

WATRS AIRSPACE

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WATRS AIRSPACE

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WATRS AIRSPACE

APPLICABILITY

Operations in WATRS and other western hemisphere airspace requires specific approval for operations and, in some cases, for equipment.

RVSM RULES

See the RVSM chapter for details on specific RVSM procedures. This chapter is set aside as a supplement for maps and references to RVSM operations in various western hemisphere areas.

WEST ATLANTIC ROUTE SYSTEM (WATRS) RVSM

The WATRS region is a complex, high traffic area that is comprised mostly of fixed routes with a significant number of crossings. There are two dominant traffic flows in the WATRS region. One is between North America and the Caribbean, Bermuda, and South America and the other is between the Americas and Europe. Historically, WATRS traffic has been increasing at an approximate rate of 2.8 percent per year. This trend is expected to continue and consequently, both the FAA and the users have agreed that RVSM was needed to accommodate the increased demand for optimum altitudes and routes.

REGULATORY APPROVAL

The Las Vegas FSDO will issue separate approvals for operations in this SOA airspace.

NAVIGATIONS ROUTE APPROVAL

The FAA may issue special approvals for flights to Bermuda wherein Class II navigation is a consideration, as is communications over the route. The FAA may waive or issue a deviation for allowance of charter operators to fly the one without the dual navigation requirements. If in doubt, check with the Director of Operations for details and approvals.

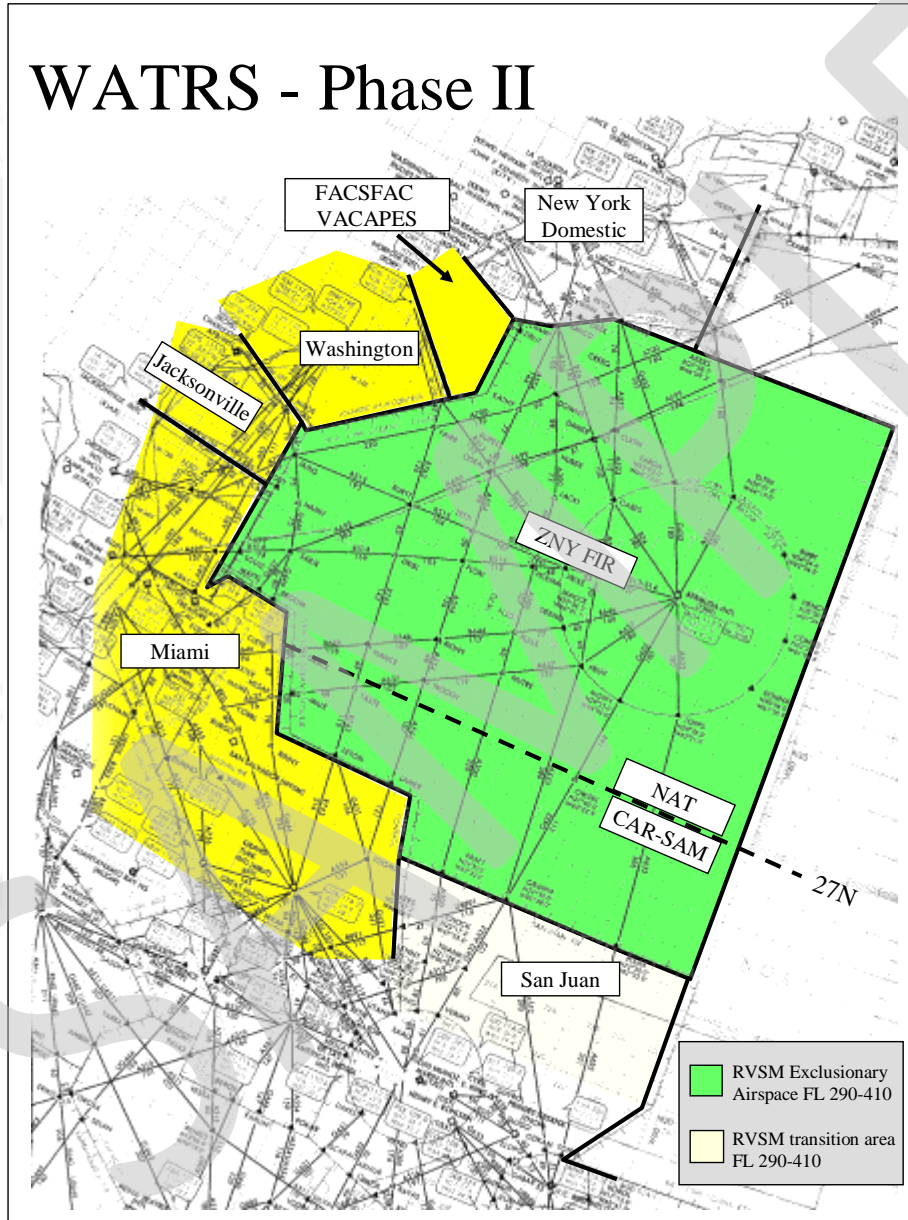
GULF OF MEXICO FLIGHTS

This chapter may be used as the general reference for Gulf of Mexico flights.

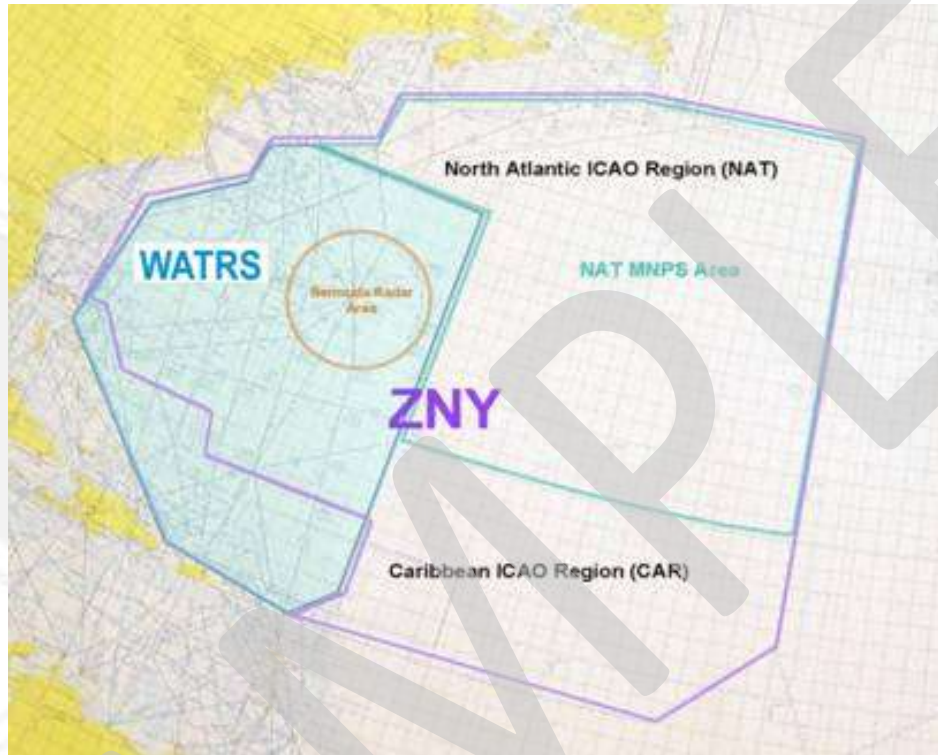
STRATEGIC LATERAL OFFSETS (SLOP) IN OCEANIC AIRSPACE

The SLOP procedures are applicable in both the WATRS and Gulf of Mexico Airspace. See Addendum A in this chapter for details.

CURRENT WATRS AIRSPACE DESIGN

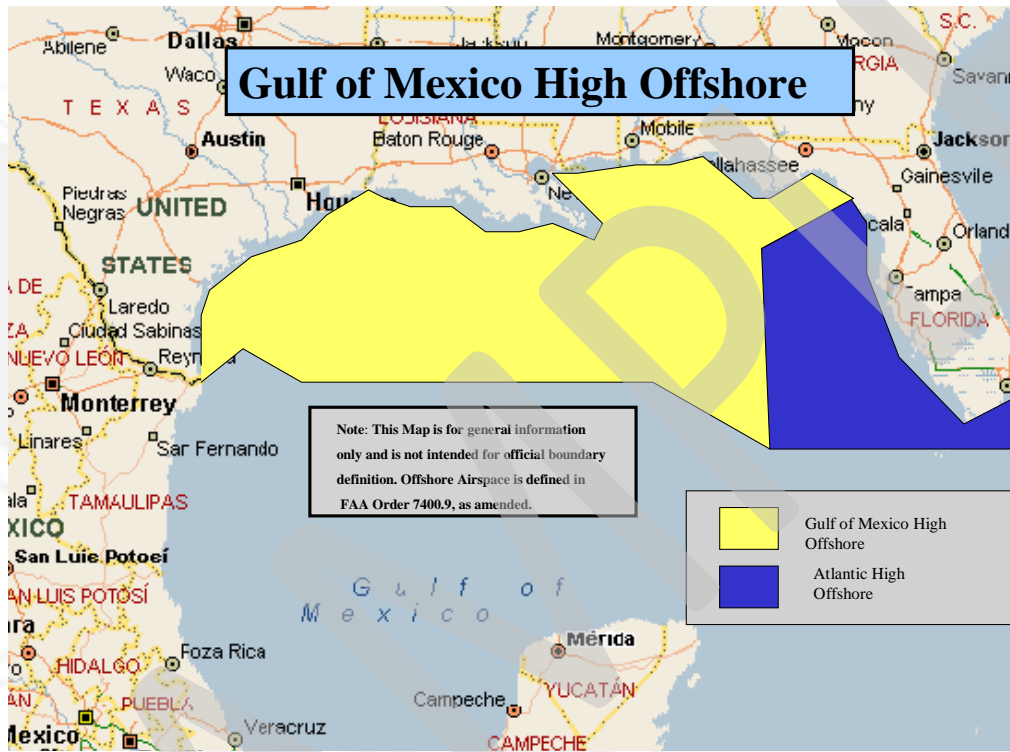


This supplemental map shows the relationship of WATRS to the NAT MNPS airspace.



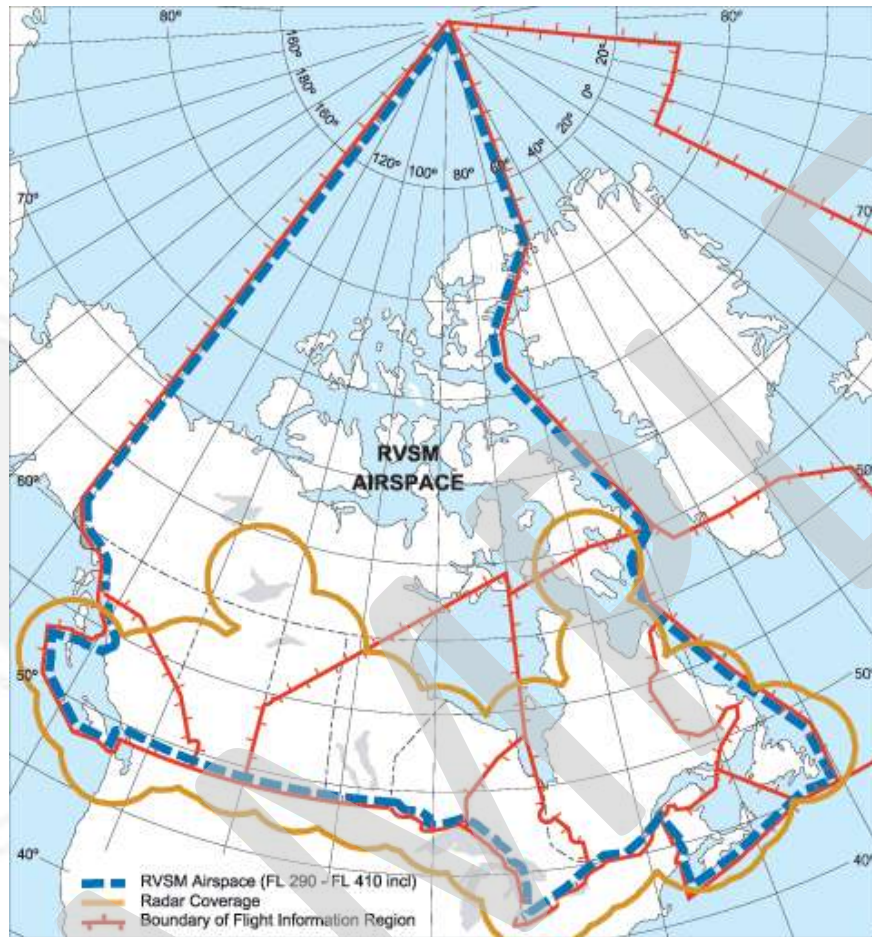
GULF OF MEXICO RVSM AIRSPACE

RVSM was implemented between flight level (FL) 290-410 (inclusive) in the airspace of the lower 48 States of the United States, Alaska, Gulf of Mexico and Atlantic High Offshore Airspace (including Houston and Miami Oceanic airspace) and the San Juan FIR.



Lateral Offset procedures are applicable in this airspace. See Addendum – A in this chapter.

CANADIAN RVSM AIRSPACE



There are operational limitations for flights in this airspace that are not directly related to this RVSM airspace. The approval for RVSM includes this airspace and while RVSM approval is applicable, the following operational issues need to be considered.

OPERATIONAL CONSIDERATIONS

- a. Needs operational approval for flights in areas of magnetic unreliability.
- b. Needs operator/pilot training for operations in the northern most airspace
- c. Needs navigational and communications equipment specifically approved for operations in the most northern area of this airspace.

STRATEGIC LATERAL OFFSETS (SLOP)

This is inserted as an exact copy of the specific message or procedure and is taken directly from the FAA's website dealing with WATRS operations.

*** * For Reference Only * ***

**PILOT PROCEDURES: IN-FLIGHT CONTINGENCIES,
WEATHER DEVIATION
STRATEGIC LATERAL OFFSETS (SLOP) IN OCEANIC
AIRSPACE**

FAA Reference: Effective February 16, 2006, operators are expected to follow the guidance printed below when conducting oceanic operations. The information was extracted from Section 2 of FAA Notice "Operational Policy and Procedures For WATRS, NY Oceanic, the San Juan FIR and Atlantic High Offshore (2/16/06)". The full notice is posted on the FAA RVSM Documentation Webpage under "Area of Operations Specific Information".

ICAO Reference. These procedures are now published in Section 15.2.2 of ICAO Document 4444 (*Procedures for Air Navigation Services - Air Traffic Management*).

**INTRODUCTION: SPECIAL PROCEDURES FOR
IN-FLIGHT CONTINGENCIES IN OCEANIC AIRSPACE**

1. Although all possible contingencies cannot be covered, these procedures provide for the more frequent cases such as:
 - a. Inability to maintain assigned flight level due to meteorological conditions, aircraft performance or pressurization failure;
 - b. En route diversion across the prevailing traffic flow; and
 - c. Loss of, or significant reduction in, the required navigation capability when operating in an airspace where the navigation performance accuracy is a prerequisite to the safe conduct of flight operations.
2. These procedures are applicable primarily when rapid descent and/or turn-back or diversion is required. The pilot's judgement shall determine the sequence of actions to be taken, having regard to the prevailing circumstances. Air traffic control shall render all possible assistance.

GENERAL PROCEDURES

1. If an aircraft is unable to continue the flight in accordance with its ATC clearance, and/or an aircraft is unable to maintain the navigation performance accuracy specified for the airspace, a revised clearance shall be obtained, whenever possible, prior to initiating any action.
2. The radiotelephony distress signal (MAYDAY) or urgency signal (PAN

PAN) preferably spoken three times shall be used as appropriate.

Subsequent ATC action with respect to that aircraft shall be based on the intentions of the pilot and the overall air traffic situation.

3. **If prior clearance cannot be obtained**, an ATC clearance shall be obtained at the earliest possible time and, until a revised clearance is received, the pilot shall:
 - a. Leave the assigned route or track by initially turning *90 degrees to the right or to the left. When possible, the direction of the turn should be determined by the position of the aircraft relative to any organized route or track system. Other factors which may affect the direction of the turn are:
 - 1) The direction to an alternate airport, terrain clearance;
 - 2) Any lateral offset being flown, and the flight levels allocated on adjacent routes or tracks.

***FAA EXPLANATORY NOTE:** a turn of less than or greater than 90 degrees may be required, depending on the type of contingency and whether the pilot intends to continue in the same direction or reverse course.
 - b. Following the turn, the pilot should:
 - 1) If unable to maintain the assigned flight level, initially minimize the rate of descent to the extent that is operationally feasible;
 - 2) Take account of other aircraft being laterally offset from its track;
 - 3) Acquire and maintain in either direction a track laterally separated by 28 km (15 NM) from the assigned route; and
 - 4) Once established on the offset track, climb or descend to select a flight level which differs from those normally used by 150 m (500 ft);
 - c. Establish communications with and alert nearby aircraft by broadcasting, at suitable intervals: aircraft identification, flight level, position (including the ATS route designator or the track code, as appropriate) and intentions on the frequency in use and on 121.5 MHz (or, as a back-up, on the inter-pilot air-to-air frequency 123.45 MHz);
 - d. Maintain a watch for conflicting traffic both visually and by reference to ACAS (TCAS) (if equipped);
 - e. Turn on all aircraft exterior lights (commensurate with appropriate operating limitations);
 - f. Keep the SSR transponder on at all times; and
 - g. Take action as necessary to ensure the safety of the aircraft.
4. When leaving the assigned track to acquire and maintain the track laterally separated by 28 km (15 NM), the flight crew, should, ***where practicable***, avoid overshooting the track to be acquired, particularly in airspace where a 55.5 km (30 NM) lateral separation minimum is applied.

**ETOPS AIRCRAFT: SPECIAL PROCEDURES FOR
IN-FLIGHT CONTINGENCIES IN OCEANIC AIRSPACE**

(Extended Range Operations By Aircraft With Two-Turbine Power-Units)

If the contingency procedures are employed by a twin-engine aircraft as a result of an engine shutdown or failure of an ETOPS critical system, the pilot should advise ATC as soon as practicable of the situation, reminding ATC of the type of aircraft involved, and request expeditious handling.

B. WEATHER DEVIATION PROCEDURES FOR OCEANIC OPERATIONS**General Procedures**

1. The following procedures are intended to provide guidance for deviations around thunderstorms. All possible circumstances cannot be covered. The pilot's judgment shall ultimately determine the sequence of actions taken and ATC shall render all possible assistance.
2. If the aircraft is required to deviate from track to avoid weather and prior clearance cannot be obtained, an air traffic control clearance shall be obtained at the earliest possible time. In the meantime, the aircraft shall follow the procedures detailed in subpara 6 below.
3. The pilot shall advise ATC when weather deviation is no longer required, or when a weather deviation has been completed and the aircraft has returned to the centerline of its cleared route.
4. **Obtaining priority from ATC when weather deviation is required.**
 - a) When the pilot initiates communications with ATC, rapid response may be obtained by stating "WEATHER DEVIATION REQUIRED" to indicate that priority is desired on the frequency and for ATC response.
 - b) The pilot still retains the option of initiating the communications using the urgency call "PAN PAN PAN" to alert all listening parties to a special handling condition which will receive ATC priority for issuance of a clearance or assistance.
5. **Actions to be taken when controller-pilot communications are established.**
 - a) The pilot notifies ATC and requests clearance to deviate from track, advising, when possible, the extent of the deviation expected.
 - b) ATC takes one of the following actions:
 - 1) If there is no conflicting traffic in the horizontal dimension, ATC will issue clearance to deviate from track.
 - 2) If there is conflicting traffic in the horizontal dimension, ATC separates aircraft by establishing vertical separation.
 - 3) If there is conflicting traffic in the horizontal dimension and ATC is unable to establish vertical separation, ATC shall:
 - i. Advise the pilot unable to issue clearance for requested deviation.
 - ii. Advise pilot of essential traffic.
 - iii. Request pilot's intentions.

PHRASEOLOGY-

"Unable (requested deviation), traffic is (call sign, position, altitude, direction), advise intentions."

- c) The pilot will take the following actions:
 - 1) Advise ATC of intentions; and
 - 2) Comply with air traffic control clearance issued; or
 - 3) Execute the procedures detailed in subpara 6 below. (ATC will issue essential traffic information to all affected aircraft.)
 - 4) If necessary, establish voice communications with ATC to expedite dialogue on the situation.
6. **Actions to be taken if a revised air traffic control clearance cannot be obtained.**
 - a) The pilot shall take the actions listed below under the provision that the pilot may deviate from rules of the air, when it is absolutely necessary in the interests of safety to do so.
 - b) If a revised air traffic control clearance cannot be obtained and deviation from track is required to avoid weather, the pilot should take the following actions:
 - 1) If possible, deviate away from an organized track or route system.
 - 2) Establish communication with and alert nearby aircraft by broadcasting, at suitable intervals: flight identification, flight level, aircraft position (including the ATS route designator or the track code) and intentions (including the magnitude of the deviation expected) on the frequency in use, as well as on frequency 121.5 MHz (or, as a back-up, the VHF inter-pilot air-to-air frequency 123.45).
 - 3) Watch for conflicting traffic both visually and by reference to ACAS (if equipped).
 - 4) Turn on all aircraft exterior lights (commensurate with appropriate operating limitations).
 - 5) For deviations of less than 10 NM, aircraft should remain at the level assigned by ATC.
 - 6) For deviations of greater than 10 NM, when the aircraft is approximately 10 NM from track, initiate a level change based on the criteria in the table below.

Route center line track	Deviations >10 NM	Level change
EAST (000-179 magnetic)	LEFT RIGHT	<i>DESCEND 300 ft</i> <i>CLIMB 300 ft</i>
WEST (180-359 magnetic)	LEFT RIGHT	<i>CLIMB 300 ft</i> <i>DESCEND 300 ft</i>

NOTE: Subpara 6 guidance calls for the pilot to: broadcast aircraft position and pilot's intentions, identify conflicting traffic and communicate air-to-air with near-by aircraft. **If the pilot determines that there is another aircraft at or near the same FL with which his aircraft might conflict, then the pilot is expected to adjust the path of the aircraft, as necessary, to avoid conflict.**

- 7) If contact was not established prior to deviating, continue to attempt to contact ATC to obtain a clearance. If contact was established, continue to keep ATC advised of intentions and obtain essential traffic information.
- 8) When returning to track, be at its assigned flight level, when the aircraft is within approximately 10 NM of center line.

**C. STRATEGIC LATERAL OFFSETS (SLOP) IN OCEANIC AIRSPACE:
TO MITIGATE COLLISION RISK AND TO MITIGATE WAKE
TURBULENCE**

- 1) Pilots should use the Strategic Lateral Offset Procedure as standard operating practice in the course of normal operations to mitigate collision risk and wake turbulence. The Strategic Lateral Offset Procedure will be in force throughout the New York Oceanic FIR and **in oceanic airspace in the San Juan FIR**. This procedure is to be used for **both** wake vortex encounters, and to mitigate the heightened risk of collision when non-normal events such as operational altitude deviation errors and turbulence induced altitude deviations occur due to highly accurate navigational systems.
- 2) Strategic Lateral Offset Procedures will be applied using the following guidelines:
 - a) Strategic lateral offsets and those executed to mitigate the effects of wake turbulence are to be made to the **right** of a route or track;
 - b) In relation to a route or track, there are three positions that an aircraft may

- fly: centerline, one or 2 NM **right**; and,
- c) Offsets are not to exceed 2 NM **right** of centerline.
- 3) The intent of this procedure is to reduce risk (increase the safety margin) by distributing aircraft laterally and equally across the three available positions. In this connection, pilots must take account of the following:
- a) Aircraft without automatic offset programming capability **must** fly the centerline;
 - b) Aircraft capable of being programmed with automatic offsets may fly the centerline or offset one or 2 NM right of centerline to obtain lateral spacing from nearby aircraft;
 - c) Pilots should use whatever means are available (e.g. TCAS, communications, visual acquisition, GPWS) to determine the best flight path to fly;
 - d) Any aircraft overtaking another aircraft is to offset within the confines of this procedure, if capable, so as to create the least amount of wake turbulence for the aircraft being overtaken;
 - e) For wake turbulence purposes, pilots are also to fly one of the three positions at 2b above and never offset to the left of centerline nor offset more than 2 NM right of centerline;

***NOTE.** It is recognized that the pilot will use his/her judgment to determine the action most appropriate to any given situation and has the final authority and responsibility for the safe operation of the aeroplane. The use of air-to-air channel, 123.45, may be used to co-ordinate the best wake turbulence offset option.*

- f) Pilots may apply an offset outbound at the oceanic entry point but must return to centerline at the oceanic exit point. **This provision applies to aircraft entering airspace in the San Juan FIR where direct controller-pilot VHF or UHF voice communication is available.**
- g) **Bermuda.** Aircraft transiting radar-controlled airspace in the vicinity of Bermuda may remain on their established offset positions;
- h) There is no ATC clearance required for this procedure and it is not necessary that ATC be advised; and,
- i) Voice position reports are to be based on the current ATC clearance and not the exact co-ordinates of the offset position.

(Oceanic Operations Standards Group (AJE-32), 2/16/06)