Navy Bird/Animal Strike Hazard (BASH) Program

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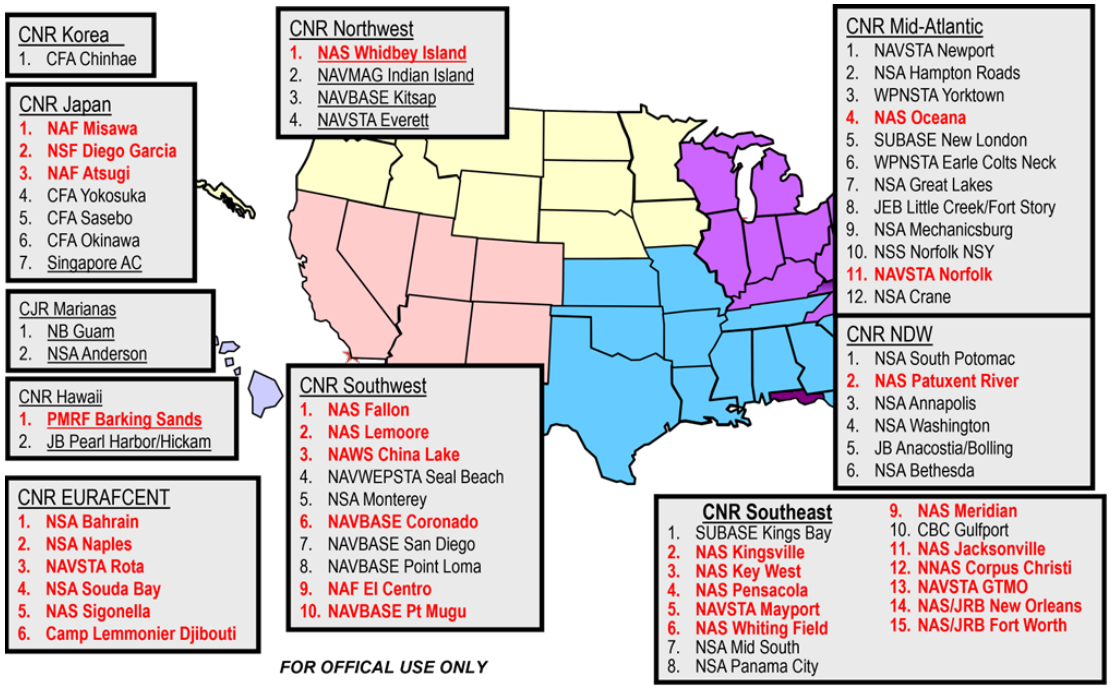
Navy BASH Program

- 32 bases in 8 regions
- 29 WB/WS at 21 bases
- Central management/oversight
- Navy BASH WG oversees program



Current Focus - Data and Risk

- **Reporting**
  - Improving quality of data (location, altitude, effect on flight)
  - Current year metrics (next slide)
- **Data management**
  - WS survey data now in GRX and aligned with the GIS NDM
  - GRX will serve as central warehouse (data, maps, metrics)
- **CNIC GRX BASH App**
  - Ties together survey, RMI, airfield habitat management data, aircraft data streams
  - Used to calculate metrics, present layered depictions of BASH hazards/managed areas
  - Account access for all CAC holders
- **Risk and readiness**
  - WB's already calculating KAR for installation quarterly/annual reports
  - NWRC working on total airfield BASH risk model
  - NWRC also modeling BASH impact to fleet aviation readiness

FY25 BASH Stats

Mishaps - 58

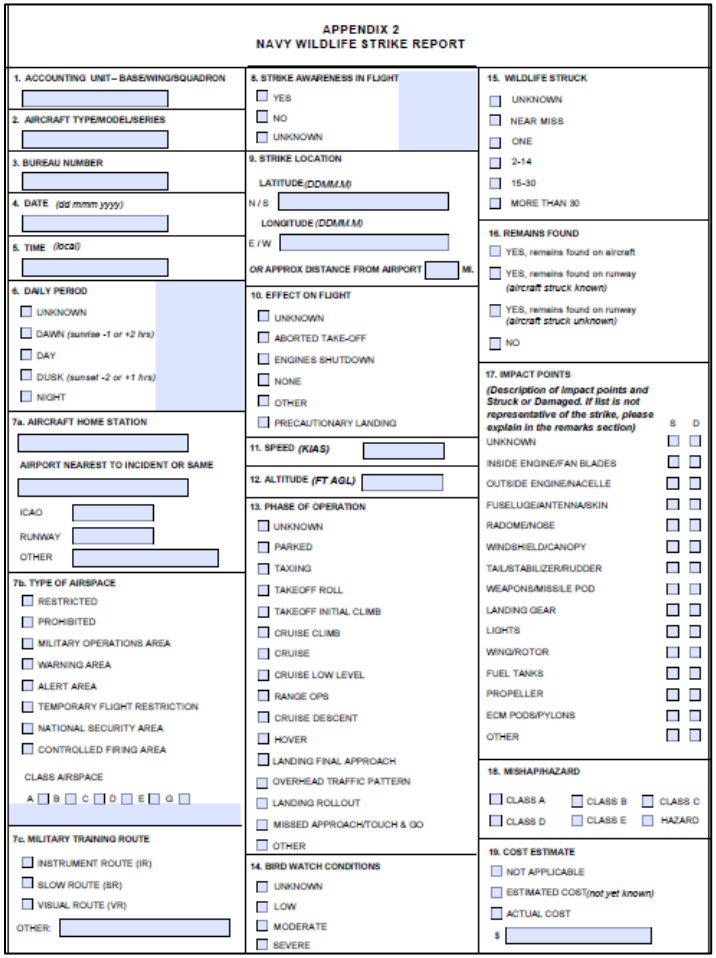
- Class A Mishaps: 0
- Class B Mishaps: 3
- Class C Mishaps: 14
- Class D Mishaps: 10
- Class E Mishaps: 31

Reporting Metrics (FY25)

- Strikes: 1136 (Class B-E, $3.6M)
- Remains turned in: 88%
- Remains ID'd to species: 79%
- Days to receive: 24

Most struck Aircraft:

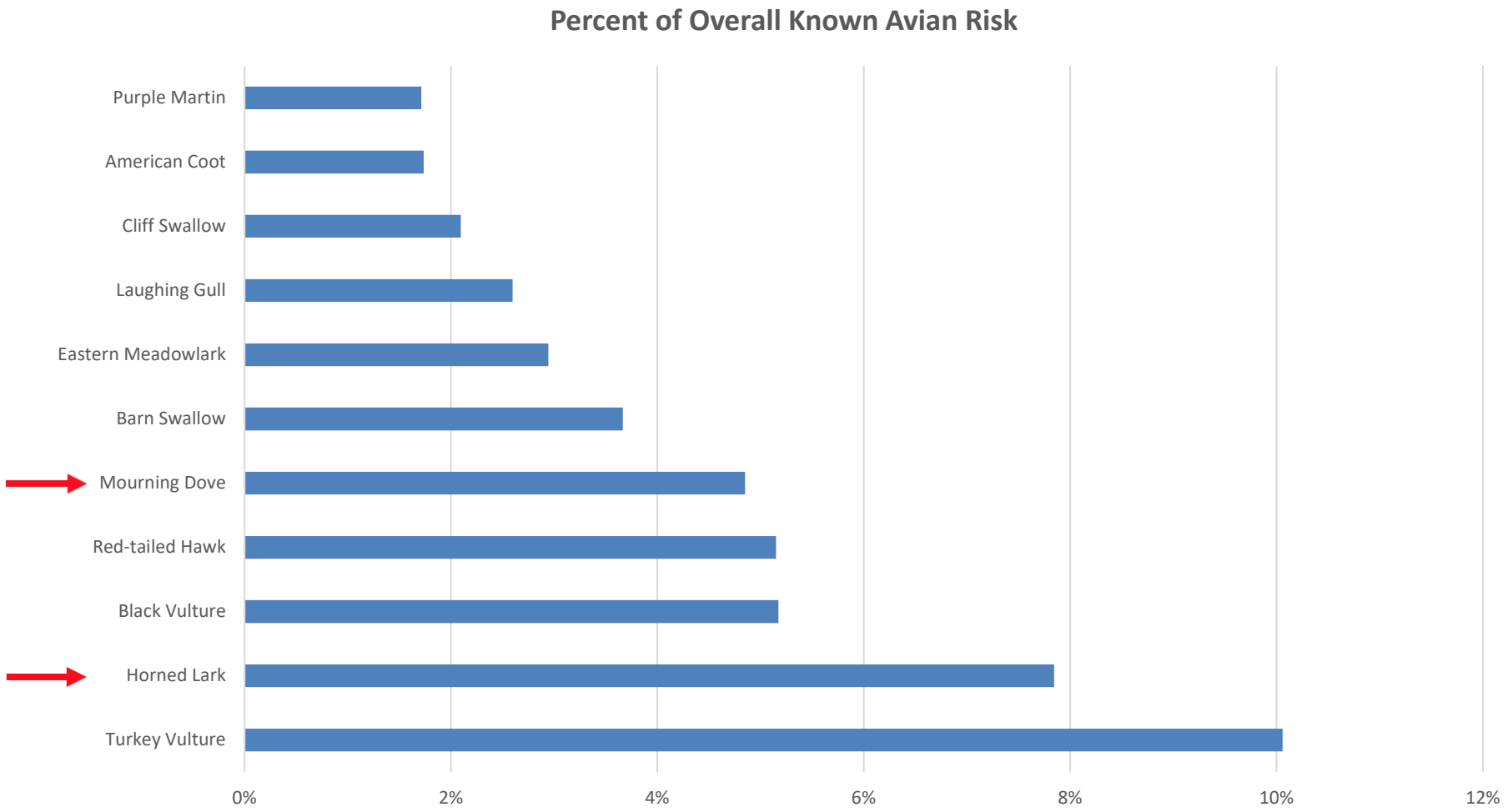
- P-8A
- F-18 E/F
- T-45/T-6/T-44



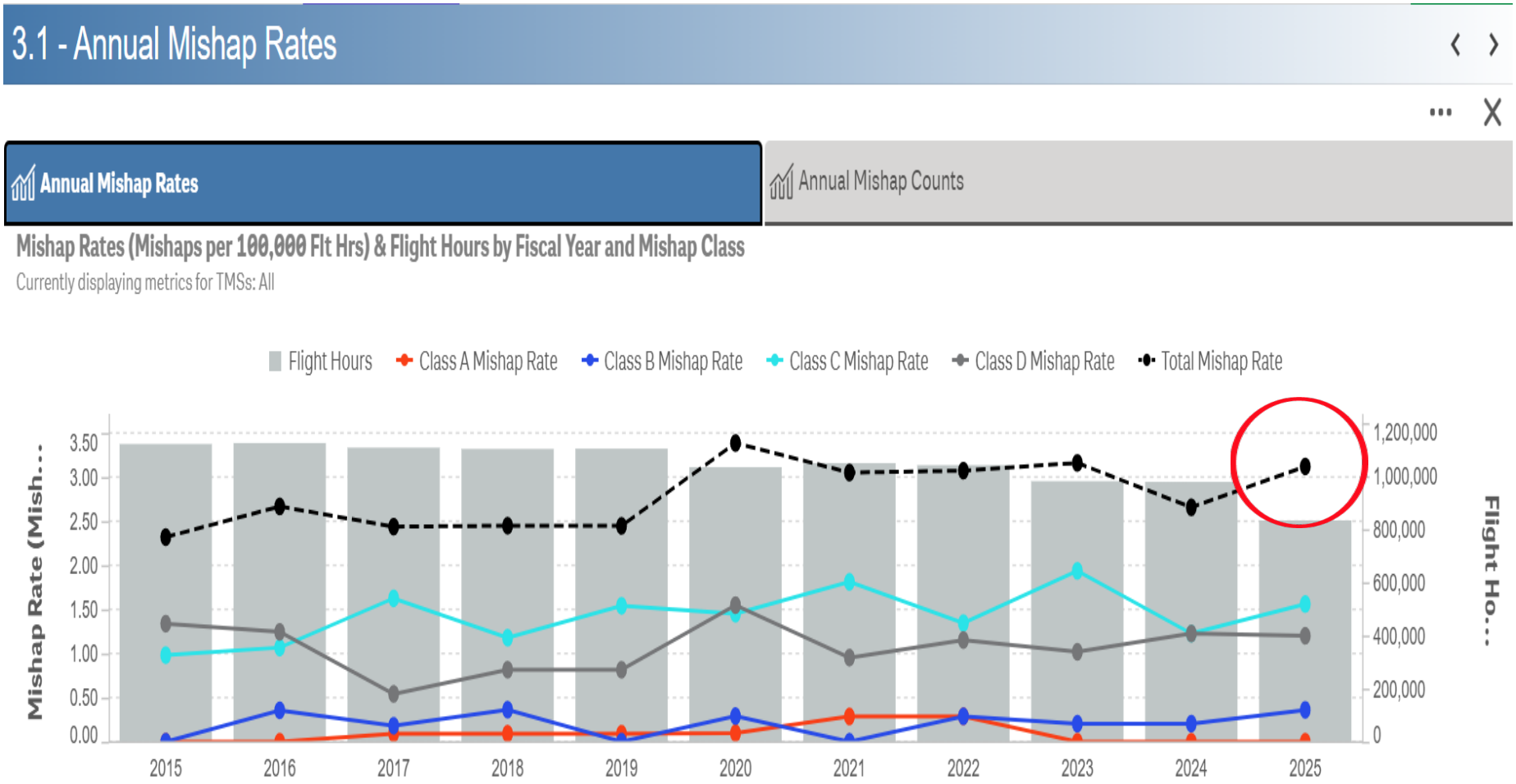
APPENDIX 2
NAVY WILDLIFE STRIKE REPORT

1. ACCOUNTING UNIT – BASE/WING/SQUADRON
2. AIRCRAFT TYPE/MODEL/SERIES
3. BUREAU NUMBER
4. DATE (dd mmm yyyy)
5. TIME (local)
6. DAILY PERIOD
UNKNOWN
DAWN (sunrise -1 or +2 hrs)
DAY
DUSK (sunset -2 or +1 hrs)
NIGHT
7a. AIRCRAFT HOME STATION
AIRPORT NEAREST TO INCIDENT OR SAME
ICAO
RUNWAY
OTHER
7b. TYPE OF AIRSPACE
RESTRICTED
PROHIBITED
MILITARY OPERATIONS AREA
WARNING AREA
ALERT AREA
TEMPORARY FLIGHT RESTRICTION
NATIONAL SECURITY AREA
CONTROLLED FIRING AREA
CLASS AIRSPACE
A B C D E G
7c. MILITARY TRAINING ROUTE
INSTRUMENT ROUTE (IR)
SLOW ROUTE (SR)
VISUAL ROUTE (VR)
OTHER:
8. STRIKE AWARENESS IN FLIGHT
YES
NO
UNKNOWN
9. STRIKE LOCATION
LATITUDE (DDMMM)
N / S
LONGITUDE (DDMMM)
E / W
OR APPROX DISTANCE FROM AIRPORT MI.
10. EFFECT ON FLIGHT
UNKNOWN
ABORTED TAKE-OFF
ENGINES SHUTDOWN
NONE
OTHER
PRECAUTIONARY LANDING
11. SPEED (KIAS)
12. ALTITUDE (FT AGL)
13. PHASE OF OPERATION
UNKNOWN
PARKED
TAXIING
TAKEOFF ROLL
TAKEOFF INITIAL CLIMB
CRUISE CLIMB
CRUISE
CRUISE LOW LEVEL
RANGE OPS
CRUISE DESCENT
HOVER
LANDING FINAL APPROACH
OVERHEAD TRAFFIC PATTERN
LANDING ROLLOUT
MISSED APPROACH/TOUCH & GO
OTHER
14. BIRD WATCH CONDITIONS
UNKNOWN
LOW
MODERATE
SEVERE
15. WILDLIFE STRUCK
UNKNOWN
NEAR MISS
ONE
2-14
15-30
MORE THAN 30
16. REMAINS FOUND
YES, remains found on aircraft
YES, remains found on runway (aircraft struck known)
YES, remains found on runway (aircraft struck unknown)
NO
17. IMPACT POINTS
(Description of impact points and Struck or Damaged. If list is not representative of the strike, please explain in the remarks section)
S D
UNKNOWN
INSIDE ENGINE/FAN BLADES
OUTSIDE ENGINE/NACELLE
FUSELUGE/ANTENNA/SKIN
RADOME/NOSE
WINDSHIELD/CANOPY
TAILSTABILIZER/RUDDER
WEAPONS/MISSILE POD
LANDING GEAR
LIGHTS
WING/ROTOR
FUEL TANKS
PROPELLER
ECM PODS/PYLONS
OTHER
18. MISHAP/HAZARD
CLASS A CLASS B CLASS C
CLASS D CLASS E HAZARD
19. COST ESTIMATE
NOT APPLICABLE
ESTIMATED COST (not yet known)
ACTUAL COST
$

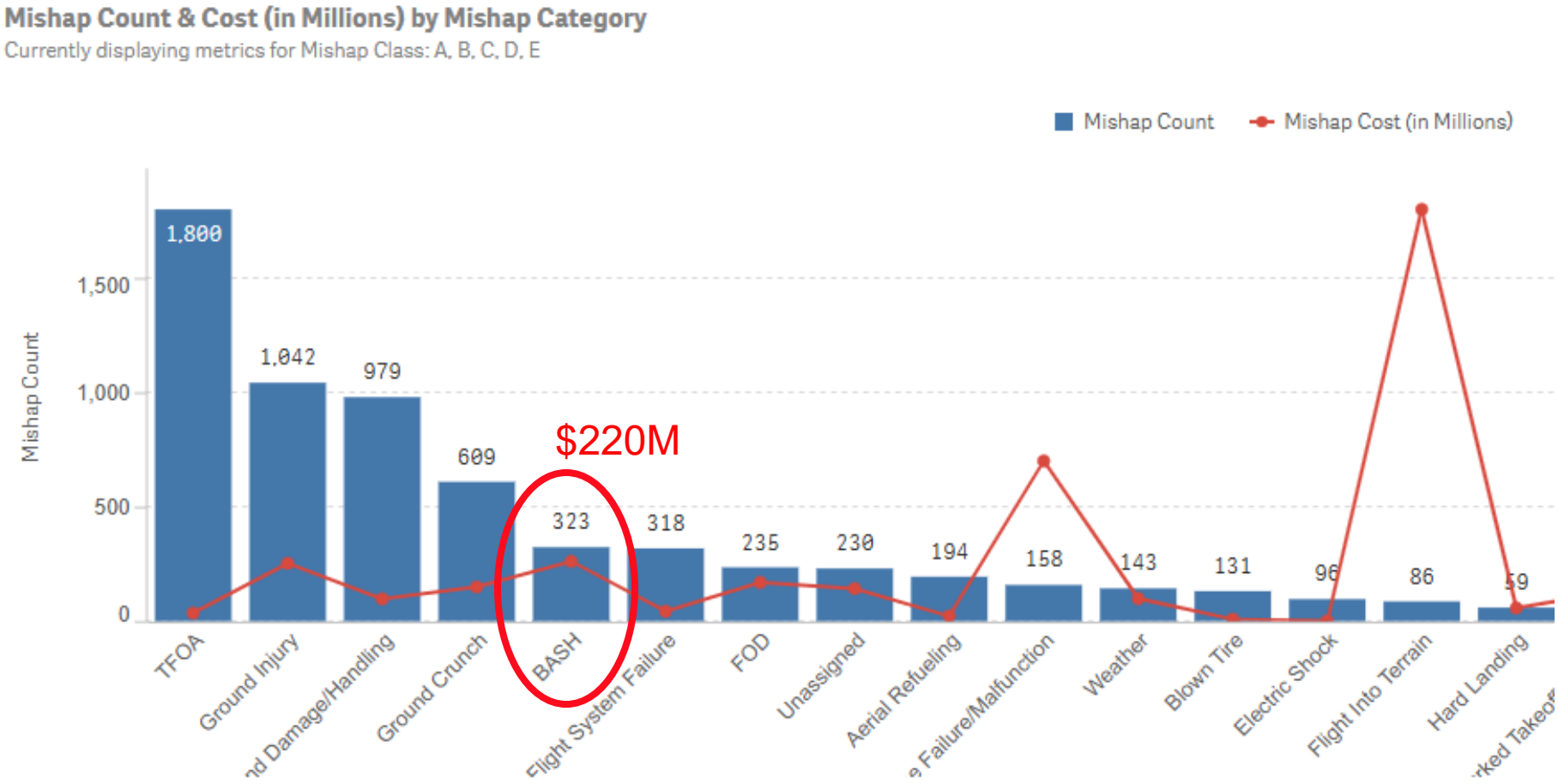
Known Avian Risk



BASH Mishap Rate



Mishap Type Comparison



NAE Safety Degrader Initiative

Context & Objectives

Context:
BASH mishaps are a persistent NAE issue driving up to 6% of all Class A-D mishaps from FY20-25.

The NAE safety pillar took an action from the January 3* Safety HUD to evaluate establishment of a systemic SSDAC to address BASH at the enterprise-level

Objectives:

- Review insights from NAE mishap data and Kingsville case study on BASH mitigation
- Align on path forward with support of BASH SSDAC playbook to deliver BASH mitigation efforts across NAE

Kingsville Case Study

Controlled Unclassified Information (CUI)

Avian radar at Kingsville (NASK)

Context

2007 Class A BASH mishap with total loss of aircraft led to 2012 installation of avian radar

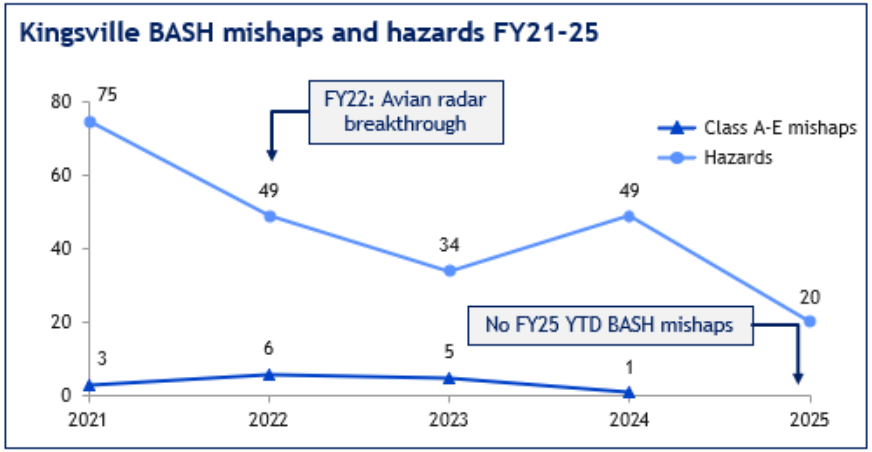
Initial results were mixed, as airfield team was still figuring out how to best use the system (e.g., not just for awareness but decision-making)

Breakthrough came in FY22 when avian radar data was incorporated into wider decision-making process

Impact

In FY22:

- **13% decrease** in BASH cancellation rate improved ability to train pilots
- **Full recovery of financial investment** from prevented low-cost mishaps (radar financial investment ~$100K/yr)



Source: RMI data as of 28 MAY 25; Avian Radar at NASK 9 MAY 23

Potential Outcomes

- Improved Fleet BASH governance
- Decisions about BASH tools (avian radar?)

One Last Thing

…the aircraft lighting project!

Navy BASH Program

NAE BASH Analysis

Platform | Recommend prioritizing based on past BASH events, TMS-specific risk factors, and typical mission reqs.

Top 10 TMS for BASH events (Class A-E) FY21- FY25

TMS	FY21	FY22	FY23	FY24	FY25	Total
P-8A	8	11	6	7	1	33
F/A-18EF	10	4	6	7	3	30
T-44C	8	2	6	8	5	29
T-45C	6	9	6	2	3	26
MV-22B	7	6	4	4	3	24
KC-130J	6	5	5	2	3	21
MH-60S	2	4	3	4	2	15
EA-18G	4		4	2	4	14
T-6B	1	2	1	5	3	12
F/A-18CD	3	2	2	2	1	10

Initial priority TMS - to consider TMS-specific and operational / mission factors to tailor priority list

TMS-specific factors that increase BASH exposure

- Large airframes
- High aircraft speeds (e.g., fixed wing jets)
- Quieter engines that do not alert birds
- Single engine aircraft

Operational / mission factors that increase BASH exposure

- Low level flying
- Dawn and dusk flights
- Spring and Autumn flights (bird migratory seasons)
- Flying in formations

Source: RMI data as of 28 MAY 25