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INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY

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IMPORTANCE OF AIR-REPORTS (AIREPs)

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Topics

- AIREPs / Special AIREPs
- ICAO Requirements
- Importance of AIREPs
- Challenges and future directions

AIREP / Special AIREP

AIREPS are:

- Reports from aircraft in flight
- Classified as routine or special (non-routine)
- Governed by ICAO documentation detailing when they should be submitted
- A pilot's responsibility under specific conditions

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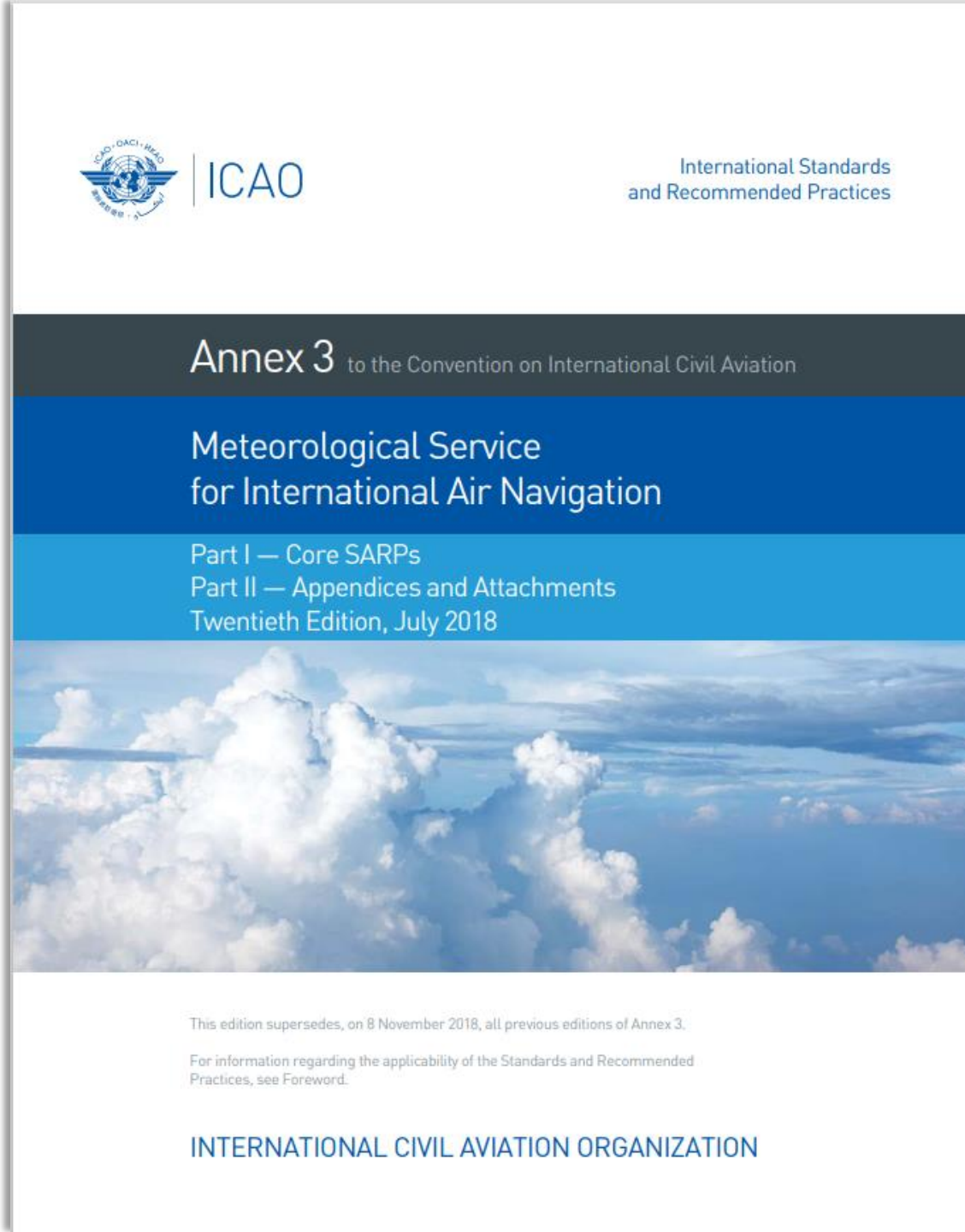
ICAO Requirements

ICAO Annex 3, Chapter 5 requires:

- "…aircraft shall make routine observations during en-route and climb-out phases of the flight;

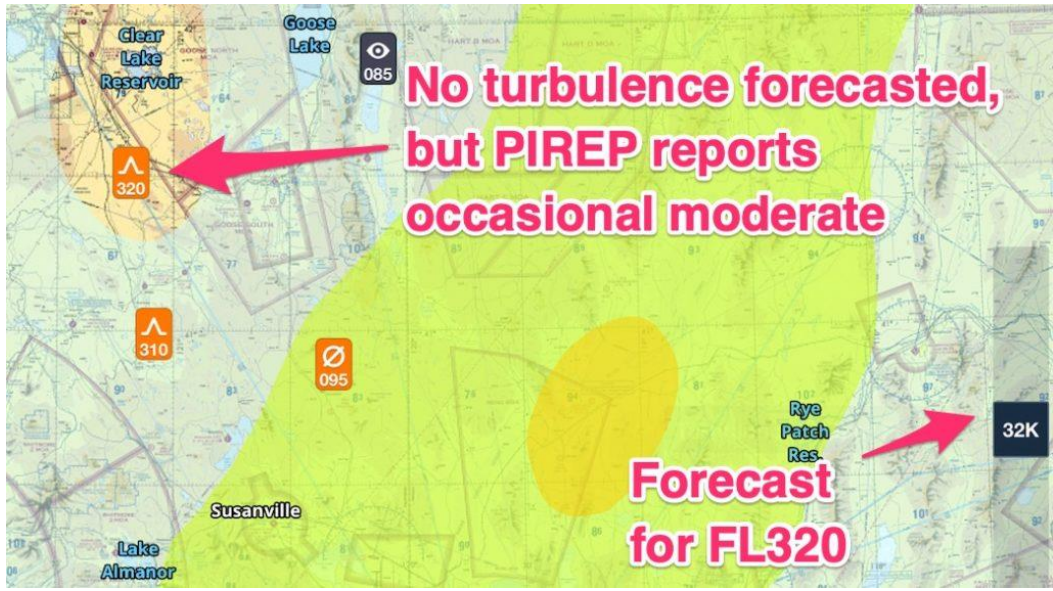
- Special and other non-routine aircraft observations during any phase of the flight



Importance of AIREPs

AIREPS (or special AIREPs):

- Enhance aviation safety
- Provide real-time, actionable weather data
- Support hazard alerts for nearby aircrafts
- Validate and improve weather forecasts



Transmission of AIREPs

Key responsibilities –

- **Pilots:** Report via data link or voice at the earliest opportunity
- **ATS Units:** Relay to meteorological authorities and broadcast to other aircraft

Example:

ARS VA812 2020N07005W 1215 F180 MTW SEV

Meaning:
Special air-report from VIASA* flight number 812. Report refers to position 20 degrees 20 minutes north and
70 degrees 5 minutes west at 1215 UTC, at flight level 180. Severe mountain wave has been encountered.
* Fictitious operator

From ICAO Doc 8896

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Utilisation of AIREPs

Used for:

- Monitoring of real-time weather
- Improving and verifying forecasts
- Enhancing Numerical Weather Prediction (NWP) models
- Supporting aviation case studies and post-event analysis

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Challenges and the Future

Key issues:

- Data accuracy and completeness
- Under-reporting by pilots
- Need for automation
- Future improvements with AI integration and increased aircraft participation

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Global Aviation Safety Plan Update

- In 2024, the Air Navigation Conference recognized turbulence encounters as a new global operational safety risk

- The 2026–2028 Global Aviation Safety Plan will reflect this, reinforcing the importance of timely special AIREPs

Recommendation 2.3/2 – Turbulence encounters as a global operational safety risk

That States:

a) share experiences and best practices related to turbulence encounters; and

b) establish mechanisms to improve the availability of air-reports, including special air reports, especially those made routinely and containing quantitative turbulence information;

that ICAO:

c) identify means for collecting and sharing turbulence-related data among Member States and industry to actively monitor global turbulence risk; …

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Together we can make a difference

- Foster a stronger reporting culture
- Encourage collaboration among pilots, ATS, and meteorological agencies
- Together, we improve safety and forecasting accuracy

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Thank You

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