Aviation Spectrum Resources, Inc.
Aeronautical Ground Station Manual

180 Admiral Cochrane Drive, Suite 300
Annapolis, MD 21401-7435
U.S.A.

A copy of this manual is required at all ASRI radio stations and must be reviewed by all station personnel who will communicate on ASRI frequencies.

Please review instructions inside for additional copies, obtaining updates, and checking the currency of this document.

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Note: Whenever the ASRI Aeronautical Ground Station Manual is revised, a copy of the current manual will be posted on the ASRI web site (www.asri.aero) for customers to verify that the manual they have is the current edition and also so that they may download copies, as needed. It is posted on the main page under "ASRI® Ground Station Administration Service (AGSA)."

QUESTIONS

All questions regarding ASRI Station Operations and requests for station supplies should be directed to:

ASRI
Frequency Management
180 Admiral Cochrane Drive, Suite 300
Annapolis, MD 21401-7435
Phone: 410-266-6030
FAX: 443-951-0349
info@asri.aero
https://www.asri.aero

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1 SCOPE

1.1 Identification

This manual provides instructions and guidance for the administration and operation of Aviation Spectrum Resources, Inc. (ASRI) radio stations operating in accordance with Part 87 (Aviation Services) of the Federal Communications Commission (FCC) *Code of Federal Regulations*[1]. A copy of this manual shall be available at each Aviation Services radio station licensed to ASRI by the FCC, at the control point. Additional copies are available from ASRI and can be requested through ASRI Frequency Management (see inside front cover) or downloaded from the ASRI web site (www.asri.aero).

Compliance with the manual is a requirement of the ASRI Ground Station Service contract for end users.

1.2 ASRI Overview

ASRI is a communications company owned and operated by the air transport industry. ASRI's purpose is to ensure efficient utilization of the scarce aeronautical radio spectrum and to coordinate the overall aspects of aeronautical telecommunications.

ASRI currently provides Frequency/Spectrum Management Services for the aviation community to support air/ground voice and data communications over domestic and international air routes. These services are provided to all ASRI users without discrimination. ASRI's stewardship of the aeronautical radio frequency spectrum has not only accommodated the growth of the aviation community but has also been able to yield spectrum to other services, as available.

ASRI directly, and through its Aeronautical Frequency Committee, has been active in planning future telecommunications activities for the aviation industry.

ASRI is granted the use of specific radio frequencies for aviation communications. As licensee, ASRI is responsible to the FCC for the legal use and operation of stations licensed by the commission.

In many instances, ASRI has found it practicable to contract with specific users for services necessary for the operation of applicable ground radio facilities. Personnel operating radio equipment at these stations are subject to the rules and regulations of ASRI, concerning technical operation.

1.2.1 Radio Station License

Section 30l of the Communications Act of 1934, as amended, provides that no radio station may be operated except under, and in accordance with, a station authorization granted by the FCC.

[1] CFR 47 – Part 87 - https://www.ecfr.gov/current/title-47/chapter-I/subchapter-D/part-87

1.3 Document Contents

This manual states the ASRI rules and regulations for ground radio stations operating in the Aviation Services. This manual supplements the regulations set forth in the Communications Act of 1934, as amended, and the FCC *Code of Federal Regulations*, as amended. The Customer has agreed to adhere to all rules and regulations set forth in this manual as part of the ASRI Ground Station service contract. The following briefly summarizes the contents of each section in this manual:

Section 1 Scope

Describes the purpose and contents of the manual.

Section 2 Applicable Documents

Provides reference to documents used in the creation of, or in reference to, this manual.

Section 3 Administration

States the responsibility and authority of ground station personnel and ASRI policies concerning station administration.

Section 4 Operations

Specifies the parameters and procedures for radio station operation.

Section 5 Technical Requirements

Provides guidance for complying with FCC technical requirements for radio transmitter equipment, control points, and dispatch points; also addresses maintenance and maintenance record keeping.

Appendix A Reports, Forms, and Signs

Provides examples of forms, reports, and signs referenced in this manual.

1.4 Terms and Acronyms

Aircraft Radio Station: A radio station on board any aircraft; includes all radio-transmitting devices operating in the Aviation Radio Service.

ASRI Headquarters: The principal office of ASRI, 180 Admiral Cochrane Drive, Suite 300, Annapolis, MD 21401. The principal office telephone number for ground station service users to contact is (410)-266-6030. Email is info@asri.aero.

ASRI Service Agreement: A legal document defining the terms and conditions under which ASRI provides aeronautical communications services to an aircraft operator.

ASRI Service Supplement: A legal document defining the terms and conditions under which ASRI leases radio station properties from the owner of such properties.

ASRI Contract Officer: The Contract Officer is an employee of the Customer and is solely responsible to that Customer. The Contract Officer is designated by the Customer and authorized to represent the Customer in its dealings with ASRI. The Contract Officer acts as the central liaison and coordinator in matters relating to the Customer's obligations

under the ASRI Station Agreements and Service Agreement. (see Section 3.3.1).

ASRI Operational Contact: The Operational Contact is an employee of the Customer that is familiar with the location and operation of all company ground radio stations licensed by ASRI.

ASRI Station Representative: A company-employed person designated by the customer to represent ASRI at the radio station level (see Section 3.3.2).

Authorized Frequency: The frequency or frequencies assigned to a radio station by the FCC and specified in the instrument of authorization (license).

Authorized Power: The maximum permissible transmitter output power authorized by the FCC as specified in the instrument of authorization (license).

Aviation Radio Service: The aviation radio service is an internationally-allocated radio service providing for safety of life and property in air navigation. There are two (2) types of aviation radio services:

Aircraft Radio Stations are stations in the aeronautical mobile service that use radio equipment, such as two-way radiotelephones, radar, radionavigation equipment, and emergency locator transmitters (ELTs), on board aircraft for the primary purpose of ensuring safety of aircraft in flight.

Ground Radio Stations are usually of two types. The Aeronautical and Fixed Service includes stations used for ground-to-air communications with aircraft about aviation safety, navigation, or preparation for flight. The Aeronautical Radionavigation Service is made up of stations used for navigation, obstruction warning, instrument landing, and measurement of altitude and range.

Citation: Notice in writing from the FCC advising radio station licensees of the existence of conditions that constitute violations of the Communications Act of 1934, as amended; the FCC *Code of Federal Regulations*, as amended; or the terms of the radio station license.

Commission: Federal Communications Commission.

Communications Act of 1934, as amended: An Act of the Congress of the United States of America providing for the regulation of interstate and foreign communication by wire or radio.

Company: The airline or other organization to which ASRI leases radio station properties in accordance with the provisions of an applicable contract with ASRI. Also includes the airline or other organization providing the services of its employees to staff ASRI owned and leased facilities.

Contact: A completed exchange of information conducted in the voice mode between an aircraft and a ground radio station or between two (2) ground radio stations. A contact may consist of more than one (1) transmission from the aircraft and/or ground radio station.

Contract Officer: A Contract Officer is designated by the customer and authorized to represent the customer in its dealings with ASRI (see Section 3.3.1).

Common Traffic Advisory Frequency (CTAF): A designated frequency for the purpose of carrying out airport advisory practices while going to or from an airport that does not have a control tower or an airport where the control tower is not operational. The CTAF is normally a UNICOM, MULTICOM, Flight Service Station (FSS), or a tower frequency.

The CTAF will be identified in appropriate aeronautical publications.

Control Point: The location at which resides the radio operator responsible for assuring proper operation of a transmitter. Radio stations in the Aviation Services must be provided with a control point at the location of the transmitting equipment, unless otherwise specifically authorized. Additional control points may be authorized. All such additional control points must be shown on the station authorization (license).

Coordinates (Geographic): A system of lines and angles used to determine specific positions on the surface of the earth. When coordinates are used as a means of stating the location of a radio station, they are expressed in terms of latitude and longitude.

Dispatch Point: An operating position from which radio communications may be transmitted under the supervision of the control point operator. Dispatch points are not listed on the FCC radio station authorization (license).

Emission: The radiation of electrical energy from the transmitting antenna of a radio station.

Licensee: The holder of an FCC authorization (license) to construct and/or operate a radio station.

MULTICOM: A mobile service, not open to public correspondence use, used for essential communications in the conduct of activities performed by or directed from private aircraft.

Operating Personnel or Radio Operator: All persons at ASRI stations authorized to operate the radio equipment.

Radio Station: A station equipped to engage in radio communications or to effect radio transmission of energy.

Station Properties: The premises, improvements, structures, enclosures, and the apparatus, equipment, and other related properties or facilities (including control lines interconnecting transmitters, receivers, and remote control point[s], whether contracted for in the name of ASRI or the customer), that are owned, leased, or otherwise held by the customer and which, in whole or in part, comprise a station or proposed station covered by an FCC authorization and the ASRI/Company service agreement.

UNICOM: A non-government air/ground radio communication station which may provide airport information at public use airports.

The following abbreviations, acronyms, and mnemonics are used in this document.

Item	***Meaning***
AAC	Aeronautical Administrative Communication
AES	Aeronautical Enroute Service
AFC	Aeronautical Frequency Committee
AGSA	ASRI Ground Station Administration
AIM	Aeronautical Information Manual
AOC	Aeronautical Operational Control

Item	*Meaning*
ARINC	Aeronautical Radio, Inc.
ARRAS	ARINC Remote Radio Access Service
ASRI	Aviation Spectrum Resources, Inc.
ATC	Air Traffic Control
ATS	Air Traffic Services
AWOS	Automatic Weather Observation Systems
CB	Citizen Band
CFR	Code of Federal Regulations
CTAF	Common Traffic Advisory Frequency
ELT	Emergency Locator Transmitters
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FSS	Flight Service Station
GCO	Ground Communications Outlet
GSARS	Ground Station Activity Reporting System
HF	High Frequency
HL	High Level
HO	Helicopter
ICAO	International Civil Aviation Organization
ITU	International Telecommunications Union
kHz	Kilohertz
LL	Low Level
MHz	Megahertz
ML	Mid-Level

Item	*Meaning*
NTSB	National Transportation Safety Board
NWS	National Weather Service
OOOI	Out-Off-On-In
POC	Point of Contact
PSTN	Public Switched Telephone Network
RC	Ramp Control
RCO	Remote Communications Outlet
RT	Ramp Level or Ground Ramp
SITA	Société Internationale de Télécommunications Aéronautiques
UNICOM	Aeronautical Advisory Station
VHF	Very High Frequency

2 APPLICABLE DOCUMENTS

2.1 ASRI Documents

Aeronautical Frequency Committee (AFC) Manual

AFC VHF Ground Station Installation Guidelines

2.2 Non-ASRI Documents

Code of Federal Regulations, Title 47, Part 87, Telecommunication, Federal Communications Commission, Office of the Federal Register, Archives and Records Administration

3 ADMINISTRATION

This section defines terms used throughout this manual and states the responsibilities and authority of ground radio station personnel. It also covers policies relating to visitors, citations, interference, display of licenses and other operating authorizations, and inspections.

Use of any frequency other than those used in accordance with a current agreement in force with ASRI is unauthorized under any FCC license held by ASRI. Use of such frequencies by either fixed, mobile, or portable stations must either be licensed by the FCC or authorized by the FAA, or else the station operator will be liable for penalties as prescribed by law.

3.1 Introduction

Because radio frequencies available to the Aviation Services are extremely limited, it is mandatory that all users obtain the maximum use of the available frequencies. This includes shared use of frequencies and constant application of improved operating techniques and improved equipment.

In the United States, the FCC has designated a portion of the Very High Frequency (VHF) Aeronautical Mobile band for use by aircraft operators to fulfill their operational requirements for communications. This includes ATS, Aeronautical Operational Control (AOC), and the sub bands, 128.825-132.000 and 136.500-136.975 MHz as part of the FCC's Aeronautical Enroute Service (AES), providing 148 discrete, 25-kHz channels. All channel assignments made by ASRI will consider channel assignments, permissible communications, specific assignment criteria for voice and data systems, specialized terms and categories of service, and the United States-Canadian agreement on the coordination of VHF aeronautical mobile spectrum.

The FCC requires that ASRI, as licensee of the stations referred to in this manual, must control the use and operation of each such radio station. Any licensee assigned a frequency must be able to prove the legality of the operations in all respects as well as the non-discriminatory nature of the service rendered to all users who have made necessary prior arrangements. Therefore, all operating personnel at ASRI radio stations have well- defined, specific responsibilities to ASRI, the licensee, with respect to matters related to compliance with applicable Federal acts, rules, and regulations.

Companies that own or lease radio station properties from ASRI, in addition to those providing certain services, must assume contractual obligations to ASRI. This is required because ASRI's authorization from the FCC is dependent on ASRI's control over the physical properties of the radio station. This arrangement between a Company and ASRI for use of AES frequencies is covered by a contract or ASRI Service Agreement.

3.2 Definitions and Explanatory Remarks

3.2.1 General Information

In the Aeronautical Mobile (R) sub bands of 128.825 MHz to 132.000 MHz and 136.500 MHz to 136.975 MHz, certain voice operations are authorized. Voice operations are restricted solely to AES communications.

3.2.2 Communications-Specific Terms

3.2.2.1 Aeronautical Operational Control Communications

AOC communications in the AES exist between an aircraft and the aircraft's operating agency. It includes only communications to and from an aircraft when the aircraft is in flight status. The aircraft operating agency refers to the dispatch, maintenance, scheduling, operating agency headquarters, or others involved in the operation of a flight. Communications may be one-way or two-way between personnel, computers, or other storage or readout devices. Communications may be conducted directly between the pilot and company offices or through a third-party radio operator. These communications can be classified as enroute High Level (HL), or Mid-Level (ML), terminal or in-range Low Level (LL), Helicopter (HO), and Ground Ramp (RT) communications (see Section 3.12).

3.2.2.2 Air Traffic Services Communications

Air Traffic Services (ATS) communications encompass Air Traffic Control (ATC), Automatic Weather Observation Systems (AWOS), Controller Pilot Datalink (CPDLC), Ramp Control (RC), and numerous other functions. While ATS functions are normally provided by the FAA on frequencies set aside for ATS, RC functions may be conducted on AES frequencies because of their relationship to safety of flight.

3.2.2.3 Flight Status

Flight status is normally defined as beginning when the flight crew enters the flight deck of the aircraft for a particular flight and ending when the flight crew leaves the flight deck at the completion of that flight. In addition, when an aircraft is taxied by authorized ground personnel, it is also considered to be in flight status.

3.2.2.4 Enroute Communications

Communication, other than “Terminal (In-Range)”, between an aircraft and its operating agency when the aircraft is at or above 10,000 feet.

3.2.2.5 Terminal (In-Range) Communications

Terminal (in-range) communications consist of communications between an aircraft and the arrival or departure ground personnel[1]. These communications are typically carried out

without a third-party radio operator.

3.2.2.6 Ground Communications

Ground communications refer to all communication between ground personnel and an aircraft on the ground. These communications are typically carried out without a third-party radio operator. This includes, for example, maintenance, ramp control, etc.[2]

Essential communications to or from an aircraft required for servicing the aircraft when not in-flight status are permitted for authorized ground personnel when other means of communications are not readily available. This will permit the ground crew servicing the parked aircraft to communicate with other support personnel relative to the needs of the aircraft and to perform checks of the communications equipment.

3.2.2.7 Network

A network is a system of two or more stations operated from one or more remotely operated control points. A network is used primarily for communications with aircraft beyond the coordinated range of low-level terminal communications facilities, or for aircraft other than those arriving or departing from an airport equipped with low-level coordinated facilities.

3.2.2.8 Common User Network

A radio communications network whose operator provides service to any aircraft operator who enters a cooperative agreement with ASRI for provision of those services.

3.2.2.9 Control Point

A Control Point is the location at which the radio operator responsible for assuring proper operation of a transmitter is located. Radio Stations in the Aviation Services must be provided with a control point at the location of the transmitting equipment, unless otherwise specifically authorized. Additional control points at locations other than the transmitter location may be authorized. All such additional control points shall be shown on the station authorization (license).

There must be a control point for each transmitter. The control point is usually at the transmitter and must provide:

- A security system to prevent unauthorized access to and operation of the radio.

[1] Ground personnel refers to the Operations, Maintenance, Ramp Parking, Ground Handling, and other personnel charged with servicing the aircraft.

[2] The ATS Ramp Control function may be permitted on AOC channels because of its relationship to Safety-of-Flight.

- A visual indication that the transmitter is keyed by either a dispatch point or the control point.

- Aural monitoring of transmissions from subordinate dispatch points.
- A way to disconnect subordinate dispatch points from the transmitter.
- A means to turn off the transmitter.
- A way to restrict calls from aircraft to the Public Switched Telephone Network (PSTN) to authorized operational control destinations.

All control points must be listed on the license. Control points cannot be located outside the U.S. Multiple control points are permitted.

3.2.2.10 Dispatch Point

A dispatch point is a location from which radio communications may be conducted, which is under the direct supervision of a control point. Dispatch points need not be shown on the FCC license.

Enroute radios can be operated from dispatch points subordinate to a control point. Dispatch points can be located anywhere the license holder desires. They need not be listed on the license.

Dispatch points should not be capable of operating when the associated control point is not manned. Manned means authorized persons are within audible range of the control point.

Acceptable means of deterring unauthorized persons from using dial-up systems include:

- User programmable passwords of four or more characters.
- Call back schemes.
- Digital data streams.

In dial-up systems, wherein public switched circuits are used to control a ground station, the control point should not connect the telephone line to the radio until an authorized password, data stream or security tone is received. If an authorized password, data stream or security tone is not received, the control point should automatically disconnect from the telephone line in a user programmable period of time.

Control/Dispatch points should not be accessible to unauthorized persons when not manned.

3.2.2.11 Frequency vs. Channel

Channel applies to a communications path that supports one contact at a time within a given geographical area and shares a common radio frequency. Thus, in a given coverage area, several users may share a channel. Frequency is used when referring to a spectral band, which can be used to support one (1) or more channels in different geographical areas.

3.2.2.12 Adjacent Channel

An adjacent channel is a channel whose center frequency is spaced from another by one (1) channel increment (usually 25 kHz) within the same service volume.

3.2.2.13 Adjacent Signal

An adjacent signal is the frequency of the channel next nearest in frequency to another collocated channel, without regard to the number of unassigned frequencies in between.

3.2.2.14 Handsets and Vehicle Operations

All handheld and vehicle mounted radios are considered mobile operations. Mobile radios used on AES channels are licensed under their associated base station license and will only be used to communicate with their associated base station and/or with aircraft that are on the ground. They are not authorized to communicate with aircraft that are airborne.

***NOTE**: Handheld radios used while in a desk charger are considered base stations.*

3.3 Company Contract Officer and Station Representative

Companies that own or lease radio station properties to ASRI and operate ASRI radio stations, in addition to providing certain services, assume obligations to ASRI. This is required because ASRI's authorization from the FCC is dependent on ASRI's control over the physical properties of the radio station. The arrangements between the "Company" (see Section 1.4, Terms and Acronyms) and ASRI are covered by a contract. The following define the responsibilities of the designated company employees contractually obligated to ASRI to ensure compliance with applicable contracts.

3.3.1 Contract Officer

The Contract Officer is an employee of the customer, solely responsible to that Company. The Contract Officer is designated by the customer and authorized to represent the customer in its dealings with ASRI. The Contract Officer acts as the central liaison and coordinator in matters relating to the customer's obligations under the ASRI Station Agreements and Service Agreements.

The Contract Officer is responsible for the following:

- Completion of schedules required by the contract.
- Providing instructions (including those contained in this manual) to Company personnel who have access to any radio station under the agreement as to the duties required of them.
- Coordinating changes, additions, modifications, or permanent closure notifications of radio stations to ASRI.
- Ensuring compliance with ASRI instructions or specifications pertaining to construction or modification of any radio station when license authorization is affected.
- Coordination of the use and operation of Company aircraft radio stations in accordance with ASRI ground radio station license authorizations and procedures. This includes coordinating shared use of frequencies by ASRI radio stations and

Company aircraft radio stations.

- Completion of any other instructions as may be necessary under the ASRI/Company agreement.

3.3.2 ASRI Station Representative

The customer shall designate a qualified employee to act as the ASRI Station Representative. The duties of the Station Representative shall be to act on behalf of ASRI in all matters at the radio station level that pertain to the management and supervision of radio station operations. The Station representative shall ensure that the personnel performing the duties specified in this manual do so in accordance with these rules and regulations. The Station Representative will ensure that personnel who operate the radio stations under their jurisdiction are properly informed of their responsibilities. The Station Representative and Contract Officer may be the same individual if the customer so chooses.

A single ASRI Station Representative may be appointed by the customer to supervise the operation of multiple ASRI radio station locations. A Station Representative appointed to supervise more than one ASRI radio station at different geographic locations shall provide ASRI current POC information for each radio station location (see Section 3.4.1).

3.4 Local Station Personnel, Access, and Inspections

3.4.1 ASRI Station Operational Point of Contact

The staffing company shall designate a responsible employee at each radio station location to serve as the ASRI Point of Contact (POC). POCs shall be familiar with the contents of this manual and be locally responsible for the administration of the radio station operations and reporting requirements as set forth in this manual. The POC will be the direct contact with ASRI Operations personnel, who are responsible for performing ASRI station inspections, and may interface directly with ASRI Frequency Management in issues pertaining to licensing and frequency coordination. The POC will normally be in a management or supervisory position at the radio station location, such as an airline Station Manager or Customer Services Manager (at airline staffed stations), Chief Pilot or Chief of Maintenance (corporate operators), or Line Services Manager (FBO staffed stations). It is recognized that the POC will be a dynamic position that may change frequently. POC changes will be made as needed in ASRI records as a result of ASRI station inspections, during license renewal processing, or through information supplied to ASRI by the staffing company.

The Station POC may be, and in many cases will be, the same person as the Station Representative.

3.4.2 Operating Personnel

All ASRI radio stations operating in the Aeronautical Enroute Service shall be operated only by persons authorized by the customer to do so. Each operator on duty is responsible for strict compliance with the terms and conditions of the instructions set forth in this

manual. The Station Representative shall ensure all operators have read and familiarized themselves with the operational procedures and limitations stated in this manual.

There is no longer a requirement for a radio operator license or permit to operate either ground or airborne radios in the domestic United States in the VHF Aviation Services. An FCC Restricted Radio Operator's Permit, or higher, is required for personnel to operate radios in the International VHF service and in all High Frequency (HF) radio operations.

3.5 ASRI Station Inspections

ASRI employees routinely perform inspections of ASRI radio stations to ensure compliance with the FCC *Code of Federal Regulations* and the provisions of this manual. Radio station personnel should make every effort within reason to allow ASRI inspectors immediate access to perform inspection without prior notification. Items normally reviewed during an inspection include:

- Federal Communications Commission (FCC) radio station license available and current
- Station license posted prominently at the primary control point
- Has the Station kept ASRI informed of all changes in:
    - Company name and/or address
    - Station location (moves from licensed location)
    - Closures
    - Additions
    - Station representative changes (to include phone, fax, and email changes)
    - Station POC changes (to include phone, fax, and email changes)
    - Number of transmitters
- Station access properly controlled
- Restricted Area signs properly posted
- ASRI Aeronautical Ground Station Manual available at the Station
- Transmitter approved by the FCC
- Transmitter output power within authorized limits shown on the station license
- Station operating on the authorized frequency/frequencies
- Operating frequency prominently posted on the transmitter
- Transmitter location description and coordinates latitude/longitude
- Has the station operator submitted an annual GSARS contact report to ASRI

The ASRI Radio Station Inspection Report form is used as a checklist when conducting radio station inspections. An inspection form is completed for each licensed call sign at a location. Reports showing discrepancies are forwarded to the appropriate department at

ASRI for resolution, which may require a modification to the to the FCC license.

3.5.1 Inspection Checklist

The following items should be checked as a self-inspection guide:

1. Do we have a copy of the Station License?
2. Is the Station License posted prominently at the primary control point?
3. Has the Station kept ASRI informed of all changes in:
    a. Company name and/or address
    b. Station location (moves from licensed location)
    c. Closures
    d. Additions
    e. Station representative changes (to include Phone, FAX, and Email changes)
    f. Station POC changes (to include Phone, FAX, and Email changes)
    g. Number of transmitters
4. Is Station access properly controlled?
5. Are Restricted Area signs properly posted?
6. Is there a current copy of *ASRI Aeronautical Ground Station Manual* available at the Station?
7. Is the transmitter approved by the Federal Communications Commission (FCC)?
8. Is the transmitter output power within authorized limits shown on the station license?
9. Is the Station operating on the authorized frequency/frequencies?
10. Is the operating frequency prominently posted on the transmitter?
11. Does the Station submit annual GSARS contact reports to ASRI? (See Figure 6-6.)
12. Are there any unanswered questions?

Note: *The items listed above represent the most commonly found discrepancies during ASRI-conducted radio station inspections.*

3.5.2 Authorized Access

Upon presentation of proper identification, persons authorized access to an ASRI radio station include the following

- ASRI employees and agents on official business
- Personnel on company business
- FCC, FAA, and National Transportation Safety Board (NTSB) officials or

investigators engaged in official business

- Other persons as expressly authorized by ASRI Headquarters
- Technical and service personnel, such as telephone or power company technicians on official business

3.5.3 Non-authorized Access

Persons not authorized access to ASRI radio station premises includes the following:

- Members of the general public
- Representatives of the press, unless specifically authorized by ASRI
- Personal visitors of radio station personnel
- Personal visitors of company personnel
- All others not specifically set forth in Section 3.5.1 covering authorized persons

3.6 Station Identification

ASRI radio stations shall be identified by neatly lettered signs of appropriate size and construction reading:

Restricted Area
Aviation Spectrum Resources, Inc.

A sign shall be posted at each entrance to the ASRI radio station control point and at the entrances to each remote transmitter location (see ASRI Forms AS-7369 and AS-7370).

At stations having a remote control point, such as a ramp operating location, the following sticker shall be prominently displayed at each ramp remote control point (see ASRI Form AS-7368):

For Use by Authorized Persons Only
Aviation Spectrum Resources, Inc.

At stations having a control point located in a space used also for other purposes, such as in an airline operations office, the use of the Restricted Area sign is optional. However, the following sticker must be displayed at the radio operating position (see ASRI Form AS-7368):

For Use by Authorized Personnel Only
Aviation Spectrum Resources, Inc.

***NOTE**: The above-mentioned signs and stickers are available from ASRI Headquarters upon online request.*

***NOTE**: Previous editions of these signs and stickers that read Aeronautical Radio, Inc., may be used until they are unserviceable or until replacements are available at the station.*

3.7 FCC Inspections and Citations

The FCC Enforcement Branch monitors and randomly inspects the operation and oversight of ASRI radio stations. Any unsatisfactory conditions discovered during monitoring and inspections are detailed in Citations or Notice of Violation to the station licensee (ASRI). Citations are notices in writing from the FCC advising radio station licensees of the existence of conditions that constitute violations of the Communications Act of 1934 as amended, the *FCC Code of Federal Regulations*, or the terms of the radio station license.

A Citation or Notice of Violation may be received at the operating location or may be forwarded directly to ASRI Headquarters by the FCC Field Office involved. If received at the station location, the Station POC shall contact ASRI Headquarters immediately for disposition instructions (see inside front cover for telephone number). In every case, immediate action and correction of unsatisfactory conditions are the responsibility of ASRI. As prescribed by federal law, the FCC can and will render harsh monetary penalties to the licensee for violations of the Communications Act, FCC rules, or terms of the station license.

Upon receipt of a Citation or Notice of Violation, ASRI will notify the Contract Officer of the customer operating the station, providing necessary instructions for handling and correcting any cited conditions. Corrective action must then be taken immediately after notification from ASRI to avoid further FCC action. When corrective actions have been completed, ASRI Headquarters must be advised with the timely submission of a detailed written report. ASRI Headquarters will make a formal reply to the FCC. At that point, station operations personnel may consider the matter closed unless advised otherwise by ASRI Headquarters.

All personnel involved in dealing with FCC Citations or Notices of Violation must remember that expeditious corrective action is mandatory and that ASRI Headquarters must make the first reply to Citations and Notices within ten (10) days after initial receipt from the FCC.

The end user will be responsible for paying any FCC fines, being charged to ASRI, due to the end user's violation.

3.8 Interference Reporting

Interference, as used herein, refers to any man-made radio energy (as distinct from natural phenomena, such as radio energy released during electrical storms) that, when detected by a radio-receiving apparatus, is of sufficient magnitude to disturb or seriously impair reception of desired signals. To help prevent radio station interference, installation of the equipment and antennas should be done within the guidelines of the *AFC VHF Ground Station Installation Guide*. This Guide is available on the ASRI website at www.asri.aero.

ASRI radio station operators shall record and report all interference. All interference reports should be complete as applies to each instance and submitted immediately through the www.asri.aero website using the on-line form. An ASRI station receiving a report stating that signals from its station are causing interference to another station shall immediately notify ASRI Headquarters. Remedial action, within the capabilities of station personnel, shall be taken to reduce or eliminate the reported interference. ASRI will coordinate

corrective action with the customer or companies involved to promptly correct the situation.

As stated in the ASRI Service supplement contract, any ASRI customer who has been deemed as the source of interference shall be responsible for the expenses associated with the investigation and required remedial action, including users with new assignments that interfere with existing users.

3.8.1 Radio Frequency Interference (RFI) Process

The customer will submit a RFI report via the ASRI website at https://asri.aero/forms-documents/ground-station-interference-report/. ASRI will then review the RFI report and contact the customer to verify information in report details (see below).

- Contact information for the person submitting the report.
- Name and contact information for the licensee.
- Description and location of the affected site, including:
    - FCC call sign
    - Frequency
    - Transmitter address
    - City
    - State
    - Coordinates
    - Physical location of the radio
    - Physical location of the antenna
- Description of the interference, duration, and type (Constant, Intermittent, Sporadic, Voice, Data Bursts, Squeals, etc.)

ASRI will coordinate with the customer to investigate the interference, attempt to identify the probable cause, and determine corrective actions. This may require dispatching technicians to the site with equipment to investigate the interference. ASRI will inform the customer and any other affected parties of its findings and work with the customer to implement corrective actions as needed. ASRI will continue follow-ups until the interference issue has been resolved.

ASRI will not be responsible for RFI caused by faulty equipment installations, infrastructure issues, power line RF noise, pre-existing RF environmental issues prior to installation, or other site issues not listed here.

3.9 Station Facility Modifications, Additions, and Changes

It is the responsibility of the customer Contract Officer to notify ASRI of the establishment of new ASRI radio stations, as well as of any changes or modifications to the physical facilities of existing ASRI radio stations,.

New radio stations shall not be established, and existing radio stations shall not be changed, relocated, or modified without prior written authorization from ASRI (letter or email), because any such changes or modifications involve the station agreement between the customer and ASRI. In many cases, this involves application to the FCC for a radio station license or modifications to an existing radio station license. ***ASRI shall handle all radio station licensing actions with the FCC***.

Organizations operating ASRI licensed aeronautical enroute radio stations are not authorized to transfer, sell, assign, share, or otherwise provide use of the radio station equipment and/or the radio station frequency to any other aircraft operator, party, or entity at the ground station location without prior authorization from ASRI.

3.10 Station Closures/Temporary Discontinuance

FCC regulations require stations that permanently discontinue operations must return the license authorization to the FCC for cancellation. ASRI requires notification of any permanent station closures in order to comply with this regulation. The Contract Officer shall notify ASRI of any permanent station closures. This notification to ASRI will also cancel the Station Agreement between the customer and ASRI, which will discontinue billing for services related to the administration of the station license affected.

ASRI Frequency Management shall be notified of any temporary or seasonal discontinuance of operation of any ASRI radio station. The Contract Officer should forward such notification stating the proposed discontinuance date and the expected resumption date.

NOTE: *For ASRI contact information, please see inside the front cover of this document.*

3.11 FCC License Authorization Transmittal

FCC authorization documents (licenses, temporary operating authorizations, duplicate copies, etc.) will be forwarded by ASRI Headquarters to the Station Representative and/or the local Station POC at the location listed on the FCC document for retention or posting at the station, in accordance with Section 3.12. In the case of remotely controlled stations, the license must be posted at the principal control point shown on the license.

Duplicate copies of FCC authorizations for ASRI stations can be requested from ASRI by calling ASRI Headquarters at the number listed on the inside front cover of this manual.

3.12 Radio Station License Display

The FCC *Code of Federal Regulations* (47 CFR 87.103) concerning availability and display of radio station authorizations are to be strictly followed. The below provides respective instructions for the following radio license types:

- Ground radio stations, fixed locations
- Ground radio stations, mobile/portable transmitters

3.12.1 Ground Radio Stations, Fixed Locations

The current FCC license authorization for each Aeronautical Enroute Service Station at a fixed location shall be prominently posted at the principal control point of the transmitter or transmitters. Station personnel should ensure that the displayed license is current in the event ASRI, the FCC, or the FAA requests it during routine inspections or audits.

3.12.2 Mobile/Portable Transceivers

Mobile and portable transceivers (radios) are authorized to operate only in conjunction with, and on the same frequency as, an associated ground station, and shall not be used outside the boundaries of the airport property served by that ground station. The ground station operator shall be responsible for training its personnel in the proper use of mobile and portable multi-frequency radios to ensure that they are not used on unauthorized frequencies, or in any manner inconsistent with rules governing their use.

3.12.3 Ground Radio Stations, Aeronautical Utility Mobile

The current license authorization for Aeronautical Utility Mobile stations licensed to ASRI shall be retained by the ASRI Station POC of the organization staffing the station, in the station records file, at the location shown on the license.

***NOTE**: Aeronautical Utility Mobile stations are for airport vehicular ground traffic communications and operate on FAA/FCC-designated ground control frequencies (121.6 to 121.925).*

3.13 Transmitter Output Power

FCC regulations provide that output power shall be limited on transmitters in the aeronautical enroute service, as stated in CFR 87.131:

> **The power which may be authorized for use at any station in the Aviation Radio Services shall not be greater than the minimum required for satisfactory technical operation.**

Equipment provided and installed by ASRI-known service providers will normally use five (5) watts of Effective Radiated Power (ERP) for ramp service, ten (10) watts ERP for low-level or in-range service, and 25 watts ERP for high-level operation. Users providing their own equipment should follow the same guidelines for limiting output power.

New station licenses shall indicate under Special Provisions the type of service authorized for the ground facility. Ramp Level (RT) (on-ground-only use by aircraft) should be limited to five (5) watts ERP. Helicopter Level (HO), Low Level (LL), and Mid-Level (ML) operations should be limited to ten (10) watts ERP. Normally, High Level (HL) operations should not exceed 25 watts ERP.

Legacy licenses may indicate that the power limit is 55 watts ERP. This is the maximum power allowable under the FCC Part 87 Rules. However, transmitter power output exceeding 25 watts may be used only after coordination and approval by ASRI.

3.14 Aeronautical Enroute Service (AES) Frequency/Channel Assignment Criteria

3.14.1 Application to ASRI and Conditions of Assignment

Applications for assignments to AES channels will be reviewed by ASRI Frequency Management for completeness and conformance with policies established in the *AFC Manual*. Companies requesting the use of ASRI frequencies will be assigned to channels subject to availability and shared use. The method of meeting the requested communication requirements will vary, depending on the channel congestion in the requested service area. Requests for additional frequencies where ground station service already exists must be justified by providing take-off and landing data. The customer must provide the following for review:

1. The number of scheduled departures at the airport served during the four (4) peak 15-minute activity periods. Any 15-minute peak periods will suffice, but the times of occurrence during the day must be provided and must equal one (1) hour.
2. The number of scheduled arrivals at the airport served during the four (4) peak 15-minute activity periods. Any 15-minute peak periods will suffice, but the times of occurrence during the day must be provided and must equal one (1) hour.

The applicant will submit flight activity data to ASRI using the following formula to justify the need of additional assignment at each airport:

N = A/14

Where:

N = The number of channels required at the airport under consideration.

14 = The number of flights that can be accommodated within a channel assignment sector within a peak hour for voice.

$$A = \sum_{i=1}^{4} (T_i + L_i)$$

Where:

Ti = the number of scheduled departures at the airport served during the four peak 15-minute activity periods.

Li = the number of scheduled arrivals at the airport served during the four peak 15-minute activity periods.

Note: *The operating entity shall select the four 15-minute periods, which need not be consecutive, but the same four 15-minute periods shall be used for all the factors, Ti, & Li. and the four 15-minute periods must be within the same 24-hour window.*

Note: *Where application of the formula results in a fractional number greater than 0.5, the next larger whole number will apply.*

3.14.2 Conditions of Assignment

Because of regulatory requirements and constantly changing demands placed on the shared ASRI frequency resources, any assignment may be revoked or modified by the FCC or ASRI. To the extent possible, ASRI will assign an operator to one or more channels without alteration or change as long as communications services are continuously provided under the assignment and are conducted in accordance with procedures dictated by the FCC Regulations and the provisions of this manual.

3.14.3 Basis for Channel Assignments

Channel assignments are made on a case-by-case basis in the service area being considered. ASRI selects the appropriate channel, sharing channels whenever possible, after considering the channel loading and nature of the operations involved. Where sharing is deemed operationally necessary, ASRI will ensure that all concerned operators are informed. ASRI will attempt to satisfy frequency preferences, if so stated during application for ASRI channels. Where no preference is stated, ASRI will select the best frequency to be used.

To reduce the potential for interference and permit the implementation of the maximum number of channels at terminal areas, transmitters located within the confines of airports will be limited to the minimum output power needed for adequate communications, normally ten (10) watts ERP or less. These systems should be limited to a maximum of 25 watts ERP. The system needs will be reviewed by ASRI when operators apply for channels. Due consideration is given to the protection of established operations from interference to or from newly licensed operations. Determination of whether interference protection between operators employing the same frequency is to be provided shall be based on consideration of channel loading. In the event that harmful interference is caused by a new station to an existing facility, where both facilities are operating equipment designed for a 25-kHz spaced environment, ***reduction of interference to an acceptable level by engineering techniques or facility relocation is the responsibility of the new station operator.***

Transmitter equipment operating on ASRI channels must be FCC Type-Accepted or Type-Approved for use as a ground station, as per 47 CFR Part 87 Subpart D. In addition, ground station transmitter equipment operating on AES channels must meet FCC mandated frequency tolerance specifications of 0.002% or less, which became effective January 1, 1993. ASRI will determine the suitability of ground station equipment as related to these criteria during processing of station license applications. New station installations will be assigned to 25-kHz spaced channels. When new 25-kHz channel spaced transmit equipment is installed, reasonable effort should be made to install it so that it does not interfere with existing 25-kHz spaced equipment. Use of equipment designed for 50-kHz channel spacing is not authorized.

ASRI maintains a listing of type-accepted equipment and of frequency-tolerance specifications of all FCC type-accepted transmitting equipment. Contact ASRI Frequency Management for specifications on equipment for which this information is not known.

NOTE*: For ASRI contact information, please see inside the front cover of this document.*

3.14.4 Coordination Altitude

No new assignments will be made for midlevel or above, except for extension of Common User and "Grandfathered" networks. All new requirements for enroute coverage above low-level will be accommodated on an existing network. Exceptions to this rule will be considered upon written documentation of unique requirements which cannot otherwise be met.

Table 3-1 Frequency coordination zones for co channel assignments per US/Canadian agreement

Type Of Station	*Altitude Level (Feet)*	*Coordination Zone (Nautical Miles from US/Canada Border)*
Ramp (RT)	0 to 50	50
Helicopter (HO)	0 to 2,000	150
Low Level (LL)	0 to 10,000	250
Mid-Level (ML)	0 to 20,000	400
High Level (HL)	Over 20,000	600

3.14.5 De-Icing Frequency Assignments

ASRI can assign de-icing frequencies as needed for each winter season. De-icing frequency assignments from previous seasons may not always be available for re- assignment during the current season and are limited to five (5) watts ERP for Ramp Level operations only. De-icing frequencies are subject to change from year to year due to new requests for permanent ground station frequency assignments.

Requests for de-icing frequencies may be made on the ASRI website.

The winter season will normally be from September 1st through April 30th but may vary depending on the location and weather conditions. Calendar extensions will be determined by ASRI on a case-by-case basis.

4 OPERATIONS

This section describes established procedures for radio station operations and includes the following general operational subjects:

- Permissible communications on ASRI AOC channels
- Unauthorized communications
- Service operating procedures
- Emergency communications
- Station activity reporting
- Other supplemental information pertinent to station operations

All personnel operating radio equipment on ASRI AOC channels are expected to thoroughly familiarize themselves with these procedures and to do their utmost to conserve available resources by keeping radio transmissions brief, using proper radio discipline and phraseology, and ensuring that all radio communications are of an approved and permissible type.

4.1 Regulatory References

FCC regulations are, to the extent required for international coordination and compatibility, based on general allocations and rules generated by the International Telecommunications Union (ITU). FAA rules are, in a like manner, guided by recommendations developed by the International Civil Aviation Organization (ICAO). Both the ITU and ICAO are international bodies to which the United States is a signatory of their respective conventions. Use of AOC channels are governed by FCC rules, which are generally in accordance with regulations contained in the ITU Radio Regulations and Annex 10 to the Convention on International Civil Aviation.

The FCC defines the AES, which ASRI channels provide, as follows:

> Aeronautical enroute stations provide operational control communications to aircraft along domestic or international air routes.[3] Operational control communications include the safe, efficient, and economical operation of aircraft, such as fuel, weather, position reports, aircraft performance, and essential services and supplies. Public correspondence is prohibited.[4]

4.2 Permissible Communications and Priority

[3] As required by FAR Part 121 for United States certified operations.

[4] 47 Code of Federal Regulations, Part 87.261 (a).

Permissible communications for air/ground radio traffic involve several areas:

- In-flight status traffic
- Communications during period of emergency
- Radiotelephone message priority

4.2.1 In-Flight Status Traffic

The following AOC air/ground communications are authorized on AES channels to or from aircraft only during the period the airplane is in flight status.[5]

- Communications relating to the initiation, continuation, diversion, or termination of a flight
- Performance of the aircraft, including components
- Aircraft servicing
- Information of value to the crew in accomplishing a particular flight
- Information of value to ground personnel concerned with the safe and efficient operation of a flight
- Information of value to other flights in a common geographical area
- Supplemental information pertaining to weight and balance and/or passenger counts
- Urgent medical information
- Connections with other transportation
- Essential services and supplies

Examples of acceptable communications would include but not be limited to the following:

- Pilot/dispatch communications
    - Weather information and planning
    - Flight plan data
    - Weight/balance figures
    - Flight release
    - Flight progress information
    - Position reporting
    - Gate assignments
    - OOOI (Out-Off-On-In) reports
- Maintenance troubleshooting and planning

[5] Flight Status is defined at beginning when the flight crew enters the flights deck of the aircraft for a particular flight and ending when the crew leaves the flight deck at the termination of that flight. When an aircraft must be taxied by ground personnel, it is considered in flight status to the extent that taxi instructions and related essential information may be exchanged on air/ground channels.

    - Maintenance item alerting
    - Maintenance diagnostics
    - Airframe/engine/avionics monitoring
- Emergencies
    - Urgent medical information
    - Equipment
- Others
    - Check lists
    - De-icing coordination with ground personnel
    - Essential aircraft supplies and services, fuel, catering, etc.
    - Online transportation, including ground transportation and ongoing air transportation

4.2.2 Radio Message Priority

The order of priority of radio messages in the establishment of air/ground communications and the transmission of messages shall be as follows:

- Distress calls, distress messages, and distress traffic; a condition of being threatened by serious and/or imminent danger and requiring immediate assistance (Radiotelephony call MAYDAY). MAYDAY takes priority over all other radio traffic.
- Urgent messages concerning the safety of an aircraft or of some person aboard an aircraft but that does not require immediate assistance (Radiotelephony call PAN)
- Communications related to direction-finding of lost aircraft
- Flight Safety Messages (ATC clearance, request, advisory messages, and position reports in order of priority)
- Meteorological messages
- Flight regularity messages

***NOTE**: See Section 4.5 for explanation of MAYDAY and PAN procedures.*

4.3 Unauthorized Communications on ASRI Channels

The following types of communications are unacceptable:

- Public correspondence
- Personal messages to or from crew members or passengers
- Profanity

4.4 Service Operating Procedures

This section describes ground station operating practices that radio station operators must be familiar with concerning:

- Station Identification
- Nondiscriminatory Service
- Ground Station Operator Transmitting Technique
- ICAO Phonetic Alphabet and Numerals
- Common Radiotelephone Words and Phrases

4.4.1 Station Identification

Land and Fixed Aeronautical enroute radio stations may be identified by using the FCC assigned call sign (WAU6 or WPUU867, etc.) or by the name of the customer and its location, city, or airport (ASRI Hangar One, Signature Flight Support Ronald Reagan National, Million Air Lansdale, etc.). An aeronautical enroute station that is part of a multi-station network may also be identified by the location of its control point (San Francisco ARINC). Do not identify these stations using "UNICOM", "MULTICOM", or by using any FAA station identification terminology, except "Ramp Control".

4.4.2 Nondiscriminatory Service

ASRI ground stations are required by law to provide nonpublic service of the particular class authorized by the FCC without discrimination to any aircraft radio station licensee that makes prior arrangements with ASRI for such service. Requests for establishment of service arrangements at ASRI radio stations should be referred to ASRI Headquarters at (410) 266-6030.

In case of emergency, ASRI radio stations shall provide the above service without prior arrangements. In any case where radio operating personnel do not know whether prior arrangements have been made, such communication shall be promptly handled and then reported to ASRI Headquarters.

4.4.3 Ground Station Operator Transmitting Technique

All personnel who communicate on ASRI stations shall use the following guidelines for transmitting messages to conserve channel resources:

- Transmissions shall be conducted concisely and in a normal conversational tone.
- The speech-transmitting technique should be such that the highest possible intelligibility is incorporated in each transmission. Operators should enunciate each word clearly and distinctly and maintain a rate of speech and speaking volume that will enable the aircraft to receive the message without repeats or corrections.

- Speak directly into the microphone.
- Use correct phraseology, including phonetic alphabet and numerals as applicable.
- Do not use Citizen Band (CB) codes or slang terms.

4.4.4 ICAO Phonetic Alphabet and Numerals

Ground operators shall use the ICAO phonetic alphabet and numerals to clarify individual letters and the phonetic numerals to clarify numbers used during radio communications. The ICAO phonetic alphabet and numerals are shown in Table 4-1 and Table 4-2, respectively.

Table 4-1: ICAO Radiotelephony Phonetic Alphabet

Character	*Word*	*Pronunciation*		*Character*	*Word*	*Pronunciation*
A	Alpha	ALFAH		N	November	NOVEMBER
B	Bravo	BRAHVOH		O	Oscar	OSSCAH
C	Charlie	CHARLEE		P	Papa	PAHPAH
D	Delta	DELLTAH		Q	Quebec	KEHBECK
E	Echo	ECKOH		R	Romeo	ROWME OH
F	Foxtrot	FOKSTROT		S	Sierra	SEEAIRAH
G	Golf	GOLF		T	Tango	TANGGO
H	Hotel	HOHTELL		U	Uniform	YOUNEE FORM
I	India	INDEE AH		V	Victor	VIKTAH
J	Juliet	JEWLEE ETT		W	Whiskey	WISSKEY
K	Kilo	KEYLOH		X	X-ray	ECKSRAY
L	Lima	LEEMAH		Y	Yankee	YANGKEY
M	Mike	MIKE		Z	Zulu	ZOOLOO

Table 4-2: ICAO Radiotelephony Numerals

Character	*Word*	*Pronunciation*
0	Zero	ZE-RO
1	One	WUN
2	Two	TOO
3	Three	TREE
4	Four	FOW-ER
5	Five	FIFE
6	Six	SIX
7	Seven	SEV-EN
8	Eight	AIT
9	Nine	NIN-ER

***NOTE**: All numbers except whole thousands shall be transmitted by pronouncing each digit in the number of thousands followed by the word thousand. For example, 16,000 should be pronounced as "one six thousand".*

***NOTE**: Numbers containing a decimal point shall be transmitted with the decimal point in the appropriate sequence being indicated by the word "point".*

4.4.5 Words and Phrases

During exchange of communications, ground radio operators should use the words and phrases listed in Table 4-3 below when applicable:

Table 4-3: Ground Radio Operators Words and Phrases

Word/Phrase	*Meaning*
Acknowledge	**"Let me know that you have received and understand this message."**
Affirmative	**"Yes" or "Permission granted."**
Correction	**"An error has been made in this transmission (or message indicated). The correct version is ..."**
Go ahead	**"Proceed with your message."**
How do you read	**(Self-explanatory)**
I say again	**(Self-explanatory)**
Negative	**"No" or "Permission not granted" or "That is not correct."**
Over	**"An invitation to respond."**
Read back	**"Repeat all, or the specified part, of this message back to me exactly as received."**
Roger	**"I have received all of your last transmission."**
Say Again	**"Repeat all, or the following part, of your last transmission."**
Stand By	**"Wait for go ahead."**
That is correct	**(Self-explanatory)**

4.5 Emergency Communications

This section describes the basic steps that should be followed by the ground station operators under emergency or hazardous conditions. Because it is impossible to predict all of the circumstances that might arise during an emergency, good judgment should always prevail and supersede these instructions when obvious that they will not apply or will in any way jeopardize effective communications. The flight control authorities should always be advised of these conditions.

4.5.1 Distress Signal — MAYDAY

MAYDAY is the international distress signal for use on radiotelephone and corresponds to **SOS** on radiotelegraph. This signal commands absolute priority over all other communications.

The use of the **MAYDAY** signal conveys that the transmitting station is threatened by grave and imminent danger. A distress message is given as follows:

- Word **MAYDAY** (Repeated three (3) times)
- Words **ALL STATIONS**
- Word **FROM**
- Aircraft Identification
- Position
- Nature of Distress
- Type of Assistance Desired

4.5.2 Urgent Signal — PAN-PAN

The words **PAN-PAN** is an urgent signal for use in radiotelephone. This signal commands priority over all communications except distress communications.

PAN-PAN is transmitted preceding a call to another radio station to signify that the data to be transmitted is of an extremely urgent nature. **PAN** or **EMERGENCY** may be initiated by either an aircraft radio operator or ground radio station personnel when circumstances warrant its use. This type of signal does not mean that any radio station is in distress but does indicate that an emergency or urgent situation exists. The signal **PAN-PAN** will normally be repeated three times.

On aeronautical radio circuits, it is permissible to use the call **ALL STATIONS FROM (radio station identification), (stand-by emergency), (flight number)** in place of the words **PAN-PAN**.

4.6 ASRI Ground Station Activity Reporting System

The Federal Communications Commission (FCC) requires that licensees obtain the most effective and efficient frequency usage. To ensure efficient frequency utilization, ASRI implemented the Ground Station Activity Reporting System (GSARS) Reporting Program. The GSARS Report minimally has to contain the name of the authorized user, frequency, call sign, and number of radio contacts.

Due to the limited number of frequency assignments in the aeronautical enroute band, ASRI reviews the GSARS periodically to ensure that the users are operating on the assigned frequencies, the integrity of our master frequency database, and compliance with all FCC rules and regulations. The information from the GSARS reporting impacts our frequency coordination, utilization practices, procedures, and allows ASRI to verify effective use of the frequency.

All VHF licensees with two or more frequency assignments at any single site are required to submit a GSARS Report annually. Licensees with only one assignment at a site are not required to submit a GSARS Report.

Customers will only use the online ASRI Form AS-7401 to submit their annual GSARS reports. This form can be found at:

http://www.asri.aero/forms-documents/ground-station-activity-reporting-system-gsars-form/.

The following instructions are applicable to this online form:

The ASRI Ground Station Activity Reporting System (GSARS) shall be submitted online annually for each station (channel or frequency) assigned. The ASRI Station POC is responsible for the preparation and submission of this form. Refer to Figure 6-6, for a sample of the on-line Form AS-7401.

Information entered on the form must be accurate and reflect actual station operation to the extent practicable. The form must be submitted no later than the 31st day of January of the following year for which the report applies (previous year contacts).

Directly below the column headings are boxes provided for entering the requested data on the web form. Should you need to report on more than two frequencies, click the Add button to add another row in the Channel Frequency section. When all required fields have been entered, click the Submit button at the bottom of the form.

Nine (9) major headings require appropriate entries:

- Date of Report
- Company Name
- Station Representative Information:
    - Name
    - Email
    - Phone Number
- Airport Code

- Channel (Radio) Frequency Information:
    - Call Sign
    - Frequency (MHz)
    - Estimated Annual Contacts

***NOTE**: ARINC and SITA datalink stations will only submit this report when requested by ASRI.*

4.6.2 GSARS Procedure

The following steps describe data entries required in addition to instructions for properly completing ASRI Form AS-7401:

1. **Date of Report**. This will auto-populate the current date. If, for whatever reason, the date on the form appears incorrect, manually type in the current date.
2. **User Code.** Enter the four-character ASRI code assigned to your company either in the Company field or the comments at the bottom of the page. *Company* means the airline or other organization that furnished personnel to staff the radio station. If necessary, contact ASRI at 410-266-6030 for the customer code.
3. **Airport Code.** Enter the three-character airport code that you are reporting for. Note that a separate form is required for each ground station site. If there is no airport code (i.e. – the frequencies are for operation off-airport), enter "N/A" or "Not Applicable".
4. **Call Sign.** Enter the FCC-assigned station identifier stated on the radio station license posted at either the transmitter location or the radio station control point.
5. **Channel Frequency**. Enter the frequency assigned in megahertz (e.g., 128.825). Assigned frequency is stated on the radio station license.
6. **Annual Contacts**. Enter the total approximate number of contacts for the year for the channel frequency listed, including those of any third-party users. To calculate the approximate number of contacts annually, customers can pull contact data for one (1) week of the year and then multiply by 52 (total # of weeks in the year). A *contact* is a completed exchange of information and may consist of more than one transmission. A typical contact consists of an initial air/ground call, a ground/air acknowledgment, and concluding transaction.

4.7 Requesting AES VHF Voice Frequencies

4.7.1 New Users

Assignments of new operators to channels will be made in accordance with the anticipated flight traffic volume of the operation concerned. New users will be assigned to share an existing, in use channel unless their initial requirement is reasonably expected to meet the desired loading for a channel with a single user. Individual users will be assigned to a non-shared channel, when available, only if that user can demonstrate a firm requirement of loading more than the desired loading criterion.

4.7.2 Existing VHF Voice Users

4.7.2.1 Channel Justification Process to Request Additional Voice Frequencies

An operating entity may receive an assignment to a single voice channel at each location at which they operate. Additional frequencies after the first assignment will be made in accordance with flight activity data. Each applicant should provide flight activity data for its own use regardless of its affiliation with other carriers.

To calculate the standard maximum number of frequencies at any airport/site, ASRI requires all applications for additional frequencies at each site to provide the number of take offs and landings of the applicant's aircraft during the four busiest 15-minute slots during a full day:
With this data, ASRI will then combine all eight values into a single total and then divide by 14. This total number is then rounded up or down to the nearest full number (≥0.5 rounds up, <0.5 rounds down). This final number is the standard maximum number of frequencies an operator is eligible for at any one airport/site, and additional justification will need to be provided if this level is to be exceeded. Table 4-4 provides a template for this, and

Table 4-5 shows a worked example. The process is described mathematically in Figure 7.

Table 4-4: Template for Airport Flight Activity Report

15 Minute Activity Period	Departures	Arrivals	Arrivals and Departures Total
15-min Slot 1	D_1	A_1	$D_1 + A_1$
15-min Slot 2	D_2	A_2	$D_2 + A_2$
15-min Slot 3	D_3	A_3	$D_3 + A_3$
15-min Slot 4	D_4	A_4	$D_4 + A_4$

Table 4-5: Worked Example of Airport Flight Activity Report

Example - Top Four 15 Minute Activity Periods			
15 Minute Activity Period	Departures	Arrivals	Arrivals and Departures Combined
0045 - 0100	107	95	202
0715 - 0730	92	102	194
0730 - 0745	4	8	12
2330 - 2345	3	2	5

ASRI processing would then total these values (413) and then divide by 14. The end value, 29.5, then rounds up to 30 as the standard maximum number of frequencies at the assessed site.

This policy is undergoing long-term review and is expected to be updated once additional data and feedback has been received.

4.8 Justification for Assignment of Additional VHF Datalink Frequencies

An additional VHF datalink frequency is justified only when the peak channel activity regularly exceeds the metrics as defined and/or measured in accordance with this section. When a CSP wishes to add a VHF Datalink frequency to a site that has not been used before, the additional frequency use must be justified before initiating the necessary application for each assignment.

4.8.1 Technical Metrics for Additional VDLM2 Frequency Justification

4.8.1.1 RF Monitoring Method

An additional frequency will be considered as justified when RF monitoring shows that all currently authorized frequencies are simultaneously channel loaded at, or above, 40% during the busy hour over the averaging period. The averaging period is defined as over a 30-day period, the number of days which the 40% threshold is exceeded is greater than 15 days.

4.8.1.2 Message Latency Method

The message latency measurement metric is applicable to the FAA Data Comm program. It is defined as the time between the 620 message arriving at the CSP Service Delivery Point (SDP), successful reception of the corresponding 618 message downlink acknowledgment from the aircraft, and the delivery of the corresponding 620 confirmation message to the originating ANSP.31

- For each airport or enroute service volume:
    - Linearly extrapolate the monthly 95% latency values out 18 months
        - Based on the last 12 months
        - Based on the last six (6) months
    - If either projection approaches nine (9) seconds at 18 months:
        - Verify growth in data throughout
        - Verify that the increase in channel utilization is commensurate with data traffic growth (i.e., not due to other issues such as hardware failures or RF interference)
- Other factors that may be considered:
    - Pending changes in customer base, fleet composition or customer VDLM2 CONOPS that indicate an imminent increase in data loading
    - Analysis and predictions indicating latency issues

If the projection is approaching nine (9) seconds (> 7 seconds) at 18 months and the data throughput and channel utilization support the conclusion that the latency is due to data traffic, then an additional frequency channel can be requested from ASRI.

Such data can be provided by the CSP directly to ASRI or through the FAA Data Comm implementation manager. ASRI will then assess the justification provided and may approve, reject, or seek further information to adjudicate such a request.

4.8.2 Technical Metrics for Additional POA ACARS Frequency Justification

4.8.2.1 RF Monitoring Method

An additional frequency will be considered as justified when RF monitoring shows that all currently authorized frequencies are simultaneously channel loaded at, or above, 40% during the busy hour over the averaging period. The averaging period is defined as over a 30-day period, the number of days which the 40% threshold is exceeded is greater than 15 days.

4.8.2.2 Traffic Analysis Method

An additional frequency will be considered as justified when an analysis of the traffic records shows that all currently authorized frequencies at that location are simultaneously loaded at, or above, 40% over an averaging period of one hour. This analysis will be based upon the following parameters:

It may be assumed that 2000 average ACARS block attempts per hour is equivalent to an RF channel load of 40%. System control blocks with labels listed in ARINC Specification 620 Section 4.2 (Uplinks) and Section 5.2 (Downlinks) may not be counted for this purpose.

All uplinks from ground stations within line-of-sight of the test point may be considered, and all unique downlinks received from stations within 1.66 times line-of-sight of the test point may be considered. The total uplinks and downlinks recorded for each system frequency currently authorized, and for the same period, will be tabulated.

4.8.3 Network Stations

While the methods of justification in this section consider the requirements for a single site, enroute service volumes may use a single site in a region to justify a regional enroute network frequency assigned at multiple contiguous locations. Any such request to ASRI should specify the service volume being implemented and the sites which will have that frequency deployed. ASRI will determine if such a request is appropriate in terms of coverage and size of such area, and may approve, decline, or modify the request. If such a request is approved, ASRI will notify the other VDL CSPs of the authorization, including the service volume and sites covered by the approved application.

Such a request and subsequent determination shall only provide an agreement that such a network frequency can be justified for the area and sites approved, but each assignment must still follow the ASRI application process, and any co-site coordination requirements

4.8.4 Justification and Reporting of Existing Datalink Channels

Frequencies authorized under this provision will be re-evaluated as determined by ASRI and will be decommissioned if not justifiable at that time. A frequency is considered to be

underutilized when its loading does not exceed 10% over an averaging period in accordance with RF monitoring method criteria and averaging windows in Section 4.7.2.1 for VDLM2, or Section 4.7.3.1 for ACARS.

All under-utilized frequencies at a station are subject to return to the common pool of assignable frequencies. A single under-utilized frequency will not be subject to recall. However, additional under-utilized frequencies will be returned to the pool after one year.

A frequency that is under-utilized at a station will not be subject to return to the common pool if the exclusion zones of remaining justified co-channel stations preclude its use for other purposes.

This policy is undergoing long-term review and is expected to be updated once additional data and feedback has been received.

4.9 Other Supplemental Information

4.9.1 Aeronautical Advisory Stations (UNICOM)

Special safety and operational considerations must be considered at airports without operating control towers or flight service stations (non-towered airports) but served by both a UNICOM and an ASRI AES station. The provisions of the *Aeronautical Information Manual* (AIM), Chapter 4, concerning airport advisory procedures at non- towered airports are not to be compromised by the operation of an ASRI AES station.

All airport advisory information (e.g., wind, ceiling, visibility, active runway, position of aircraft, and traffic pattern conditions) must be handled by the UNICOM station.[6] Only communications concerning the mutual activities of the aircraft operator and the customer staffing the ASRI AES station may be conducted on the ASRI channel.

For those aircraft not capable of maintaining a listening watch on both the UNICOM and ASRI frequency while tuned to an ASRI frequency in the vicinity of a non-towered airport, the flight crew must establish a practice of making minimal use of the ASRI frequency to maintain maximum watch on the UNICOM frequency.

ASRI radio frequencies are not to be used for the purpose of providing either UNICOM services or Common Traffic Advisory Frequency (CTAF) services at non-towered airports.

NOTE**: ASRI radio frequencies are not to be labeled as UNICOM on letterheads, business cards, signs, service publications, or in company advertisements. They must be labeled as **ASRI**; for example, **ASRI 131.40.

[6] Weather observations taken at non-towered airports by qualified and certified National Weather Service (NWS) weather observers employed by a company operating an ASRI AES station may be transmitted to that company's aircraft (only) on the authorized ASRI channel.

5 TECHNICAL REQUIREMENTS

This section provides guidance for complying with FCC technical requirements for radio transmitter equipment, control points, and dispatch points. Radio maintenance and maintenance record keeping requirements are also included.

5.1 FCC Application and License

5.1.1 Station License Details

ASRI applications to the FCC for a Radio Station Authorization (license) become part of the authorization when granted. It is mandatory that ASRI radio stations remain in strict compliance with the terms listed on the application and FCC license. The information on file with ASRI Headquarters must be corrected to reflect any changes to station facilities. The license may also require modification as a result of these changes. See Section 3.9 for information on changes to station facilities requiring notification to ASRI.

An example of an FCC Radio Station License is included in Appendix A. Explanations of items listed on the license are included for reference. All items on the station license are checked for compliance during routine ASRI station inspections.

5.2 Transmitter Equipment, Remote Control Points, Dispatch Points

5.2.1 Radio Equipment Identification

Radio transmitting equipment installed at ASRI stations shall have affixed appropriate identification. Transmitters must be Type-Accepted or Type-Approved by the FCC, Authorization and Evaluation Division, for use under CFR 87 on the frequency band authorized at the station. A listing of these transmitters is available at ASRI, and questions regarding transmitter acceptability can be directed to ASRI Headquarters (see inside front cover).

5.2.2 Control and Dispatch Points

There must be a control point for each radio transmitter. The control point will normally be at the transmitter location (direct control). Remote control points are authorized and must be listed on the station license. All control points must provide the following:

- Secure or restricted access to the control point to preclude unauthorized operation of the radio, or radios if configured in a network. The control point must be under the direct control and supervision of the operator

- A visual indication that the transmitter is keyed by either a control point or dispatch point operator
- Aural monitoring of transmissions from subordinate dispatch points
- A way to disconnect subordinate dispatch points from the transmitter
- A means to turn off the transmitter
- In the case of dial-up remote control stations, security means to restrict calls from aircraft to a Public Switched Telephone Network (PSTN) to authorized operational control points, and to prevent station activation from a "standard" telephone.

If a control point is not collocated with the transmitter, the control point must be listed on the license. Control points cannot be located in foreign countries. Multiple control points are permitted for a station, but all control points must be listed on the license. All control points should be inaccessible to unauthorized personnel when not manned.

Enroute radios can be operated from dispatch points subordinate to a control point. Dispatch points can be located anywhere the license holder desires and need not be listed on the station license. Dispatch points shall not be capable of operating or operated during periods when the associated control point is unmanned. *Manned* means that an authorized operator is within audible range of the control point and radio control equipment.

In dial-up radio systems, where PSTN circuits are used to control a ground station, the control point must not connect the telephone line to the radio until an authorized password, data stream, or security tone is received. The security code is intended to deter unauthorized persons from using the dial-up system. If an authorized password, data stream, or security tone is not received within a set period of time, the control point must automatically disconnect from the telephone line.

Transmitters and control points are checked for compliance with these requirements during routine ASRI station inspections.

5.3 Transmitter Maintenance and Record Keeping

5.3.1 Frequency Measurements

Transmitters shall be measured to ensure that the frequency is correct as assigned at ASRI stations under any of the following conditions:

- When the transmitter is originally installed
- When any change or adjustment is made to a transmitter that may affect the operating frequency
- When there is reason to believe an operating frequency has shifted beyond the applicable tolerance

5.3.2 Radio Station Maintenance Records

Individuals performing maintenance on a radio transmitter shall sign and date an appropriate entry in the radio station maintenance records for the transmitter noting the following information:

- Pertinent details of all service and maintenance work performed by that person or under that person's supervision
- Name, address, serial number, and expiration of the technician's FCC General Radiotelephone License

Any other pertinent information necessary to document maintenance or modifications to the transmitting equipment.

5.4 VHF DATA LINK FREQUENCY ASSIGNMENT CRITERIA

5.4.1 AFC Channel Plan for the 136-136.975 MHz Band

Table 5-6: Channel Plan for the Aeronautical Enroute Service Sub-band from 136.000 MHz to 136.975 MHz for VDLM2

Frequency (MHz)	Allocation	Notes
136.975	VDLM2 Common Signaling Channel	Both CSPs
136.950	Guard Band Channel	
136.925	Guard Band Channel	
136.900	Guard Band Channel	
136.875	Guard Band Channel	
136.850	Guard Band Channel	
136.825	Guard Band Channel	
136.800	SITA VDLM2	SITA Upper Band Frequency Pair A*
136.775	Guard Band Channel	
136.750	SITA VDLM2	SITA Upper Band Frequency Pair B*
136.725	Guard Band Channel	
136.700	VDLM2 Test	Limited and secondary status**
136.675	Guard Band Channel	
136.650	Collins VDLM2	Collins Upper Band Frequency Pair A*
136.625	Guard Band Channel	
136.600	Collins VDLM2	Collins Upper Band Frequency Pair B*
136.575	Guard Band Channel	
136.550	Guard Band Channel	
136.525	Industry voice users	Limited number of locations
136.500	Industry voice users	Limited number of locations
136.475	Federal voice users	Limited number of locations
136.450	Federal voice users	Limited number of locations
136.425	Guard Band Channel	

136.400	Guard Band Channel	
136.375	Guard Band Channel	
136.350	SITA VDLM2	SITA Lower Band Frequency Pair A*
136.325	Guard Band Channel	
136.300	SITA VDLM2	SITA Lower Band Frequency Pair B*
136.275	Guard Band Channel	
136.250	Guard Band Channel	
136.225	Guard Band Channel	
136.200	Guard Band Channel	
136.175	Guard Band Channel	
136.150	Collins VDLM2	Collins Lower Band Frequency Pair A*
136.125	Guard Band Channel	
136.100	Collins VDLM2	Collins Lower Band Frequency Pair B*
136.075	Guard Band Channel	
136.050	Guard Band Channel	
136.025	Guard Band Channel	

***NOTE:** *These 50 kHz VDLM2 frequency pairs are subject to the conditions in Section 4.2 of the AFC Manual.*

****NOTE:** *Provided on a secondary only basis where available, and subject to operational limitations as directed by ASRI.*

5.4.1.1 Shared Common Signaling Channel and Dedicated Alternate Channels

Industry standards and agencies have identified 136.975 MHz as the international CSC for VDLM2 operations. All data link service providers announce their service availability on this channel.

Per VDLM2 industry standards, to avoid congestion and offload traffic, each data link service provider may operate one or more VDLM2 alternate channels. Unlike the CSC, these channels are not shared but are dedicated and licensed to each CSP. Dedicated channels avoid the issues associated with shared channels (CSMA collisions, hidden terminal effects, and interference) and maximize the efficient use of the VHF spectrum.

5.4.1.2 Airport Installations with Multiple VDL Transceivers

Due to the complex nature of larger airports and based on airlines requirements for redundancy and comprehensive VDL coverage at all gates, data link service providers frequently operate several ground stations that share the same frequencies at the same airport.

In airports where multiple VDLM2 Transceivers are used, the service provider may designate a station as the primary station operated at full transmitter power, typically 25 Watts. In order to minimize unnecessary spectral emissions, the other VDL transceivers within the airport should operate with the minimum necessary power needed to provide successful communications at the gate areas.

5.4.2 Intermodulation Considerations for the 136-136.975 MHz band

The following combinations on co-located VDLM2 frequencies can create a 3rd order intermodulation product:

- SITA Lower A (136.350 MHz) + Collins Upper B (136.600 MHz) = Intermod Possible: Collins Lower B (136.100 MHz)
- SITA Lower A (136.350 MHz) + Collins Lower B (136.100 MHz) = Intermod Possible: Collins Upper B (136.600 MHz)

During extensive discussions with the CSPs, it was agreed that the following conditions to mitigate potential VDLM2 3rd order intermodulation products for co-located assignments apply:

- Where SITA Lower A (136.350 MHz) is already co-located, Collins may only deploy either Collins Upper B (136.600 MHz) or Collins Lower B (136.100 MHz) co-located, but not both.
- Where both Collins Upper B (136.600 MHz) and Collins Lower B (136.100 MHz) are already deployed co-located, SITA must not deploy SITA Lower A (136.350 MHz) co-located.

Already deployed co-located stations are defined as possessing a full FCC license for the respective ground station.

The AFC reviewed data on possible voice and VDLM2 3rd order intermodulation products being transmitted onto a VDLM2 assignment. It was concluded that although such possibilities existed, they were not seen in available test data or CSP logs. Therefore, these considerations are not included in the national VDLM2 channel plan. However, CSPs and ASRI are encouraged to monitor high risk locations on a regular basis and report issues.

5.4.3 VDLM2 Compliance Testing Frequency

To prevent interference from testing to live VDLM2 networks, a dedicated VDLM2 compliance test frequency is included in the 136 MHz channel plan. Operated on a secondary basis on 136.700 MHz, it shall only be assigned where available and the ground station limited to a maximum of five (5) watts EIRP unless there are exceptional reasons to increase the power. The frequency shall not to be used for operational aircraft traffic and will be shared between all users requiring the function. ASRI will not provide any guarantee of operational or RF performance of the assignment.

A separate letter of conditions specified by ASRI shall be posted with the license to ensure compliance with the relevant operating limitations. An annual written recertification is also required before June 30th each year to verify the usage meets the specified license conditions and the license still has an operational need. Any user found not complying with the conditions stipulated by ASRI, or failing to provide annual recertification, may have the license revoked without warning. Breach of these conditions will also trigger a full review by ASRI and the AFC, assessing if the concept/channel is still feasible or should be withdrawn for all users.

5.4.4 Site Survey Process (Pre-Installation)

To eliminate the possibility of interference, the following steps are recommended:

1. Identify all existing co-site base stations that have a potential to cause interference, noting that datalink stations may have additional considerations.
2. Determine/measure the distance between all co-located antennas and the location of the proposed antenna and record the results. It is highly recommended that maximum antenna separation be achieved between base stations. This provides for greater transmitter isolation with co-located base stations, minimizing the risk of transmitter intermodulation.
3. Identify the operating frequency of these co-located stations and correlate them to the antenna distances above.
4. Recommend an intermodulation study be done on all frequencies located within 200 feet of the station being installed. The study should identify all 3rd and 5th order products that fall within the Aeronautical Frequency band. Consult with ASRI to determine if these frequencies are in use at this location. If they are, coordination with the using agencies should be done.

Measure the noise-floor to ensure that it does not limit operation of the receiver due to blocking communications. A high noise-floor at the terminal gates can interfere with aircraft operating on VDLM2.

5.4.5 Coordination of co-site VDLM2 Assignments Between CSPs

5.4.5.1 VDLM2 Alternate Frequency Implementation Process

ASRI will receive a request from a CSP to operate a ground station on one of the alternate VDLM2 frequency. ASRI will then measure the distances between the existing VDLM2 sites, and the new ground station location, then notify the CSPs. The CSP will determine if there is the need to add filtering on the existing sites. If filtering is needed the CSPs will have 90 days to install before ASRI will process the request. If the sites already have the required filtering, then ASRI will process the request immediately.

5.4.5.2 Example for the ASRI 90 Day Notice

The purpose of the process is to provide 90-days to install filtering, due to implementation of an alternate VDLM2 frequency, to mitigate possible interference to existing VDLM2 sites. Distances between new frequency's location and existing VDLM2 sites are based on location information provided to ASRI by Collins Aerospace and SITA. It is the responsibility of the CSP's to confirm the distance accuracy and filtering requirements. Please review and notify ASRI which sites need filtering within five (5) business days.

CSP: XXX

New Alternate Frequency: 136.xxx MHz

Start Date: XXX XX, 202X

End Date: XXX XX, 202X
(For sites requiring filtering)

Distance to nearest existing VDLM2 site/s:

IATA	Distance
XXX	Feet XXX
XXX	Feet XXX

6 APPENDIX A: REPORTS, FORMS, AND SIGNS

This appendix provides examples of the following items:

- Figure 6-1: Radio Station License Reference Copy
- Figure 6-2: ASRI License Container (ASRI Form AS-7371)
- Figure 6-3: ASRI Restricted Area Sticker, 2 ¾" x 5 ¾" (ASRI Form AS-7369C, ASRI Form AS-7369W), ASRI Restricted Area Sticker, 5 ¼" x 9 ½" (ASRI Form AS-7370W)
- Figure 6-4: ASRI Authorized Personnel Only Sticker, ¾" x 2" (ASRI Form AS-7368)
- Figure 6-5: ASRI Radio Station Inspection Report (ASRI Form AS-7305)
- Figure 6-6: ASRI Annual Ground Station Activity Report

***NOTE**: "C" means on a clear background. "W" means on a white background.*

REFERENCE COPY

This is not an official FCC license. It is a record of public information contained in the FCC's licensing database on the date that this reference copy was generated. In cases where FCC rules require the presentation, posting, or display of an FCC license, this document may not be used in place of an official FCC license.

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AVIATION SPECTRUM RESOURCES INC

ATTN: FREQUENCY MANAGEMENT
AVIATION SPECTRUM RESOURCES INC
180 ADMIRAL COCHRANE DRIVE
ANNAPOLIS, MD 21401

Call Sign	File Number
KQH3	0006673924
Radio Service AF - Aeronautical and Fixed	
Station Class FA	
Coast Id	**Sel Call** / **Aviation Id**

FCC Registration Number (FRN): 0013756952

Grant Date	Effective Date	Expiration Date	Print Date
04-14-2015	04-14-2015	04-20-2025	04-14-2015

STATION TECHNICAL SPECIFICATIONS

Fixed Location Address or Mobile Area of Operation

Loc. 1 **Address:** EUGENE ISLAND BLOCK 346
City: OFFSHORE **County:** GULF OF MEXICO **State:** GM
Lat (NAD83): 28-08-17.9 N **Long (NAD83):** 091-20-35.1 W **ASR No.:** **Ground Elev:** 0.0
No. of units:

Antennas

Loc No.	Ant No.	Frequencies (MHz)	Emission Designator	Output Power (watts)	Hours of Operation	Ant. Ht./Tp meters	Construct Deadline Date
1	1	000128.90000000	6K00A3E	55.000		61.0	

Control Points

Control Pt. No. 2

Address: 11760 Turtle Ave, Intracoastal City Base
City: Abbeville **County:** VERMILION **State:** LA **Telephone Number:** (985)395-6191

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

FCC 601-CG
August 2007

Figure 6-1: Radio Station License

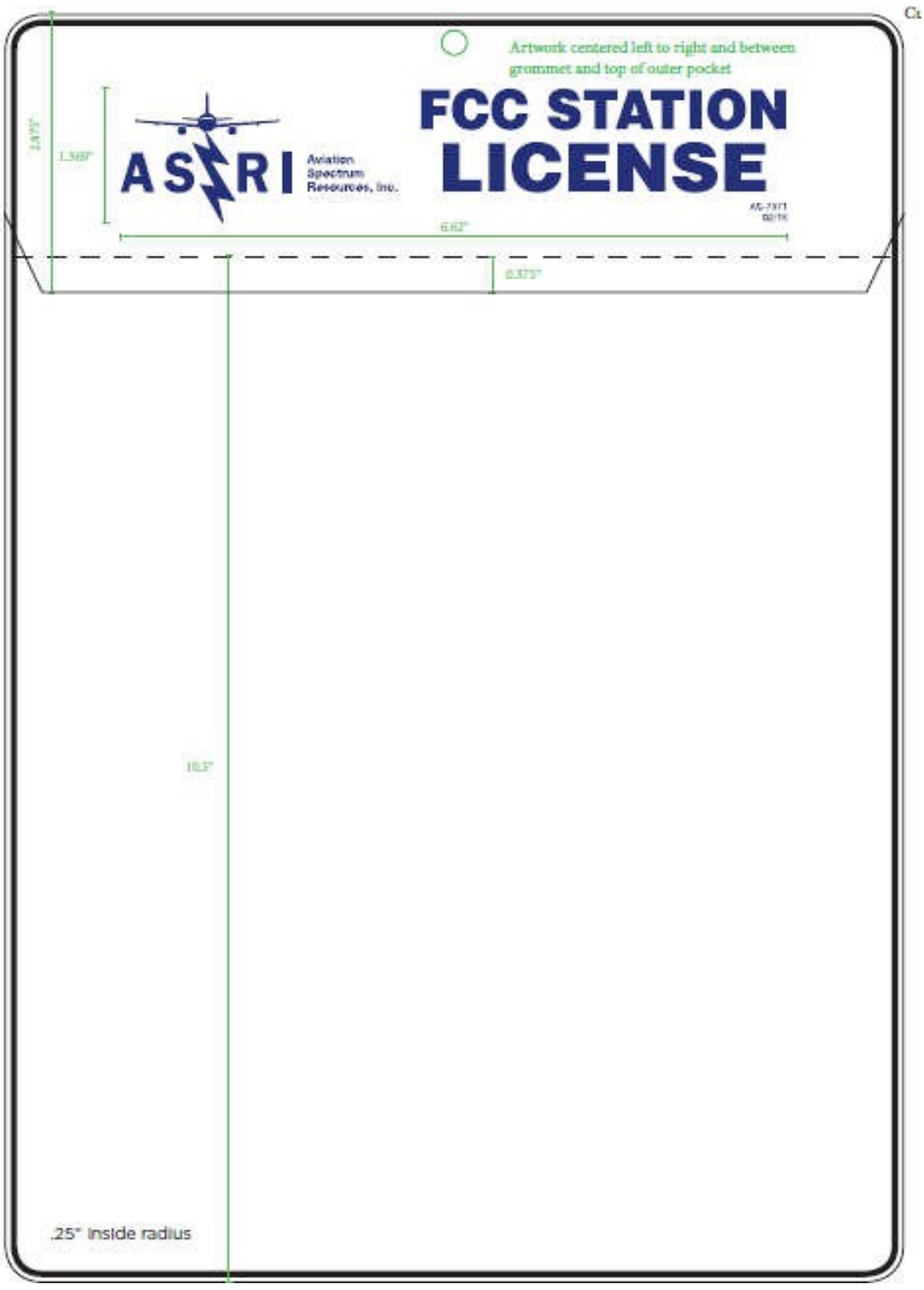

Figure 6-2: ASRI License Container (ASRI Form AS-7371)

Figure 6-3: ASRI Restricted Area Sticker, 2 ¾" x 5 ¾"
(ASRI Form AS-7369C, ASRI Form AS-7369W),
ASRI Restricted Area Sticker, 5 ¼" x 9 ½" (ASRI Form AS-7370W)

Figure 6-4: ASRI Authorized Personnel Only Sticker, ¾" x 2"
(ASRI Form AS-7368)

ASRI

RADIO STATION INSPECTION REPORT

ASRI USE ONLY

Customer Code
«CODE»

Section 1

The ASRI Radio Station listed in Section 1 of this form was inspected by a qualified ASRI employee on the date shown. Items marked with an "X" should be corrected and disposition of each reported to the Project Leader/Radio Station Inspection Program.

Radio Station Location **«ADDR» - «LOC»**	Altitude Restriction	The Visit Covered by This Report Included:	Report Submitted by:
FCC Call Sign **«CS»** / Staffed by: **«USER»**	☐ RL – 5 Watts	☐ Control Point Only	Date of Inspection:
ASRI Station Representative Listed in ASRI Records **«CONTACT» «PHONE»**	☐ LL – 10 Watts	☐ Transmitter Location	ASRI Headquarters Review by:
ASRI Station POC Listed in ASRI Records	☐ HL – 20 Watts	☐ All of the Above	Date of Review:
Company Employee on Duty During Inspection	Frequency(ies) ☐ Mhz ☐ Khz **«FREQ»**		

Section 2

Items Observed		Remarks
FCC Radio Station License or Temporary Authorization Available and Current		
Radio Station License Posted in ASRI (or Other Acceptable) Container at TX Control Point		
Remote Control Point(s) Properly Listed on Station License (If Applicable)		
Current Edition of ASRI Ground Station Manual or Referred to Online Version		
Station Representative Properly Appointed and Current		
Current or Operational POC		
ASRI "Restricted Area" Sign(s) or "Authorized Persons Only" Decal(s) Displayed		
Access to Station and Control Points by Unauthorized Persons Adequately Controlled		
Transmitter Identification (Manufacturer, Model No., or Type No.) Attached to Transmitter		
Transmitter Type Accepted/Approved for Use As Ground Station, Frequency Stability .002% or Less		
Station Operating on Licensed Frequency/Operating Frequency Posted on Transmitter		
Latitude (dd-mm-ss)		
Longitude (dd-mm-ss)		
Transmitter Location Description		
Control/Dispatch Station Location Description		

Checklist Legend: ✓ = Satisfactory **X** = Discrepancy; See Remarks **N/C** = Not Covered by this Report *Items Not Marked Do Not Apply to this Report.

AS-7305
02/24

Figure 6-5: ASRI Radio Station Inspection Report (ASRI Form AS-7305)

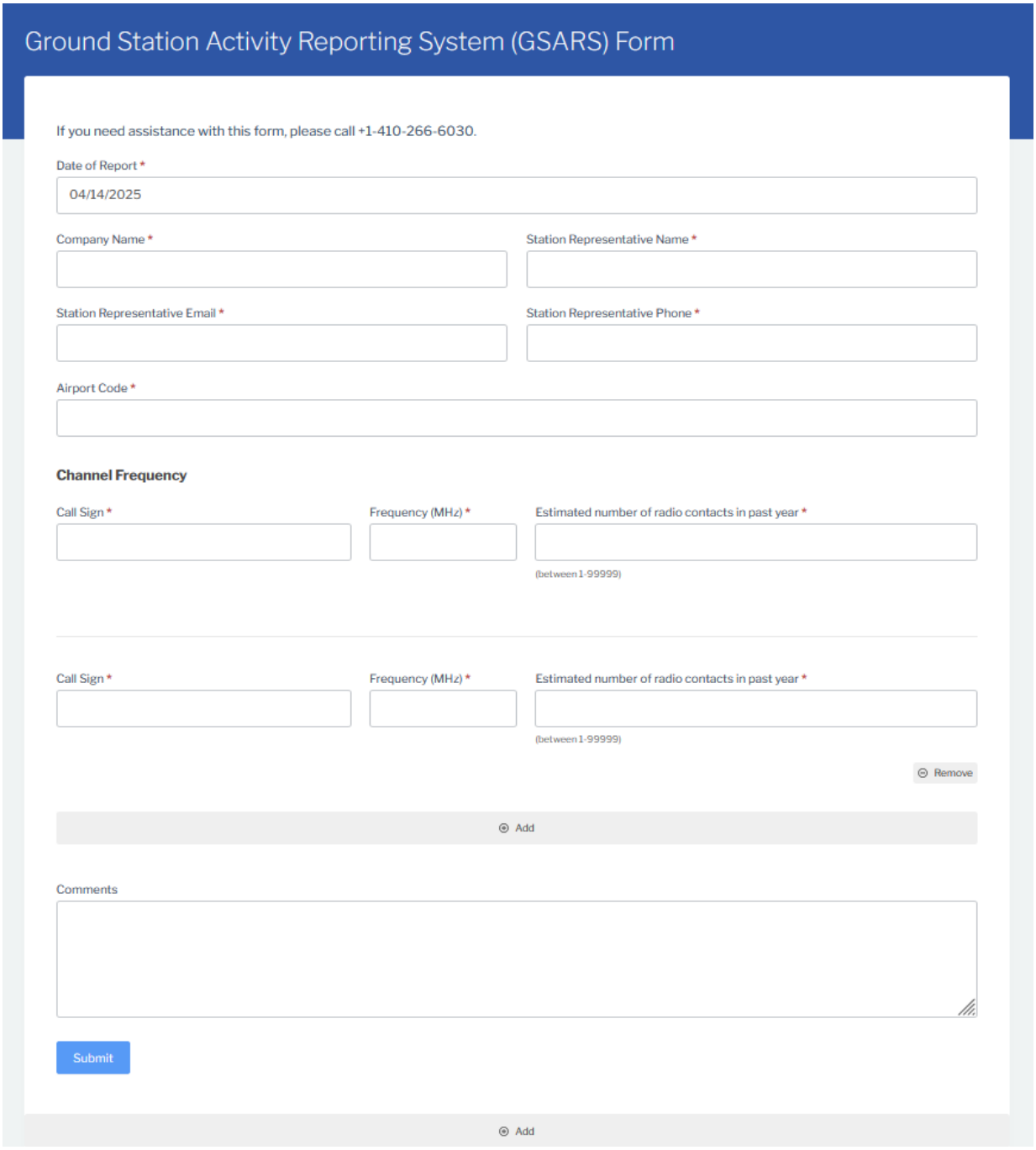

Figure 6-6: ASRI Annual Ground Station Activity Report

NOTES: *1) This report should only be submitted on the ASRI website (www.asri.aero)*
2) Please submit your data using all CAPS.
*3) Fields marked with * are required.*
4) Please note that call signs KUF6 and KGF7 are temporary call signs. Use official call signs only
5) Questions call: 410-266-6030