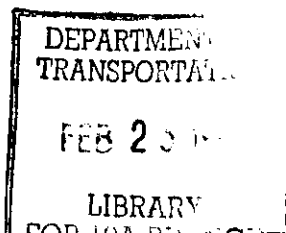




U.S. Department  
of Transportation  
**Federal Aviation  
Administration**



# Advisory Circular

**Subject:** FLIGHT OPERATIONS IN OCEANIC  
AIRSPACE

**Date:** 1/29/90  
**Initiated by:** ATO-340

**AC No:** AC 90-76B  
**Change:**

1. PURPOSE. This circular provides basic information applicable for flights into oceanic airspace under United States air traffic control (ATC) jurisdiction.

2. CANCELLATION. Advisory Circular 90-76A, dated 9/18/84, is canceled.

3. GENERAL.

a. The United States provides air traffic service in oceanic airspace as follows:

(1) Atlantic Ocean: New York, Miami, and San Juan Flight Information Regions (FIR).

(2) Gulf of Mexico: Miami and Houston FIR's.

(3) Pacific Ocean: Oakland and Anchorage FIR's.

b. Section 91.1 of the Federal Aviation Regulations states, in part, that "each person operating a civil aircraft of U.S. registry outside of the United States shall, when over the high seas, comply with Annex 2, Rules of the Air, to the Convention on International Civil Aviation and with FARs 91.70(c), 91.88, and 91.90 of Subpart B."

c. Section 91.20 of the Federal Aviation Regulations states, in part, that "no person may operate a civil aircraft of U.S. registry in North Atlantic (NAT) airspace designated as Minimum Navigation Performance Specifications (MNPS) airspace unless that aircraft has approved navigation performance capability which complies with the requirement of appendix C to this Part."

d. Section 99.3 of the Federal Aviation Regulations states, in part, that "the Air Defense Identification Zone (ADIZ) is an area of airspace over land or water in which the ready identification, location, and control of civil aircraft is required in the interest of national security."

e. Section 99.11 of the Federal Aviation Regulations states, in part, "unless otherwise authorized by ATC, no person may operate an aircraft into, within, or across an ADIZ unless that person has filed a flight plan with an appropriate aeronautical facility."

f. Navigational performance is monitored by the U.S. for all aircraft entering and/or departing international airspace under U.S. jurisdiction. All deviations of 20NM or more are reported to Flight Standards and investigated. (FAA Order 7110.82)

4. FLIGHT PLANNING. (ICAO Annex 2, section 3.3.1.1.2.1 and chapter 4, FAA Order 7110.83, and ICAD Document 7030)

a. A flight plan is required for all flights which cross international borders.

b. Operations in oceanic airspace on a VFR flight plan are permitted only between sunrise and sunset and only within the following airspace:

(1) In Miami, Houston, and San Juan oceanic control areas, at or below FL 180.

(2) In the New York oceanic control area, at or below FL 050; except in the airspace east of 60 degrees West, at or below FL 190.

(3) In the Oakland and Anchorage oceanic areas, at or below FL 050.

c. Operations in offshore airspace (the airspace between the U.S. 12-mile limit and the oceanic control area/flight information boundary) on a VFR flight plan are permitted only between sunrise and sunset and only at or below FL 200.

d. Even though flights may be conducted legally using VFR, experience indicates that IMC weather conditions will be encountered at some point in a transoceanic flight. Consequently, it is recommended that the pilot be instrumented rated, the aircraft meet the equipment requirements for IFR flight, and an IFR flight plan be filed.

5. NAVIGATION/COMMUNICATION EQUIPMENT. In most cases aircraft operating over the high seas will not have adequate VHF radio and/or ICAO standard NAVAID (VOR, VOR/DME, and NDB) coverage. HF communication capabilities, provided by Aeronautical Radio Inc. (ARINC), are available throughout most of U.S. controlled oceanic airspace. Notwithstanding the fact that pilots must comply with all Federal Aviation Regulations (FAR) applicable to their flight, all aircraft operating over the high seas must be equipped with:

a. Suitable instruments and navigation equipment appropriate to the route to be flown (Section 91.1(b) (1) of the FAR and ICAO ANNEX 2, paragraph 5.1.1) and;

b. A functioning two-way radio to maintain a continuous listening watch on the appropriate radio frequency of, and establish two-way communications as necessary with, the appropriate air traffic control unit (Section 91.1(b)(1) of the FAR and ICAO ANNEX 2 paragraph 3.6.5.1). It should be noted that it is not acceptable to depend on radio relay operations to satisfy this requirement.

1/29/90

6. POSITION REPORTING. (ICAO Document 7030) When following a designated oceanic route, position reports must be made over all designated reporting points. Unless otherwise required, reporting points should be located at intervals of 5 or 10 degrees latitude or longitude (latitude if the route is predominantly north-south, longitude if east-west) north or south of the Equator or east or west of the 180 degree meridian. Aircraft traversing 10 degrees of latitude or longitude in 1 hour and 20 minutes or less should normally report only at 10 degree intervals. Slower aircraft should normally report at 5 degree intervals. Position reports should be transmitted at the time of crossing the reporting point using the following format:

Aircraft Identification  
Aircraft Position  
Time Over Position in four digits (UTC)  
Flight Level  
Next Reporting Point and ETA in four digits (UTC)  
Subsequent Reporting Point

7. AIR TRAFFIC CONTROL SERVICE. (ICAO Document 7030) Air traffic control separation is provided to all flights in oceanic controlled airspace by Air Route Traffic Control Centers (ARTCC) and San Juan Combined Center Radar Approach Control (CERAP). These facilities issue clearances and instructions providing separation vertically and horizontally (laterally and longitudinally). The horizontal distances between aircraft being separated generally exceed those applied over land. Three additional separation variations unique to oceanic air traffic control are:

a. Composite: A combination of vertical and lateral separation. Composite is currently used on the North Pacific (NOPAC) routes between Alaska and Japan and the Central East Pacific (CEP) routes between the west coast of the U.S. and Hawaii.

b. Minimum Navigation Performance Specifications (MNPS) Airspace: Specially designated airspace in the North Atlantic which requires that all aircraft be approved by Flight Standards (i.e. requirements defined in the International Flight Information Manual, IFIM) for flight within MNPS airspace. Within the designated area, lateral and longitudinal separation is significantly reduced.

c. MACH Number Technique: Controllers may apply reduced longitudinal minima in oceanic airspace between turbojet aircraft cleared to maintain a specified MACH speed. For example, in some cases initial longitudinal minima applied between aircraft may be reduced from 20 minutes to 5 minutes depending on the speed of the aircraft when MACH technique is used.

8. TRANSPONDER OPERATION. ICAO Documents 7030, Regional Supplementary Procedures and 8168, Aircraft Operations Volume I, state that transponders shall be operated as follows:

a. When the aircraft carries serviceable Mode C equipment, the pilot shall continuously operate in this mode, unless otherwise directed by ATC.

1/29/90

b. In North Atlantic airspace, unless otherwise directed by ATC, pilots shall retain the previously assigned transponder code for a period of 30 minutes after entry into the airspace, then operate on code 2000.

c. In oceanic airspace other than the North Atlantic, pilots shall operate the transponder and select modes and codes as directed by the ATC unit with which the pilot is in contact; or

d. In the absence of any ATC directions, pilots shall operate the transponder on Mode A Code 2000.

9. WARNING AREAS. Warning Areas are established to contain operations hazardous to non-participating aircraft. Some of these areas may be jointly used by the FAA and the military. The FAA will issue IFR clearances through these areas whenever hazardous operations are not taking place. Charts should be carefully reviewed for those areas while flight planning, taking note of the area operating times and restrictions.

10. REFERENCE DOCUMENTATION. The following is a compilation of the principal source documents governing flight operations in international airspace and addresses where they may be obtained. Readers should be aware that this compilation is not all-inclusive.

a. ICAO Documentation.

(1) Applicable Documents.

Rules of the Air.....	Annex 2
Operation of Aircraft.....	Annex 6
Air Traffic Services.....	Annex 11
Search and Rescue.....	Annex 12
Telecommunications.....	Annex 10
Procedures for Air Navigation Services - Rules of the Air and Air Traffic Service.....	Document 4444
Regional Supplementary Procedures....	Document 7030
Aircraft Operations.....	Document 8168-OPS

(2) Specific Section/Chapters.

(a) General.

General.....	Annex 2, Chapter 2
General Rules.....	Annex 2, Chapter 3
Air Traffic Services.....	Annex 11
General Provisions.....	Document 4444, Part II
Flight Information and Alerting Service.....	Document 4444, Part VI

(b) IFR/VFR Flight Operations.

Visual Flight Rules.....Annex 2, Chapter 4  
Instrument Flight Rules.....Annex 2, Chapter 5  
Flight Rules.....Document 7030

(c) Flight Planning.

Flight Plans.....Annex 2, Section 3.3.1  
Flight Plans and Clearance.....Document 7030  
Model Flight Plan Form.....Document 4444, Appendix 2

(d) Navigational Requirements.

Adherence to Flight Plan.....Annex 2, Section 3.6.2  
Aircraft Equipment.....Annex 2, Section 5.1.1  
Navigation Equipment.....Annex 6, Parts I & II,  
Section 7.2

Adherence to ATC Approved  
Routes.....Document 7030

(e) Communications Requirements.

Communications.....Annex 2, Section 3.6.5  
Communication Equipment.....Annex 6, Parts I & II,  
Section 7.1  
Telecommunications.....Annex 10, Vol II, Chapter 5  
Air Traffic Services Requirements  
for Communications.....Annex 11, Chapter 6  
Air-Ground Communications  
and In-Flight reporting.....Document 7030

(f) Air Traffic Control Service.

Air Traffic Control Service.....Annex 2, Section 3.6  
Annex 11, Chapter 3  
Separation of Aircraft.....Document 7030  
Flight Plans and Clearances.....Document 7030  
Area Control Service.....Document 4444, Part III

(g) Transponder Operation.

Operation of Transponder.....Document 7030, NAT/RAC  
Transponder Operating  
Procedures.....Document 8168, Part VIII

(3) ICAO documentation may be obtained by writing to:

International Civil Aviation Organization  
ATTENTION: Document Sales Unit  
1000 Sherbrooke Street west, Suite 400  
Montreal, Quebec  
Canada H3A 2R2

b. U.S. DOCUMENTATION.

United States Airman's Information Manual (AIM)  
United States International Flight Information Manual (IFIM)  
United States Aeronautical Information Publication (AIP)  
Pacific Chart Supplement and En Route Charts  
Alaska Supplement and En Route Charts  
Caribbean and South American Supplement and En Route Charts  
North Pacific (NOPAC) Operations Manual  
North Atlantic MNPS Airspace Operations Manual

The U.S. AIM, IFIM, AIP, and International NOTAMS are available through:

Superintendent of Documents  
Government Printing Office  
Washington, DC 20402

The Supplements and En Route Charts are available from:

National Ocean Service  
NOAA Distribution Branch, N1CG33  
Riverdale, Maryland 20737

The NOPAC and MNPS manuals are available from:

Utilization and Storage Section  
M-443.2  
U.S. Department of Transportation  
400 7th Street S.W.  
Washington, DC 20590

11. FURTHER INFORMATION. For more detailed information and assistance in planning a specific flight, contact the nearest Flight Service Station or Flight Standard District Office.

*Handwritten signature: Harold W. Becker*

for David J. Hurley  
Acting Director, Air Traffic  
Operations Service, ATO-1