

COMMUNICATIONS S.O.I.

(SIGNALS OPERATING INSTRUCTIONS)

A reference for AP III% Tennessee Comms



**Disaster and Civil Defense
Communications**

WWW.APIII.US

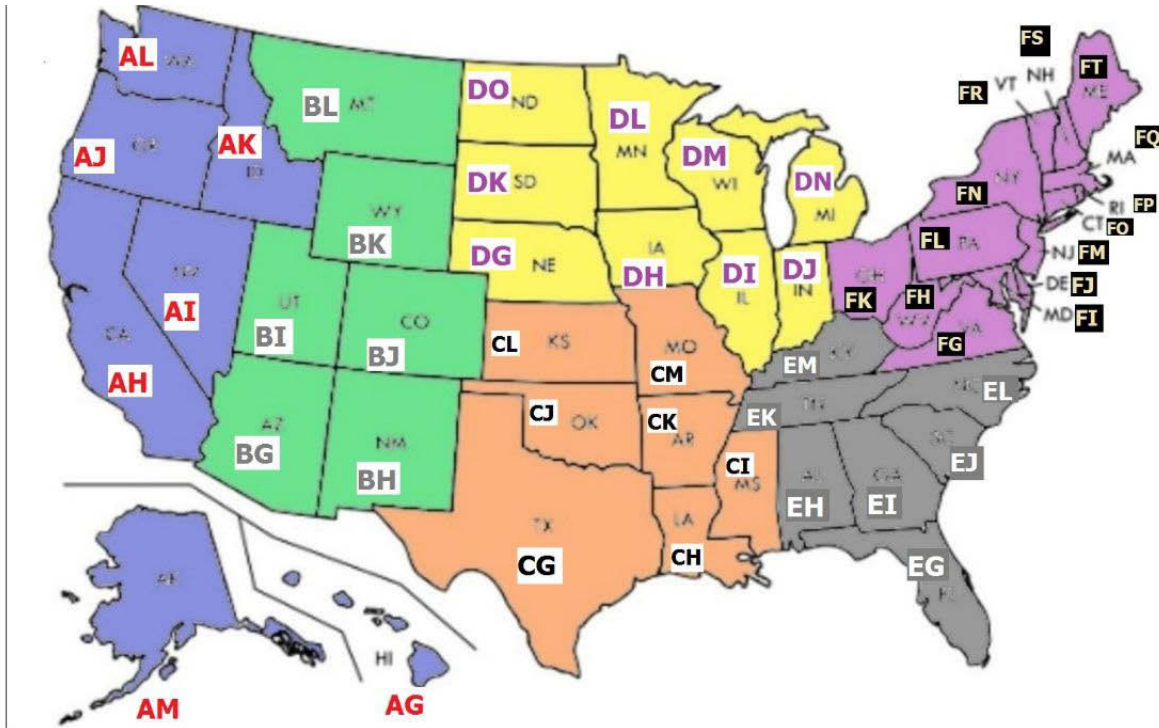
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(AP III% CONdition)

(Threat level relative to Conventional communications disruptions and guidance for action)

LEVEL	ACTION
1 ACTIVE INCIDENT	Conduct AP III% Nets according to the Emergency Net Schedule. Make adjustments based on the situation. - Prepare a STATREP or SITREP for your area. - Follow all instructions of Net Control - Conduct local nets to account for others and assess your local/regional situation.
2 Incident IMMINENT	Disruption of communications expected or highly likely - Conduct a 'test' net among group and regional or national network as situation requires - Monitor all sources and stay informed. - Prepare all equipment for operation or evacuation - Review radio operations with family/group. - Maintain regular contact with your local group
3 Incident Probable	Increased probability of interruption of conventional communications. Not 'imminent'. - Finalize plans with family/friends/Network for 'what-if' - Review Comms Plan and monitor radio traffic and increase frequency of nets as necessary. - Maint./Checks on fuel, back-up power, batteries, etc.
4 Incident Possible	Possible near-future interruption of conventional comms - Inventory, locate, and assemble all comm equipment. - Increase monitoring of situational developments (News) - Make phone & email contacts to keep everyone in your network informed. - Continue with regularly-scheduled nets
5 No Incident	No known or anticipated threat to communications - Conduct Regularly-scheduled practice nets - Monitor radio frequencies and maintain proficiency - Check in to local/regional ham nets, or monitor if unlicensed - Develop and expand current nets and training sessions

Tactical Call Signs



Tactical call-signs will be allocated for state command and above. The above map will help with prefixes.

National Command will be NX (November X-ray)

Regional Command will be Region letter plus "X"(X-ray) plus the number correlating to rank.

State Command Will Be 2 letter prefix plus number.

For Example

Region 1 CO will be AX1

AZ XO would be BG2

Each Region uses a letter prefix of A-F

Each State uses Letter G-T within each region

CO is 1

XO is 2

Sgt Maj is 3

CommL is 4

These will help us to maintain some security and assure we are talking to the right State/region/ etc

AP III% Tactical Call Sign Prefixes

National Command Will Use NX prefix

Regional Command Will Use Region + X prefix

CO 1

XO 2

CSM 3

COMML 4

Pacific Region - A

HI AG
CA AH
NV AI
OR AJ
ID AK
WA AL
AK AM

Mountain Region - B

AZ BG
NM BH
UT BI
CO BJ
WY BK
MT BL

Midwest Region - D

NE DG
IA DH
IL DI
IN DJ
SD DK
MN DL
WI DM
MI DN
ND DO

South Central - C

TX CG
LA CH
MS CI
OK CJ
AR CK
KS CL
MO CM

Northeast Region - F

VA FG
WV FH
MD FI
DE FJ
OH FK
PA FL
NJ FM
NY FN
CT FO
RI FP
MA FQ
VT FR
NH FS
NE FT

Southeast Region - E

FL EG
AL EH
GA EI
SC EJ
TN EK
NC EL
KY EM

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(Use this to set up the schedule you regularly use at your station)

[Amateur Radio] "plays a vital public safety communications service...[with]...tremendous potential...when all other forms of radio communication fail, especially during emergencies."

The Hon. Greg Walden
Member, U.S. Congress

IN CASE of EMERGENCY

WHAT DO I DO? WHAT TO EXPECT?

In a major regional or national grid-down emergency:

- Secure your family and yourself first.
 - Local AP III% operators will be taking to the air on CH3 and VHF ham (2m). Hopefully you have joined or established a local AP III% net in your area.
 - Regionally and nationally, HF operators are **already** on the air now!
-

LOCAL:

Listen for Emergency Disaster Services for news and Updates:

- Local Commercial Radio and Television (many have backup power)
- NOAA Weather Alert Radio
- ARES/RACES and local ham club Amateur Radio nets in your area (see www.radioreference.com for listings in your area – **before** a disaster strikes).
- Police/Fire/EMS Scanner

How do I listen?

- AM/FM radio receiver
- CH3 radio (FRS, MURS, CB)
- Ham Radio (VHF/UHF)
- Scanner (police, fire, EMS, Amateur Radio, aircraft, government, etc.)
- SDR (Software Defined Radio receiver)

If you have two-way radio communications capabilities:

- ❖ Prepare a STATREP (or abbreviated STATREP, at minimum)
- ❖ Attempt to make initial contact with others using the S.O.I. Frequencies. If no initial contact, then:
- ❖ Join/start a net following the Operational Net Schedule SECTION 1.
- ❖ If there is not a local AP III% net in your area, tune in to local ham club and/or ARES/RACES nets. Listen for information and instructions.
- ❖ Send your STATREP to your local NCS and check on others.

IN CASE of EMERGENCY

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IN CASE of EMERGENCY

REGIONAL/NATIONAL (HF Communications):

To Listen:

- Shortwave Radio with SSB (Single Sideband), or;
- SDR (Software Defined Radio) Receiver dongle, or;
- Amateur Radio transceiver or receiver

Get on the air!

1. Persistent Presence Net (see SECTION 1.3). Operators are on the air!
 2. Fill out STATREP (and any other pertinent reports)
 3. Identify next scheduled Operational Net (SECTION 1)
 4. Be prepared to send STATREP to NCS and others in the network
 5. Beaconsing (if you use JS8Call and/or FSQCall)
- *****REMINDER***** Turn beacons/sounders/heartbeats **OFF** approximately 10 minutes prior to scheduled nets.
6. Start a Net Communications Log (See SECTION 6.4.1)
 7. Follow instructions of NCS. Assume '*Schedule 3*' Net schedule until modifications to the schedule is announced (SECTION 1.2)

IN CASE of EMERGENCY

SECTION 1 OPERATIONAL NET SCHEDULE

Regional Rolling Net times listed in local time					
Morning Regional Net		07:30	08:00	08:30 - 09:30	09:30
80m	3.793 LSB		*Voice		
80m	3.563 USB			Digital	
2m	146.420	Voice			
2m	144.500				Digital
CH3	**FRS/MURS/CB - Voice	07:45			
**At approximately 15 minutes into all VHF/UHF nets, NCS should direct operators to make calls out on CH3 to receive traffic, disseminate traffic, or to coordinate future communications activities.					

*Voice nets are listed as 30-minute nets, but if there is still traffic to pass the net can run as long as an hour if needed.

Afternoon NATIONAL Nets in <u>Zulu time</u>			
Afternoon National (Zulu ST)		21:00Z	21:30Z - 22:30Z
Afternoon National (Zulu DST)		20:00Z	20:30Z - 21:30Z
My Local Time -->			
20m	14.313 LSB	*Voice	
20m	14.085 USB		Digital

ST = Standard Time

DST = Daylight Savings Time

HF Digital Nets start with Contestia 4/250

HF Traffic handling via flamp or flmsg, MFSK-32 (or other mode per NCS)

UHF/VHF digital nets begin with MT-63KL

UHF/VHF digital traffic normally switch to MFSK-32 (or other mode per NCS)

Regional Rolling Net times listed in local time					
Afternoon Regional Net		13:30	14:00	14:30 - 15:30	15:30
40m	7.213 LSB		*Voice		
40m	7.085 USB			Digital	
2m	146.420	*Voice			
2m	144.500				Digital
CH3	**FRS/MURS/CB - Voice	13:45			
**At approximately 15 minutes into all VHF/UHF nets, NCS should direct operators to make calls out on CH3 to receive traffic, disseminate traffic, or to coordinate future communications activities.					

Regional Rolling Net times listed in local time					
Evening Regional Net		19:30	20:00	20:30 - 21:30	21:30
80m	3.793 LSB		*Voice		
80m	3.563USB			Digital	
2m	146.420	Voice			
2m	144.500				Digital
CH3	**FRS/MURS/CB - Voice	19:45			
**At approximately 15 minutes into all VHF/UHF nets, NCS should direct operators to make calls out on CH3 to receive traffic, disseminate traffic, or to coordinate future communications activities.					

*Voice nets are listed as 30-minute nets, but if there is still traffic to pass the net can run as long as an hour if needed.

HF Digital Nets start with Contestia 4/250

HF Traffic handling via flamp or flmsg, MFSK-32 (or other mode per NCS)

UHF/VHF digital nets begin with MT-63KL

UHF/VHF digital traffic normally switch to MFSK-32 (or other mode per NCS)

1.2 Variable Daily Net Schedule

The situation will determine the number of daily nets needed throughout an event. It may only be necessary to run one net per day for exchanging traffic and sending out reports or announcements. Running as few nets as possible will help save time and precious emergency power.

The Persistent Presence Nets are always active, whether or not AP III% is running 'Operational' nets, for stations who have the power to keep their stations on the air.

"Schedule Zero"

"Schedule One"

"Schedule Two"

"Schedule Three"

"Schedule TEN"

Decision made by National or Regional Net Coordinator, or by SIGCEN director (if applicable). Announcements should be made using all means available.

SCHEDULED NETS	
Schedule 0 (Zero) or 'Persistence Only'	Persistent Presence Net ONLY (See Section 1.3)
Schedule 1 (1 Regional Net/day)	• Afternoon National • Evening Regional
Schedule 2 (2 Regional Nets/day)	• Evening Regional • Afternoon National • Morning Regional (no afternoon Regional)
Schedule 3 (3 Regional Nets/day)	• Morning Regional • Afternoon National • Afternoon Regional • Evening Regional
Schedule 10 (Modified Sked)	Modified or customized schedule to meet mission requirements, when deviation from S.O.I. Schedule is necessary. Details of modified net schedules would then be disseminated as needed.

1.3 Persistent Presence Net

AP III% is always on the air on the AP III% HF digital frequencies!

Training, practice, and Operational Persistent Presence Nets run virtually the same. This enables a seamless transition from non-activation to operational status in the event of a sudden grid-down emergency.

See the full description of Persistent Presence Net operations in **Section 4.2**

PERSISTENT PRESENCE DIGITAL NET			
ZULU	Eastern	Pacific	Band/Freq.
20:00 - 22:00	16:00 - 18:00	13:00 - 15:00	20M 14.085
22:00 - 02:00	18:00 - 22:00	15:00 - 19:00	40M 7.085
02:00 - 16:00	22:00 - 12:00	19:00 - 09:00	80M 3.563
16:00 - 20:00	12:00 - 16:00	09:00 - 13:00	40M 7.085

SECTION 2 PRACTICE and TRAINING NETS

For the most updated practice net information, go to:

<https://amrron.com/nets-regional-national/>

2.1 Schedule: National Net Weeks:

National, Rolling Regional, and local Nets

***First and Third weeks of the month**

2.1.1 National:

1 st and 3 rd <u>Wednesday</u> each month		
20:00 Zulu	20M Voice	14.313 USB - 1/2 hr.
20:30 Zulu	20M Digital	14.085 USB (Contestia 4/250) - 1 hr.
01:00 Zulu	40M Voice	7.213 LSB - 1/2 hr.
01:30 Zulu	40m Digital	7.085 USB (Contestia 4/250) - 1 hr.

2.1.2 Regional (Rolling):

Thursdays (Following the 1 st and 3 rd Wednesdays of each month)		
20:00 Local	80M Voice	3.793 LSB - 1/2 hr.
20:30 Local	80M Digital	3.563 USB (Contestia 4/250) - 1 hr.

2.1.3 Local 2m/CH3 Nets:

Thursdays (Following the 1 st and 3 rd Wednesdays of each month)		
19:00 Local	2M Voice	146.420 - Up to 1 hr. If needed.
19:45 Local	CH3 Voice	CB, FRS, MURS not all types may be covered in all local nets
21:30 Local	2M Digital	144.500 (MT63-1kL) - 1 hr.

*Note: Occasionally we adjust some nets to avoid major holidays.

2.2 Persistent Presence Net (Practice)

See **Section 4.2** for more details about Persistent Presence Nets.

Operational and Practice schedules are the same.

PERSISTENT PRESENCE DIGITAL NET			
ZULU	Eastern	Pacific	Band/Freq.
20:00 - 22:00	16:00 - 18:00	13:00 - 15:00	20M 14.085
22:00 - 02:00	18:00 - 22:00	15:00 - 19:00	40M 7.085
02:00 - 16:00	22:00 - 12:00	19:00 - 09:00	80M 3.563
16:00 - 20:00	12:00 - 16:00	09:00 - 13:00	40M 7.085

NOTE: The times in the chart are general guidelines, as band conditions fluctuate throughout the year, and under various solar conditions. Times may vary by as much as an hour or more.

SECTION 3 CH3 Project (Channel '3' Project)

The CH3 Project refers to a standardized communications plan for the most commonly used non-Ham radio communications bands which do NOT require a license to operate. These are:

- CB (Citizens Band)
- FRS (Family Radio Service)
- MURS (Multi-Use Radio Service)

The standard is simple - 3,2,1

3 - Turn to Channel **3** on CB, FRS, or MURS

2 - **Two** Minutes before and after the hour, attempt to make contact with others.

1 - Every **one** hour (during activation)

To conserve battery power, turn the radio off and attempt in the next hour.

Scheduled Nets:

At approximately fifteen minutes into the nets, during Regularly-scheduled 2m Amateur Radio (Ham) nets, Net Control (NCS) *should* direct everyone participating in the nets to break for five minutes. This time is used to attempt to make CH3 contacts, take check-ins, and relay any voice traffic for the net, or from the net to be relayed to NCS. At the time specified by NCS, all stations should return to the AP III% Amateur Radio net and report check-ins and traffic.

For CH3 Scheduled Net Times:

Operational Nets: See Regional Net Schedules on Pages 8 and 9

Practice Nets: See Practice Net Schedule on Page 12

SECTION 4 AP III% NETS - DEFINED AND EXPLAINED

(Operational, Training, & Practice)

In this section, the following are covered:

- **Nets Explained**
 - **Operational Nets**
 - **Persistent Presence Nets** (take place continuously, during activation and non-activation periods). They're on the air right now!
 - **Special Net**
 - **Training Nets**
-
- **Practice Nets**
 - **Reporting/Checking in online**
 - **Activities During Practice Nets**

The ARRL's NET CONTROL STATION Training Manual describes nets in the following way:

The word "net" is short for "network". Networks can be defined as groups of equipment, individuals, and/or agencies acting together to increase efficiency and effectiveness through shared information and resources. The word "network" can be further broken down into its two components. "Net" implies a capture and holding effect. "Work" implies that something productive is to be accomplished. Ham radio operators and nets in emergency situations capture, record, hold, and distribute information so that others may work (produce results) more effectively.

The purpose of any net is to provide a means for orderly communication within a group of stations. In a directed net, a net control station (NCS) and Assistant NCS organizes and controls all activity, much like a traffic cop at a busy intersection. His job is to keep traffic running smoothly, ensuring emergency vehicles have priority, and getting traffic where it needs to go while minimizing collisions. He's there to keep traffic moving in an orderly manner.

Directed nets are the best format when there are a large number of member stations.

Nets are either directed (formal) or undirected (informal or open).

AP III% **Nets** are very similar, but with subtle differences.

AP III% conducts *Scheduled Nets* (directed) and *Persistent Presence Nets* (undirected, and continuously -- persistently -- ongoing).

While nets take place in both voice and digital modes, the persistent presence net is intended to be HF and digital only, unless the situation calls for continuous coverage on voice frequencies (for example, when supporting groups or agencies who do not have digital capabilities, or in local VHF/UHF and CH3 nets and in tactical environments).

AP III% Scheduled Nets follow a predetermined schedule, whether developed before an incident (such as this S.O.I.), or developed in response to, or during, an incident, where special circumstances require developing a modified schedule that deviates from this S.O.I.

AP III% conducts scheduled nets in both operational (real-world or training exercise) and practice situations.

NET TYPES:

- **OPERATIONAL (Including Persistent Presence Nets)**
- **TRAINING & PRACTICE (Including Persistent Presence Nets)**

4.1 OPERATIONAL NETS (Real-world or simulated Real-world

Operational nets are conducted during activations under real-world emergency conditions, or during scenario-based training exercises simulating real-world emergency conditions. **See the Operational Net Schedule in Section 1**

When does an Operational Net happen? This is dependent on the situation. If an event is foreseen (such as a hurricane or developing wildfires, or a pre-planned exercise) we will monitor the situation and begin on a controlled, pre-planned basis. AP III% will adjust to the needs of the situation. If an incident occurs instantaneously (cyber attack or major earthquake), the operators in the affected area, on their own initiative, refer to their S.O.I. and take to the airwaves, seeking nets. Others will be doing the same. Those of us outside the affected area will be coordinating with each other and will be on the air right away, starting nets and organizing the rest of the network.

4.2 AP III% Persistent Presence Nets

At pretty much any time of day someone, some *where* is on the air, whether AP III % is activated (Operational), or in training mode.

AP III% has grown considerably and in each of the most recent real-world disasters there were adequate numbers of radio operators on the air so that if someone called for help, there was normally someone on the air to hear the call.

While the Scheduled S.O.I. Nets are considered 'controlled' nets (meaning they are run by Net Control Station operators), the Persistent Presence Net is not controlled. Operators may make contact and pass traffic as the situation requires.

The 'Persistent Presence' Digital Net was implemented for:

- Operators who have sufficient backup power and the time to continue monitoring between the Scheduled S.O.I. Net cycles.
- Maintaining a lifeline for those who need to pass priority or emergency traffic when there is not a scheduled net taking place.
- Allowing for stations to assess band conditions and determine propagation paths to other stations, through beaconing (or sounding/heartbeating) and signal reports.
- Creating an opportunity for stations to directly pass point to point traffic, relieving the scheduled S.O.I. nets of congestion.

The following schedule has been developed as guidance reflecting our experience of which bands perform best at various times of the day and night. Band conditions can and do deviate sharply from our general expectations. These are very general guidelines, so there is no adjustment for Daylight Savings Time.

The following Persistent Presence Net Schedule is also found in section 2.2

PERSISTENT PRESENCE DIGITAL NET			
ZULU	Eastern	Pacific	Band/Freq.
20:00 - 22:00	16:00 - 18:00	13:00 - 15:00	20M 14.110
22:00 - 02:00	18:00 - 22:00	15:00 - 19:00	40M 7.110
02:00 - 16:00	22:00 - 12:00	19:00 - 09:00	80M 3.588
16:00 - 20:00	12:00 - 16:00	09:00 - 13:00	40M 7.110

4.3 SPECIAL NETS

At times there are such unique circumstances, that communications are necessary requiring heavy modification or deviation from the AP III% S.O.I..

Special Nets are developed on an 'as needed' basis to meet requirements of the situation. For example:

- Emergency Shelter Coordination Nets, search and rescue, or community events (races, parades, fairs, etc.)
- Joint operations with multiple agencies/entities each with their own communications plans, requiring customized plans for interoperability.
- Circumstances which make the use of all or part of the AP III% S.O.I. unusable or impractical.

4.4 TRAINING NETS

Training Nets are designed to focus on developing or maintaining proficiency in very specific individual tasks or a group of skills which would be used in a real-world emergency situation. This helps to eliminate unnecessary distractions which would likely hinder the mastering of the intended task or skill, or a combination of related tasks or skills.

4.5 PRACTICE NETS

Practice nets are normally regularly-scheduled voice or digital nets, which provide opportunities for operators to 'practice' using their equipment, skills, software, etc. It is a regular systems check to ensure all is working properly and that deficiencies are identified so they can be remedied.

Practice nets normally include a check in at the very least. A Net Word of the Week (NWOTW) is also generated during the National Nets, and then passed down throughout the network to give stations something to pass along.

Especially during digital nets, we pass the weekly AP III% Intelligence Brief (AIB). This provides the opportunity each week (every Tuesday) to receive and pass on (relay) a small abbreviated briefing containing real-world news, intelligence, or emergency communications related traffic, and a chance to practice with AP III% custom forms using FLDIGI, FLMSG, and FLAMP.

Beginning January 2020, the 'Veri-Code' project was introduced, providing an interesting and fun 'scavenger hunt' component to the regularly-scheduled AP III% Practice Nets, requiring the combining of information from the AIB Veri-Code and a separate 'Supplemental VeriCode' to create a password which opens a weekly encrypted message posted at AP III%.com. Opening the message reveals small snippets from a fictional series called the Partisan Operator Journal, with a new 'Journal Entry' each week.

See Section 2 - Regularly-scheduled practice nets

or, refer to the AP III% Net Schedule at www.AP III%.com

4.6 National Net Activities

Besides normal net check ins, there are other activities that help operators practice receiving and sending information, but also which make the experience fun and interesting.

4.6a NET WORD OF THE WEEK: The “Net Word of the Week” (NWOTW), originates from the **20m National Voice Net**, then is passed along over the Regional Nets, and is finally shared during the local nets.
NWOTW is normally a scripture or a word accompanied by a two-digit number.

4.6b AIB (AP III% Intelligence Brief):

Transmitted from AP III% National each Tuesday at:

14.110 usb at 2000z, and again;
7.110 usb at 2030z, normally in MFSK-32.

A very condensed, Real-world intelligence report highlighting one or two recent developments as it relates to cyber or terrorism threats, security issues, socio/political/economic threat indicators , and emergency communications related news or announcements.

Beginning January 2020, we began including the Numeric portion of the **VeriCode Project** in the Weekly AIB. This VeriCode is one half of the password needed to decrypt the text on the Partisan Operator Journal page.

AIB is intended to be passed along on the Persistent Presence Net by coordinating with other stations on the net, and is also to be distributed by Net Control Station operators during all scheduled practice nets.

4.6c AIB Supplemental VeriCode: Four-digit Alpha portion of the VeriCode, which must be combined with the AIB VeriCode to make the weekly password. Available ONLY during regularly-scheduled practice nets, and for one hour after the scheduled net has ended.

May only be passed over radio (no internet-based amateur radio service, such as Winlink, Echolink, etc).

Go to: <https://AP III%.com/nets-regional-national/taprn-regional-net/aib/>

4.7 Quarterly SETs (Simulated Emergency Test)

Normally the second week of February, May, July, and October.

Due to requests for smaller, more frequent training exercises besides our larger annual T-REX and Operation Premonition exercises, we now run smaller quarterly exercises, named as such by the quarter and the year. For example, the exercise in October 2019 was titled Q4-19. In February 2020, Q1-20.

Each 'Quarterly' is different. Some exercises will consist of one primary task with only a few supporting tasks for the operator to focus on. Other times, it may be a four or six hour scenario-based exercise, with objectives identified and instructions provided in the weeks leading up to the exercise. D

Information will be disseminated on the nets, the website, and the AP III% Team App.

4.8 Activation Alerts - ('Alerts')

Alerts are very short exercises with **no prior announcement or advanced warning**. In most cases they would simulate an abrupt, instantaneous major event and would normally result in an AmCON-1 readiness condition level.

Notification of Alerts will be via: Persistent Presence Net, the website, social media, the AP III% Team App, and the Z-Net (AP III% Corps only).

Objective: Take to the airwaves and follow instructions.

4.9 T-REX and other Scenario-Based Exercises

AP III% also conducts major regional and national scenario-based exercises, such as the annual TEOTWAWKI Readiness Exercise (T-REX). T-REX is a nationwide (and beyond) simulated grid down emergency preparedness exercise, normally held in late July. In these exercises news, intelligence, reports, and updates related to the ongoing simulated emergency are made available over the air by radio. The exercise traffic is developed prior to the exercise and injected by volunteer

'Initiating Stations' at predetermined locations and times to add realism to the progression of events.

Check www.AP-III.com periodically for T-REX updates and announcements.

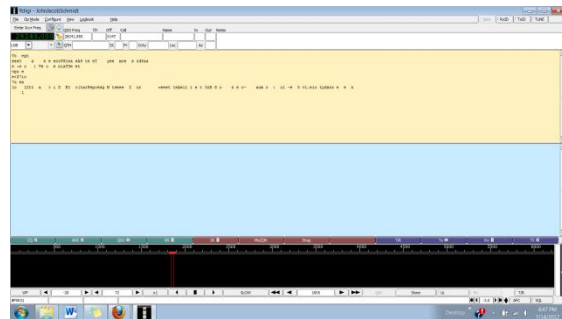
SECTION 5 Digital Mode Operations

Why Digital Modes?:

- More efficient, longer distances with less power/bandwidth
- Accurate transfer of forms, files, reports, etc.
- More Private, requiring software and proficiency to decode
- Superior performance in weak signal or poor band conditions

DIGITAL MODE OPERATIONS: GENERAL GUIDANCE

This section is designed to instruct operators who are already familiar and have a working knowledge of digital software as to which frequencies, modes, and configurations to use, and other useful information. It is NOT designed to teach the new individual operator *how* to set up or become familiar with digital communications software.



Resources are listed here for the self-motivated new operator who wishes to learn about, locate, set up, and practice with various digital modes prior to T-Rex or the next real-world communications emergency.

- AP III% Nets normally begin using FLDIGI program, in Contestia 4/250 mode
- NCS will commonly switch to MFSK-32 for sending reports and forms
- FLMSG is used for sending preformatted and filled out forms
- FLAMP has Forward Error Correction (FEC), and is used for sending files

Go to AP III%.com, in Search box, type: 'FLDIGI' and/or 'Digital'

Multiple resources, tutorials, and postings with embedded

videos. <https://AP III%.com/2017/03/23/fldigi-tutorials-videos/>

<https://AP III%.com/?s=Digital>

5.1 Digital Mode Software Programs

Software Program	Primary uses
*FLDIGI	The Swiss Army Knife of digital communications. Download and use this program if nothing else. This is the most commonly used digital mode program during AP III% nets and should be the first program you set up. It is used for sending text back and forth, just like an online chat room, as well as sending files, images, etc. Capable of sending/receiving multiple modes and is a full featured suite, known as the FLDIGI Suite (See FLMSG and FLAMP below). All scheduled digital nets will begin with fldigi using Contestia 4/250 mode. The MFSK32 mode is the primary mode for sending files. Net control will direct the net to switch modes when the time comes.
FLMSG	Used for sending preformatted forms which open up as html forms in your internet browser. Works with FLDIGI. Open FLDIGI first, then FLMSG.
FLAMP	Used for sending error-free files, including FLMSG forms, and larger files can be sent using compression. Works with FLDIGI. Open FLDIGI first, then FLAMP.
JS8Call	JS8 weak signal mode is the primary mode used during Persistent Presence Nets. Ideal for low power or poor band conditions. Used for: Beacons (Heart-beating); determining path quality between you and other stations; determining band conditions; sending short messages to individuals and groups; can receive signals from multiple stations simultaneously.
FSQcall	Also used for sending files and images, as well as direct text messaging to individual stations. Used for beacons and determining path quality between you and other stations. NCSs will often take early check-ins prior to the nets using FSQCall and JS8Call, to relieve congestion on the nets when there is high participation.
gARIM	Uses ARDOP mode, and in use by advanced operators for file transfers, storing and retrieving files, and direct messaging.

5.2 DIGITAL MODE OPERATIONS

5.2.1 FLDIGI Digital Modes:

WATERFALL: 1000

A. **CONTESTIA 4-250** (PRIMARY OPERATING MODE FOR AP III% NETS)

USED FOR: Scheduled nets and net check ins, general communications use by NCSs for beginning HF digital nets, and for operators to make contact and communicate with the rest of the AP III% Network.

B. **MFSK-32** (and sometimes MFSK-64):

USED FOR: Sending forms, images, and files (such as when using FLMSG or FLAMP). NCS may choose to switch to an MFSK mode for general use during nets if band conditions favor it.

Below are additional programs and modes commonly used by AP III% Operators:

5.2.2 FSQcall or FSQ 4.5 (in FLDIGI):

<https://AP III%.com/wp-content/uploads/2020/02/FSQ-Training-101-1.pdf>

WATERFALL: 1500 (by default - cannot be changed)

- A. Open a second instance of fldigi and select FSQ 4.5 mode, or; Download and operate stand-alone FSQcall Program.
- B. FSQ is excellent for exchanging quick chat messages between operators, beaoning, and determining path quality between operators, and for sending/receiving files. Excellent for station-to-station coordination.
- C. In most cases, the signal dB report in FSQ (or FSQCall) will give you a more accurate path quality for determining reliability between you and other stations in other modes as well, such as Contestia, MFSK32, gARIM/ARDOP, etc.. JS8Call (below) mode may not reflect the a realistic path quality for FSQ and other modes.

5.2.3 JS8Call

<https://AP III%.com/2019/12/04/white-paper-js8call-settings-for-AP III%-ops/>

Each operator should keep an abbreviated STATREP current, updated at least once a day, and stored in their JS8Call Station Info and FSQ QTC fields, for other stations to query your status, especially if you are unattended.

Be sure to precede the abbreviated STATREP with 'STAT' and the DTG indicating when you last updated your STATREP.

<https://amrron.com/2019/10/23/js8call-training-resources/>

General JS8Call Guidance:

1. Settings for waterfall location:

AP III% JS8 operations should only take place between 1900 and 2300 on the waterfall. This is done to avoid interfering with traffic using other modes at 1000 and 1500 on the waterfall.

You can set your preferred waterfall location in JS8call by editing the 'Center' field (see Figure 1)

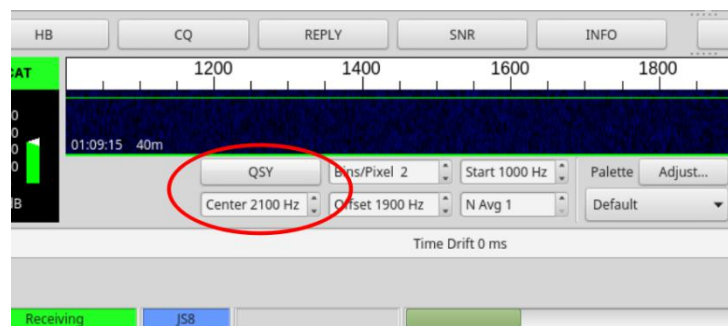


Figure 1

2. Adding Callsign Group:

- a) Sharing information between AP III% members over the air. You can create groups to which you can direct messages or make queries for information, to and from that group only.

To be part of the AP III% group, simply add @AP III% to the 'Callsign Groups (comma separated)'

- b) Go to File > Settings > General > Station and add @AP III%

You must include the '@' symbol. (See Figure 2)

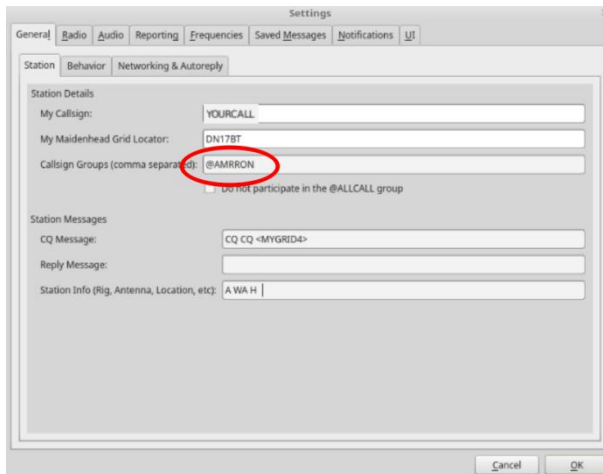


Figure 2

3. Adding and updating your abbreviated STATREP to Station Info field:

- a) Maintaining an abbreviated STATREP allows other stations to query your station to ascertain your status (power, water, communications, etc). It is simply a snapshot of your situation at your location.

- b) **Add your STATREP** to the Station Info field by going to:

In JS8Call program, go to: File > Settings > General > Station

4. Add AP III% digital mode frequencies to JS8Call frequency page:

- a) Go to File > Settings > Frequency

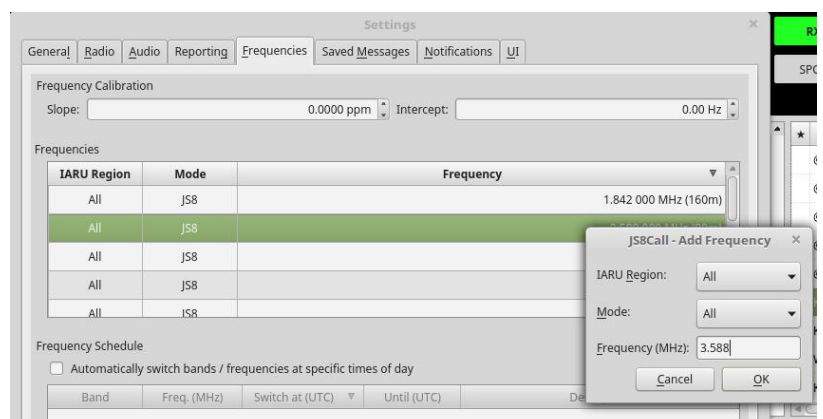
Hover over each band and 'Right' click (See Figure 3)

- b) Select 'Insert...' from the drop down menu, and add:

14.110 (20m band)
7.110 (40m band)
3.588 (80m band)

Select 'OK' when finished

Figure 3



NOTE: Your activity is logged in JS8Call by band, so even if you are not using rig control, it is still helpful to switch the displayed frequency on the main JS8Call window. This helps separate on-air activity by band in your logs, for later review when you are trying to determine band path quality and activity between yourself and other stations.

In your JS8Call program, see Log --> ALL.txt

5. Tips and guidance for AP III% operators using JS8Call

- a) Be sure to turn HB+ACK and AUTO features OFF prior to scheduled nets or exchanging traffic with other stations using modes other than JS8Call
- b) We strongly recommend turning the SPOT feature off. It is the button toward the upper right-hand corner of your main JS8Call window. If SPOT is turned on your station activity is logged at the PSKReporter website for all who wish to see.
- c) Some AP III% stations add a slant b or n after their call sign. This indicates [call]/b a Backbone station, or a [call/n] Net Control station. They do this to help recognize each other more easily on the air, as they are tasked with specific roles for passing traffic across the network. If you are not a Backbone or NCS station, do not place a /letter after your call sign.
- d) Under most circumstances, you should set any automatic Heartbeat (beacon) intervals at no more than once per hour.
To do this, type in the offset (in Hz) value in the window labeled 'Offset', located in the lower left-hand portion of your JS8Call main screen. After that, you simply click on the QSY button and it will automatically place your waterfall position at the value you chose (between 1900 and 2300).

5.2.4 gARIM/ARDOP

This is an advanced program/mode used by experienced operators, such as HF Net Control Station operators for coordinating and exchanging traffic, and will not be covered in depth here.

If you are proficient in gARIM/ARDOP then be sure to add an 'AP III%' sub-folder in your 'files' folder. This is where traffic may be stored and retrieved.

ARDOP modes default at 1500 on the waterfall, which is where FSQ also defaults. This does not normally create a conflict, but in times of heavy band traffic, use fsq to coordinate with attended stations to move up or down the band to exchange gARIM traffic.

To learn more about gARIM at: <https://www.whitemesa.net/gARIM/gARIM.html>

5.3 DIGITAL MODE Information and resources

Experience shows that digital communications over radio (especially HF) are far superior to voice for transmitting reports, forms, and other formatted information. We use several digital modes.

THE SOFTWARE IS FREE, and the programs vary in complexity. The most common digital modes and programs can be set up and used by beginners and novice operators.

Digital Mode Resources: IF YOU ARE NEW (to digital mode communications)...

In the PDF version of this S.O.I., click the hyperlinks below to read the following postings. These postings are helpful for learning how to download, set up, and practice receiving digital communications, step by step.

For the printed version of this S.O.I., simply go to www.AP III%.com and type the title of the postings listed below into the search box on the website.

Titles of Postings at AmRRon.com

- How to Receive Ham Radio Digital Communications
<https://amrron.com/2014/01/16/how-to-receive-ham-radio-digital-communications/>
- Digital Communications
<https://amrron.com/communications-resources/digital-communications/>
- Digital Communications - A Practical Exercise
<https://amrron.com/2014/02/14/digital-communications-a-practical-exercise/>
- So You Want To Practice Decoding Digital Modes
<https://amrron.com/2014/02/22/so-you-want-to-practice-decoding-digital-modes/>
- White Paper: AmRRON Intelligence Brief
<https://amrron.com/2019/06/06/aib-amrron-intelligence-brief-white-paper-07-mar-2019/>
- Basic Digital Communications Setup (for sending and receiving)
<https://amrron.com/2014/06/07/basic-digital-communications-setup/>
- AmRRON Forms for Digital Reports (FLMSG forms)
<https://amrron.com/2014/11/20/amrron-forms-for-digital-reports/>

If you have difficulty with any of the links, simply go to www.AmRRON.com and type the title of the posting in the search box on the website.

5.4 WATERFALL LOCATION GUIDE

NOTE: The following applies when the operator is tuned to the frequencies as noted in the red text boxes beneath Figure 5.1.

1. **FLDIGI modes** @ 1000 on Waterfall, for modes such as Contestia 4/250, MFSK-32 and MFSK-64, etc., including while sending via:

- a) FLMSG. FLMSG is used for sending completed built-in or custom forms, such as reports.
- b) FLAMP. FLAMP is the FEC (Forward Error Correcting) application we use for sending files such as .k2s or .txt files free of errors.

2. **FSQcall** defaults at 1500 on the waterfall. Used for beaconing (sounding) for determining signal path quality and determining which stations are on the air. Is also used for transfer of small files and images, as well as chatting using short messages, and sending message alerts to individual radio operators.

3. **JS8call** @ approx. 2000 on the waterfall. This can be done by going into File->Settings->Behavior tab, and selecting the box which reads “Allow heartbeat transmissions outside of heartbeat sub-channel (500Hz- 1000Hz)”.

This is an excellent mode for poor band conditions or low power (QRP) operations, and allows for group messages or directed messages between two operators.

Operators should select a place between 1900 and 2300 on the WF. With JS8Call, two operators can decode each other even if not at the exact same spot on the WF.

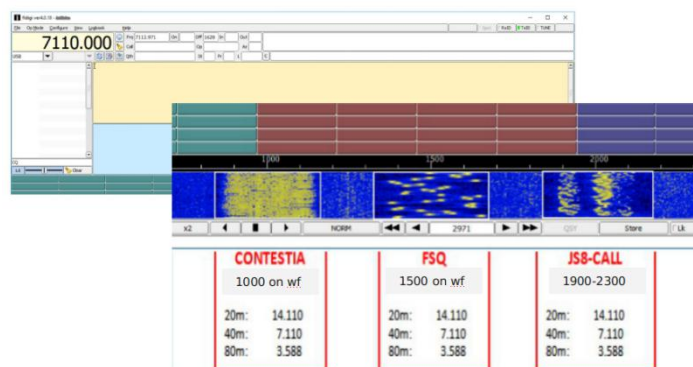


Figure 5.1

1000 on WF: Contestia, MFSK, and other general use FLDIGI modes

1500 on WF: FSQ4.5 or FSQCall Sounding, text chat, and .txt file transfers

1900-2300 on WF: JS8Call - Heartbeating and weak signal messaging

Section 6 Reports and Forms

Reports should be sent to others in your local network, as well as to higher up NCSs and/or SIGCENs, depending on the situation.

Station Reports (all operators)

- **STATREP** (*Abbreviated*)
- **STATREP** (Full/non-abbreviated)
- **SITREP**
- **SPOTREP**

Distributed Reports (higher echelon/top down)

- **IES**
- **AIB**
- **SITREP**
- **EXSUM**
- **PSA** (Public Service Announcements)

6.1 Station Reports - All stations should keep a STATREP updated, and be prepared to fill out and submit all other reports when appropriate.

STATREP (Abbreviated and Full/non-abbreviated)

SEE BELOW, beginning on Page 36

STATREPs should be sent at the onset of an event, and when there is a significant change to their initial status/situation.

SITREP (Situation Report) A SITREP is simply a report of a situation as it relates to a location, entity, or events. It explains what just happened, what is happening, or the current state during an event. A SITREP is issued when there are more details which need to be explained than what can reasonably be put in a STATREP (which is simply a 'snapshot' of what is happening around the individual radio operator).

A SITREP is more suitable when there is more of a '*story to tell*'.

If there is a more complex situation or more details need to be added than what the standard STATREP form allows for, then the same format can be used as a guide and a SITREP may be created using the AP III% Blank Form, or even a text (.txt) document which can be sent over the air using FLAMP, gARIM, FSQ 4.5, PAT, ARIM, or other file transferring mode or program. Experienced operators should choose the method he thinks is the most suitable for the situation.

SPOTREP (also known as a SALUTE report).

SEE BELOW, beginning Page 48

This is the format for reporting enemy activity, modeled after the military reporting system which uses the mnemonic SALUTE (Size, Activity, Location, Unit/Uniform, Time, and Equipment). Disasters can create opportunities for criminal activity, and in some cases criminal elements form into organized elements and adopt military style tactics. The SPOTREP is a way to report hostile groups or individuals, especially when they pose an organized and significant risk to a community.

6.2 Distributed Traffic

This section briefly covers methods for distributing news, information, and intelligence from AP III% National, regional SIGCENs, and Net Control Stations to the radio operators throughout the network.

Distributed Traffic is our effort to take raw information and intelligence, process it and organize it, and develop usable intelligence to help everyone stay informed of what is happening inside of, around, and beyond, one's immediate world (which can become very small in a grid down situation).

- **IES** Initial Event Summary AP
- **AIB** III% Intelligence Brief
- **EXSUM** Executive Summary
- **PSA** Public Service Announcement
- **Other** Situation dependent 'other' category

6.2.1 IES (Initial Event Summary)

An IES is a statement prepared by Net Control Stations, Signal Centers, and AP III% National, essentially stating *“This is what we know...”*

At the onset of a major event (especially if grid-down), radio operators will be taking to the airwaves in search of information and answers to find out what just happened.

NCSs, SIGCENs, and other seasoned AP III% operators may not have any more information than anyone else, but people will still be looking to each of them as an “AP III% Leader,” not only with answers, but with guidance to tell them what to do next.

An Initial Event Summary (IES) will help maintain calm and give reassurance that someone is there and aware, and efforts to gather and disseminate information are already under way. These higher tier AP III% operators will be a reassuring presence that will instill confidence in others that the network is alive and well and there for them. Net Control Stations (and higher) should update their IESs as radio operators report in with their STATREPs and SITREPs, and otherwise as additional information becomes available.

6.2.2 AIB (AP III% Intelligence Brief)

The AIB is a way to distribute a brief synopsis or an aggregate report of intelligence or news which could affect you. These can be a simple bulleted list of intelligence highlights, or a short description of updates, and in any case they are designed to help you keep situational awareness during an event when the situation is continually changing.

During non-operational times, the AIB is distributed each Tuesday from AP III% National, and may only be distributed by radio or courier.

Follow the link below to learn more about the AIB as it is used during non-operational times.

<https://amrron.com/2019/06/06/aib-amrron-intelligence-brief-white-paper-07-mar-2019/>

6.2.3 EXSUM (Executive Summary)

The Executive Summary is a detailed, comprehensive report of events and may be sent out daily or weekly, or as the situation requires. SIGCENs (Regional and National) should be producing EXSUMs on a routine basis for distribution to the network, or to served entities (leadership, local government officials, community leaders, or others tasked with making decisions related to logistics, emergency response, security issues, etc.). The EXSUM is normally produced by the information/intelligence element of a SIGCEN or organization, known as the ACE (Analysis and Control Element). In the military this element is known as S2 or G2.

6.2.4 PSA (Public Service Announcement)

PSAs are short announcements and/or instructions to the public in an affected disaster area. These announcements normally address a specific need or hazard. PSAs give guidance related to the public's safety and well being. Examples may be updated evacuation routes, emergency shelter information, medical services, or aid and relief services, etc.

6.2.5 Other

Occasionally traffic may need to be disseminated to a community at the request of leaders within that community. It could be news reports, announcements, requests for support, etc., which may not fall neatly into other AP III%-formatted distributed radio net traffic.

"When Everything Else Fails. Amateur Radio often times is our last line of defense...When you need amateur radio, you really need them."

The Hon. W. Craig Fugate

Administrator, US Department of Homeland Security, FEMA

6.3 STATION TRAFFIC

Traffic which EVERY operator should be familiar with developing and sending

6.3.1 STATREP (Abbreviated)

Intent: This is used for brevity, such as when using low power/weak signal modes, such as CW or JS8Call, or over voice/phone, or when it is more practical due to a high volume of traffic.

General Guidance:

As a reminder, a STATREP is the status at the radio operator's location. Is YOUR power on? Is YOUR phone working? It is not for reporting a power outage in the next town or county, or even the end of your block. That is what a SITREP is for.

AP III% operators should develop the habit of keeping an abbreviated STATREP filled out, updated, and ready to transmit at all times. Your STATREP should also be placed within some digital modes where it can be quickly sent if asked, or retrieved by other stations (details below).

NCS may call for abbreviated STATREPS during digital and voice nets. If you have something significant or more noteworthy to report, you can send a full STATREP, or even a SITREP if more details are warranted. A STATREP is a pulse check. A SITREP is when you have something to tell -- a bridge is out; the martians have landed; a curfew has been implemented in your town, etc.

Over Voice/Phone:

"...my abbreviated STATREP is as follows..."

"Alpha, West Virginia, Hotel, Yankee, Yankee, Yankee, Yankee Papa, Yankee, Yankee, over."

Over Digital modes:

A WV H Y Y Y Y P Y Y

The term 'field #' below is a holdover from the AP III% custom STATREP form used in FLMSG. Here, it simply means 'Item' number.

Abbreviated STATREP guide:

field 1 - conditions @ operators location

(**A** - all stable / **B** - moderate disruptions / **C**- severe disruptions)

field 2 - operator's location by state

field 3 - operator's position (h-home / m - mobile / p - portable)

[The following fields may be omitted if “all is okay” and all services available]

field 4 - commercial power (y - yes / i - intermittent / n - no)

field 5 - water (y - yes / c - contaminated / n - no)

field 6 - sanitation (y - yes / n - no)

field 7 - medical (y - yes / n - no)

field 8 - grid communications (y - yes / n - no)

field 9 - transportation (y - yes / n - no)

NOTE If there is an Emergent/Immediate or Priority need for the commercial services listed, add an **E** - emergent or **P** - Priority after the field it pertains to.

Priority: Important or time sensitive, but not imminently life threatening.

Emergent/Immediate: Emergency which will likely result in danger to, or loss of, life or catastrophic destruction.

It would look something like this:

A WV H --> (normal conditions or when all is well with no disruptions)

A WV H Y Y Y YP Y Y --> (real ops / training / exercises)

Each operator should keep an abbreviated STATREP current, updated at least once a day, and stored in their JS8Call Station Info and FSQ QTC fields, for other stations to query your status, especially if you are unattended.

Be sure to precede the abbreviated STATREP with ‘STAT’ and the DTG indicating when you last updated your STATREP.

FLDIGI: Configure > Operator > Modems > FSQ > QTC field

Example for a station in Idaho at his home QTH when all is well:

*stat 20190726-1700z A ID H

JS8Call: File > settings > General > Station > Station Info field

*when using JS8Call, omit the Date Time Group and simply note the conditions:
A ID H

Note on JS8Call: It would probably be advisable to disable "spot" on the JS8call console unless you want your brevity code sent out worldwide on "PSKreporter".

Additional info could be stored after the abbreviated STATREP. For example, some operators put the Net Word of The Week in the Station Info field as well. However, this takes longer to transmit.

6.3.2a STATREP (Full Non-Abbreviated Status Report)

What is a Status Report?

It is a snapshot report to let others know that you are there, and what your status is. When submitted to others in the network, the STATREP helps others in the determine the size, scope, and effects of a disruptive event.

The STATREP (status report) pertains to your location, as much as you are able to directly observe or experience (or ascertain and confirm through others among your local contacts).

Specifically, the Status Report covers the Operational status of Public Power, Water, Sanitation, Medical Care, Transportation and Communications systems.

This report (which is a modified version of the Army MARS format) covers the status of a number of important public services in the referenced county. It uses a standardized system to report status ensuring consistency in reporting. Data used in the report can come from personal observation or from personal observations collected by other MARS members, amateur radio operators in ARES or RACES groups, or knowledgeable individuals.

This general guide has been modified to fit the customized AP III% STATREP. After corroboration among AP III% Corps, the following changes have been made:

1. Addition of line numbers to facilitate line item Voice or Text reporting when the custom html form cannot be used.
2. The addition of the Modified Mercalli Scale for reporting damage or effects felt from earthquake or major explosion.
3. Radiological Reporting for operators with radiation detection equipment, when applicable.

- 40 -

4. City/County/State. Often times a station operator may not know what grid square he is in, especially if he has been forced to relocate, or is deployed to an unfamiliar area. However, he almost always knows what city (and possibly county) and state he is near/in.

There is an FLMSG custom form available at www.AmRRON.com which can be imported into your NBEMS Custom Forms Folder, which opens in html in a web browser for viewing, editing, and printing.

The HTML version of the AP III% custom STATREP V2 form looks like this:

If the operator is unable to access or use the custom form, the following format may be used to give the report via voice, text, Winmor, etc.

AmRRON Status Report:

[1] DE [2]

[3] Date/Time observed(YYYYMMDD-HHMMZ)

[4] Grid Square [5] City/County/State

[6] FIPS Code *optional for AmRRON

[7] Exercise/Event:

[8] MSGID: [9] Msg#

[10] Mercalli Score: (Earthquake or major explosion)

[11] Radiological Survey: (if detection/monitoring capable)

[12] ADDITIONAL INFORMATION:

[13] Power [14] Water [15] Sanitation [16] Medical [17] Comms [18] Transportation [19] Information

Line (or Field):

1. To _____
2. From _____
3. Time of Report (YYYYMMDD-HHMM) _____
4. Grid Square (if known) _____
5. City/County/State _____, _____
6. FIPS Code _____ (not used by AP III% unless by request)
7. EVENT or EXERCISE _____
8. MSGID _____ -
9. MSG# _____
10. Mercalli Score (Earthquake or major explosion) _____
11. Radiological Survey (if detection/monitoring capable) _____
12. Addl Info: _____
13. POWER: Y R P B N
14. WATER: Y P C N
15. SANIT: Y P N
16. MEDICAL: Y P R F N
17. COMMS: Y P N
18. TRANSP: Y P N
19. INFORM: C E G A R

NOTE: If you do not know, then respond 'U' (Uniform) or "Unknown."

Have the report filled out and prepared **prior** to attempting to send the STATREP.

Instructions:

LINE 1: To (Either another specific station or 'QST' to anyone who may copy you)

LINE 2: From (this is the station generating the report -- you)

LINE 3: Time of Report DTG: YYYYMMDD-HHMMz

(Year Month Day, and 24hr time format, and generally always Zulu time)

LINE 4: Grid Square (four or six digit) if known. Should actually be your Grid Locator, or may also be gps grid coordinates.

LINE 5: City/County/State

LINE 6: FIPS Code (**Not used** by AP III%).

LINE 7: Exercise/Event Operation Name

(Training or real world; example: T-Rex 2017 or Hurricane Michael)

LINE 8: Message ID-

Line 9: Message Number

Line 8&9 Explanation:

Line 8 is the time HHMM followed by the last three of the operator's call

Line 9 is the sequential number for that station's traffic. So it that is his

Example: 12th message he has put out, it would be 012.

LINE 10: Mercalli Score as felt by reporting party (or N/A). Earthquake or major explosion. See Modified Mercalli Scale chart on Page 44.

LINE 11: Radiological Report (or N/A)

Due to the various devices and measuring units used for reporting area radiation and absorbed dosages, it may be helpful to have a conversion chart printed out from: <https://www.remm.nlm.gov/radmeasurement.htm>

LINE 12: Additional Information. This is not a place to tell a story. It is a place to clarify a detail ("Only 101.5FM on air") or to place an urgent need (ex. Need a doctor, or need H2O, or rqst shelter listings), "Black Echo On Air 107.5FM", etc.

LINE 13: Power

- Y – Yes. Commercial power is fully functional in the county except for routine maintenance. (“Green” is sometimes used to report this status by power companies.)
- R – Rolling Blackout. Planned outages with little warning intended to ease stress on the power grid.
- P – Partial Blackout. Unplanned interruption of commercial power only in parts of the county.
- B – Brownout. Reduction in voltage used as an emergency measure to prevent system failure.
- N – No. A Blackout has occurred. Complete unplanned commercial power interruption in the county.

LINE 14: Water

- Y – Yes. Fully functional water service in the county except for routine maintenance. (Green).
- P – Partial. Unplanned interruption of water service only in parts of the county.
- C – Contaminated. Available water contaminated and should not be used.
- N – No. Complete unplanned water service interruption.

LINE 15: Sanitation

- Y – Yes. Fully functioning sanitation service in the county except for routine maintenance.
- P – Partial. Unplanned interruption of sanitation service only in part of the county.
- N – No. Complete unplanned sanitation service interruption.

LINE 16: Medical

- Y – Yes. Fully functioning and staffed hospitals and clinics with spare capacity available.
- P – Partial. Unplanned decrease of capacity in the county due to loss of facilities.
- R – Partial due to personnel. Unplanned decrease in capacity due to loss of personnel.
- F – Full. Facilities are at maximum capacity and can’t handle new patients.
- N – No. Not available. Medical facilities are unusable due to loss of personnel or infrastructure.

LINE 17: Communications

Y – Yes. Fully functioning commercial and civil government local communications.

P – Partial. Commercial communications out but local government communications are operational.

N – No. Complete loss of local communications and government communications.

LINE 18: Transportation

Y – Yes. Fully functioning mass transit, roads, and rail systems except for routine maintenance.

P – Partial. Unplanned interruption in service or loss of road/rail in parts of the county.

N – No. Complete loss of mass transit systems. Roads remain available except for those damaged.

LINE 19: Information (What information sources are functional?)

C – Commercial Broadcast. This includes non-validated sources such as local radio and TV news.

E – EAS. Government Broadcast. Information received from EAS/IPAWS over any media.

G – Civil government or public officials other than EAS/IPAWS such as from an EOC.

A – Amateur. Information originated by amateur radio operators and not validated or coordinated by public officials.

R – Relay. Information originated by civil government that is subsequently relayed through amateur radio.

NOTE: If you do not know, then respond 'U' (Uniform) or "Unknown."

A dash or hyphen symbol, – is used if no source is required based on the fact that nothing negative is reported. If no source is required since nothing negative is reported, the field should be filled with a "- ". Basically, if all other Fields have a "Y" (Yes) answer, then quoting a source is not required. When a problem in an area exists and any entry other than a "Y" is entered, then a source must be cited. This provides a way to confirm or trigger other events that may provide support to an area.

When giving the report via voice, for example, you can say either:

"Line one four (14)..." or "Water..."

6.3.2b Simple Text Version of STATREP

For transmitting text via digital modes when digital reports/forms not available:

LINE:

- 1.[TO]
- 2.[yourcall]
- 3.[DTG]
- 4.[grid sq]
- 5.[city, county, state]
- 6.[FIPS] <- Not used by AP III% unless rqsted by coop agency
- 7.[Exercise/Event]
- 8.[message ID] <- last 3 char in call sign followed by time
- 9.[message#] <- sequential 3 DTG.
- 10.[mercalli score] or na (not applicable)
- 11.[radiological] or na (not applicable)
- 12.[additional info]
- 13.[power]
- 14.[water]
- 15.[sanitation]
- 16.[medical]
- 17.[communications]
- 18.[transportation]
- 19.[information]

6.3.2-0 Modified Mercalli Scale (Earthquake or Explosion Effects Reporting)

Modified Mercalli Scale		Richter Magnitude Scale
I	Detected only by sensitive instruments	1.5
II	Felt by few persons at rest, especially on upper floors; delicately suspended objects may swing	2
III	Felt noticeably indoors, but not always recognized as earthquake; standing autos rock slightly, vibration like passing truck	2.5
IV	Felt indoors by many, outdoors by few, at night some may awaken; dishes, windows, doors disturbed; motor cars rock noticeably	3
V	Felt by most people; some breakage of dishes, windows, and plaster; disturbance of tall objects	3.5
VI	Felt by all, many frightened and run outdoors; falling plaster and chimneys, damage small	4
VII	Everybody runs outdoors; damage to buildings varies depending on quality of construction; noticed by drivers of automobiles	4.5
VIII	Panel walls thrown out of frames; fall of walls, monuments, chimneys; sand and mud ejected; drivers of autos disturbed	5
IX	Buildings shifted off foundations, cracked, thrown out of plumb; ground cracked; underground pipes broken	5.5
X	Most masonry and frame structures destroyed; ground cracked, rails bent, landslides	6
XI	Few structures remain standing; bridges destroyed, fissures in ground, pipes broken, landslides, rails bent	6.5
XII	Damage total; waves seen on ground surface, lines of sight and level distorted, objects thrown up into air	7

6.3.3 AP III% SITREP



1. FROM: <i>(Sender)</i> 		2. TO: <i>(Recipient)</i> 	
3. Current DTG: <i>(YYYYMMDD-HHMMZ Use UTC)</i> 		4. Incident Number: <i>(YYYYMMDD-HHMMZ Use UTC)</i> 	
5. Expiration: <i>(YYYYMMDD-HHMMZ Use UTC)</i> 		6. Location: <i>(Lat/Lon, Grid Square, City)</i> 	
7. Incident Status:			
8. Size and Scope:			
Indicate G, Y, R (Green, Yellow, Red) in the line next to each category (9 - 15)			
9. Overall Hazard:			
10. Current Weather:			
11. 48 hr Weather:			
12. Infrastructure:			
13. Political:			
14. Civil:			
15. Communications:			
16. Remarks:			

AFP-110 Rev 201412010001

SITREP Form Instructions

1. **FROM:** This is the person/station actually sending the report.
2. **TO:** This is the intended recipient (person/station)
3. **Current DTG:** The time/date group (Zulu) that the report is completed
4. **Incident Number:** This is the DTG of incident (may be same as Current DTG)
5. **Expiration:** Date and Time when report can reasonably be expected to be obsolete or no longer useful and should not continue to be circulated.
6. **LOCATION:** Location of affected area the report refers to. Examples: grid coord, mile marker, hwy number, address, city, county, state, etc.
7. **Incident Status:** NEW: Indicates first report. ONGOING: Indicates new developments related to a previously reported incident. Incident number will be the same as first report number, but should end with alpha character for each subsequent report (eg. -A, -B, -C, etc.). RESOLVED: Report that incident or threat is over. Not always necessary, especially when accompanied by a 'Expiration' DTG.
8. **Size and Scope:** Local (town, county, etc). Regional (Multiple counties to Multiple states). National (Entire nation or multiple locations across the nation affected).
9. **Overall Hazard:** Summarized assessment of threat level, overall.
10. **Current Weather:** Currently causing or strong potential for dangerous or damaging weather conditions.
12. **Infrastructure:** Availability/servicability of utilities and services, such as electricity, internet, roadways and bridges, hospitals, water & sewer, emergency services, etc.
13. **Political:** Stable, cooperative and functional? Hostile and oppressive? Citizens access to government to address grievances? Rule of Law being followed by members of govt?
14. **Civil:** Cooperative and peaceful? Crime, looting, unrest? Churches and communities working together?
15. **Communications:** Availability of communications (phone, internet, commercial radio & television, ham radio repeaters, emergency services, etc.
16. **Remarks:** This is a narrative box for adding specific details. Be brief and concise. Eliminate unnecessary words, but be thorough with details about facts. Avoid opinions.

GREEN: Safe, normal, and unaffected

YELLOW: Potential or minor disruptions or threat

RED: Severely disrupted/non-operational and/or threatening situation imminent or ongoing

6.3.4 SPOT REPORT/SALUTE REPORT

SPOT REPORT (SALUTE & 5 W's)	S -ize A -ctivity L -ocation U -nit T -ime E -quipment	Who What Where When Why How (How many)
--	---	--



The Spot Report is a guide to assist with reporting hostile/enemy forces or threatening activity that you have observed. Designed as a tool to aid soldiers in reporting observed enemy activity in the military, this has been adapted to report criminal activity, invading military forces, etc. This is a combination of two reporting formats (SALUTE & 5W's). Fill everything out as soon and as accurately as possible.

S	Size (Platoon? Battalion? #Vehicles #Persons)
A	Activity (Convoy, Checkpoint, Patrol, Cordon, Training, Interrogation, Relocating/evacuating Citizens, Etc)
L	Location (GPS/Grid Coord, address, road name/#, Direction, proximity to landmarks, nearest town, etc.)
U	Unit (Domestic/Foreign, Police, Military, branch, guard/reserve, Unit Designation, civ supt, volunteer, etc.)
T	Time & Duration (Time/Date Group: YYYYMMDD-HHMM (L-local or Z-zulu)
E	Equipment Weapons, equip, supplies, vehicles, armor, etc.

AFP-100 REV 20141114

6.4 FORMS

Established forms. These are forms that can and should be used by all operators when they have information to pass about details during a disaster. Located under the Forms tab at AmRRON.com, and in the AP III% S.O.I.

	<u>Document ID#</u>	<u>Name</u>
6.3.3	AFP-110	SITREP form (Situation Report)
6.3.4	AFP-100	SPOT Report (S.A.L.U.T.E.)
6.4.1	AFP-75	Communications Log
6.4.2	AFP-76	Net Control Station Log
6.4.3	ICS-213	General Message Form
6.4.4	HX	Message Handling Instructions
6.4.5	9 Line	Medevac Request
AFP-78	COMINT Intercept Worksheet	

Go to AmRRON.com for the Monitoring Intercept Form (AFP-77)

Access the Forms Directory online at: <http://www.amrron.com/amrron-forms/>

LEGAL NOTE:

Under FCC Rules, you must hold a General Class license, or higher, to operate in the 20, 40, or 80 meter bands using Voice or Digital Modes.

Also, it is against FCC rules to send encrypted messages over Amateur Radio bands, or to otherwise hide the true meaning of a message.

APPENDIX 2.2

Communications Log

[illegible]

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Print Multiple Copies

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APPENDIX 2.1

Net Control Station (NCS) Log



NCS Call Sign: _____

	Date(Zulu):	Band:		Mode:		Freq:		
	NWOTW (Net Word Of The Week):							
	NCS Location:			Net Time (Local):		Net Time (Zulu) :		
	Time	Call Sign	Name	State	City or County (optional)	Check In Dir Rel		Relayed by
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								



6.4.3 ICS-213 General Message Form

GENERAL MESSAGE		
1. TO:		2. POSITION:
3. FROM:		4. POSITION:
5. SUBJECT:	6. DATE:	7. TIME:
8. MESSAGE:		
9. SIGNATURE:		10. POSITION:
11. REPLY:		
12. DATE:	13. TIME:	14. SIGNATURE/POSITION:

6.4.4 Message Handling Instructions (HX):

Handling instructions (HX) are less used but quite useful in handling messages. They serve to convey any special instructions to handling and delivering operators. This "prosign," when used, is inserted in the message preamble between the precedence and the station of origin. Its use is optional with the originating stations, but once inserted is mandatory with all relaying stations.

The following definitions apply:

HXA --(Followed by number) Collect landline delivery authorized by addressee within X miles. (If no number, authorization is unlimited.)

HXB --(Followed by number) Cancel message if not delivered within X hours of filing time; service originating station.

HXC --Report date and time of delivery (TOD) to originating station.

HXD --Report to originating station the identity of station from which received, plus date and time. Report identity of station to which relayed, plus date and time, or if delivered report date, time and method of delivery.

HXE --Delivering station get reply from addressee, originate message back.

HXF --(Followed by number.) Hold delivery until...(specific date).

HXG --Delivery by mail or landline toll call not required. If toll or other expense involved, cancel message and service originating station.

Example: NR 207 R HXA50 W4MLE 12...(etc.).

If more than one HX prosign is used, they can be combined if no numbers are to be inserted, otherwise the HX should be repeated thus:
NR 207 R HXAC

6.4.5 9 Line MEDEVAC Request

Line 1. Location of the pickup site

Line 2. Radio Frequency, call sign, and suffix

Line 3. Number of patients by precedence

- A. Urgent
- B. Urgent Surgical
- C. Priority
- D. Routine
- E. Convenience

Line 4. Special equipment required:

- A. None
- B. Hoist
- C. Extraction equipment
- D. Ventilator

Line 5. A. Litter

B. Ambulatory

Line 6. *Security at pickup site

N - No enemy troops in area

P - Possible enemy troops in area (approach w/ caution)

E - Enemy troops in area (approach w/ caution)

X - Enemy troops in area (armed escort required)

* In peacetime - number and types of wounds, injuries, and illnesses

Line 7. Method of marking pickup site:

- A. Panels
- B. Pyrotechnic signal
- C. Smoke signal
- D. None

Line 8. Patient nationality and status:

A - US Military

B - US Civilian

C - Non-US Military

D - Non-US Civilian

E - EPW

Line 9. NBC Contamination

N - Nuclear

B - Biological

C - Chemical

* In peacetime - terrain description of pick-up site

SECTION 7:

AP III% TTPs and OPERATIONAL GUIDANCE

(Tactics, Techniques, and Procedures)

- **File Naming** (A logical procedure for managing traffic)
- **Message Precedence** (Prioritizing Traffic)
- AP III% **Tier Structure** (Understanding the Duties and Roles)
- **Conducting Nets:**
 - **Tips Before and During Nets**
 - **Minimize Interference with Net Traffic**
 - **CH3 Net Script**
 - **2M Net Script**
 - ♦ **Amateur Radio to CH3 Communications**
- **On-Line Net Check In**

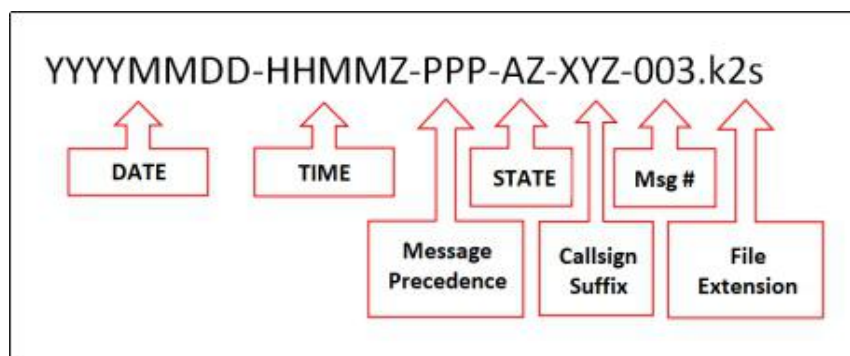
The radio operator with a guerrilla group came in for his share of difficulties too. First of all, he usually arrived at his destination by parachute. Often his equipment was damaged in the drop. Many times he had to lug it over almost impassable terrain in a wild scramble to protect it and avoid capture. Sometimes he never got on the air at all, and he and his teammates would be the subject of melancholy speculation on the part of his comrades at headquarters until some word trickled back as to what had happened to them. The radio man was expected to do his share of the fighting when the situation demanded it; and injured or sick, he was supposed to keep at his radio as long as he was strong enough to operate it.

7.1 File Naming Protocol

When creating messages, and especially when submitting SITREPS, SPOTREPS, Narrative text reports, welfare traffic, etc, the file naming structure is critically important for organizing, retrieving, and handling high volumes of traffic during an emergency.

<https://amrron.com/2019/03/04/white-paper-file-naming-protocol/>

Note: If a conflict arises between information in a published white paper and this S.O.I., the most current dated document supersedes previously dated information.



Precedence level indicated 3 TIMES in case portions of the message are garbled, and so that it more easily catches the eye.

7.2 Message Precedence

How important is your message traffic? As individual operators we become invested in what we do and often think it's the most important message in the world. It may be true, but just in case, use the following guide to determine the message precedence you place on your traffic.

ROUTINE (R):

Non-Emergency information, News Reports, Health/Welfare, Administrative, logistical coordination, etc.

WELFARE (W): (This is not **P**riority or **I**mmEDIATE/Emergency traffic)

Welfare check to report status of loved ones, or inquire of the status of same

PRIORITY (P):

Non-Emergency but very important and/or time sensitive

IMMEDIATE (O): (you say "emergency traffic" when talking to other hams)

EMERGENCY TRAFFIC. Danger of loss of life or limb is occurring or is Imminent.

Handle without delay.

FLASH (Z):

Flash 'Command & Control' traffic overrides all other traffic. Is NOT initiated by individual radio operators. **Extreme** national security or other strategic threat.

Must be handled without any delay.

7.3 AP III% Tier Structure

Statement of Purpose: To outline the general structure, including roles and duties, of AP III% operations during training and real-world disaster communications events.

During an event, whether real or training, the following is an explanation of AP III% radio procedures which includes all levels of experience.

So lets start! A nationwide or large regional event has occurred and normal communications are not working, but you and others like you have prepared by training with your radios. Although not covered in this document, it is essential that all radio operators have a current SOI and understand the Channel 3 Program.

Backbone



Tier 5 – The backbone

HF Operators with a strong persistent signal presence and one who is highly skilled at gARIM, FLDIGI, FLMSG, FLAMP, FSQCALL, and JS8CALL. Must be able to have radio on for a majority of the day. His/her function is to maintain a repository of message traffic. Communicates with tier 3, 4, 5, and 6 operators.

Duties: Create, maintain and increase size of "Backbone Network"
Utilize the 20 meter window for national communications (2000z-2300z)
Have a working knowledge of the "Gray Line"
Keep your gARIM file structure up to date and clutter free
Repackage message traffic into FLMSG/FLAMP files if needed.
Stay aware of all message traffic from Tier 3,4,5 and 6 operators.

Tier 1 - Non-licensed CH3

The non licensed radio operator is referred to as a **Tier 1** – CH3 operator using MURS, CB, and/or FRS on channel 3.

Duties: You are the very localized operator with a vital role in supplying the street level information to be passed up the chain for the leadership.

You should try to cultivate and maintain an active relationship with other tier 1 and 2 operators, as they will relay important info to you as well. Learning how to use a scanner and a shortwave radio with SSB capabilities will further keep you in the know.

Tier 2 - Licensed Amateur Radio Technician

Local VHF/UHF operator with CH3 capabilities as well. A scanner and shortwave radio are a huge plus here. Communicates with tier 1 and 2 and 3 operators.

Duties: Realize the importance of your role as “boots on the ground” collecting and exchanging information on a local level is crucial to our mission.

Cultivate and maintain relationships with tier 1 and 3 operators.

Tier 3 - HF Operator

Must be able to send information in brief but concise format between themselves, NCS's and back to the Technician. HF/VHF/UHF required. Communicates with tier 2 and 4 operators.

Duties: Act as a liaison between the tier 2 and 4 operators

Exchange information between tier 2 operators keeping them in the loop.

Pass important message traffic to a NCS using the band and mode described in the SOI.

Whenever possible use digital modes with the AP III% Custom forms for message traffic. Also read and understand the white paper explaining “file naming”

If you have NCS experience then step up to the plate when needed. And remember our goal is to pass critical message traffic, please be mindful of others that may need your help with passing traffic. Also please closely follow the directions of a NCS.

NOTE: Tiers 4, 5, and 6 are volunteer AP III% Corps operators who have previously coordinated with AP III% National to fill the positions of NCS, Backbone, and SIGCEN using the designation N, B and S after their call sign.

Tier 4 - NCS

HF operator with experience in being a Net Control Station. Must be able to administer order in the midst of chaos. Digital radio experience is a must in FLDIGI, FLMSG, and FLAMP. Communicates with tier 3, 5 and 6 operators. You have big shoes to fill here!

Duties: Must take charge and direct the flow of traffic using whatever mode is the fastest and most accurate.

Ensures that traffic is passed to other (liaison stations) tier 4, 5 and 6 operators based upon priority and need.

Also needs to keep the tier 3 operators informed of the next window of operation and process EXSUMS as they are issued. It is not your job to reassemble message traffic into K2s forms. You have enough to do already.

Tier 5 - The Backbone

HF Operators with a strong persistent signal presence and one who is highly skilled at gARIM, FLDIGI, FLMSG, FLAMP, FSQCALL, and JS8CALL. Must be able to have radio on for a majority of the day. His/her function is to maintain a repository of message traffic. Communicates with tier 3, 4, 5, and 6 operators.

Duties: Create, maintain and increase size of "Backbone Network"

Utilize the 20 meter window for national communications (2000z-2300z)

Have a working knowledge of the "Gray Line"

Keep your gARIM file structure up to date and clutter free

Repackage message traffic into FLMSG/FLAMP files if needed.

Stay aware of all message traffic from Tier 3,4,5 and 6 operators.

Tier 6 - SIGCEN

HF operators with significant experience in all HF modes with the added experience of intel gathering, prioritizing, battle tracking and analyzing for leadership decision making. Must have all needed HF/VHF/UHF/CH3 and scanner equipment. Communicates with tier 3, 4 and 6 operators.

Duties: Have a system and the equipment to maintain awareness of all critical information.

Must be able to prioritize the information and repackage it for clear and concise consumption by the leadership to help them make important decisions.

Higher Echelons: Served agencies or elected/community/emergency response leadership, to help them coordinate logistics and planning and make critical decisions, and:

Lower Echelons: Distribution of information to Net Control Station (NCS) operators and at times, the general audience of the network, consisting of compiled Initial Event Summaries, SITREPs, Public Information Announcements, and Executive Summaries to keep all participants in the network informed.

Must be able to keep a persistent presence especially during a crisis or emergency.

Work closely with tier 4 and 6 operators.

Here's the process for interaction between tiers:

Tier 1 operators are sharing messages with each other and one of them passes a message to a Tier 2 operator.

The Tier 2 operator makes a contact with a Tier 3 and shares that very same message.

The Tier 3 person then repackages the information into a digital format and uses the SOI to share that message with others in a larger geographic region or even nationally by coordination with a NCS (net control Station).

The Tier 4 NCS ensures that the message is sent to its required destination by soliciting help from Liaison (Tier 4,5,and 6) stations.

The Tier 5 Backbone is a persistent presence radio station that is in place to ensure a nationwide network and act as a repository for digital forms.

Once the message gets to a Tier 6 SIGCEN it is then prioritized and compared with other messages to paint a picture of events for leadership to make important decisions and assemble executive summaries of daily events.

Once the leadership has a good picture of the national events they will issue an executive summary of events that will be passed back down through the tiers to ensure that everyone is informed.

7.4 Conduct Before and During Nets

1. What is expected of EVERY radio operator during operational nets:

- a) STEP 1. Fill out an initial STATREP and an Abbreviated STATREP and keep them updated.
- b) Refer to the net schedule and participate in all the nets you are able to
- c) Follow ALL INSTRUCTIONS of NCS during the nets. Scheduled nets are DIRECTED NETS. If NCS asks for assistance or relays be ready to assist.
- d) Unless you have emergency/Immediate traffic, do not check in to a net until NCS asks for check-ins. During voice nets, when NCS asks for check-ins, you check in with your call sign, phonetically, and wait for him to acknowledge you.
- e) If you do not have traffic, then be silent and listen. If you want to conduct a radio check, be sure that others with traffic have finished with their business.
- f) One of the very first things NCSs will do is ask for stations to report their initial STATREPS. You should always have this and any other traffic ready to go PRIOR to a net. If there is a high volume of traffic, NCS may ask for abbreviated STATREPS, and may request them in a different digital mode, such as JS8Call or FSQ4.5.
- g) Have all of your traffic prepared before the net.
- h) Monitor the airwaves and learn the cause, size, scope, and effects of the event, to stay informed and inform others.
- i) Conduct local voice nets where you have established them, and if you can conduct local (VHF/UHF) digital nets, that's a huge bonus.
- j) Don't forget to monitor CH3 (CB, FRS, and MURS if possible) and pass on announcements and news in your area.

- k) During training exercises, ALWAYS announce the traffic as such at the beginning and the end of your traffic, especially if it could cause alarm to others monitoring who may be unaware of the training exercise:

“Exercise, Exercise, Exercise... The following SITREP is part of the [name of exercise] emergency communications exercise...”

“This is only a training exercise, this is [callsign], out.”

7.5 Minimize Interference:

Guidance to minimize interference of net traffic being transmitted

“Every time I’m right in the middle of getting the AIB (or other traffic) from the net, someone transmits in the blind trying to check in, and obliterates half the incoming message, and they do it repeatedly!”

Intent of this guidance. Develop orderly net disciplines so traffic being sent is not disrupted. This guidance is intended to resolve the following conditions:

- A. Net Control often not establishing and/or maintaining working relationship with an Assistant Net Control Station (ANCS), leading to;
- B. Stations who are unable to hear NCS repeatedly transmitting “CQ CQ AP III %”, or repeatedly checking in, interfering with net traffic.
- C. Frustrated station operators who are in the process of receiving traffic, missing traffic due to stations transmitting in the blind, on top of net traffic.
- D. NCSs unable to confirm receipt of traffic from distant station operators.

Recommended Procedures for net participants during controlled nets:

- 1. Follow all instructions of NCS and ANCS, precisely.
- 2. If you do not have Priority or higher traffic for the net,
do not transmit until:
 - a. You specifically hear/see from NCS or ANCS, clearly calling for check-ins or traffic. If you’re not clearly instructed to transmit, you don’t transmit, unless:

- b. You are well into the established net schedule time and have heard nothing, then suddenly see stations checking in, or apparently communicating with NCS/ANCS, THEN:
 - Put out your call sign, followed by "Need Relay" to request to be relayed ONE TIME, and wait to be acknowledged, or;
 - Transmit your call sign, followed by "[Precedence] Traffic" ONE TIME, if you have traffic to pass, and wait to be acknowledged.
3. If you see/hear a station transmitting on top of NCS/ANCS, make a note of his call sign so you can relay him in at the appropriate time. It is apparent he cannot copy NCS or ANCS and will need to be relayed.
4. If you see/hear a station repeat his transmission on top of NCS/ANCS, do not delay, tell the station:
 - a) "<call> de <yourcall>, Net is underway. Stand by." That station has already disrupted the net twice, so your message to him will hopefully stop further interference.
 - b) If station interferes a third time, "<call> de <yourcall>, You are interfering with the net. I will relay you in. Cease transmitting."
 - c) Although you would likely also be disrupting traffic at that moment, all the other operators will appreciate it nonetheless. Then ask NCS or ANCS to re-transmit last traffic.
5. When receiving traffic, do not ask for fills or re-transmission until NCS asks for it. Often NCS's station will momentarily BK or 'BT' (Break Transmission), and then resume. That break is not your chance to ask for the rest of the message or request block fills, unless you have Emergency traffic.
6. If after the net you were not able to check in or receive traffic, no one volunteered to relay you in, and it is evident you were not heard, THEN feel free to call 'CQ CQ AP III%', and request traffic. You will very likely be heard by someone and may still get traffic relayed to you after the net has officially closed.

7.6 On-Line Check-in: Practice or Training Nets

1. Check in directly with Net Control
2. If you cannot check in directly, ask another station to relay you.
3. If you cannot check in at all, but you could hear other stations talking during the net, you can still check in via the website.

Let us know you were there!

Click on the green 'Net Checkin' button on the website, or...

Check in at: <https://amrron.com/net-check-in-form/>

(only if you could not check in over radio)

7.7 Net Scripts

(What to say while starting/running a local CH3 net)

KEEP IT SIMPLE! ...JUST GET THE MESSAGE OUT!

EXAMPLES

- Turn to desired channel, and listen for 15 to 30 seconds. Don't hear anything?
- Make sure the frequency is clear and not already in use.
- Key the mic: ***"This is <your call sign>, is this channel (or frequency) in use?"***

7.7.1 Super Simple Contact:

"<call sign>, this is <your call sign>, are there any operators on the air? Any Operators wishing to make contact, over"

7.7.2 Super Simple Informal Net Script:

Preamble:

"This is <your call sign>, initiating the local _____ (CB/FRS/MURS) AP III% emergency communications (*practice) net on Channel 3. Is there anyone wishing to check in to the AP III% CH3 Net?"

- Wait 10 – 15 seconds for a response. If you hear a response, offer to check them in to the net. Write down their call sign/code name so you can relay it to a local 2m net control station, or maintain it for your own records if you are not in contact with a 2m net.

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- If no response is heard:

Repeat the preamble. Then:

“Nothing heard on my end. If you can hear me, but I’m unable to hear you, this is <your call sign>, with the local AP III% CH3 Net on _____ (CB, FRS, MURS) channel three. This is an emergency communications (*practice) Net. I have the following message to pass. The message is as follows, _____ “(If this is a practice net, relay the NWOTW – Net Word Of The Week). Otherwise, pass the information, and then repeat it.

Close your net. “This is <your call sign>. I have no further traffic and will now close the net. <your call sign>, OUT.”

***During non-emergency nets on the CH3 radios, always announce that this as an emergency PRACTICE net.**

7.7.3 Channel 3 Nets (FULL SCRIPT

This is intended to provide general guidance and a basic script to aid in the use of the Channel 3 project, within the AP III% communications program. It was designed to be used during practice nets.

For use with CB, FRS, and/or MURS:

When you are conducting your own local CH3 Net and acting as a Net Control Station (NCS)

-or-

When you are part of a larger net and directed by NCS to attempt contact and exchange messages or take check-ins on CH3.

Good evening (morning/afternoon), this is _____ <your call sign> with AP III%, the American Patriot Radio Operators Network, and the CH3 project, conducting a (practice) communications net on _____ (CB/FRS/MURS) Channel 3.

Is there anyone wishing to check in to the AP CH3 Net?”

<Pause and wait for approximately 10 -15 seconds>

- Take check-ins and give them the NWOTW (Net Word Of The Week) and/or message traffic. - - Relay back to NCS or log the contacts and any message traffic.

<If nothing is heard after the 10 -15 second pause, repeat opening announcement message>

- If you hear no other stations coming back to you, then continue:

“Nothing heard. If anyone can hear me, but I am unable to hear you, the Net Word Of The Week is _____ (repeat NWOTW and then spell it phonetically).

You can report this contact by going to www.AmRRON.com and clicking on the green 'Net Checkin' button on the right side of the page, to let us know you were there, and we appreciate you letting us know how you heard the net, such as with a two-way radio or a scanner.

Once again, this is _____ with the American Patriot Radio Operators Network conducting a practice net for emergency or disaster preparedness purposes on _____ (CB, FRS, MURS) Channel 3. Any stations wishing to check in, please come now.

<Pause 10 -15 Seconds. Respond and take check-ins if there are any>

A) This concludes this AP CH3 emergency communications net. This is _____, CLEAR.

-Or-

B) This concludes this AP CH3 emergency communications net. I will be standing by for the next _____ minutes in case there are any late-comers. This is _____, OUT.

NOTE: This is a guideline for conducting PRACTICE CH3 nets. Modify it for use in your area in a real-world emergency communications situation.

7.7.4 VHF/UHF (2m/70cm) Simplex Net Script

Note for Net Control: Refer to NCS Checklist

Five minutes prior to the net announce the following:

This is _____ (phonetic call sign). The AP III% _____ (2m, 70cm, ch3) net will begin in 5 minutes. We would appreciate a clear frequency at that time. _____ (Phonetic call sign), Standing by.

Start ON TIME!

QST, QST, QST AP III%,

This is _____ (Call sign), _____ (repeated phonetically). My name is _____ in _____ (location), Net Control for the _____ (see note 1) AP III% net. The purpose of this net is to practice emergency communications and act as relays for the CH3 project. You can learn more about AmRRON and the CH3 project by going to www.AmRRON.com.

This is a directed net, so please stand by. This is Net Control Operator, _____ (call sign).

-Break-

This net meets on _____ of each month at _____ hrs., (local/Zulu) time, on this frequency of _____ MHz. (Make note of SSB, Offsets, or PL tones, if applicable)

In each AP III% practice net we provide a different net word of the week. This helps us understand the effectiveness and the reach of these nets. In a real-world emergency situation, instead of a net word of the week, it might be some other public announcement or even life-saving information. This helps us practice passing a specific piece of information across the network.

The Net Word Of The Week for this week is _____ - _____, I say again, the Net Word Of The Week is (phonetically) _____-_____.

At this time I will take check-ins. Please report with your call sign, name, general location, and confirm the Net Word Of The Week and the authentication number. This is _____, net control, check-ins come now.

After all check-ins, ask if there is any traffic or announcements from any station. Also, if you have any traffic or announcements, do that at this time.

You may also announce that the net is open for any QSOs, but clear calls

///// At the 15 minute mark /////

This is _____, Net Control for the AP III% Net. At this time, all stations act as relays and make contacts on Channel 3 on FRS, MURS, or CB, depending on your capabilities. Remember that some stations may be monitoring and may not be able to respond or you may not be able to copy them, so be sure to announce the Net Word Of The Week and the Authentication Number. After you take CH3 Check-ins, report them to Net Control, with the contact's Call Sign, general location, and the band on which the contact was made.

This is _____, At this time, are there any late stations wishing to check in? Come now.

-Break-

If anyone can copy this net but you are NOT able to check in, you can click the green 'Net Checkin' button on the website.

The Net Word Of The Week is _____ - _____. This is _____, Net Control, standing by.

///// 20 Minute mark /////

This is _____, Net Control for the AP III% Net; Are there any (other) CH3 Check-ins from any relay stations, or any other traffic, before we close the net? Come now.

This is _____, Net Control for the AP III% Net. I would like to thank everyone for participating in the _____ AP III% Net. If you're new and would like to know more, don't forget you can always visit us at www.APIII.US.

We now return this repeater/frequency _____ MHz to normal use. 73, everyone, and God bless. This is _____, net control, signing off.

SECTION 8 Radio Operations

OVERVIEW

This section covers some of the fundamentals of communications that are relevant to AP III%/TAPRN/CH3 operations. It is designed to bring the beginner or novice communicator up to a basic level of understanding. This will be helpful in determining capabilities and limitations, and to help identify shortcomings and set goals for the communications operator or team.

8.1 Making a Radio Call

Experienced operators are very familiar with radio procedures. This section is for the new communicator, especially as it pertains to AP III% protocol. (Extremely useful on CH3 frequencies)

- Step 1. Check the SOI to make sure you are on the correct frequency at the correct time
- Step 2. Ensure your radio volume is turned up loud enough to hear other stations (operators)
- Step 3. Key the mic at least a half second before speaking, and wait a half second before un-keying.
Hold the mic approximately 3 - 4 inches away from your mouth, and slightly to the side, and speak PAST the mic, not directly in to it. This is especially important on UHF/VHF radios.
- Step 4. Making the call:
- A) If you know the other station's code name/call sign:
Always use the other station's ID, and then your own
" <other station's call sign> this is <your call sign>, over"
... then wait 10 to 15 seconds ... then say again...
Repeat this process a couple of times. If nothing is heard, then clear your call:
"This is <your call sign>, nothing heard. Out" (or simply state your call sign/code name)
-
-

8.2 Communications Crash Course

Here, we're specifically talking about radio communications. There are two primary modes of communications – Voice and Digital. Voice is often referred to in radio-speak as 'Phone.' Just so you're not confused if you see that in your research elsewhere. Voice is just that. You key the mic and talk. Your voice goes out over the airwaves and is received by another radio. Simple. The other mode is Digital. For simplification, we'll include CW (Morse Code) in the Digital category. Digital communications sounds like a modem, making a screeching, warbling sound to the ear. That's actually data being passed – Much like talking vs. texting on your cell phone.

Voice:

PROS: Instant communications, allowing for quick feedback allowing for brief exchange of information in a short amount of time.

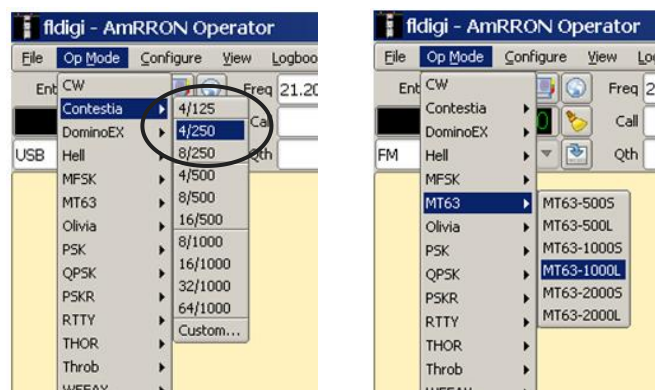
CONS: Uses much more bandwidth, requiring more power to transmit and cannot travel as far as a digital message. Not secure. The bad guys instantly know the information you just transmitted.

Digital:

PROS: Narrow bandwidth, requiring much less transmitting power to send a message farther than voice. Can often be received when voice cannot due to distance, atmospheric conditions, etc. More secure than voice. Bad guys need equipment, software, and skillsets to decode your traffic.

CONS: Slower and more cumbersome than voice. Requires additional equipment (small laptop), software, and skillsets to operate. Requires additional power and logistics to operate. Bad guys with the necessary equipment and skills can receive your transmissions from farther distances.

More on Digital: There are several Digital modes referenced in this SOI. They can be selected from the dropdown menu in your fldigi software as the screenshots (right) show.

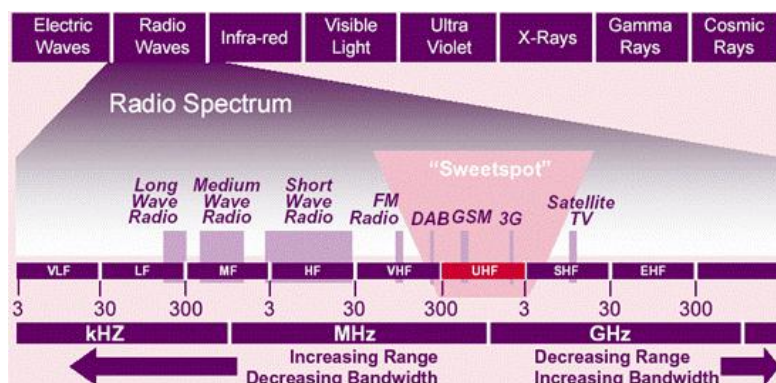


Important Notes:

- Make sure to set the proper audio settings [**configure**] then
- [**sound card**] then [**port audio**] to match your computer Audio
- USB Soundcard, such as Signalink, provides best performance, but an audio patch cable from radio's headphone 'out' jack to computer works well for simply receiving.

You do NOT need to be licensed to receive digital communications!**There**

are three Radio Waves we will be using for AP III%:



HF (High Frequency)
3 - 30 MHz

VHF (Very High Frequency)
30 - 300 MHz

UHF (Ultra High Frequency)
300 - 3000 MHz (3 GHz)

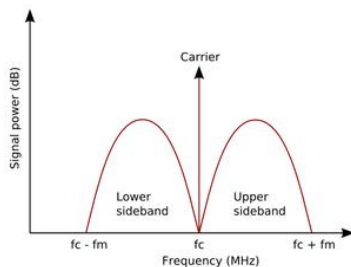
MF	HF	VHF	UHF
AM commercial broadcasting uses 535kHz to 1,605kHz 1,600 kHz = 1.6 MHz	CB Radio (27 MHz) 20m Ham (14 MHz) 40m Ham (7.0 MHz) 80m Ham (3.5 MHz) All other Ham HF Shortwave Brdcstng	2m Ham (146 MHz) MURS (152 MHz) Police-Fire-EMS-Public Services (varies) Marine (157 MHz) FM Broadcasting - (88-108 MHz)	70cm Ham (440 MHz) FRS (462 & 467 MHz) Police-Fire-EMS-Public Services (varies) Business

Single Side Band (SSB)

There are two sides to the bandwidth of a signal:

USB (Upper Side Band)

LSB (Lower Side Band)



Using both sides of the band at once is called AM (Amplitude Modulation)

SSB is used for transmitting both Voice and Digital, mostly used in HF bands.

SSB allows your signal to ride along one side of the band, requiring less power to push your signal farther. It

narrows (squeezes) the information traveling through the airwaves to one side of the band, and this is why you can talk to someone in New Zealand from central Montana on a 20m frequency. SSB is especially useful with weak signals or poor band conditions, but can be used any time and is what Ham operators almost always transmit on when using the HF bands.

As a minimum you must have a shortwave radio with Single Side Band capabilities to be able to receive these transmitted signals.

8.3 Communications Gear (an Overview)

There are three basic types of radios:

1. **Transceivers:** Two-way communications – Transmit and Receive
 - Ham Radios (aka. Ham 'Rigs'), FRS, MURS, CB, cell phones, etc.
2. **Transmitters:** One way – OUT. Transmit only
 - Dakota Alert, FM broadcast transmitters, motion sensors, personal emergency beacon
3. **Receivers:** One way – IN. Receive only.
 - Scanners, AM/FM radios, Shortwave radios, pagers, weather station receivers, etc.

Additional Equipment: (don't forget the antenna cable adapter for your handheld radio!)

A) **Antenna.** IT'S ALL ABOUT THE ANTENNA! Invest in this area by purchasing or building, and:

- Mount outdoors and as high as possible for best performance
- Shortwave antennas should be as long as possible (up to 250') strung outside in horizontal loop, whenever possible/practical.
- Use Ferrite Chokes at antenna cable connection points when possible, especially when using digital communications. This helps eliminate RF (radio frequency) interference from electronics.
- Ground the antenna when possible/practical or applicable

B) **Antenna Tuner:** Enables the use of one long antenna for operating on multiple bands. Used primarily for HF Transceivers.

C) **Soundcard/Soundcard Interface:** Such as Signalink brand soundcard. This is necessary for your radio to work together with your computer when sending/receiving digital communications.

D) **Power Supply:** Enables you to power 12v-13.8v DC equipment (such as Ham radios) with 110v AC power source, such as a wall outlet (grid-up) or generator.

E) **Inverter:** Supplies 110v AC from 12v DC Deep Cycle RV (or auto) battery/battery bank.

F) **Computer:** Such as small laptop, netbook, or Raspberry Pi. Necessary for operating digital communications software, such as fldigi.

"the secret of war lies in the communications"
- Napoleon Bonaparte

SECTION 9 Radio Communications References and Resources

- Phonetic Alphabet (NATO/ITU)
- Signal Reports (RST system)
- General Overview of Various Radio Capabilities
- Zulu Time Conversion Chart
- Prowords
- Other Nets of Interest

Dipole Wire Antenna Formula

The most widely used formula to calculate the approximate overall length of wire required for a dipole is:

$$468 / \text{frequency (MHz)} = \text{length of wire in feet.}$$

callsig

9.1 NATO/ITU Phonetic Alphabet

A ALFA	J JULIET	S SIERRA
B BRAVO	K KILO	T TANGO
C CHARLIE	L LIMA	U UNIFORM
D DELTA	M MIKE	V VICTOR
E ECHO	N NOVEMBER	W WHISKEY
F FOXTROT	O OSCAR	X X-RAY
G GOLF	P PAPA	Y YANKEE
H HOTEL	Q QUEBEC	Z ZULU
I INDIA	R ROMEO	

9.2 Signal Report (R-S-T System)

"Can I get an RST report please?" or "...a signal report please?"

READABILITY

- 1—Unreadable
- 2—Barely readable, occasional words distinguishable.
- 3—Readable with considerable difficulty.
- 4—Readable with practically no difficulty.
- 5—Perfectly readable.

SIGNAL STRENGTH

- 1—Faint signals, barely perceptible.
- 2—Very weak signals.
- 3—Weak signals.
- 4—Fair signals.
- 5—Fairly good signals.
- 6—Good signals.
- 7—Moderately strong signals.
- 8—Strong signals.
- 9—Extremely strong signals.

tone (normally used only during CW)

- 1—Sixty Hz ac or less, very rough and broad.
- 2—Very rough ac, very harsh and broad.
- 3—Rough ac tone, rectified but not filtered.
- 4—Rough note, some trace of filtering.
- 5—Filtered rectified ac but strongly ripple-Modulated.
- 6—Filtered tone, definite trace of ripple modulation.
- 7—Near pure tone, trace of ripple modulation.
- 8—Near perfect tone, slight trace of modulation.
- 9—Perfect tone, no trace of ripple or modulation of any kind.

Examples:

Perfect signal, perfect copy:

"Roger, I copy you five by nine."

Fair signal, fair copy:

"Roger, I copy you three by four"

9.3 General Overview of Radio Compatibility

Radio and Band Performance Compatibility													
Can Communicate With ➡	FRS	MURS	CB	Shortwave Rcvr. (No SSB)	Shortwave Rcvr. w/SSB	Scanner (800MHz) Police/Fire/EMS	2m Ham	70cm Ham	Dual-Band Ham	Baofeng -type Dual-Band	HF Ham	FM Broadcast Transmitter	AM Broadcast Transmitter
My Device ⬇													
FRS	X					T			T	X		R	
MURS		X				T			T	X			
CB			X	T	*T								
Shortwave Receiver (No SSB)			R										R
Shortwave Receiver w/ SSB			*R								R		R
Scanner (800MHz) Police/Fire/EMS	R	R					R	R	R	R		R	
2m Ham						T	X		X	X			
70cm Ham						T		X	X	X			
Dual Band Ham						T	X	X	X	X			
Baofeng-type Dual-Band	X	X				T	X	X	X	X		R	
HF Ham on SSB			R		T						X		R
FM Broadcast Transmitter						T				T			
AM Broadcast Transmitter				T							T		
T - Transmit (OUT) Only R - Receive (IN) Only X - Transmit <u>and</u> Receive													
*SSB Shortwave Radio required for listening to CB Radios transmitting on SSB													
NOTE: Range of frequencies a scanner can receive varies by model. Check your manufacturer's specs.													
This chart is a general guideline and is not conclusive. There are many variables and modifications that can affect a radio's capabilities.													

"You see, wire telegraph is a kind of a very, very long cat. You pull his tail in New York and his head is meowing in Los Angeles. Do you understand this? And radio operates exactly the same way: you send your signals here, they receive them there. The only difference is that there is no cat."

- Albert Einstein

Section 9.4

ZULU Time Conversion Chart

Most of the **United States** begins Daylight Saving Time at 2:00 a.m. on the second Sunday in March and reverts to standard time on the first Sunday in November. In the U.S., each time zone switches at a different time.

To make the conversion to your local time, see the chart below. Find your local time in the first column. If you are on Eastern Daylight Saving Time (EDT), you would use the second column to find your Zulu Time/UTC. For instance, if it's 11 a.m. Eastern Daylight Saving Time in Washington, D.C., it's 1500 hours in Zulu time/UTC.

		LOCAL	EDT	EST	CDT	CST	MDT	MST	PDT	PST
			Mar-Nov	Nov-Mar	Mar-Nov	Nov-Mar	Mar-Nov	Nov-Mar	Mar-Nov	Nov-Mar
Time Zone Legend: EDT: Eastern Daylight Saving Time EST: Eastern Standard Time CDT: Central Daylight Saving Time CST: Central Standard Time MDT: Mountain Daylight Saving Time MST: Mountain Standard Time --- --	Midnight		0400	0500	0500	0600	0600	0700	0700	0800
	1 a.m.		0500	0600	0600	0700	0700	0800	0800	0900
	2 a.m.		0600	0700	0700	0800	0800	0900	0900	1000
	3 a.m.		0700	0800	0800	0900	0900	1000	1000	1100
	4 a.m.		0800	0900	0900	1000	1000	1100	1100	1200
	5 a.m.		0900	1000	1000	1100	1100	1200	1200	1300
	6 a.m.		1000	1100	1100	1200	1200	1300	1300	1400
	7 a.m.		1100	1200	1200	1300	1300	1400	1400	1500
	8 a.m.		1200	1300	1300	1400	1400	1500	1500	1600
	9 a.m.		1300	1400	1400	1500	1500	1600	1600	1700
	10 a.m.		1400	1500	1500	1600	1600	1700	1700	1800
	11 a.m.		1500	1600	1600	1700	1700	1800	1800	1900
	NOON		1600	1700	1700	1800	1800	1900	1900	2000
	1 p.m.		1700	1800	1800	1900	1900	2000	2000	2100
	2 p.m.		1800	1900	1900	2000	2000	2100	2100	2200
	3 p.m.		1900	2000	2000	2100	2100	2200	2200	2300
	4 p.m.		2000	2100	2100	2200	2200	2300	2300	2400
	5 p.m.		2100	2200	2200	2300	2300	2400	2400	0100
	6 p.m.		2200	2300	2300	2400	2400	0100	0100	0200
	7 p.m.		2300	2400	2400	0100	0100	0200	0200	0300
	8 p.m.		2400	0100	0100	0200	0200	0300	0300	0400
	9 p.m.		0100	0200	0200	0300	0300	0400	0400	0500
	10 p.m.		0200	0300	0300	0400	0400	0500	0500	0600
	11 p.m.		0300	0400	0400	0500	0500	0600	0600	0700
		LOCAL	EDT	EST	CDT	CST	MDT	MST	PDT	PST

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9.5 PROWORDS

<u>Word or Phrase</u>	<u>Meaning</u>
-----------------------	----------------

ALL AFTER	I refer to the portion of the message that follows...
ALL BEFORE	I refer to the portion of the message that precedes....
BREAK	I hereby indicate the separation of the text from other portions of the message. Or: I have completed the text of the message, signature follows, etc. (When break-in is permitted, receiving operator may interrupt the transmitting operator to request retransmission of a portion of a message. This proword is the interruption sign.)
CORRECTION	An error has been made in this transmission (or message indicated). Transmission will continue with the last word correctly transmitted.
FIGURES	Numerals or numbers follow.
FROM	The originator of this message is indicated by the address designation immediately following.
I READ BACK	The following is my response to your instructions to read back.
I SAY AGAIN	I am repeating transmission (or portion) indicated.
I SPELL	I shall spell the next word phonetically.
MESSAGE FOLLOWS	A message which requires recording is about to follow. (Transmitted immediately after the call.) Word or Phrase Meaning Radio Operator's Handbook _____
OUT	This is the end of my transmission to you. No response is necessary or expected.
OVER	This is the end of my transmission to you. A response is necessary and expected. Go ahead and transmit.
READ BACK	Repeat this entire transmission back to me exactly as received.

RELAY TO	Transmit this message to all addressees or to the address designations immediately following.
ROGER	I have received your last transmission satisfactorily.
ROUTINE	Precedence ROUTINE.
SAY AGAIN	Repeat all of your last transmission. Followed by identification data means: Say again (portion indicated).” (“Repeat” is not used because it is the signal for naval gunfire and artillery to fire.)
THIS IS	This transmission is from the station whose designation immediately follows.
TIME	That which immediately follows is the time or date-time group of the message.
TO	The addressees whose designations immediately follow are to take action on this message.
WAIT	I must pause for a few seconds.
WAIT OUT	I must pause longer than a few seconds.
WILCO	I have received your message, understand it, and will comply. (To be used only by the addressee. Since the meaning of ROGER is included in that of WILCO, the two prowords are never used together.)
WORD AFTER	I refer to the word that follows. WORD BEFORE I refer to the word that precedes.
WORDS TWICE	Communication is difficult. Transmit(ing) each phrase (or each code group) twice. This proword may be used as an order, request, or as information.
WRONG	Your last transmission was incorrect. The correct version is.

Interesting Radio History

Four types of agent radio operators can be distinguished -- those who operated in metropolitan areas in concert with well-organized watcher organizations; those who operated on their own in cities; those who were with the guerrilla groups; and those who worked alone in isolated rural areas.

CIA Library - Agent Radio Operation During World War II

9.6 Other Frequencies & Nets of interest

Some of these resources are not necessarily patriot oriented, are great resources for training, information, and situational awareness.

Hurricane Watch Net 14.325 Voice (when activated) <https://hwn.org/>

Maritime Mobile Net 14.300MHz - (Voice) Also is the IARU Region 2 Emergency Communications Frequency for ships and weather forecasts
(Monitored 24/7/365)

Montana Traffic Net. <http://montanatrafficnet.com/>

NoonTime Net <http://www.noontimenet.org/>
7268.5 kHz. and 3970 kHz (Voice)

ORCA NET (Oregon and California Digital Net)
<http://orcadigitalnet.com/reports/>

NBEMS Training & Practice using FLDIGI/FLMSG/FLAMP

3.581 USB (1500 on Waterfall) using MFSK-32 mode

Tuesdays:

0300Z (1900 Pacific) Early Check-ins

0330Z (1930 Pacific) Net Begins

SATERN (Salvation Army Team Emergency Radio Network)

<https://qso.com/satern/>

14.265 National Voice

7.265 Regional Voice

FEMA Region X Monthly Interoperability NET

60m Channels (ARES/RACES)

Channel 1: 5330.5 kHz

Channel 2: 5346.5 kHz

Channel 3: 5357.0 kHz

Channel 4: 5371.5 kHz

Channel 5: 5403.5 kHz

3rd Wednesday 1730-1900 Zulu

1730Z CH1 Open net, delay check-ins

1735Z CH2 BPSK31 NCS sends 1st digital message

1740Z CH2 MT63-2KL NCS repeats 1st message

1745Z CH1 NCS calls for check-ins

1815Z CH2 BPSK31 NCS sends 2nd msg

1825Z CH2 MT63-2KL NCS repeats 2nd Message

1827Z CH1 NCS calls for reports

1850Z CH1 NCS closes the net

Voice of America (VOA) RADIOGRAM

Shortwave Radiogram transmits digital text and images on an analog shortwave broadcast transmitter. The program is produced and presented by Dr. Kim Andrew Elliott KD9XB. Shortwave Radiogram continues VOA Radiogram's tradition testing new modes and is an interesting source for Digital Ops wishing to practice more with FLDIGI & FLAMP.

Shortwave Radiogram Transmission Schedule (AM)

Fri 2030-2100 UTC

7780 kHz

9455 kHz

WRMI Florida

Sat 1600-1630 UTC

9400 kHz

Space Line, Bulgaria

Sun 2330-2400 UTC

7780 kHz

WRMI Florida

Mon 0800-0830 UTC

7730 kHz

5850 kHz

WRMI Florida

Wilderness Protocol (from ARRL)

The Wilderness protocol (see page 101, August 1995 QST) calls for hams in the wilderness to announce their presence on, and to monitor, the national calling frequencies for five minutes beginning at the top of the hour, every three hours from 7 AM to 7 PM while in the back country. A ham in a remote location may be able to relay emergency information through another wilderness ham who has better access to a repeater.

National calling frequencies:

52.525 MHz

146.52 “

223.50 “

446.00 “

1294.50 MHz.

9.7 Frequency Tables

9.7.1 FRS (Family Radio Service)

Some brands may deviate from this standard. Check the frequencies listed by the manufacturer of your brand.

Channel	Frequency (MHz)	Notes
1	462.5625	Shared with GMRS
2	462.5875	Shared with GMRS
3	462.6125	Shared with GMRS
4	462.6375	Shared with GMRS
5	462.6625	Shared with GMRS
6	462.6875	Shared with GMRS
7	462.7125	Shared with GMRS
8	467.5625	FRS use only
9	467.5875	FRS use only
10	467.6125	FRS use only
11	467.6375	FRS use only
12	467.6625	FRS use only
13	467.6875	FRS use only
14	467.7125	FRS use only

Some clubs such as *REACT International, Inc.* and the *National SOS Radio Network* have recommended FRS Channel 1 as a national emergency/calling channel. Monitor CH1 for information.

9.7.2 GMRS (General Mobile Radio Service) License Required

This band is not used for AmRRON, but due to the popularity among some prepper groups, it is added for reference.

For use with simplex operation. Frequencies shared with FRS

For use with GMRS repeaters (+ offset) 5 MHz

Name	Frequency	Motorola Ch. Config.
"5625" or "FRS 1"	462.5625 MHz	Ch. 1
"5875" or "FRS 2"	462.5875	Ch. 2
"6125" or "FRS 3"	462.6125	Ch. 3
"6375" or "FRS 4"	462.6375	Ch. 4
"6625" or "FRS 5"	462.6625	Ch. 5
"6875" or "FRS 6"	462.6875	Ch. 6
"7125" or "FRS 7"	462.7125	Ch. 7

Name	Lower frequency (repeater output)	Upper frequency (repeater input)	Motorola Ch. Config
"550"	462.550 MHz	467.550 MHz	Ch. 15
"575"	462.575	467.575	Ch. 16
"600"	462.600	467.600	Ch. 17
"625"	462.625	467.625	Ch. 18
"650"	462.650	467.650	Ch. 19
"675"	462.675	467.675	Ch. 20
"700"	462.700	467.700	Ch. 21
"725"	462.725	467.725	Ch. 22

9.7.3 MURS (Multi-Use Radio Service)

Channel	Frequency	Channel Name
1	151.820 MHz	--
2	151.880 MHz	--
3	151.940 MHz	--
4	154.570 MHz	Blue Dot
5	154.600 MHz	Green Dot

9.7.4 CB(Citizens Band)

Channel	Freq	Channel	Freq	Channel	Freq	Channel	Freq
1	26.965	11	27.085	21	27.215	31	27.315
2	26.975	12	27.105	22	27.225	32	27.325
3	26.985	13	27.115	23	27.255	33	27.335
4	27.005	14	27.125	24	27.235	34	27.345
5	27.015	15	27.135	25	27.245	35	27.355
6	27.025	16	27.155	26	27.265	*36	27.365
7	27.035	17	27.165	27	27.275	37	27.375
8	27.055	18	27.175	28	27.285	38	27.385
9	27.065	19	27.185	29	27.295	39	27.395
10	27.075	20	27.205	30	27.305	40	27.405

***CH 36 (LSB)** is the AmRRON SSB hailing frequency

9.7.5 NOAA Weather Alert (National Oceanic and Atmospheric Administration)

At least one of these frequencies is active in nearly every part of the country.

162.400	162.425	162.450	162.475
162.500	162.525	162.550	

9.7.6 National Calling/Hailing Frequencies

FRS Ch. 1 (CERT and other national disaster response programs)

MURS N/A

CB Ch. 19 'Trucker's Channel'

Ch. 9 (for emergency) – Rarely ever monitored anymore

2m 146.520 MHz (National Simplex Freq)

Marine VHF - Ch. 16

9.7.7 UTC Time Server Frequencies

The following frequencies are excellent for receiving UTC Time (Zulu Time). In a grid-down communications situation, time accuracy for nets, transmitting, and/or receiving important information will be critical.

Frequency Station Location

2.5000	Fort Collins, Colorado, USA
3.3300	Ottawa, Canada
2.5000	Kekaha, Hawaii, USA
5.0000	Fort Collins, Colorado, USA
5.0000	Kekaha, Hawaii, USA
7.850	Ottawa, Canada
10.0000	WWV Fort Collins, Colorado, USA
10.0000	Kekaha, Hawaii, USA Continuous
14.6700	Ottawa, Canada
15.0000	Fort Collins, Colorado, USA
15.0000	Kekaha, Hawaii, USA
20.0000	Fort Collins, Colorado, USA

RED indicates stations that are typically the clearest and strongest signals in the U.S.

To adjust Zulu Time to your local time, see the ZULU Time Converter

9.8 Software (Free & Downloadable)

CHIRP (radio programming software for Windows and MAC)

Programs: Alinco, Baofeng, Icom, Jetstream, Kenwood, Puxing, TYT, Vertex Standard, Wouxun, and Yaesu)

<http://chirp.danplanet.com/projects/chirp/wiki/Download>

FLDIGI Download Page for fldigi/flarq, flamp, flmsg

Note: This is the software that will allow you to decode digital modes such as PSK31, MT-63, Olivia, CW – Morse code, and MANY more!

sourceforge.net/projects/fldigi/files

9.9 Additional Internet Resources

Manually program your Baofeng Radio using the keypad (IMPORTANT!) Print it!

<http://www.vhfclub.org/downloads/BAOFENF%20Final.pdf>

ARRL Amateur Band Plan

<http://www.arrl.org/graphical-frequency-allocations>

http://www.arrl.org/files/file/Regulatory/Band%20Chart/Hambands_color.pdf

Considerate Radio Operator's Guide

<http://www.arrl.org/files/file/conop.pdf>

Other Online Resources

Radio Reference dot com (perfect for scanners and ham receivers alike!)

This site is an excellent source for ham repeaters, police/fire, local/state government, business, and other bands.

<http://www.radioreference.com/apps/db/>

Locate antennas in your AO (Cell phone, Businesses, Emergency Services, Amateur Radio, etc.)

<http://www.antennasearch.com/>

Shortwave Radio Listener Guides

<http://www.shortwaveradio.com/>

SECTION 10 INTELLIGENCE and SECURITY



10.1 COMINT (Communications Intelligence)

Intercept Worksheet

Part-1 (from [sparks31 28Apr2014](#))

1. Date:
2. Time:
3. Freq:
4. Mode:
5. PL/DPL/NAC:
6. Signal Strength:
7. Bearing:
8. Agency/dept.:
9. Local, state, federal:
10. Who initiated transmission:
11. Initiating call sign:
12. Who responded? (police, fire, EMS, etc.):
13. Responding call sign:
14. Summary of transmission:
15. Action taken:
16. Who notified:
17. Monitoring operator:

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10.2 AP III% COMINT Intercept/Collection Objectives

Using Transceivers, scanners, receivers, the internet, and any other OSINT, IMINT, HUMINT resources, the AP III% SIGINT team will collect all communications and information related to the SET, to determine:

1. What is the scenario (incident or disaster) that is developing?
2. What are the affected areas? (Size and scope)
3. Who are the communications support personnel?
4. What is their organizational structure?
5. Where are they located? How are their teams/stations configured? What is their site physical security?
6. What organizations/persons are they supporting? Locations?
7. What is the organizational structure of the entity being supported?
8. Is this a multi-agency effort?
9. Who has jurisdiction over the operations?
10. What is the role/tasking of each contributing organization?
11. Which person/group is responsible for tactical/operational decisions?
12. What means/modes of communications are they using?
13. How are they disseminating information? (Radio - voice/digital/email, phone, email, social media, courier, other)
14. How are they receiving information? (Public hot lines, citizen reports, news media)
15. What communications are they monitoring?
16. What is the intent of the jurisdictional organization?
17. What are their immediate future actions/plans?
18. Which communications did they use or mention that was not included in the pre-mission intelligence?

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10.3 Source and Information Reliability Matrix

From Army FM2-22.3 Appendix B

Reliable and accurate information is critical for making good decisions. Unfortunately, that's often not what is passed during emergencies when emotions are running high, as are stress levels. For a multitude of reasons a person will give inaccurate and unreliable information. It's important to rate sources, whether from an individual person, or from an organization. Keep this updated and over time you will be able to learn what information is most likely to be trusted and passed on, and most important, RELIED upon. The following Source and Reliability Chart will help you in this.

SOURCE RELIABILITY

Reliability ratings range from "Reliable" (A) to "Unreliable" (E) as shown in the table below. In every instance the rating is based on previous reporting from that source. If there has been no previous reporting from that source. If there has been no previous reporting, the source must be rated as "F".

[NOTE: F does not mean the source cannot be trusted, but rather that there is no reporting history to make a determination one way or the other].

A	Reliable	No Doubt of authenticity, trustworthiness, or competency; has a history of complete reliability
B	Usually Reliable	Minor doubt about authenticity; trustworthiness, or competency; has a history of valid information most of the time
C	Fairly Reliable	Doubt of authenticity, trustworthiness, or competency
D	Not Usually Reliable	Significant Doubt of authenticity. Trustworthiness, or competency; but has provided valid information in the past
E	Unreliable	Lacking authenticity, trustworthiness, or competency; history of invalid information
F	Cannot be Judged	No Basis for evaluating the reliability of this source

“History repeatedly has demonstrated that numerically inferior forces, armed with less capable technologies, can win when leaders are armed with accurate intelligence they believe they can act upon. Such intelligence can be a force multiplier.”

Gregory Elder, ‘Winning with Intelligence’

Intelligence in War: It Can Be Decisive

INFORMATION CONTENT

The highest degree of confidence in reported information is given to that which has been confirmed by outside sources, “1”. The table below shows evaluation of information content. The degree of confidence decreases if the information is not confirmed, and/or does not seem to make sense. The lowest evaluated rating of “5” means that the information is considered to be false.

[NOTE: A rating of “6” does not necessarily mean false information, but is generally used to indicate that no determination can be made since the information is completely new.]

1	Confirmed	Confirmed by other independent sources; logical in itself; Consistent with other information on the subject
2	Probably True	Not confirmed ; logical in itself; consistent with other information on the subject
3	Possibly True	Not confirmed ; reasonably logical in itself; agrees with some other information on the subject
4	Doubtfully True	Not confirmed; possible but not logical ; no other information on the subject
5	Improbable	Not confirmed; not logical in itself; contradicted by other information on the subject
6	Cannot be Judged	No Basis exists for evaluating the validity of the information

Intelligence networks gathered military/strategic information such as Coastal Fortifications, Army deployments and their strength. The various Resistance movements in France sent regular intelligence reports to the British to be recognized. By 1944, the British headquarter was receiving thousands of telegrams and enemy plans. Many radio operators died after they were located by Germans.

10.4 PIRs (Priority Intelligence Requirements)

PIR Defined: The most important thing(s) a leader/commander/command staff has determined it needs to know for making informed decisions.

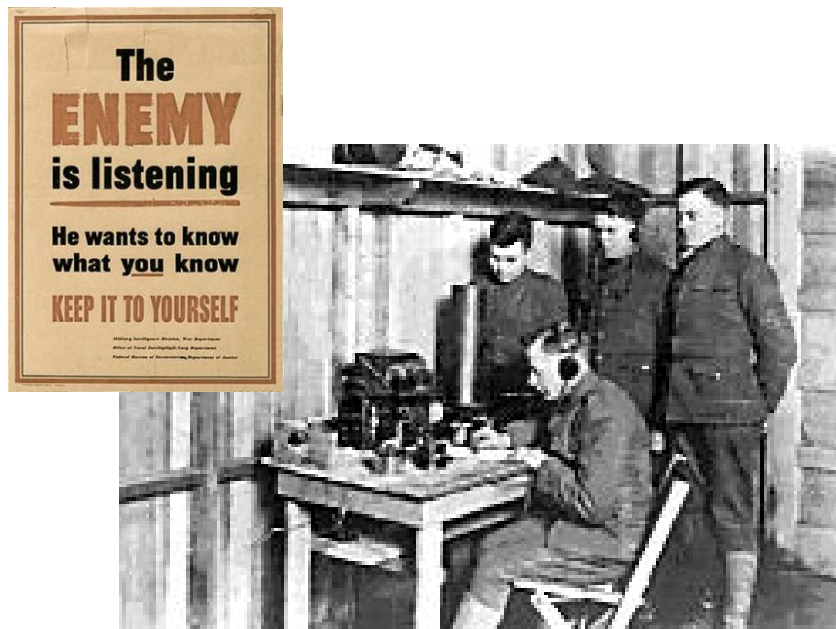
1. PIRs are determined by leadership and then issued to the information/communications network.
2. PIRs serve as a guide or directive for personnel to help determine what information needs to be reported, and which is most important.

PIRs are extremely helpful for radio operators in the field. At times during an emergency things can become chaotic and confusing. Priority Intelligence Requirements help bring attention to certain important pieces of information. Without it, key information may be overlooked or otherwise go unreported.

Leadership/commanders will need to develop courses of action related to security, logistics, command and control, and tactical or strategic responses to various threats. The information they need will be issued as Priority Intelligence Requirements.

When PIR-related traffic is being reported up the chain, it should always be treated as Priority traffic.

SECURITY:



10.5 Authenticating (Friend or Foe?)

It is important to note that there is no way you can truly authenticate friend/foe using a widely-distributed, nationwide authentication method. This is designed to heavily increase the odds that you are making contact with another party who is involved in AP III%. Authenticating someone over the radio does not mean he/she is necessarily a “good” guy. It means that he has a very high probability of being an AP III% Operator. The AP III%/TAPRN typically draws conservative, patriotic, preparedness-minded people to its membership, but you do not know what is truly in a man’s heart and what his intentions are, especially if you’ve never met him before.

You should always develop a separate, internal authentication protocol for your family, friends, or retreat group. This should also include a **‘Distress Word’** or other method to let others know you are in grave danger, or are under duress.

There are two layers of authentication in the APIII % standardized communications plan.

1. The Correct Tactical call sign
2. The Ten-Letter Daily Word (REPUBLICAN)

10.5.1 The AmRRON Prefix When you hear “AmRRON,” you’re probably talking to a patriot/prepper. That’s a good sign. But maintain vigilance. Think Security!

10.5.2 The ‘AmRRON X-Ray’ call

- Ham operators use the term “CQ CQ CQ” to mean “calling any station”
- For unlicensed CH3 users, use “*AmRRON X-Ray*” to call for any (no particular) station, just like licensed hams would call “CQ CQ...”
- Protocol for responding to someone calling for “AmRRON X-Ray” is to respond with your call sign (AmRRON Code Name), or the initials of your name, phonetically.

If you are trying to make contact with ANY AmRRON Operator who will respond:

Unknown party is referred to as “X-Ray”

“AmRRON X-Ray, this is AmRRON Juliet Sierra, over.”

If the responding party is actually an AmRRON member he/she should respond with his AmRRON call sign/code name, replacing “AmRRON X-Ray” (unknown party) with his own, actual call sign/code name.

- NEVER respond with “This is AmRRON X-Ray.”
- There are NO AmRRON call signs beginning with “X-Ray”.

SECURITY ALERT! If a station responds with “***...this is AmRRON X-Ray, what’s up?***”

This should raise a red flag! Ask him to verify his call sign. If he responds again with “***...this is AmRRON X-Ray***” he is being deceptive and should be avoided.

10.5.3 Ten-Letter Authentication (word)

Remember: **MASHEDROCK**

'Ten-Letter' Word Authentication									
R	E	P	U	B	I	I	C	A	N
1	2	3	4	5	6	7	8	9	0

The authentication word is a ten-letter word, with no duplicate letters. Each letter has a corresponding number as its value. In this particular word, M=1
H=4 C=9

HOW TO USE IT

If the station you are in contact with is responding appropriately to your challenge, he is either an AP III% Operator, or a really sophisticated bad guy. There are many ways this can be used to authenticate that someone has the same SOI as you (which is what this does).

1. Ask for a sum. What is the sum of 'Mike' and 'Charlie'?
Answer: Ten (or One Zero)
2. Expedient method. What is the fourth letter of the [authentication] word?
Answer: Hotel

Develop your own authentication for your family, group, or team.

SECURITY ALERT!

NEVER say the whole ten-letter word over the air.

SECTION 11 Glossary of Terms

AIB	AmRRON Intelligence Brief
AM	Amplitude Modulation
AmCON	AmRRON Condition (Emergency communications readiness level)
AmRRON	American Redoubt Radio Operators Network
ARES	Amateur Radio Emergency Service
ARRL	Amateur Radio Relay League
CB	Citizens Band
CH3	Channel 3 Project - Mutual agreement to standardize the use of channel 3 on FRS, MURS, and CB
COMINT	Communications Intelligence (Information gathered from monitoring any communications)
CW	Continuous Wave (Morse Code is sent over radio using CW)
Digital	A mode used for sending text messages and other data over radio waves, similar to fax machines
DTG	Date Time Group - Typically uses the following format: YYYYMMDD-HHMMZ (Z = Zulu Time)
Freq.	Abbreviated term for 'Frequency'
Frequency	The cycles of radio waves per second. Typically measured in millions (Mega) or thousands (kilo). Each cycle is referred to as a 'Hertz'.
FRS	Family Radio Service - No license required
GMRS	General Mobile Radio Service - License required
GMT	Greenwich (England) Mean Time - Also referred to as 'UTC' or 'Zulu' time
Hertz	A single, complete cycle of a radio wave
HF	High Frequency (also referred to as 'shortwave') (3-30 MHz)
IES	Initial Event Summary
kHz	kilo Hertz - radio frequency cycles measured in thousands per second
LSB	Lower Side Band - The lower portion (side) of the band
MHz	Mega Hertz - radio frequency cycles measured in millions per second
Mode	The means of transmitting (specifically voice, digital, or CW)
MURS	Multi Use Radio Service - Uses five frequencies from the business VHF band requiring no license
NCS	Net Control Station - primary station responsible for facilitating a radio net
NOAA system	National Oceanic and Atmospheric Administration - weather and hazards alert
OPSEC	Operational Security - The act of keeping your activities/information confidential and private
OSINT	Open Source Intelligence - News, press releases, internet, public records, etc.
SIGINT	Signals Intelligence - the gathering of information related to tones, codes, direction finding, etc.
SITREP	Situation Report
SPOTREP	Aka 'SPOT' report. A format for reporting observed enemy (or other threat) activity
STATREP	Status Report - Short report of status of station or individual's location
SSB	Single Side Band (when only one side of the bandwidth is used (USB or LSB)
TAPRN	The American Preparedness Radio Network
UHF	Ultra High Frequency (300-3000 MHz)
USB	Upper Side Band - The upper portion (side) of the band
UTC	Universal Time Clock - Also referred to as 'Zulu' time or 'GMT' (Time and Date in Greenwich)
VHF	Very High Frequency (30-300 MHz)
Zulu	Same as UTC or Greenwich Mean Time (GMT)

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