# Soaring to New Heights

Presents

# FAA National Wildlife Strike Database 101

By Phyllis Miller and Mahalah Schank

July 19, 2022

Bird Strike Committee USA

# 1905: The First Recorded Bird Strike

Date: 7th of September 1905

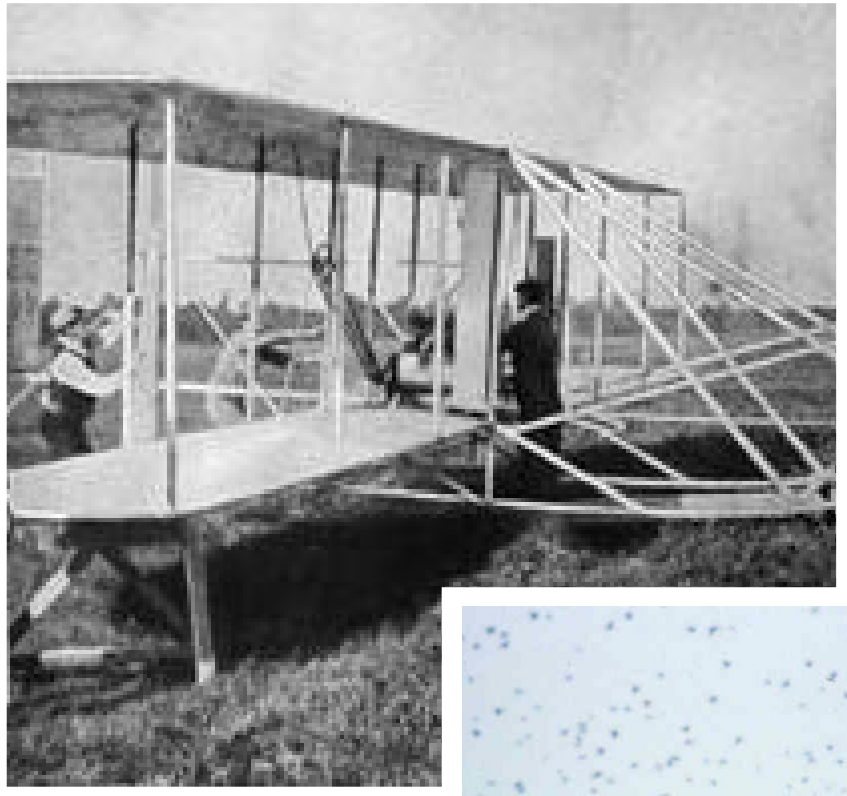
Aircraft: Wright Flyer

Location: Dayton, OH

Phase of Flight: Cruise over cornfield

Damage: None

Wildlife Species: Red-winged Blackbird



# 1912: The First Bird Strike Fatality

Date: 3rd of April 1912

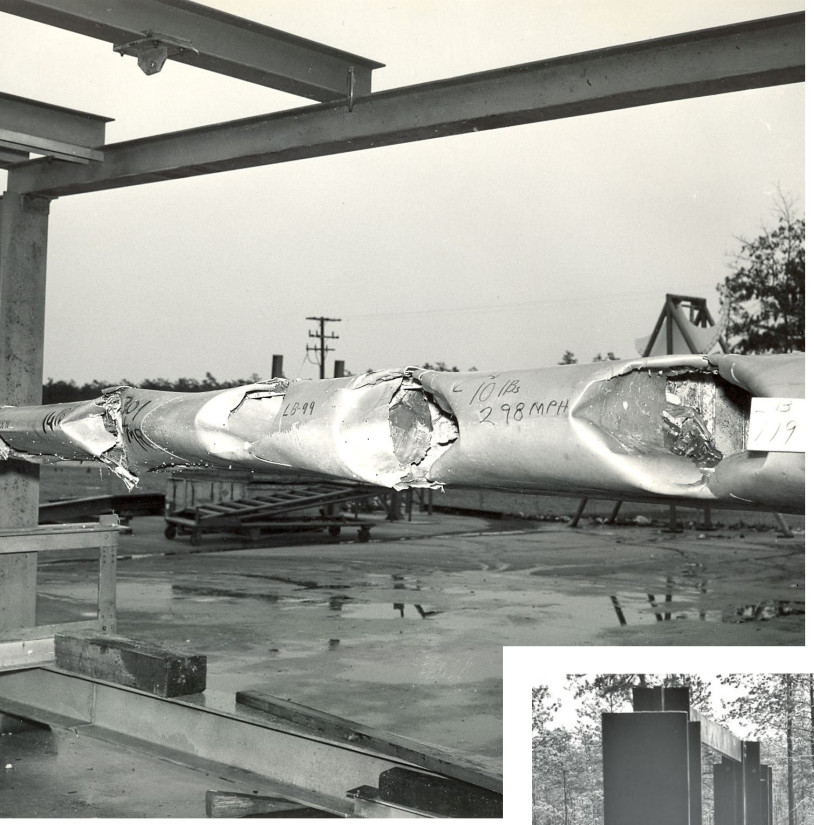
Aircraft: Wright Pusher

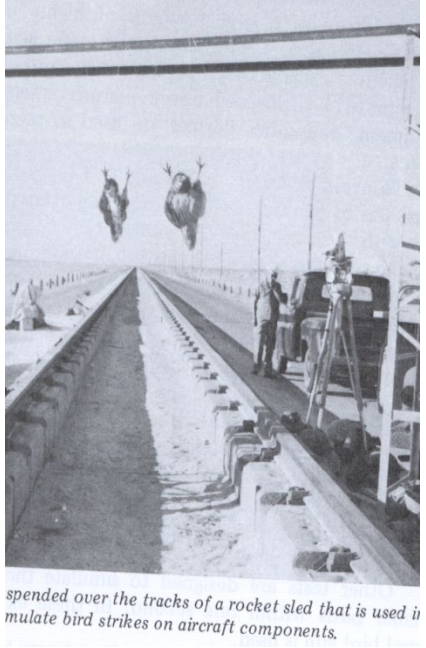
Location: Long Beach, CA

Phase of Flight: Cruise over water

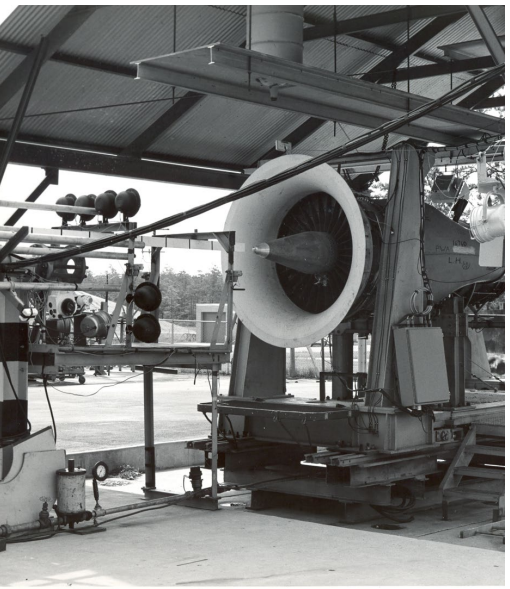
Damage: Aircraft Destroyed

Wildlife Species: Gull

spended over the tracks of a rocket sled that is used i
mulate bird strikes on aircraft components.



# IN THE 1960'S AND 1970'S, AN INCREASE IN STRIKES AND DEATHS PROVIDED A NEED FOR RESEARCH INTO WILDLIFE STRIKES


# 1995: Worst U.S. Military Bird Strike

- Date: 22nd of September 1995
- Aircraft: E-3 AWACS
- Location: Elmendorf AFB (AK)
- Phase of Flight: Take-off Run
- Damage: Engines, Aircraft Destroyed- 24 Fatalities
- Wildlife Species: Canada Geese

Crash site from over head including runway

# Miracle on the Hudson

Date: 15th of January 2009

Aircraft: A-320

Location: Bronx, NY

Phase of Flight: Climb

Damage: Aircraft Destroyed

Wildlife Species: Canada Geese

U.S. Department
of Transportation
**Federal Aviation
Administration**

# Advisory Circular

**Subject:** Reporting Wildlife Aircraft Strikes | **Date:** 5/31/2013 | **AC No:** 150/5200-32B
**Initiated by:** AAS-300 | **Change:**

**1. Purpose.**

This Advisory Circular (AC) explains the importance of reporting collisions between aircraft and wildlife, more commonly referred to as wildlife strikes. It also explains recent improvements in the Federal Aviation Administration's (FAA's) Bird/Other Wildlife Strike Reporting system, how to report a wildlife strike, what happens to the wildlife strike report data, how to access the FAA National Wildlife Strike Database (NWSD), and the FAA's Feather Identification program.

**2. Applicability.**

The FAA provides the standards and practices in this AC as guidance for all public-use airports, aviation industry personnel (e.g., Air Traffic Control, pilots and airline personnel, and engine manufacturers), and others who possess strike information. The FAA strongly recommends that the above aviation representatives and others possessing strike information participate in reporting.

**3. Cancellation.**

This AC cancels AC 150/5200-32A, Reporting Wildlife Aircraft Strikes, dated December 22, 2004.

**4. Background.**

The FAA has long recognized the threat to aviation safety posed by wildlife strikes. Each year in the United States, wildlife strikes to U.S. civil aircraft cause about $718 million in damage to aircraft and about 567,000 hours of civil aircraft down time. For the period 1990 to 2011, over 115,000 wildlife strikes were reported to the FAA. About 97 percent of all wildlife strikes reported to the FAA involved birds, about 2 percent involved terrestrial mammals, and less than 1 percent involved flying mammals (bats) and reptiles. Waterfowl (ducks and geese), gulls, and raptors (mainly hawks and vultures) are the bird species that cause the most damage to civil aircraft in the United States, while European starlings are responsible for the greatest loss of human life. Vultures and waterfowl cause the most losses to U.S. military aircraft.

Studies have shown that strike reporting has steadily increased over the past two decades; however, strike reporting is not consistent across all stakeholders (pilots, air carriers, airport operators, air traffic control personnel, etc.) in the National Airspace System. Although larger 14 CFR Part 139 airports and those with well-established wildlife programs have improved strike reporting, there is a wide disparity in overall reporting rates between Part 139 airports and general aviation (GA) airports in the National Plan of Integrated Airport Systems (NPIAS). Less than 6 percent of total strike reports come from NPIAS GA airports, whose reporting rates average less than 1/20$^{th}$ the rates at Part 139 airports. Most Part 139 airports (97 percent) have

WESS for the USN is now RMI (Risk Management Information) and runs similarly to the AFSAS system.

USN CNIC
RMI

https://navalsafetycenter.navy.mil/Resources/RMI/

AFI-91-212

**2.5. Bird/wildlife Strike Reporting and Analysis.**

2.5.1. Accurately and thoroughly report all Bird/wildlife Aircraft Strike Hazard events to help identify local wildlife trends for mishap prevention. Proper species identification of wildlife is an integral part of the program. A thorough analysis of the circumstances leading to wildlife strikes, in conjunction with wildlife survey/mitigation documentation, is vital before actionable recommendations for management and mitigation may be proposed. Report all wildlife strikes within the Air Force Safety Automated System (AFSAS) and submit wildlife remains to the Smithsonian Institution National Museum of Natural History (see para 2.5.2). As per AFI 91-204, *Safety Investigation and Hazard Reporting*, wildlife strikes with any cost up to $19, 999.00 will be classified as Class E. Wildlife strikes with no cost, will be classified in Air Force Safety Automated System as a hazard.

2.5.2. Identify all impact points on the mishap object. Collect all feathers/feather fragments,

# A Wildlife Strike is Defined by the Federal Aviation Administration as:

A) A strike between wildlife and aircraft has been witnessed.

B) Evidence or damage from a strike has been identified on an aircraft.

C) Bird or other wildlife remains, whether in whole or in part, are found:

(1) Within 250’ runway centerline or within 1000’ of a runway end unless another reason for the animal’s death is identified or suspected.

(2) On a taxiway or anywhere else on or off the airport that you have reason to believe was the result of a strike with an aircraft.

D) Presence of birds or other wildlife on or off the airport had a significant negative effect on flight.

# Types of Wildlife to Report if Involved in a Strike:

Report:

- All Birds
- All Bats
- Terrestrial Mammals
  - Larger than 2.2 lbs (1kg) (i.e., all rabbits, muskrats, foxes, armadillos, dogs, coyotes, deer, etc. but not mice, voles, rats, chipmunks, etc.)
- Reptiles larger than 2.2 lbs (1 kg)

It is being proposed to change the mass for Terrestrial Mammals and Reptiles:

- Terrestrial mammals weighing 1 lb (454 grams) or more.
- Reptiles:
  - All alligator, caimans, iguanas, and turtles. Report Snakes 1 foot (30 cm) or longer in total length


**When in Doubt, Report it!**

# The Importance of Strike Reporting

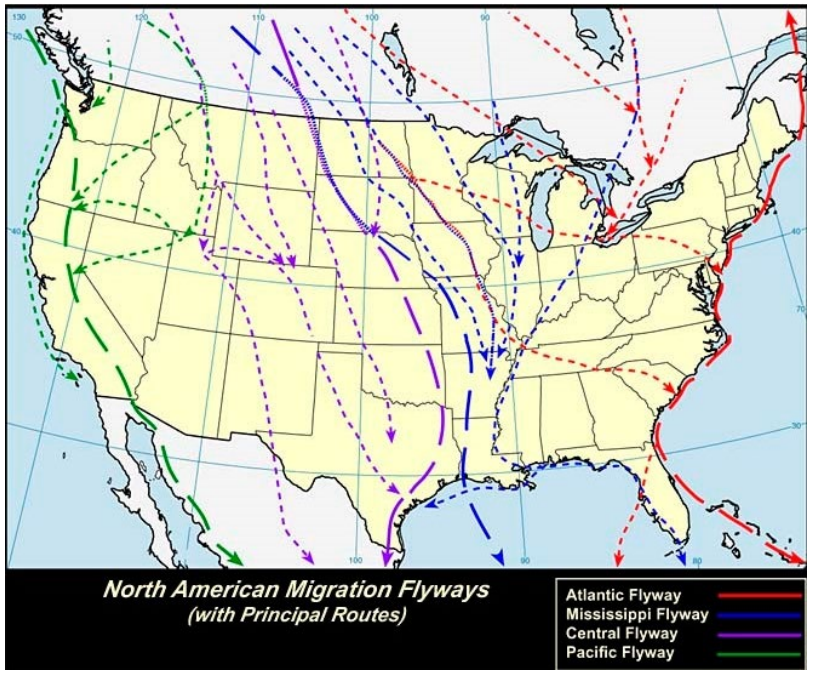
***You Can't Manage What You Don't Know About!***

Wildlife strike reports are important to figuring out:

- Hazard level of various wildlife species
- Seasonal Patterns of wildlife
- Wildlife attractants on and around the airfield
- Vulnerabilities of aircraft components to damage

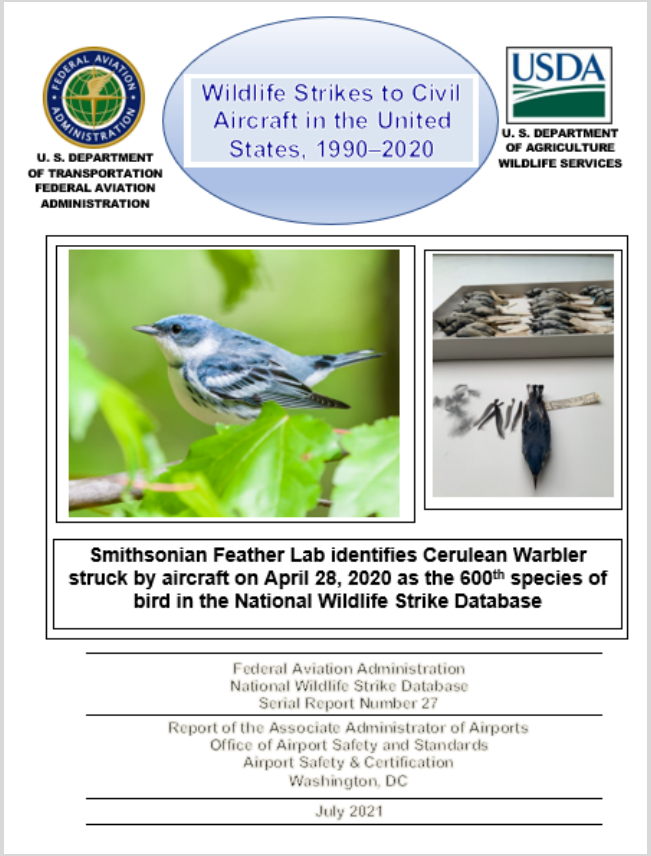
By analyzing wildlife strikes:

- Airport operations and airport biologists can develop more successful wildlife hazard management plans to create a safer flying environment, for pilots and wildlife.
- Engineers can enhance aircraft components susceptible to damage.




# Science Based Management of Airport Wildlife Hazards

- We have compiled over 259,577 strike reports from 2,073 USA airports and 325 foreign airports in 111 countries.
- The 2020 Annual report is available at https://www.faa.gov/airports/airport_safety/wildlife/media/Wildlife-Strike-Report-1990-2020.pdf
- The 2021 Annual report is in Final Draft




Federal Aviation Administration

FAA Home | Wildlife | Login

Home | Report a Strike | Update/Print a Strike Report | Search the Database

## Bird/Wildlife Strike Report Submittal

Thank you for taking the time to report your wildlife strike to the FAA.

Your Strike Report Confirmation Number is: 2021-11-22-111947

This is used to Update a Strike Report. For a printable version of this report Please Click Here

If new information for this strike becomes available, please return to our Home Page and file an updated (revised) report using this Confirmation Number.

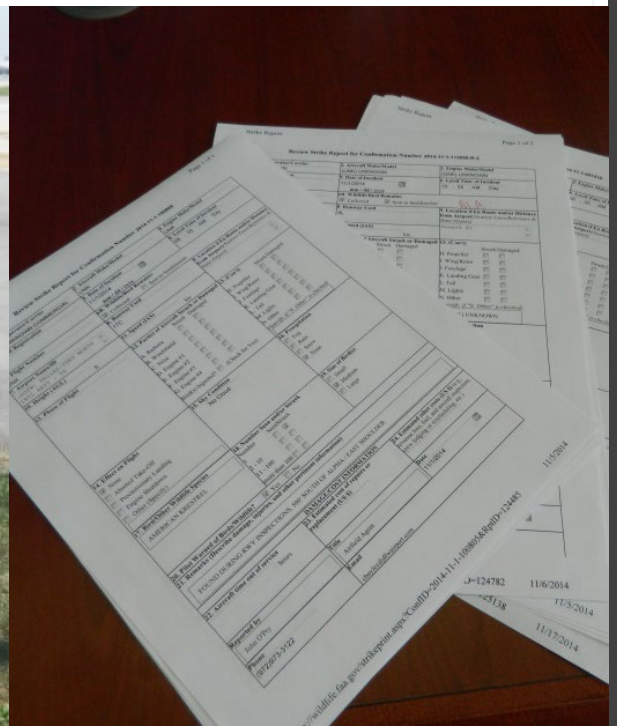
This data is extremely important to increasing air safety and will be used by the FAA to appropriately assess the risk of bird and other wildlife strikes. The information is also used by aircraft and engine manufacturers in designing stronger aircraft components. Airport managers use the data to justify funding wildlife hazard assessments and management programs at their airports. Scientists use the data to determine which wildlife are the most hazardous species to aircraft and then study ways to keep these animals away from airports and aircraft.

**BY REPORTING THIS STRIKE, YOU ARE ACTIVELY CONTRIBUTING TO INCREASING AIR SAFETY.**

As a reminder please send any remains, along with the Strike Report Confirmation Number (at the top of this page), to:

| US Postal Service | Priority Shipping (e.g. Fed Ex, etc.) |
|---|---|
| Smithsonian Institution<br>Feather Identification Lab<br>NHB E-600, MRC 116<br>P.O. Box 37012<br>Washington, D.C. 20013-7012 | Smithsonian Institution<br>Feather Identification Lab<br>NHB E-600, MRC 116<br>10th & Constitution Ave., N.W.<br>Washington, D.C. 20560-0116 |

For more information regarding bird remains and their importance
Please see Wildlife Identification Techniques



# What Happens with the Report I Submit?

The Database Team takes all filed reports and researches them for any additional information (e.g., N numbers, airport, aircraft model, etc.), and enters the information provided.

Once the report has been reviewed it is then released to the database for the public's use. (Submitters names are left out!)

Researchers, biologists, airports, engineers, media outlets, and others use the information to enhance airport safety and provide the public with objective information.

# Strike Reporting Resources

## FlightAware

- Free to the public
  - Only tracks flights for the past 3 months
- Can search based on flight number, aircraft registration, airport, or operator
- Great place to collect aircraft registration and flight numbers
- https://flightaware.com/

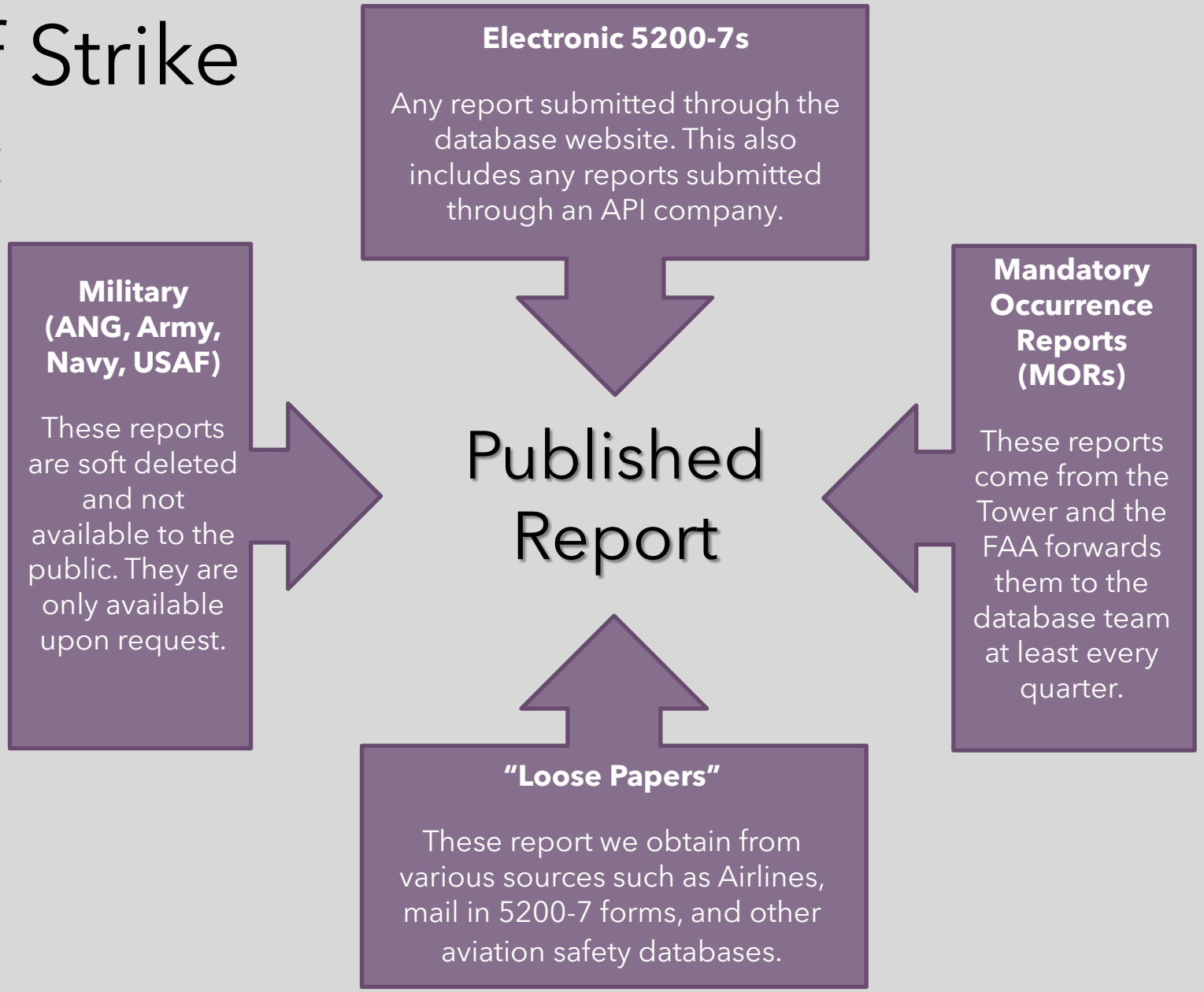
## FAA Registry

- Can search based on aircraft's registration number
  - Can locate the make and model of aircraft and type of engine
  - https://registry.faa.gov/aircraftinquiry/Search/NNumberInquiry

## You!

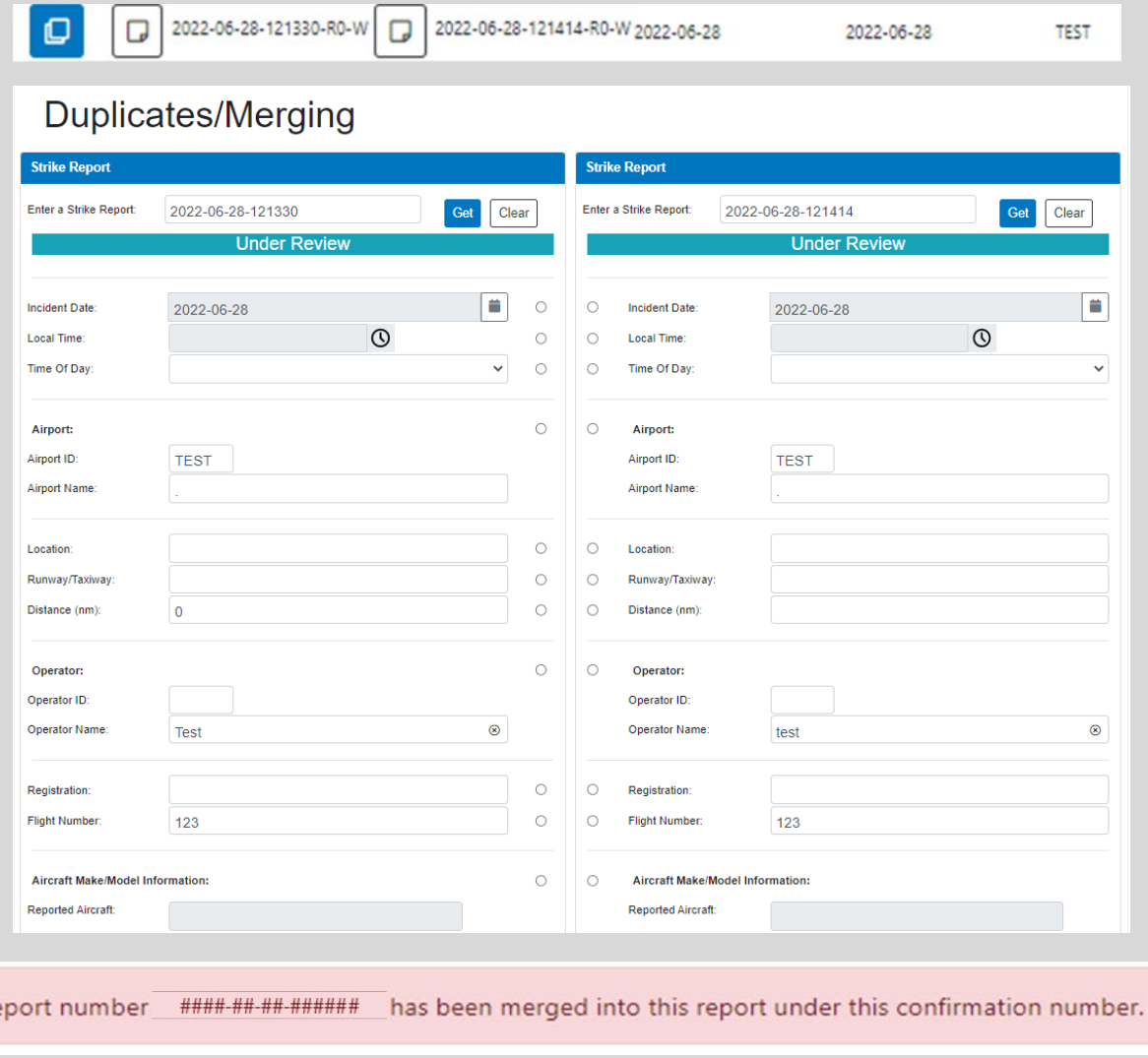
- Please include your phone or email in the reporter's information area so if we have any further questions, we can contact you for more information.

# Types of Strike Reports:



# What if there are multiple reports for the same incident?

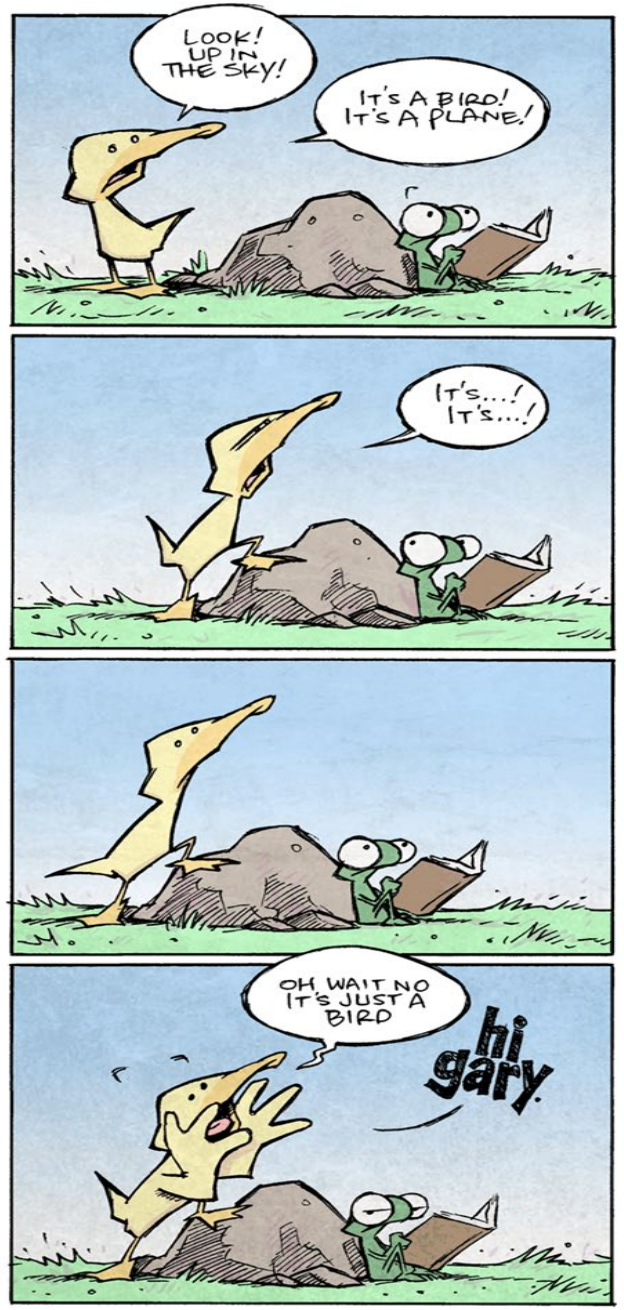
- There is a self check in the system that will flag a report that has the potential to be a duplicate.
  - For the reports to flag they must have the same airport code, registration or flight number, and have incident dates within 2 days of each other.
- The Database Team will review the reports side by side and pull the valuable information from the report and merge it under a single strike report number.
- After the reports have been merged you will still have access to the report to edit even if it is no longer under the same confirmation number you authored.



# Database Update:

- 5200-7 (Paper): Processed through March 31, 2022
- 5200-7E: Processed through June 22, 2021
- Mandatory Occurrence Reports (MORs), from ATC, processed through April 6, 2022

- Currently the Database is processing strike reports faster than the Smithsonian can receive/ identify the remains.
  - If you sent remains to the Smithsonian Feather Lab, you will most likely see "Waiting for SI ID as of (date)" in remarks.



## Impact And Damage Information

| Aircraft Part(s): | Struck | Damaged | Ingested |
|---|---|---|---|
| Radome | ☐ | ☐ | |
| Windshield | ☐ | ☐ | |
| Nose | ☐ | ☐ | |
| Engine #1 | ☐ | ☐ | ☐ |
| Engine #2 | ☐ | ☐ | ☐ |
| Engine #3 | ☐ | ☐ | ☐ |
| Engine #4 | ☐ | ☐ | ☐ |
| Propeller | ☐ | ☐ | |
| Wing/Rotor | ☐ | ☐ | |
| Fuselage | ☐ | ☐ | |
| Landing Gear | ☐ | ☐ | |
| Tail | ☐ | ☐ | |
| Lights | ☐ | ☐ | |
| Other | ☐ | ☐ | ☐ |

Specify part struck/damaged/ingested if "Other" is checked:


# New features to 5200-7E and Database

- Separate ingestion boxes!
  - Now you can specify which engine had the ingestion.
  - If you are unable to see this feature, please let us know so we can get you updated.
- Military strikes are not available to the public. If you would like any information on military strikes, please let us know and we will pull the information for you.

# Identify that Species!

Mourning Dove?

Zebra Dove?

White-winged Dove?

Rock Pigeon?

***ID the species, ID the problem!***

**The National Wildlife Strike Database contains > 1,182 dove strikes**

- We have 59 dove strikes in 2021 alone.
  - 47% of the species ID'd as "dove" are Carcass found reports.
- The dove family includes 14 species in North America.

Unsure of the species? We're here to help!

- Smithsonian Feather Lab can look at birds AND mammals
- Send photos (with size comparison) with your strike report

# Why Should you have Strike Kits?

- Collect snarge and other materials
- Cheap to make and easy to assemble
- Encourages reporting and getting remains identified (especially if you keep a supply in your vehicle to provide to operations, airlines, maintenance, mechanics and/ or pilots)

| Rank | Bird Species | Number Struck |
|---|---|---|
| 1 | Mourning Dove | 12,875 |
| 2 | Killdeer | 8,469 |
| 3 | Barn Swallow | 8,207 |
| 4 | American Kestrel | 7,765 |
| 5 | Horned Lark | 6,715 |
| 6 | European Starling | 5,606 |
| 7 | Rock Pigeon | 3,899 |
| 8 | Red-tailed Hawk | 3,605 |
| 9 | Eastern Meadowlark | 3,605 |
| 10 | Cliff Swallow | 2,529 |

# MOST FREQUENTLY STRUCK 1990-2021 (CIVIL AIRCRAFT)

# Spreading the Word











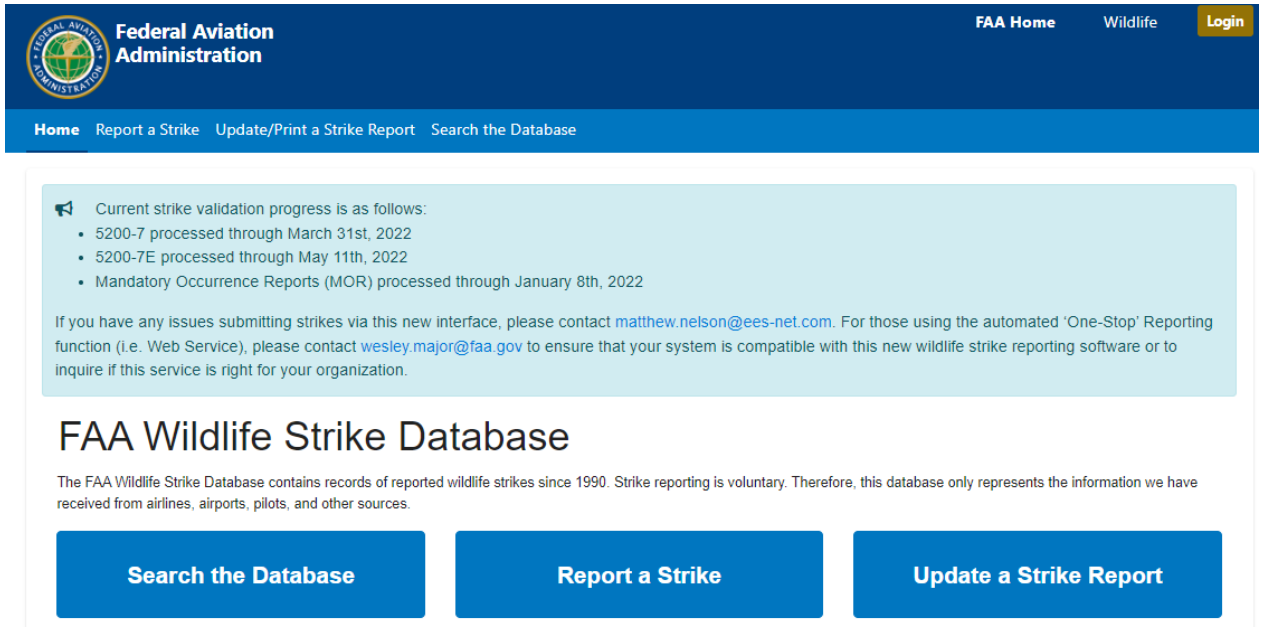














# Resources

**http://wildlife.faa.gov**

On this site you find:

- A link to the Smithsonian Feather Lab
- Strike Collection Kit Information
- FAQs

**http://www.birdstrike.org**

Bird Strike Committee, USA is an organization of volunteers promoting bird strike awareness and reporting.

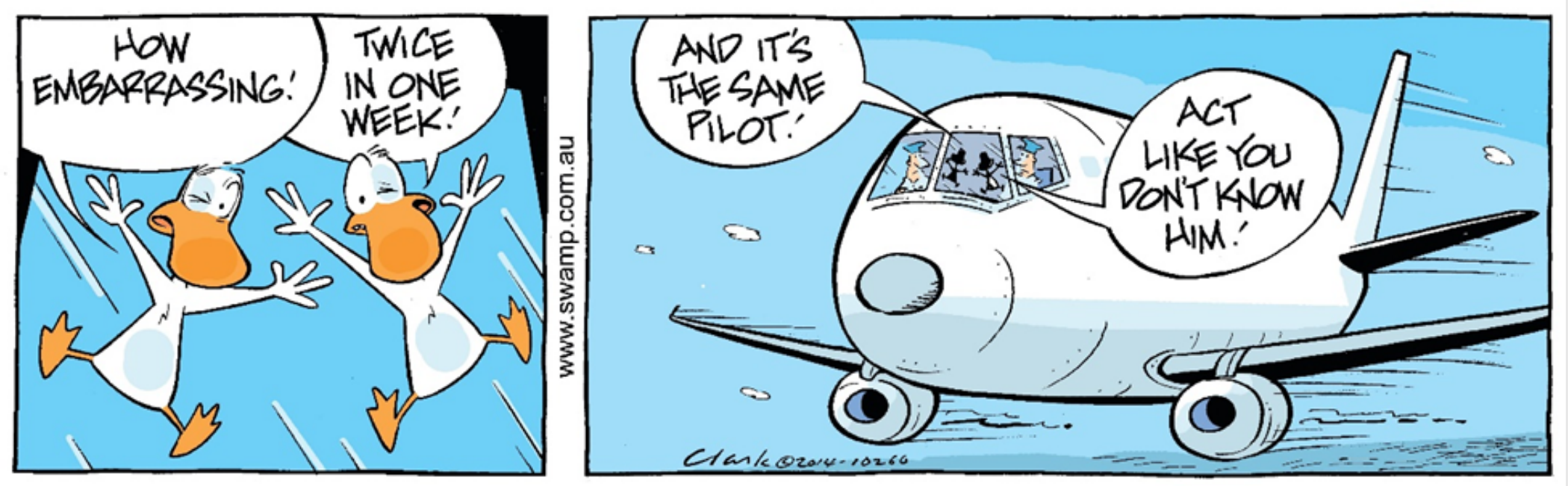
It is comprised of: FAA, USDA, DoD, U.S. Airports, Private Sector Services, Airlines, and the Aerospace Industry

**National Wildlife Strike Database Office:**

Phyllis Miller and Mahalah Schank

Phyllis Cell: 419-202-1199

Mahalah Cell: 419-366-6815




# Questions?

National Wildlife Strike Database

Airport Wildlife Hazards Program

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