

PROTOCOL
CONCERNING THE USE OF BANDS ALLOCATED TO THE AERONAUTICAL
RADIONAVIGATION AND AERONAUTICAL COMMUNICATIONS SERVICES
ALONG THE COMMON BORDER

This Protocol is being concluded pursuant to the Agreement Between the Government of the United States of America and the Government of the United Mexican States Concerning the Allocation and Use of Frequency Bands by Terrestrial Non-Broadcasting Radiocommunication Services Along the Common Border signed June 16, 1994, herein referred to as the Agreement.

ARTICLE I. Purposes

The purposes of this Protocol are:

1. To establish a procedure for the coordination of frequency assignment information and the exchange of engineering comments on proposed frequency assignments for Aeronautical Radionavigation and Aeronautical Communications Services along the Mexico/United States common border.

2. To establish the frequency bands and technical criteria that is to be provided as part of the coordination of proposed frequency assignments.

3. To establish conditions of use so that each Administration has access to all of the channels in each of the frequency bands, provided that the use does not cause harmful interference to stations in the other country.

ARTICLE II. Definition

For the purpose of this Protocol and as provided for in Article IV of the Agreement, the term Administration(s) shall refer to the Federal Aviation Administration and the Federal Communications Commission of the United States of America and the Secretaría de Comunicaciones y Transportes (SCT/SENEAM) of the United Mexican States.

ARTICLE III. Conditions of Use

1. The frequency bands set forth in the table below shall be used for aeronautical radionavigation, and aeronautical communications and associated uses in accordance with Appendix I:

TABLE

<u>Item</u>	<u>Frequency Band</u>	<u>Authorized Coordination Agencies</u>	
		<u>U.S.</u>	<u>Mexico</u>
1	190-285 kHz	FAA	SCT/SENEAM
2	285-435 kHz	FAA	SCT/SENEAM
3	510-535 kHz	FAA	SCT/SENEAM
4	74.8-75.2 MHz	FAA	SCT/SENEAM
5	108-118 MHz	FAA/FCC	SCT/SENEAM
6	118-137 MHz	FAA/FCC	SCT/SENEAM
7	328.6-335.4 MHz	FAA	SCT/SENEAM
8	960-1215 MHz	FAA	SCT/SENEAM
9	1215-1400 MHz	FAA	SCT/SENEAM
10	2700-2900 MHz	FAA	SCT/SENEAM
11	4200-4400 MHz	*	*
12	5000-5250 MHz	FAA/FCC	SCT/SENEAM
13	5350-5470 MHz	*	*
14	9000-9200 MHz	FAA/FCC	SCT/SENEAM
15	13.25-13.4 GHz	*	*
16	15.4-15.7 GHz	*	*

*No coordination required at this time

2. The above-mentioned frequency bands are available for use by both countries subject to coordination in the zones established in Appendix I.

ARTICLE IV. Coordination Procedures

1. Before an Administration authorizes a new assignment or a modification to an existing assignment in the frequency bands governed by this protocol in the coordination zones established in Appendix I, it shall coordinate the assignment with the other country. A coordination request shall include the information required for that communication service as listed in Appendix I. The Program Director for Spectrum Policy and Management of the Federal Aviation Administration and the Gerencia de Normas Operacionales de la Secretaría de Comunicaciones y Transportes (SCT/SENEAM) shall conduct the coordination. The medium used for providing the information shall be established by mutual agreement, and the receiving Administration shall acknowledge receipt of the coordination request.

2. The affected Administration shall examine the coordination request and shall reply as soon as practicable advising whether or not a conflict is anticipated. If so, the detail of the conflict and the particulars of the station likely to experience interference shall be supplied. A counter proposal or discussions on the initial proposal may be initiated with the objective of resolving any problem.

3. If adverse comment is not received from the affected Administration within 30 days from the date of the receipt of the proposal, the initiating administration may go ahead with the operation after having notified the other Administration.

4. Whenever differences of opinion concerning the probability of harmful interference exist, which cannot be resolved otherwise, or in cases where the information available makes it difficult to determine whether harmful interference would be created by the proposed operation, mutually acceptable arrangements should be made for actual on-the-air tests to be observed by representatives of both the Federal Aviation Administration and Secretaría de Comunicaciones y Transportes/SENEAM.

Should harmful interference be caused to the existing station, the administration having jurisdiction over the proposed operation should be notified promptly so that the transmissions of the interfering station may be halted.

5. Neither the Federal Aviation Administration nor Secretaría de Comunicaciones y Transportes/SENEAM shall be bound to act in accordance with the views of the other. However, to keep such instances to a minimum, each agency should cooperate to the fullest extent practicable with the other by furnishing such additional data as may be required.

ARTICLE V. Master List of Aeronautical Stations

1. Appendices III and IV to this Protocol list the existing stations (and their associated technical parameters) of each Administration that are in the frequency bands covered by this Protocol. These stations comprise the initial Master List and are entitled to the protections accorded stations coordinated pursuant to this Protocol. Any future modifications to these stations shall be coordinated with the other Administration in accordance with Article IV of this Protocol.

2. In June of each year, the Federal Aviation Administration and Secretaría de Comunicaciones y Transportes/SENEAM shall exchange recapitulative lists of all of their country's assignments for Aeronautical Radionavigation and Aeronautical Communications Services within the coordination zones.

ARTICLE VI. Entry into Force and Termination

This Protocol shall enter into force on the date of signing. It shall remain in force until it is replaced by a new Protocol, or until it is terminated in accordance with Article VII of the Agreement.

IN WITNESS WHEREOF, the respective representatives have signed the present Protocol.

Done at Morelia, Michoacán, this twenty-sixth day of April, 1996, in duplicate, in the English and Spanish languages, both texts being equally authentic.

FOR THE GOVERNMENT OF THE
UNITED STATES OF AMERICA:

Donya B. McLane
Gerald J. Markey

FOR THE GOVERNMENT OF THE
UNITED MEXICAN STATES:

Alvarado

AERONAUTICAL RADIONAVIGATION SERVICE

NDB	190-285, 285-435 and 510-535 kHz
OM/MM	74.8-75.2 MHz
ILS-LOC	108-112 MHz
VOR	108-117.975 MHz
ILS-GS	328.6-335.4 MHz
DME/TACAN	960-1215 MHz
SSR	1030 MHz
Radar	1215-1400 MHz
	2700-2900 MHz
	9000-9200 MHz
MLS	5000-5150 MHz*

* At the present time, there is no MLS use in the band 5091-5150 MHz.

- Technical Data Required for Coordination

- (a) Frequency (provide pulse repetition frequency for SSR)
- (b) Location Name and Geographical Coordinates (NAD-83)
- (c) Class of Emission and Necessary Bandwidth
- (d) Transmitter Mean Power Output (Peak for DME and SSR)
- (e) Antenna Azimuth and Gain in the Event of a Directional Antenna Array
- (f) Facility Service Volume in Terms of Altitude and Radius Protected. (Not applicable to OM/MM. Radius only for NDB's)

- Coordination Zones

NDB 0-25W	135 NM of U.S./Mexican Border
26-400W	250 NM of U.S./Mexican Border
OVER 400W	350 NM of U.S./Mexican Border
OM/MM	10 NM of U.S./Mexican Border
ILS-LOC/GS/DME	120 NM of U.S./Mexican Border
VOR/DME/TACAN up to 18000 ft	200 NM of U.S./Mexican Border
VOR/DME/TACAN up to 75000 ft	400 NM of U.S./Mexican Border
SSR	200 NM of U.S./Mexican Border
Radar	150 NM of U.S./Mexican Border
MLS	200 NM of U.S./Mexican Border

Note 1 - The power for NDB's is the transmitter mean power output.

Note 2 - DME Channels 1 through 16 and 60 through 69 are excluded from coordination between FAA/Mexico.

Note 3 - The frequency of 1090 MHz is excluded from coordination.

AERONAUTICAL MOBILE (R) SERVICE - AIR TRAFFIC CONTROL

117.975-137.000 MHz

- Technical Data Required for Coordination

- (a) Frequency
- (b) Location Name and Geographical Coordinates
- (c) Class of Emission and Necessary Bandwidth
- (d) Transmitter Mean Power Output
- (e) Antenna Gain and Azimuth in the Event of a Directional Antenna Array
- (f) Facility Service Volume and Function, e.g., Typical Function Service Volumes:

Helicopter Control	30 NM up to 5000 ft
Local Control and VFR Radar Advisory	30 NM up to 20000 ft
Approach Control Including Radar	60 NM up to 25000 ft
Departure Control Including Radar	60 NM up to 20000 ft
Basic Altitude En Route	100 NM up to 15000 ft
Intermediate Altitude En Route	100 NM up to 24000 ft
High Altitude En Route	200 NM up to 75000 ft

- Coordination Zones

Ground Control Frequencies 121.6-121.9 MHz	25 NM of U.S./Mexican Border
Low Altitude (up to 24,000 ft)	400 NM of U.S./Mexican Border
High Altitude (up to 75,000 ft)	600 NM of U.S./Mexican Border

Note: The frequency 121.5 MHz is excluded from coordination.

APPENDIX II

GLOSSARY:

1. DISTANCE MEASURING EQUIPMENT (DME) - Equipment (airborne and ground) used to measure, in nautical miles, the slant range distance of an aircraft from the DME navigational aid.
2. INSTRUMENT LANDING SYSTEM (ILS) - A precision instrument approach system which normally consists of the following electronic components and visual aids:
 - a. Localizer (LOC) - provides course guidance to the runway.
 - b. Glideslope (GS) - provides vertical guidance for aircraft during approach and landing.
 - c. Outer Marker (OM) - A 75 MHz beacon at or near the glideslope intercept altitude of an ILS approach. The OM is normally located four to seven miles from the runway threshold on the extended centerline of the runway.
 - d. Middle Marker (MM) - A 75 MHz marker beacon that defines a point along the glideslope of an ILS normally located at or near the point of decision height (ILS category I - 200 ft.).
 - e. Approach Lighting System (ALS) - An airport lighting facility which provides visual guidance to landing aircraft by radiating light beams in a directional pattern by which the pilot aligns the aircraft with the extended centerline of the runway on his final approach for landing.
3. MICROWAVE LANDING SYSTEM (MLS) - A precision landing system operating in the 5 GHz band.
4. NONDIRECTIONAL BEACON (NDB) - A low/medium frequency (L/MF) or ultra high (UHF) frequency radio beacon transmitting nondirectional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his bearing to or from the radio beacon and "home" or track to or from the station. When the radio beacon is installed in conjunction with the Instrument Landing System (ILS) marker, it is normally called a Compass Locator.

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5. SECONDARY SURVEILLANCE RADAR (SSR) - Also known as a Radar Beacon. A radar system in which the object to be detected is fitted with cooperative equipment in the form of a radio receiver/transmitter (transponder). Radar pulses transmitted from the searching transmitter/receiver (interrogator) site are received in the cooperative equipment and used to trigger a distinctive transmission from the transponder.
6. TACTICAL AIR NAVIGATION (TACAN) - A UHF electronic rho-theta air navigation aid which provides suitably equipped aircraft a continuous indication of bearing and distance to the TACAN station.
7. VHF OMNIDIRECTIONAL RANGE (VOR) - A ground-based electronic navigation aid transmitting VHF navigation signals, 360 degrees in azimuth, oriented from magnetic north. Used as the basis for navigation in the National Air Space. The VOR periodically identifies itself by Morse Code and may have an additional voice identification feature.