
Bird/Animal Aircraft Strike Hazard (BASH) Program

Aviation Wildlife Management Conference



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Navy BASH Program

- **Program Background/Current state**

- Program implemented in 2010 for CNIC shore enterprise
- Designed as an operational safety program to reduce wildlife-related aviation risks at Navy shore airfields
- CNIC N32 BASH expenditures (~\$6M/yr)
 - Funds USDA support to 25 installations (22 CONUS/3 OCONUS)
 - Funds Smithsonian Feather ID Lab for strike ID support and data tracking
- OPNAV BASH instruction (3750.21):
 - Names CNIC N3 as Navy BASH Program Manager
 - Links major BASH stakeholders at HQ level for coordinated planning, execution and monitoring
 - Establishes Navy BASH working group (BWG)
 - Directs CNIC N32 to fund BASH, perform management oversight across echelons II-IV
- CNIC instruction (3750.1B) establishes BASH program guidance to bases
 - CNIC BASH Manual clarifies requirements and provides templates

Current Focus

For the Program:

- **Overall:**
 - Risk estimation/modeling, data management, performance monitoring
- **Granular:**
 - Risk analysis and operational response
 - Improve reporting content (strike location, effect on flight, etc)
 - Keep improving WHMPs (requirements, GIS maps, MOEs)
 - Get the GRX BASH site built
 - Monitor program performance (strike and damage rate metrics)

For USDA (granular):

- Maintain continual monitoring--survey data critical for:
 - Defendable IWDM recommendations
 - Building BASH attractant layers in GRX
- Develop known avian risk (KAR) workbooks – show in reports
- Set MOEs for mitigations and annually monitor

Ongoing Initiatives

Partially funded (w/partners)

- *Lighting Project (NAVAIR, USDA, Purdue University)*
 - *Developing aircraft lights tuned to certain species sight “recipes”*
 - *Will afford birds earlier detection/avoidance; reduce strike potential*
- *BASH Risk Modeling (USDA NWRC)*
 - *Model total BASH risk for Navy airfields*
 - *Will afford HQ-level resourcing decisions; will aid local planners on when/how to conduct flight ops*
 - *Considers T/M/S, flight profiles, op tempo, hazardous species/activity patterns, weather, land use, etc*
- *BASH Impact on Aviation Readiness (USDA NWRC)*
 - *Models impact of realized or potential BASH risk on local Fleet mission objectives*
 - *Will also afford HQ-level resourcing decisions*
 - *Considers T/M/S, mission objectives, strike rates, aircraft downtime, constraints to flight ops*



Funded in house:

- *GIS Initiative (CNIC N44 GIS/USDA) – incorporate all Navy BASH data, airfields, BASH attractant layers, risk profiles and metrics into one GRX site*

Strike Reporting

FY26 BASH Stats

Mishaps - 32

- Class A Mishaps: 0
- Class B Mishaps: 1
- Class C Mishaps: 6
- Class D Mishaps: 7
- Class E Mishaps: 18

Reporting Metrics

- Strikes: 762 (Class B-E, \$1.9M)
- Remains turned in: 87%
- Remains ID'd to species: 77%
- Days to receive: 26

Most struck Aircraft:

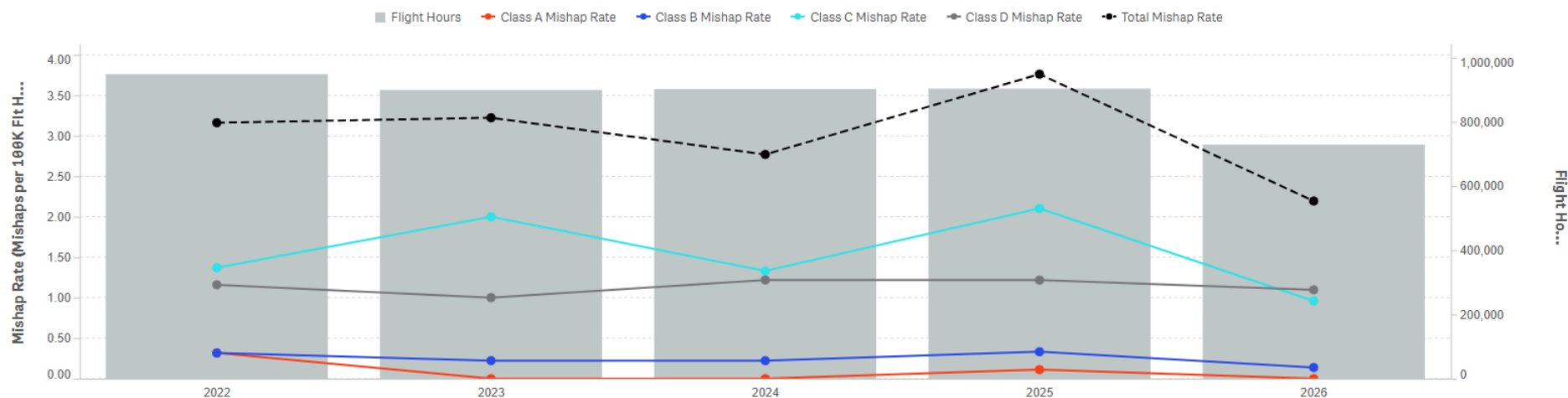
- P-8A
- F-18 E/F/G
- T-6/T-45/T-44

APPENDIX 2 NAVY WILDLIFE STRIKE REPORT		
1. ACCOUNTING UNIT - BASEWING/SQUADRON 	8. STRIKE AWARENESS IN FLIGHT ☐ YES ☐ NO ☐ UNKNOWN	15. WILDLIFE STRUCK ☐ UNKNOWN ☐ NEAR MISS ☐ ONE ☐ 2-14 ☐ 15-30 ☐ MORE THAN 30
2. AIRCRAFT TYPE/MODEL/SERIES 	9. STRIKE LOCATION LATITUDE (DDMM.M) N/S	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
3. BUREAU NUMBER 	LONGITUDE (DDMM.M) E/W	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)
4. DATE (dd mm yyyy) 	OR APPROX DISTANCE FROM AIRPORT NR.	UNKNOWN ☐ S ☐ D ☐
5. TIME (DDCI) 	10. EFFECT ON FLIGHT ☐ UNKNOWN ☐ ABORTED TAKE-OFF ☐ ENGINES SHUT-DOWN ☐ NONE ☐ OTHER ☐ PRECAUTIONARY LANDING	INSIDE ENGINE/FAN BLADES ☐
6. DAILY PERIOD ☐ UNKNOWN ☐ DAWN (sunrise -1 or +2 hrs) ☐ DAY ☐ DUSK (sunset -2 or +1 hrs) ☐ NIGHT	11. SPEED (KIAS)	OUTSIDE ENGINE/ACELLE ☐
7a. AIRCRAFT HOME STATION 	12. ALTITUDE (FT AGL)	FUSELAGE/ANTENNA/SKIN ☐
AIRPORT NEAREST TO INCIDENT OR SAME 	13. PHASE OF OPERATION ☐ UNKNOWN ☐ PARKED ☐ TAXING ☐ 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	RADOME/NOSE ☐
ICAO		WINDSHIELD/CANOPY ☐
RUNWAY		TAIL/STABILIZER/RUDDER ☐
OTHER		WEAPONS/MISSILE POD ☐
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 ☐		LANDING GEAR ☐
7c. MILITARY TRAINING ROUTE ☐ INSTRUMENT ROUTE (IR) ☐ SLOW ROUTE (SR) ☐ VISUAL ROUTE (VR) OTHER:		LIGHTS ☐
	14. BIRD WATCH CONDITIONS ☐ UNKNOWN ☐ LOW ☐ MODERATE ☐ SEVERE	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 \$

BASH Mishap Rate

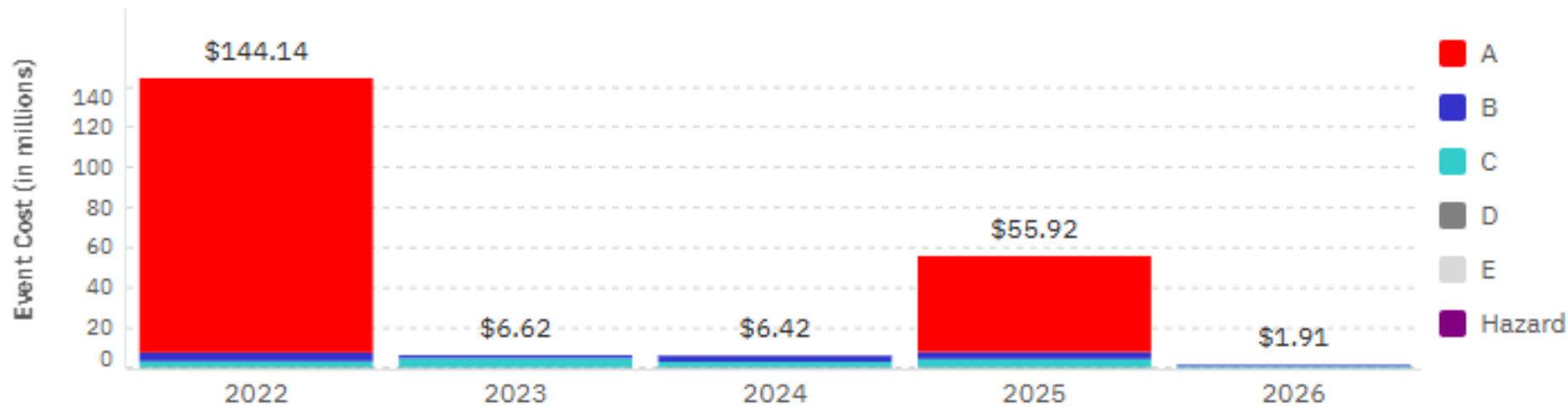
Mishap Rates (Mishaps per 100,000 Flt Hrs) & Flight Hours by Fiscal Year and Mishap Class

Currently displaying metrics for TMSs: 35 of 77



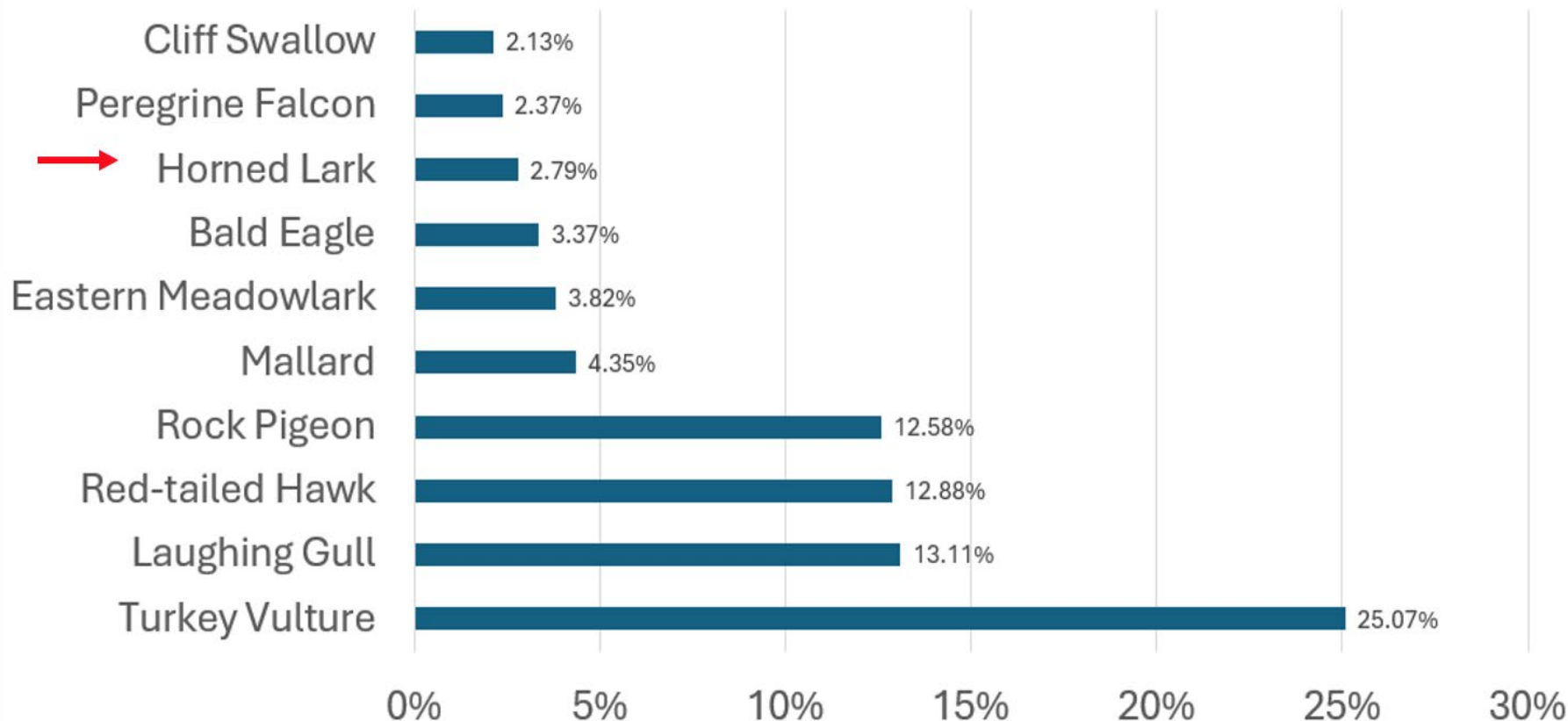
Strikes by Cost FY22-26

Annual BASH Event Cost (in millions)



Known Avian Risk FY26

Overall Known Avian Risk (KAR)





Questions/comments?

