Performance Based Communication and Surveillance

30 NM Lateral, 30 NM and 50 NM Longitudinal Separation Minima in the New York Flight Information Region (FIR)

Presented to: NAT PBCS Workshop

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Date: 20-22 February 2013

Federal Aviation Administration

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- **FAA experience in other oceanic airspace**
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- **Plan for implementation in New York FIR**
- **Review proposed changes to NAT Doc 7030/5**
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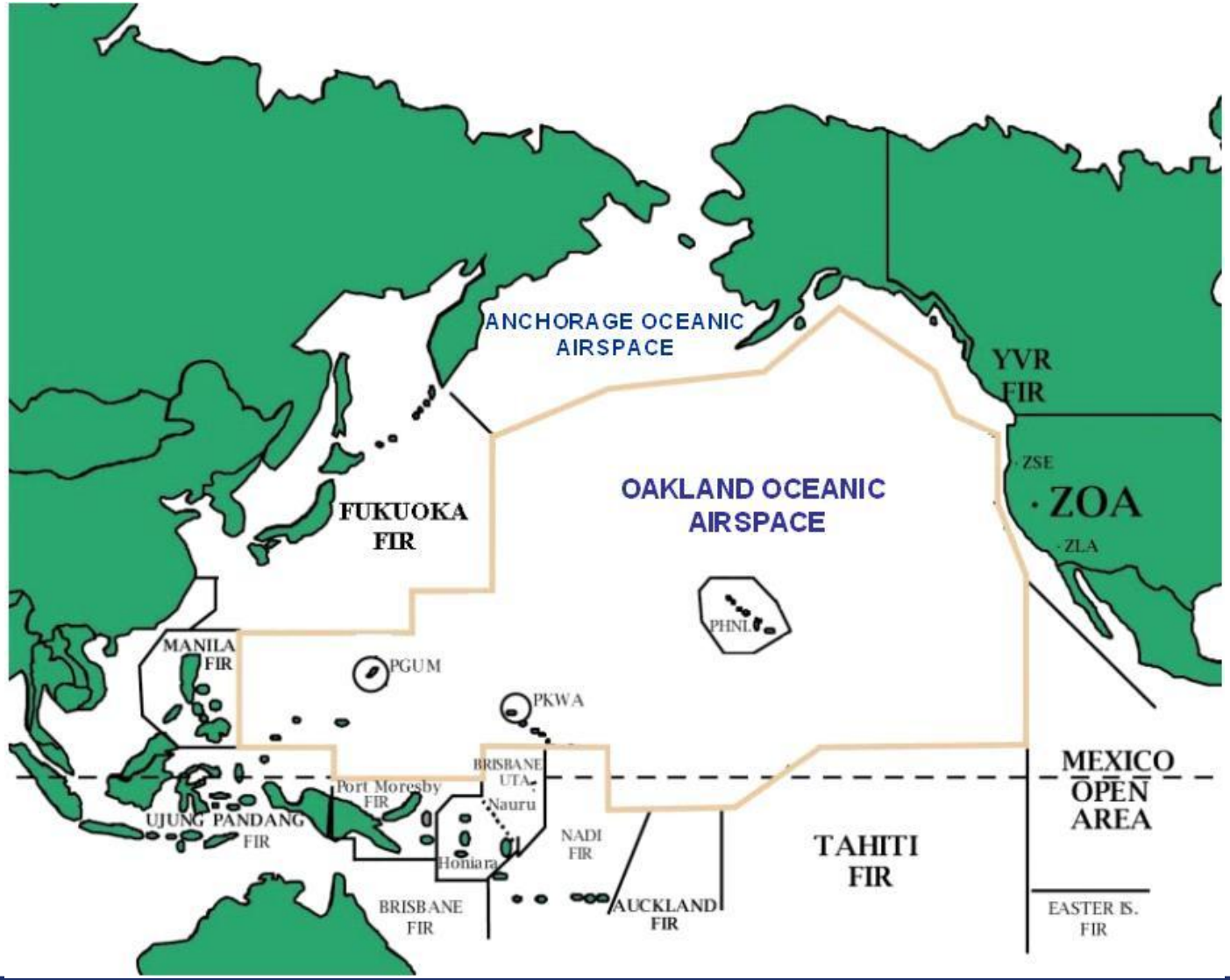
Use of 50 NM Longitudinal, 30 NM Longitudinal, and 30 NM Lateral Separation Minima in FAA Controlled Oceanic Airspace

Separation Standard	Implementation in Oakland Oceanic Airspace	Implementation in Anchorage Oceanic Airspace
50NM longitudinal	November 2005	October 2008
30NM lateral	December 2005	November 2012
30NM longitudinal	December 2005	November 2012

- The application of the reduced horizontal separation minima is accomplished ad hoc between pairs of eligible aircraft, it is not planned prior to oceanic entry

Pacific Airspace



Distance-based Longitudinal Separation Minima

- Procedures and procedural separation minima for use in the separation of aircraft in the en-route phase of operation are contained in Chapter 5 of ICAO Doc 4444
- Longitudinal distance-based separation minima in an RNP RNAV environment using ADS-C (paragraph 5.4.2.6.4 in ICAO Doc 4444)
  - Provides maximum ADS-C periodic report interval and RNP type for 50NM and 30NM longitudinal separation

Communication Allowances for Distance-based Longitudinal Separation Minima

- Communication allowances for ATC intervention assumed in the safety analyses completed during the development of these separation standards are provided in ICAO Doc 4444 (paragraph 5.4.2.6.4.3.2)

Communication Scenarios for ATC Intervention	ATC Intervention Time Allowance
ADS-C report received, ATC uses normal means of communication (CPDLC) for intervention	4 minutes (or 240 seconds)
ADS-C report received, CPDLC communication fails, ATC uses HF for intervention	10 ½ minutes

Communication Allowances for Distance-based Longitudinal Separation Minima (continued)

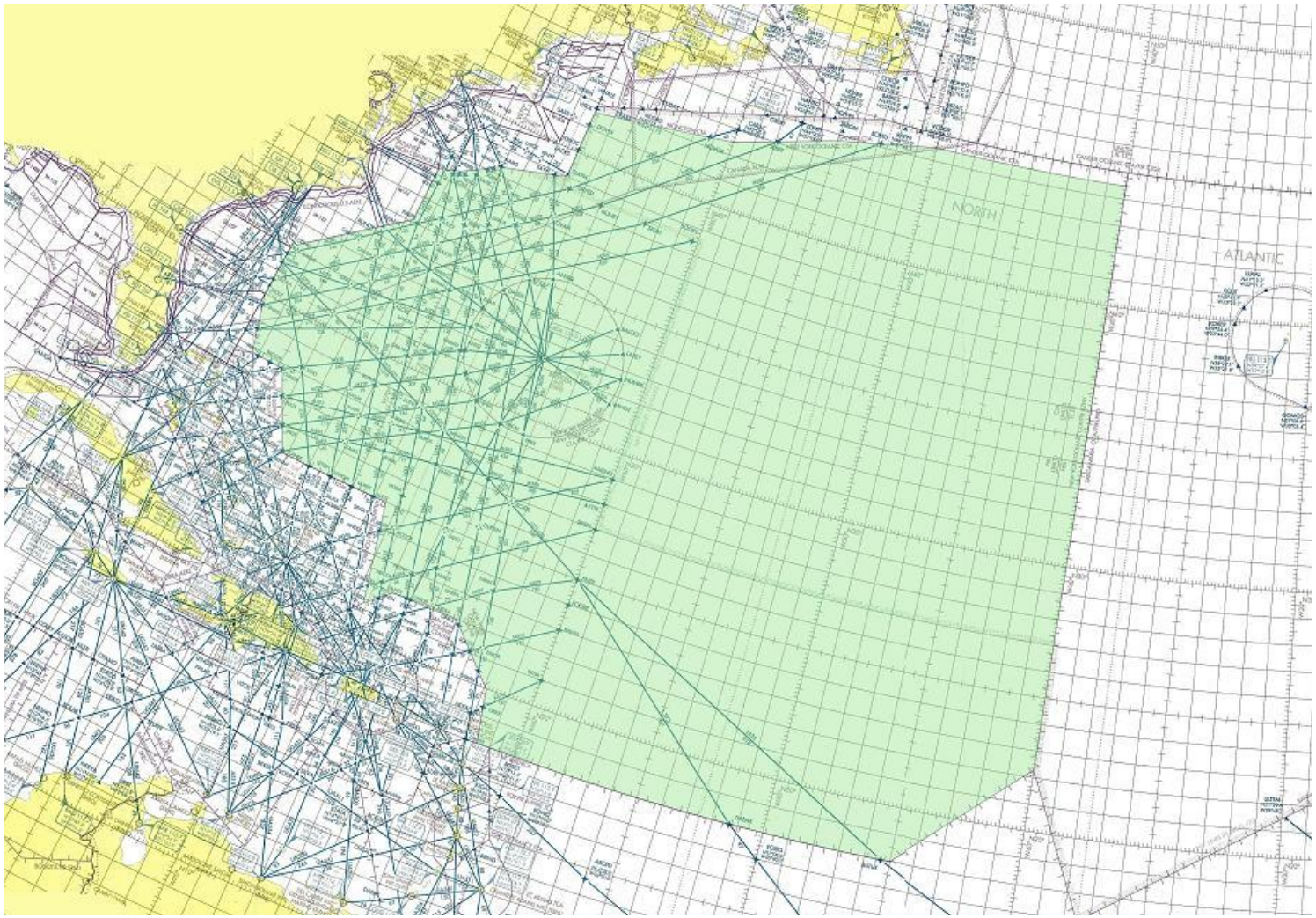
- Communication allowances for ATC intervention when ADS-C report is overdue by 3 minutes is provided in ICAO Doc 4444 (paragraph 5.4.2.6.4.3.3)

Communication Scenarios for ATC Intervention	ATC Intervention Time Allowance
ADS-C report not received, ATC uses HF for intervention	13 ½ minutes

Plan for Reduced Horizontal Separation Minima in New York Oceanic Airspace

Separation Standard	Planned Implementation in New York Oceanic Airspace
50NM longitudinal	December 2013
30NM lateral	December 2013
30NM longitudinal	December 2013

New York Oceanic Airspace



Planned Implementation of Reduced Horizontal Separation Minima in New York Oceanic Airspace

- **In preparation for the implementation of the reduced horizontal separation minima in New York oceanic airspace, the FAA is proposing changes to the NAT Regional Supplementary Procedures (NAT Doc 7030)**
- **Summary and highlights of these proposed changes follows**

Operator Filed Flight Plans

- **New York oceanic airspace will identify eligible aircraft operations from filed flight plans**
- **Item 10:**

..J#..P2..R… / …..D1…

  - J#: Appropriate descriptor (J2 through J7) indicating FANS 1/A interoperable equipment
  - P2: CPDLC RCP 240 approved aircraft use the P2 descriptor
  - R: PBN approval, must file PBN/ in Item 18
  - D1: ADS-C aircraft use the D1 descriptor in Item 10b to indicate FANS 1/A capabilities

Item 10 - J# Definitions

J Code	Definition
J2	CPDLC FANS 1/A HFDL
J3	CPDLC FANS 1/A VDL Mode A
J4	CPDLC FANS 1/A VDL Mode 2
J5	CPDLC FANS 1/A SATCOM (INMARSAT)
J6	CPDLC FANS 1/A SATCOM (MTSAT)
J7	CPDLC FANS 1/A SATCOM (Iridium)

Operator Filed Flight Plans (continued)

- **Item 18:**
- **All RNP 4 / RNP 10 approved aircraft (file ‘R’ in Item 10)**
  - RNP 10 aircraft: use PBN/A1… in Item 18
  - RNP 4 aircraft: use PBN/L1… in Item 18
- **All ADS-C RSP 180 approved aircraft include RSP 180 after the SUR/ indicator**
  - Example: SUR/RSP 180

Performance Based Communications (PBC)

- **Required Communication Performance (RCP)**
  - Aircraft and operator shall be approved to the RCP 240 allocations, by the State of the Operator or the State of Registry
  - ANSPs will measure the communication performance against the RCP 240 specification

Performance Based Navigation (PBN)

- **RNP 10 is required for 50 NM longitudinal separation minimum**
- **RNP 4 is required for 30 NM lateral and 30 NM longitudinal separation minimum**

Performance Based Surveillance (PBS)

- **Required Surveillance Performance (RSP)**
  - Aircraft and operator obtain RSP 180 approval from State of the operator or the State of Registry
  - ANSPs will measure the communication performance against the RSP 180 specification

Air Traffic Services

- **30 NM Lateral separation within the control area of the New York Oceanic FIR**
  - Navigation: RNP 4
  - Communication: CPDLC with RCP 240
  - Surveillance: ADS-C with RSP 180
  - Proportion of flight time spent 15 NM or more from cleared track < 5.44×10^{-5} *(e.g. < roughly 70 hours of flight time spent 15 NM or more from cleared track in an airspace with 1.3 million annual flying hours)*
  - Proportion of flight time spent between 24 and 26 NM from cleared track < 1.01×10^{-5} *(e.g. < roughly 13 hours of flight time spent between 24 and 26 NM from cleared track in an airspace with 1.3 million annual flying hours)*

Air Traffic Services

- **50 NM Longitudinal separation within the control area of the New York Oceanic FIR**
  - Navigation: RNP 10
  - Communication: CPDLC with RCP 240
  - Surveillance: ADS-C with RSP 180
- **30 NM Longitudinal separation within the control area of the New York Oceanic FIR**
  - Navigation: RNP 4
  - Communication: CPDLC with RCP 240
  - Surveillance: ADS-C with RSP 180