through. Required 4 aircraft due to buoy requirement.

Successes: Able to contribute to requirements for SASCWATCH research campaign.





Hurricanes Lorena / Kiko

Forward operating location: PHJR, 4 September – 11 September
KSUU enroute to PHJR

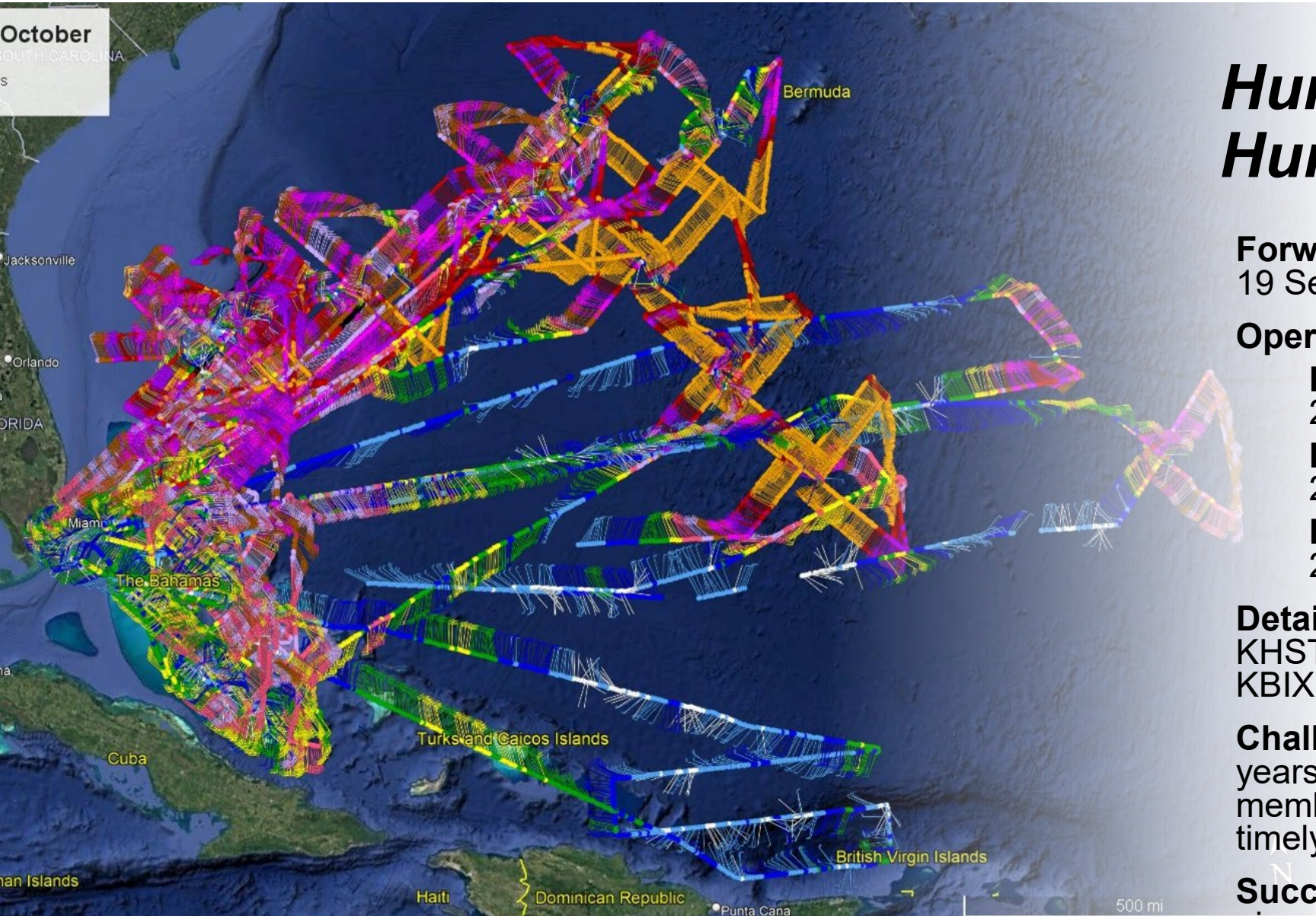
Operational Taskings:

Hurricane Lorena: 2 missions, 03/1730Z and 04/1730Z

Hurricane Kiko: 5 missions, 07/0600Z – 09/1200Z

Details: Flew first Lorena mission as a Keesler out and back and second en route to Travis AFB as part of Kiko movement.

Challenges: The two-day travel to Hawaii.



Hurricanes Gabrielle, Humberto, Imelda

Forward operating location: KHST, 19 September – 2 October

Operational Taskings:

Hurricane Gabrielle: 2 missions, 20/1800Z & 21/1200Z

Hurricane Humberto: 4 missions, 28/0000Z – 30/1130Z

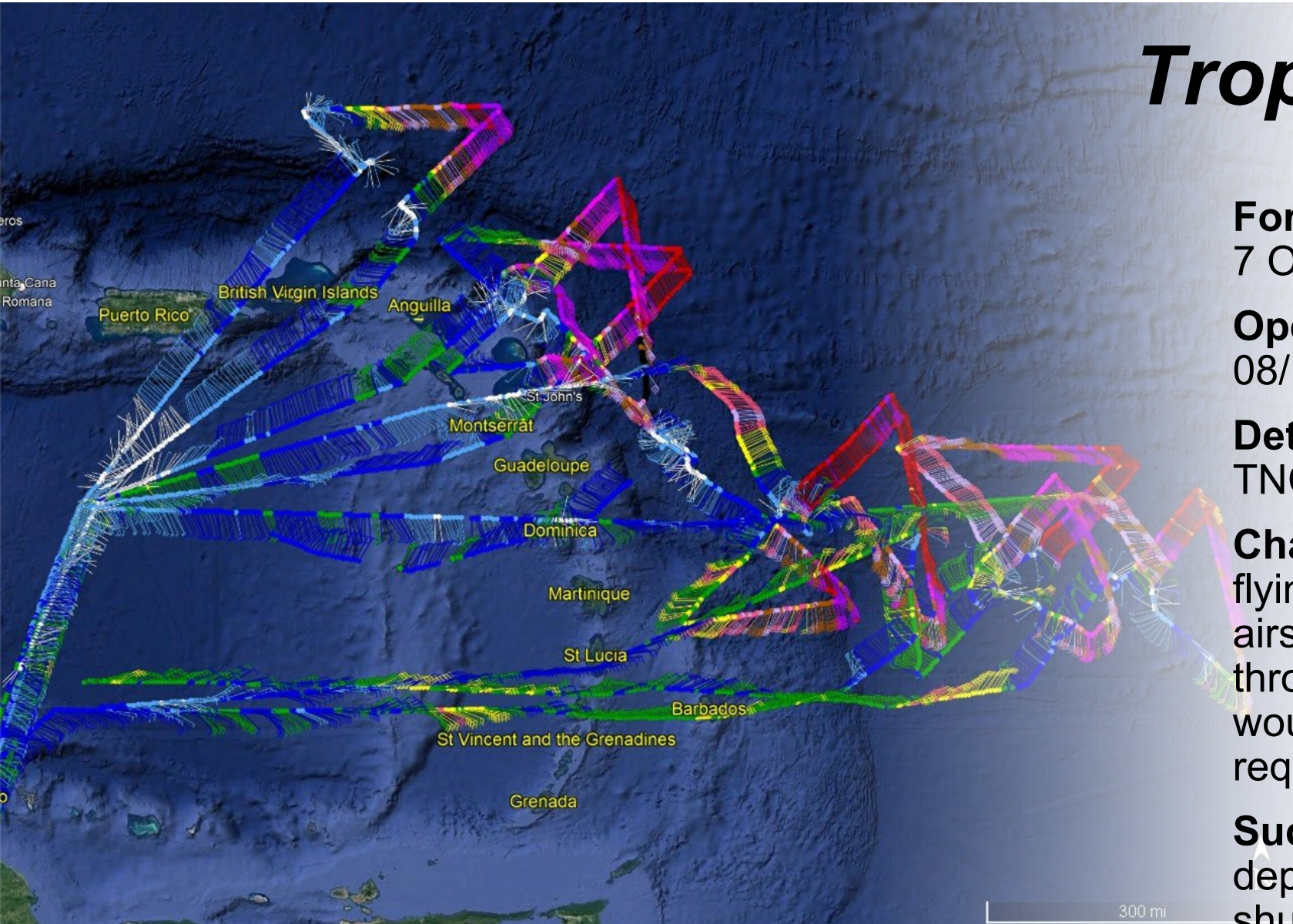
Hurricane Imelda: 11 missions, 27/1800Z – 01/2330Z

Details: Flew all missions out of KHST, with final flights recovering at KBIX.

Challenges: Crossing of the fiscal years created logistical issues with members being paid for travel in a timely manner.

Successes: Flying and operating six aircraft out of KHST.

Tropical Storm Jerry



Forward operating location: TNCC,
7 October – 11 October

Operational Taskings: 5 missions,
08/1730Z – 10/1130Z

Details: All missions flown out of
TNCC.

Challenges: Could not fly out of TISX,
flying out of TNCC there were
airspace challenges when flying
through the Maiquetia FIR. Aircraft
would have been unable to meet
requirements without flying through.

Successes: First successful
deployment during the government
shutdown.

Hurricane Melissa

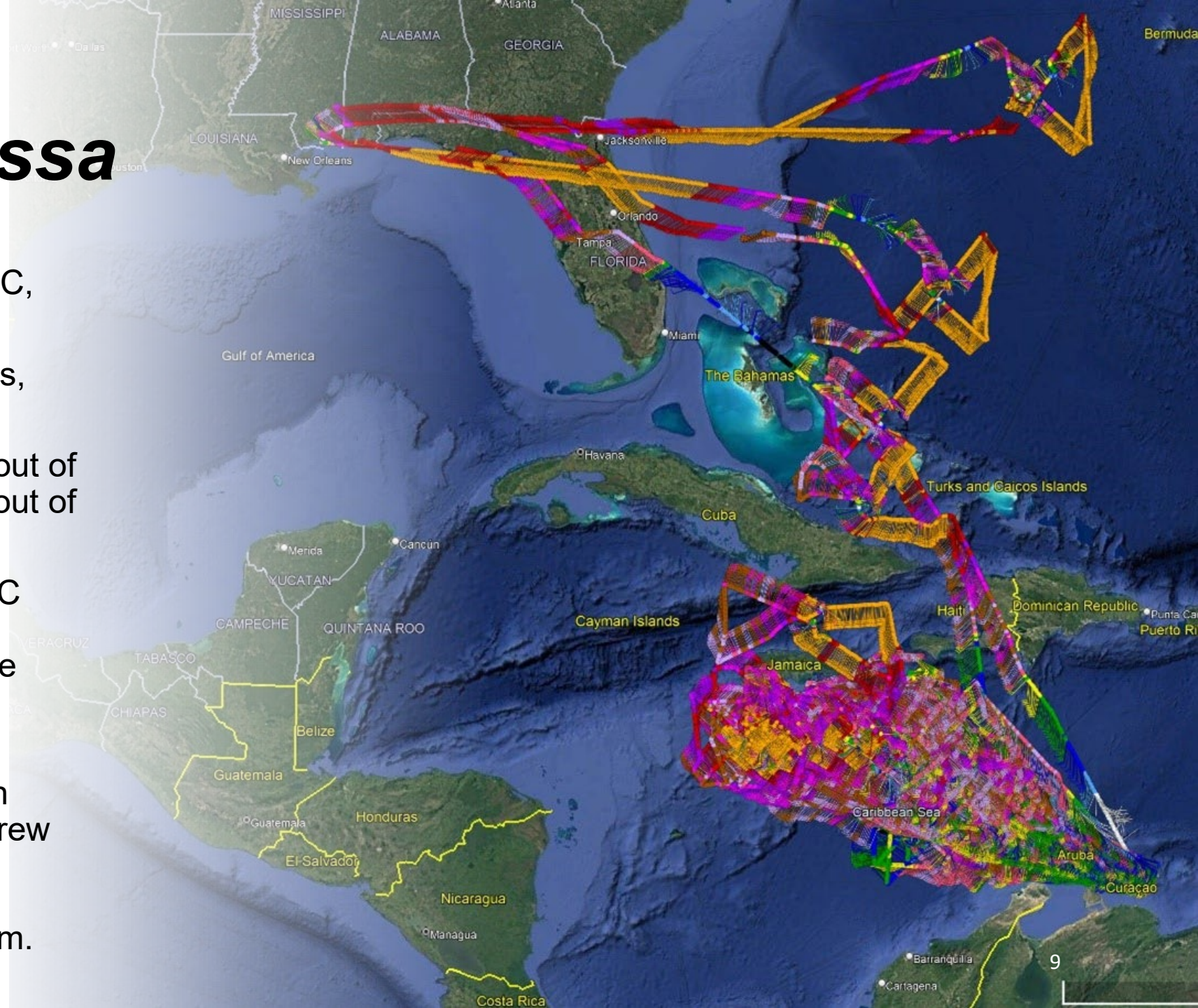
Forward operating location: TNCC,
20 October – 30 October

Operational Taskings: 19 missions,
21/1800Z – 30/2330Z

Details: Flew majority of missions out of TNCC, with the final 2 being flown out of Keesler AFB.

Challenges: Operating out of TNCC instead of TISX presents logistical challenges– stopping at TISX on the way to TNCC to load maintenance equipment.

Successes: Early coordination with NHC to extend rest cycles for the crew to avoid cancellations due to CRM/fatigue because of the slow movement/long duration of the storm.





Challenges

Operations:

- The government shutdown during the busiest month generated unique challenges
- Generally had funds to execute missions but maintenance support was minimal outside of storm flights and deployments

Manning:

- Currently have 11/20 full-time pilot slots filled
- Currently have 7/11 full-time meteorologists filled
- Mx personnel must share resources across both squadrons at Keesler

Equipment:

- Testing and installation delayed due to aircraft availability, personnel shortages, and funding
- Lack of dedicated program office personnel to work modifications (Proposal submitted to correct)



Successes



Mission Readiness:

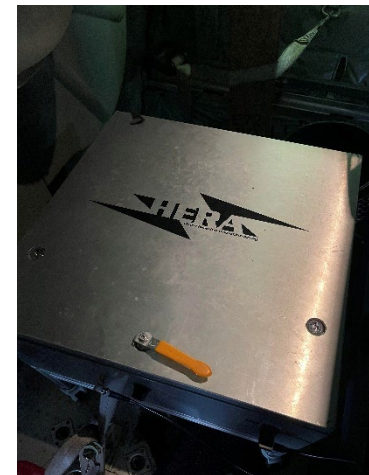
- Fostering mission ready environment enhances max participation from traditional reservists – increased funding allows all to participate

Instrument and Data Standardization/Improvement:

- New capability to upload data while on deployment allows SFMR/instruments to be rapidly reviewed and potentially identify faulty instruments prior to the deployment being concluded.

Developing Capabilities:

- Terrestrial Gamma Flash Detector is operational, had data collection from multiple storms during 2025 season
- Pressurized buoy launchers have been received from the Program Office. Awaiting final Seek Eagle paperwork for release clearances
- Wideband BLOS SATCOM system assessing capabilities in operational environment, we're targeting to have this capability by 2026 season
- SABIR Pod system feasibility study complete



HERA



Hatch-mount Ku Antenna



NRD-41 Dropsonde



Dropsonde Hurricane Season Summary

Dropsonde Success Rate (NHOP)

2025 Sondes 1,007 Total

Good Sondes: 951

Failed Sondes: 56 (5.56%)

1. Late/No GPS (25)
2. No Launch Detect (5)
3. Fast Fall (3)
4. No Altitude (0)
5. Pallet Failure (7)
6. Bad PTU (3)
7. Damaged in Tube (2)
8. Lost Signal Mid-Drop (6)
9. Floater (0)
10. No Winds (4)

2024 Sondes 1,162 Total

Good Sondes: 1,035

Failed Sondes: 127 (10.93%)

1. Late/No GPS (38)
2. No Launch Detect (42)
3. Fast Fall (16)
4. No Altitude (3)
5. Pallet Failure (0)
6. Bad PTU (8)
7. Damaged in Tube (3)
8. Lost Signal Mid-Drop (12)
9. Floater (5)
10. No Winds (0)

Dropsonde Inventory:

- Secured funding for dropsonde requirements
- Roughly 4300 in the inventory currently



Dropsonde Winter Season Summary

Dropsonde Success Rate (NWSOP)

2025 Sondes 636 Total

Good Sondes: 592

Failed Sondes: 44 (6.92%)

1. Late/No GPS (11)
2. No Launch Detect (25*)
3. Fast Fall (2)
4. No Altitude (0)
5. Pallet Failure (0)
6. Bad PTU (4)
7. Damaged in Tube (0)
8. Lost Signal Mid-Drop (2)
9. Floater (0)
10. No Winds (0)

2024 Sondes 802 Total

Good Sondes: 771

Failed Sondes: 31 (3.87%)

1. Late/No GPS (2)
2. No Launch Detect (3)
3. Fast Fall (6)
4. No Altitude (0)
5. Pallet Failure (0)
6. Bad PTU (9)
7. Damaged in Tube (0)
8. Lost Signal Mid-Drop (8)
9. Floater (0)
10. No Winds (0)

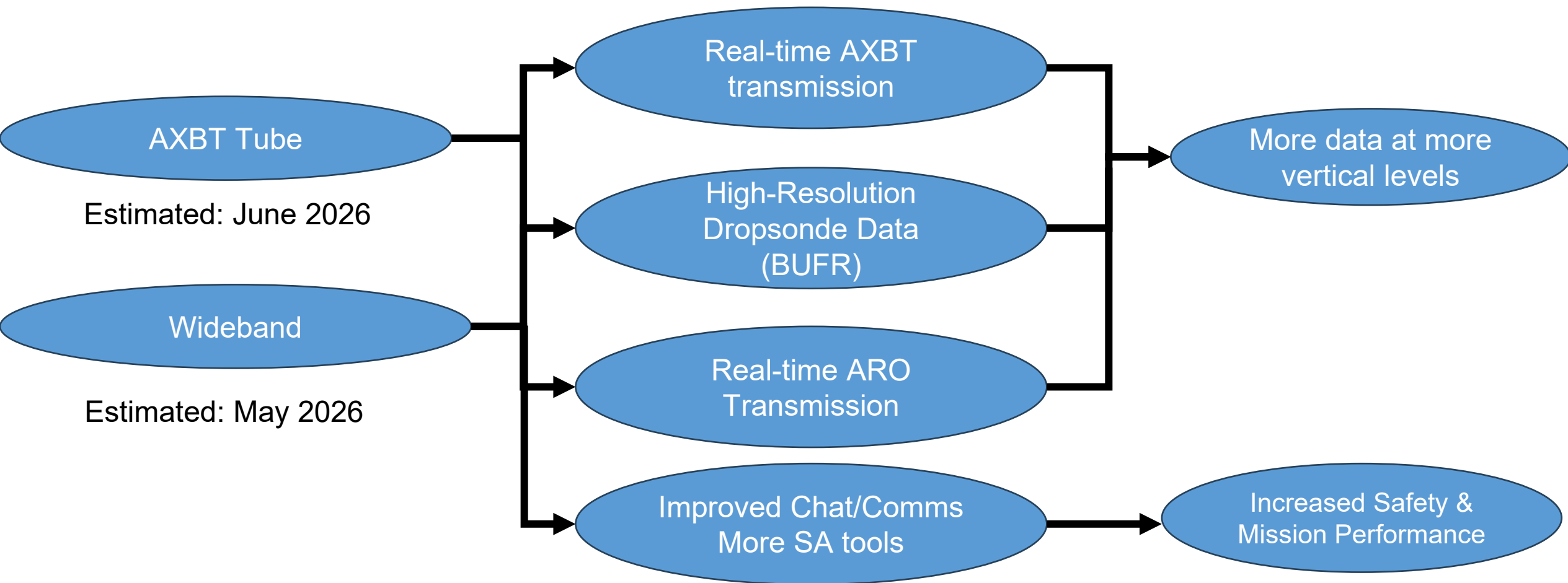
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Changes for FY26-27

Forecast Impacts





U.S. AIR FORCE

Questions?



Integrity - Service - Excellence