

AVIATION SAFETY ANALYSIS

DATA-DRIVEN AIRCRAFT SELECTION STRATEGY

Project Goal

Help our company safely enter the aviation industry by identifying:

- Safest aircraft types to purchase
- Lowest-risk operational strategies
- Data-backed safety protocols

DATA SOURCE

- National Transportation Safety Board (NTSB)
- 77,488 aviation accidents (1962-2023)
- Comprehensive safety analysis

Business Understanding

THE CHALLENGE

We're expanding into aviation but lack expertise in:

- Aircraft safety profiles
- Risk assessment
- Operational best practices

THE OPPORTUNITY

Use data to make informed decisions about:

- Which aircraft to purchase
- How to operate safely
- Where to focus training

Data Overview

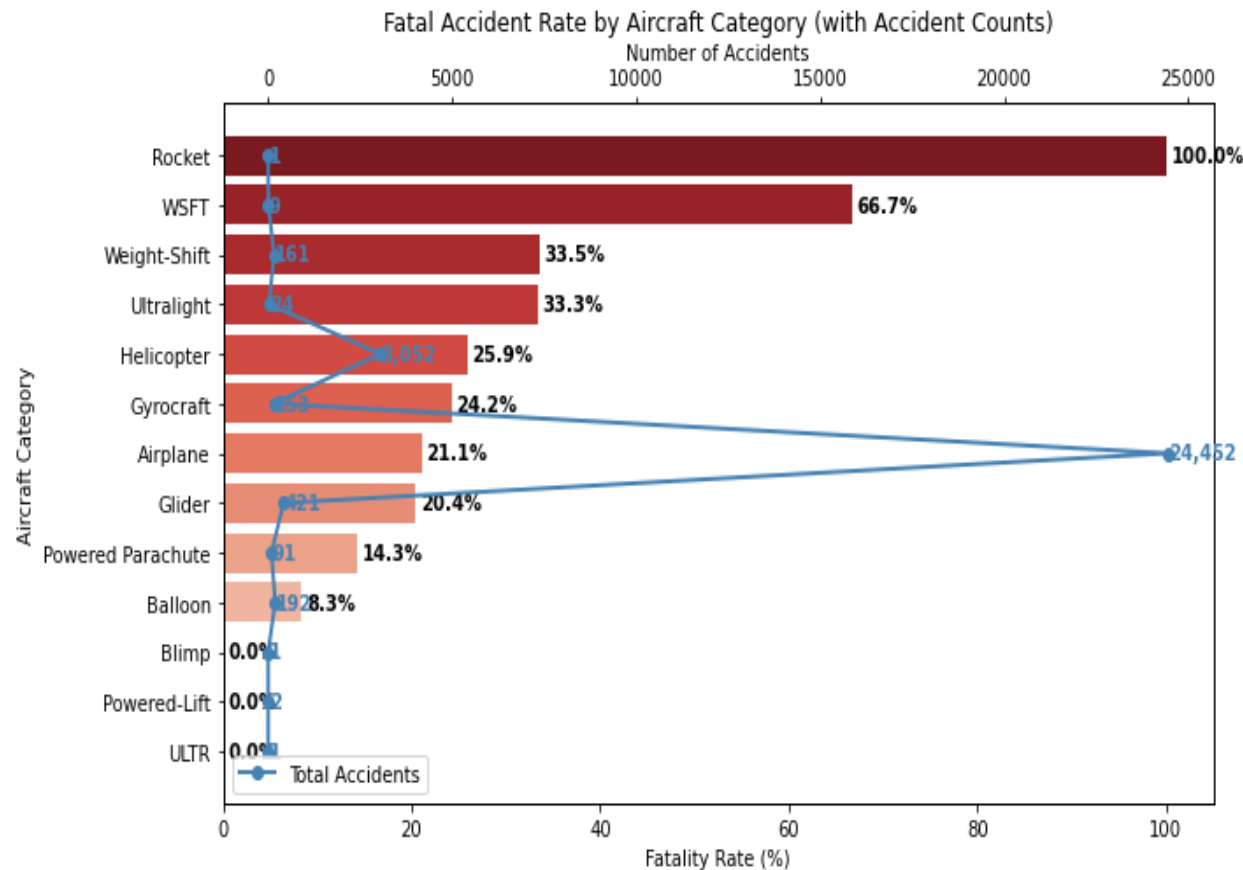
WHAT WE ANALYZED

- 77,488 aviation accidents
- 60+ years of safety data
- Multiple aircraft categories
- Various manufacturers

KEY METRICS

- Fatality rates by category
- Accident frequency
- Safety trends over time
- Risk factors

KEY FINDING: AIRCRAFT CATEGORY SAFETY



Safest Options for Our Business:

- Balloons: 8.3% fatality rate
- Powered Parachutes: 14.3%
- Gliders: 20.4%
- Airplanes: 21.1% (best balance)

Avoid High-Risk Categories:

- Rockets: 100% fatality rate
- WSFT: 66.7%
- Weight-Shift: 33.5%

RECOMMENDATION 1: START WITH AIRPLANES

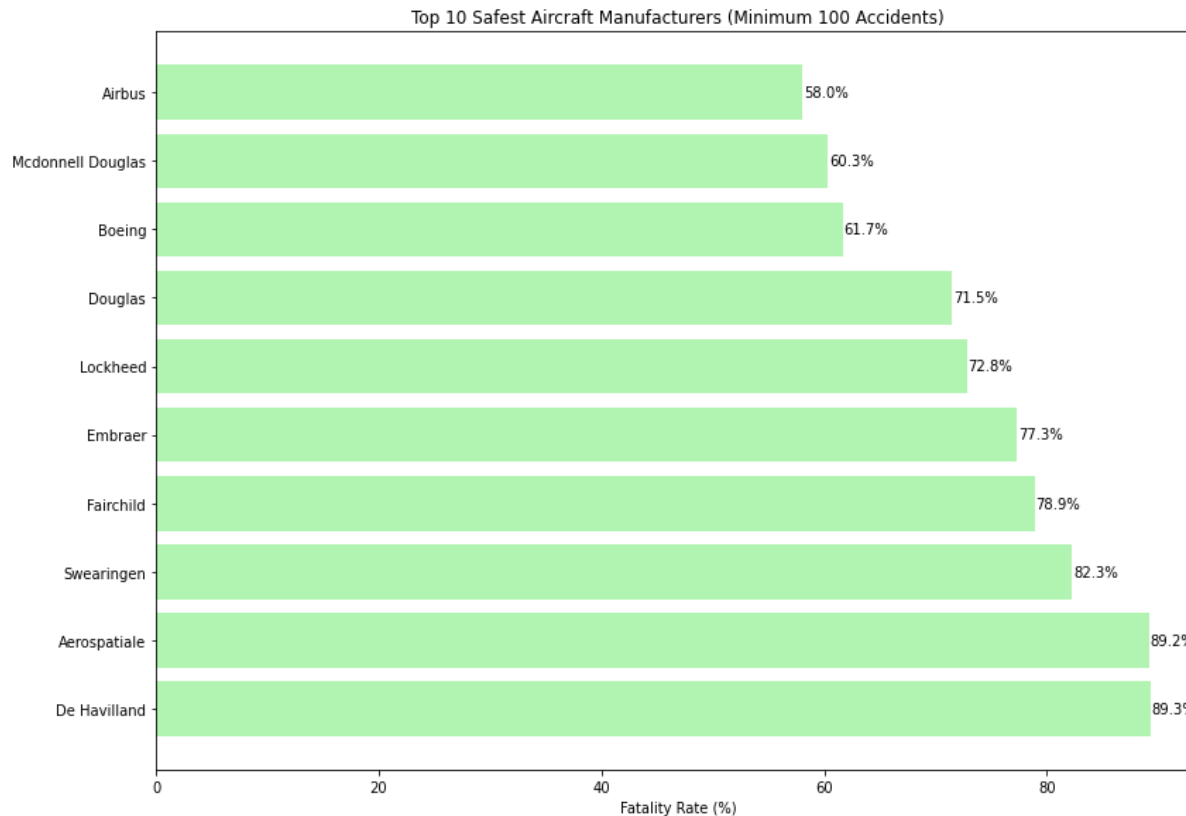
WHY AIRPLANES?

- 21.1% fatality rate (well below average)
- 24,452 accidents analyzed (proven track record)
- Versatile for commercial & private use
- Established maintenance protocols

ACTION ITEMS:

1. Purchase initial fleet from Boeing/Airbus
2. Develop airplane-specific safety protocols
3. Train pilots on airplane operations

KEY FINDING: MANUFACTURER SAFETY



Top Performing Manufacturers:

- Airbus: 58.0% fatality rate
- McDonnell Douglas: 60.3%
- Boeing: 61.7% (best with high volume)

Safety with Experience:

- Boeing analyzed in 2,270 accidents
- Proven safety track record
- Reliable maintenance networks

RECOMMENDATION 2: PARTNER WITH BOEING

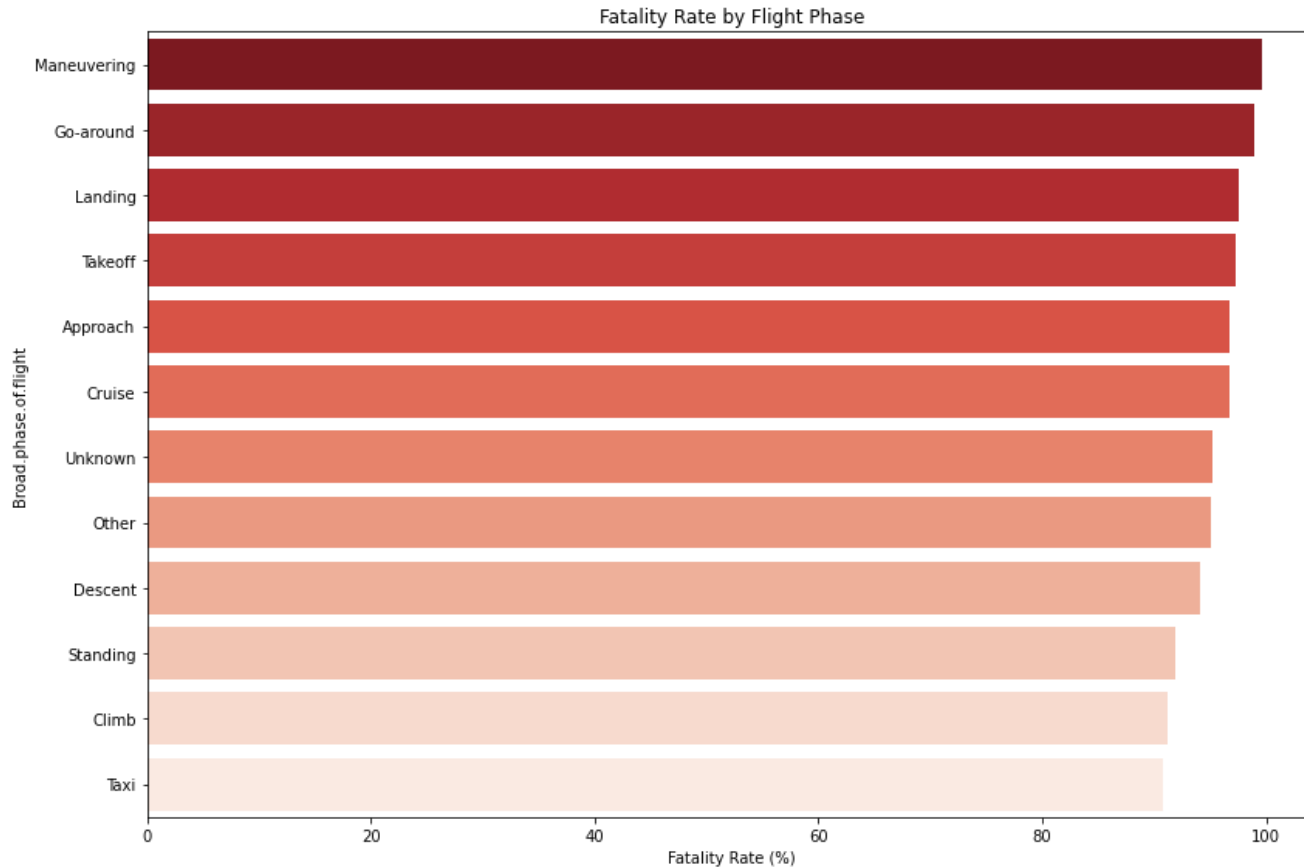
WHY BOEING?

- Best combination of safety and experience
- 61.7% fatality rate across 2,270 accidents
- Global support and maintenance network
- Proven reliability for new operators

ACTION ITEMS:

1. Establish Boeing partnership
2. Standardize on Boeing aircraft types
3. Leverage their safety programs and training

KEY FINDING: OPERATIONAL RISKS



Highest Risk Phases:

- Maneuvering phases: 99.6% fatality rate
- Go-around: 99.0% fatality rate
- Landing: 97.6% fatality rate

CRITICAL INSIGHT:

- Routine operations (takeoff/landing) are extremely dangerous
- Maneuvering has near-perfect fatality rate
- Standard procedures need complete overhaul

RECOMMENDATION 3: OVERHAUL OPERATIONAL SAFETY

CRITICAL FOCUS AREAS:

1. Maneuvering training (99.6% fatality rate)
2. Go-around procedures (99.0% fatality rate)
3. Landing protocols (97.6% fatality rate)
4. Takeoff safety (97.3% fatality rate)

ACTION ITEMS:

1. Develop emergency maneuver training
2. Implement strict go-around criteria
3. Enhance landing checklist procedures
4. Standardize takeoff safety protocols
5. Invest in flight simulators for high-risk phases

Implementation Roadmap

PHASE 1: MONTHS 1-3

- ✓ Purchase initial Boeing airplane fleet
- ✓ Develop basic safety protocols
- ✓ Hire and train initial pilots

PHASE 2: MONTHS 4-12

- ✓ Expand to additional safe categories
- ✓ Implement advanced training
- ✓ Establish safety monitoring

PHASE 3: YEAR 2+

- ✓ Continuous improvement
- ✓ Expand operations safely
- ✓ Become industry safety leader

End