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1

2021 Year End Summary, Update, Preview

Santa Clara County ARES®/RACES

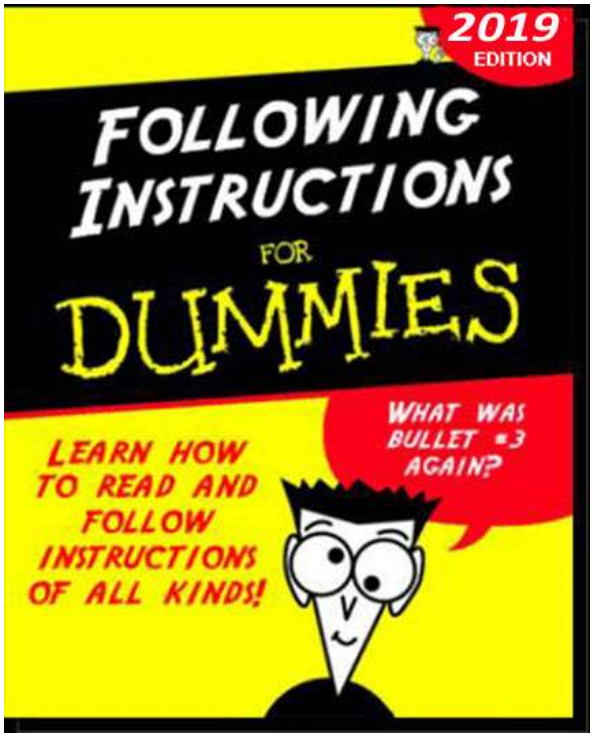
Revised: Dec 11, 2021

2

2

HOUSEKEEPING

- Introductions
- Pen/pencil & paper
- Distractions
  - Cell phone
  - Pets
  - Other household members
- Questions – “Raise Hand”
- Breaks
- If we lose Internet connection
- Course Credit



3

Agenda

- Packet Update
- October Exercise and SET
- October Exercise Packet Operations
- Net Control Updates
- Message Passing
- BBS, Network Update
- New FCC Station Evaluations
- Volunteer Hours Reporting
- 2022 Training
- Credential Program

4

Packet Update

Jim Oberhofer, KN6PE

Revised 01-Dec-2021

5

Packet Exercise

6

Weekly Packet "Practice"

2021… by the numbers (7-Dec-2020 thru 30-Nov-2021)

	Monday	Tuesday	'21 ttl	'20 ttl	'19 ttl	'18 ttl
Ttl Practice Messages sent	1365	1861	3226	3138	2844	2116
% Correct all the time	96.8%	96.5%	96.6%	95.5%	93.7%	93.2%
Unique Ave # of Participants/Night	26	35	30	31	29	25.5

7

Weekly Packet "Practice"

- See the "*Standard Packet Check-In/Out Message*" App Note under…
  https://www.scc-ares-races.org/data/packet/index.html#app-notes

- See the *Practice Message, Subject* section under…
  https://www.scc-ares-races.org/data/packet/weekly-packet-practice.html#Message

8

What's new with Outpost and PackItForms

9

What's in the box?

- SCCo Integrated Packet Installer 160
  - Outpost Packet Message Manager
    - GUI-based interface for managing packet communications
    - Makes using packet as simple as using e-mail
  - PackItForms
    - Next generation HTML-based forms for use with Outpost
    - Headless Chrome for auto-printing support
  - PacFORMS
    - HTML-based forms for use with Outpost
    - Since 2007, simplified forms-based data entry, reduced network bandwidth

SCCo Installer v160

July 2021

PackItForm 3.2.1*

- Digitally signed PackItForm installer and programs
- No functionality changes

Outpost v3.5.0*

- Digitally signed Outpost installer and programs
- Minor functionality changes to address SCC defects

*See the release notes for details

What was new, different in 2021?

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Top 7 packet "what's new" items for 2021

7. Packet Training on Zoom
6. Windows 11
5. Event Documentation
4. Check-in, Check-out messages
3. Resend Options (and the Subject Line)
2. Manual Packet (and the Subject Line)
1. Packet as a repeatable process

7. Another year on Zoom

Packet training in pajamas

- Ran all the packet classes by zoom
- Zoom registration helped track who actually showed up
- Office Hours offered a chance for troubleshooting, 1-on-1 chats, and general Q&A
- Updated homework assignments
- Completing the homework was prerequisite for class credit
  - Packet IIIA; Outpost and PackItForms 79%
  - Packet IIIB; Applying packet to the Field 94%
  - Packet II; What!? No Outpost? Manual Packet 68%

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6. Windows 11

- Windows 11 was released on October 5, 2021
  - Price: Free upgrade for existing Windows 10 users
  - new desktop look, a major UI redesign, changes to the core Microsoft OS apps and services.
  - Microsoft says *Windows 11 was built for gamers*.
- But… not every Windows 10 PC is Windows 11 compatible

- The good news: PackItForms and Outpost works fine on W11
- SCC RACES packet PC recommendation:
  - Laptop or larger netbook running at least Windows 8.1 (end of W8.1 extended support… January 10, 2023)

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5. Event documentation

Its all about the money

FEMA

- Excerpts from the FEMA | Office of Inspector General report titled "***Summary of Key Findings of Fiscal Year 2016 FEMA Disaster Grant and Audits***"
  - *"Over the 7-year period, FYs 2009 to 2015, we found $1.64 billion, or 15 percent, in questioned costs out of the $10.9 billion that we audited, which we recommended FEMA disallow as ineligible and unsupported costs."*
  - *"In fiscal year 2016, we found $155.6 million, or 23 percent, in questioned costs out of the $686 million that we audited, which we recommended FEMA disallow as ineligible and unsupported costs."*
- In cases where FEMA payments were made and claims later disallowed, recipients would be required to repay these payments, with audits sometimes taking place years later.
- Because your documentation could be a used as part of the City's justification for either an expense reimbursement or cost recovery request, ensuring the accuracy and completeness of what we submit is critical.

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5. Event documentation

Its all about the money

FEMA

- Excerpts from the FEMA | Office of Inspector General report titled "***Summary of Key Findings of Fiscal Year 2016 FEMA Disaster Grant and Audits***"
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- Because your documentation could be a used as part of the City's justification for either an expense reimbursement or cost recovery request, ensuring the accuracy and completeness of what we submit is critical.

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How does this apply to us?

- If tracked properly, hours worked volunteering can be reimbursed by FEMA under the guidelines for “volunteer labor” (44 Code of Federal Regulations (CFR) 13.24 (c) (1)).
- The reimbursement rate would depend on the volunteer and the type of work completed.
- The reimbursement rate could be in the range of $20 to $50 / hr (estimate)
- For instance:

Your_ARES	10	10	# volunteers
Hrs / day	12	120	Volunteer hours / day
Days / event	10	1200	Volunteer hours / event
$/hr	$35	$42,000	Reimbursement

- And… city staff hours are reimbursable if overtime is extraordinary or the work is not normally budgeted in their job.
- **BUT, it all depends on getting the documentation right.**

What can go wrong… a case in point

- From May 1 through May 2, 2010, Tennessee experienced high winds and flooding which resulted in widespread loss of power.
- The disaster forced residents to vacate their homes and to require food and basic housing.
- The Applicant opened a disaster recovery center and staffed it with volunteers.
- The Applicant requested credit toward the calculation of the non-Federal cost share for volunteer labor, donated equipment, and donated materials.
- FEMA initially granted Applicant's request for a $65,416 credit but later de-obligated $57,714 because volunteer hours were not properly documented.

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Archiving event documentation

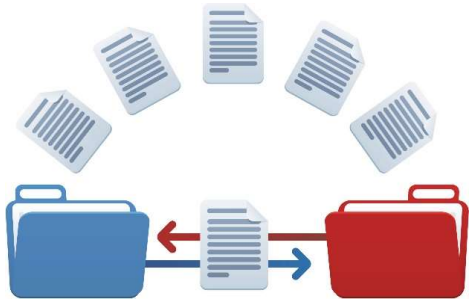
Introduction

- During a Packet Deployment, you will produce the following:
  1. ICS 214-SCCo Unit Activity Log
  2. ICS 309-SCCo Communications Log (if participating on a voice net)
  3. All third party sent & received PackItForms and plain text messages
  4. All sent and received operator to operator packet messages
  5. ICS 309 Communications Log (packet)
  6. Any *Form 1* / hand-scribbled / sticky notes, documentation.

- Applies to exercises and real activations
- When your shift is over, your supervisor will tell you what to do, such as:
  - Submitting all documentation (to whom and how)
  - Preparing the packet station for the next use (archiving your shift)

Event documentation

Introduction



- The job is not done until the paperwork is complete, archived, and submitted.
  - Every scrap of paper used during an activation is part of the event or incident and goes to the Documentation Unit (or your Supervisor)
    - It must be legible (print)
    - Use one side only
  - These are legal documents that may be needed to defend decisions
  - Most of this documentation is 'discoverable'
  - If it is not in the documentation, then it did not happen
  - Some documentation is specifically created after the event or incident, such as the After Action Report
- And, all this applies to our packet operations

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Archiving event documentation

1. Create the ICS 309 Communication Log

a) Outpost, **Forms** > **ICS 309 Comm Log**.

b) Select **Period** Tab, then **Range** for when ***your shift*** (or event) occurred.

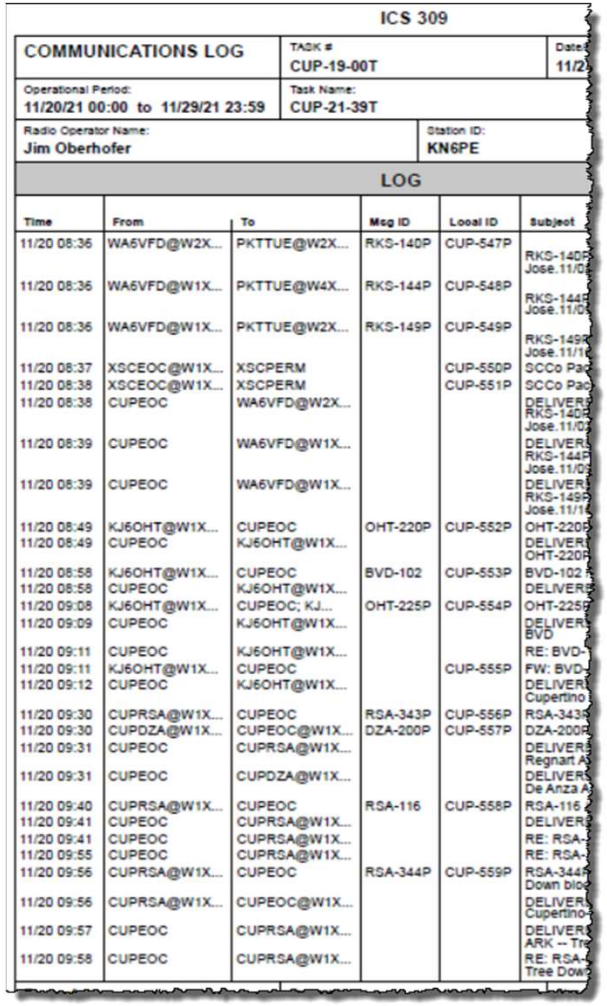
c) Select **Output** Tab, then which printer

NOTE: If you do not have a printer, then select the ***Microsoft Print to PDF*** printer to produce a .pdf file.

d) Press **Build Data Set**, then press **Print**.

e) If you paper-print this form, then sign the ICS 309.

f) Deliver this report to your supervisor.



ICS 309

COMMUNICATIONS LOG	TASK #: CUP-19-00T	Date: 11/2
Operational Period: 11/20/21 00:00 to 11/29/21 23:59	Task Name: CUP-21-39T	
Radio Operator Name: Jim Oberhofer		Station ID: KN6PE

LOG

Time	From	To	Msg ID	Local ID	Subject
11/20 08:36	WA6VFD@W2X...	PKTTUE@W2X...	RKS-140P	CUP-547P	RKS-140P Jose.11/0
11/20 08:36	WA6VFD@W1X...	PKTTUE@W4X...	RKS-144P	CUP-548P	RKS-144P Jose.11/0
11/20 08:36	WA6VFD@W1X...	PKTTUE@W2X...	RKS-149P	CUP-549P	RKS-149P Jose.11/1
11/20 08:37	XSCEOC@W1X...	XSCPERM		CUP-550P	SCCo Pac
11/20 08:38	XSCEOC@W1X...	XSCPERM		CUP-551P	SCCo Pac
11/20 08:38	CUPEOC	WA6VFD@W2X...			DELIVERY RKS-140P Jose.11/0
11/20 08:39	CUPEOC	WA6VFD@W1X...			DELIVERY RKS-144P Jose.11/0
11/20 08:39	CUPEOC	WA6VFD@W1X...			DELIVERY RKS-149P Jose.11/1
11/20 08:49	KJ6OHT@W1X...	CUPEOC	OHT-220P	CUP-552P	OHT-220P
11/20 08:49	CUPEOC	KJ6OHT@W1X...			DELIVERY OHT-220P
11/20 08:58	KJ6OHT@W1X...	CUPEOC	BVD-102	CUP-553P	BVD-102 R
11/20 08:58	CUPEOC	KJ6OHT@W1X...			DELIVERY
11/20 09:08	KJ6OHT@W1X...	CUPEOC; KJ...	OHT-225P	CUP-554P	OHT-225P
11/20 09:09	CUPEOC	KJ6OHT@W1X...			DELIVERY BVD
11/20 09:11	CUPEOC	KJ6OHT@W1X...			RE: BVD-
11/20 09:11	KJ6OHT@W1X...	CUPEOC		CUP-555P	FW: BVD-
11/20 09:12	CUPEOC	KJ6OHT@W1X...			DELIVERY Cupertino
11/20 09:30	CUPRSA@W1X...	CUPEOC	RSA-343P	CUP-556P	RSA-343P
11/20 09:30	CUPDZA@W1X...	CUPEOC@W1X...	DZA-200P	CUP-557P	DZA-200P
11/20 09:31	CUPEOC	CUPRSA@W1X...			DELIVERY Regnart A
11/20 09:31	CUPEOC	CUPDZA@W1X...			DELIVERY De Anza A
11/20 09:40	CUPRSA@W1X...	CUPEOC	RSA-116	CUP-558P	RSA-116
11/20 09:41	CUPEOC	CUPRSA@W1X...			DELIVERY
11/20 09:41	CUPEOC	CUPRSA@W1X...			RE: RSA-
11/20 09:55	CUPEOC	CUPRSA@W1X...			RE: RSA-
11/20 09:56	CUPRSA@W1X...	CUPEOC	RSA-344P	CUP-559P	RSA-344P Down blo
11/20 09:56	CUPRSA@W1X...	CUPEOC@W1X...			DELIVERY Cupertino
11/20 09:57	CUPEOC	CUPRSA@W1X...			DELIVERY ARK -- Tre
11/20 09:58	CUPEOC	CUPRSA@W1X...			RE: RSA- Tree Dow

Archiving event documentation

2. Create a printable message listing

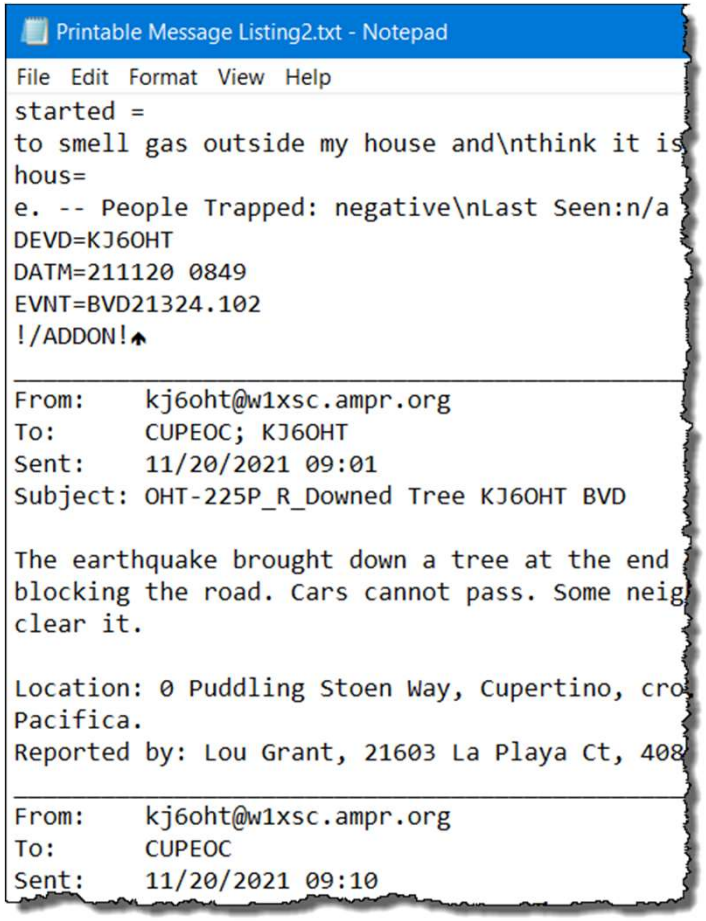
a) From Outpost, **File** > **Save All**.

b) Creates an Ascii-formatted file of all messages in the current folder with a **Page Break** between each message.

c) Repeat for any other folder where event messages were stored.

d) This file could be printed to generate one message per page or cut-n-paste out a specific message.

e) Deliver this file to your supervisor.



Archiving event documentation

3. Create a Message Archive

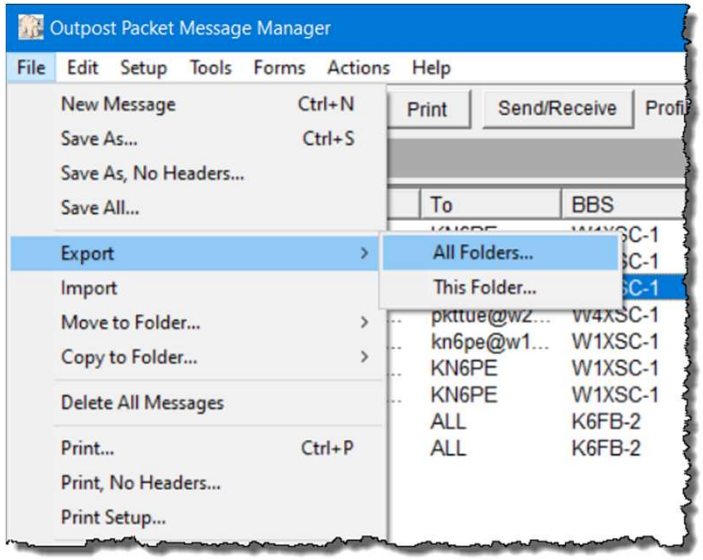
a) From Outpost, **File** > **Export**, then select "**All Folders**" (for your entire system).

b) Use meaningful file names.

c) The Export process will create an Outpost Archive File (.oaf).

d) This file later can be imported back into Outpost to restore the archived messages to their original folders.

e) Deliver this file to your supervisor.



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Archiving event documentation

4. Reset Outpost for the next event

a) You are about to **DELETE ALL MESSAGES** in Outpost

STOP!	Do not proceed until you have created a **Message Archive>All Folders** first.

STOP!	Do not proceed until you have permission from your supervisor.

b) Make sure you set up the SCC Notices message folder

c) Export (backup) the SCC Notices folder (**File** > **Export**…)

c) Delete all Outpost messages (**File > Delete All Messages**, **Yes**)

d) Restore the SCC Notices (**File** > **Import**…)

e) You now have a clean system for the next event or incident.

f) Inform your supervisor that this task is complete.

4. Check-In/-Out Messages

- Properly formatted Check-In/Out messages are important
  - Recipient can easily find them among other messages in the In Tray
  - They inform the EOC or other "net control" which stations are ready
  - They are part of DSW supervision
- General rules during field assignments

  - Check in and out using your ***assigned Tactical Call*****, not your FCC call**
  - Check-in as soon as the station is ready
  - Check-out before shutting down the station using your *Tactical Call*
  - Always send as plain text messages (not forms)
  - Always use [HandlingOrder] = "_R_"
    - Handling Order = R (Routine)
  - Always follow the standard subject line format
    - With specific check-in/out details for subject and message body

Check-In/-Out: Tactical

- Tactical Check-In Format:
  - Subject: [MsgNbr]_R_Check-In [TacticalCallSign], [TacticalName]
  - Body: Check-in [TacticalCallSign], [TacticalName]
    Present are:
    [List of FCC call signs and full names, one per line]
- Example:
  - Subject: SH1-234P_R_Check-In XNDSH1, Xanadu Shelter 1
  - Body: Check-in XNDSH1, Xanadu Shelter 1
    Present are:
    W6XRL4, Herman Munster
- Check-Out format is the same, except replace “Check-In” with “Check-Out”

https://www.scc-ares-races.org > Data Networking > Packet BBS > Standard Packet Check-In/Out Message

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Check-In/-Out: Individual

- Unless your local jurisdiction requires it, it is unlikely you will need to use an individual check-in/out. But, if you do…
- Individual Check-In Format:
  - Subject: [MsgNbr]_R_Check-In [FCCCallSign], [FullName]
  - Body: Check-in [FCCCallSign], [FullName]
- Example:
  - Subject: XRL-123P_R_Check-In W6XRL4, Herman Munster
  - Body: Check-in W6XRL4, Herman Munster
- Check-Out format is the same, except replace “Check-In” with “Check-Out”

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3. Message Resend

You did what?!!?

- You just sent a message, but …
  - it was addressed incorrectly, or
  - it was sent to the wrong BBS, or
  - you forgot to include all recipients, or
  - it was incomplete, or
  - it was the wrong message, or
  - any number of other problems!

  And, you don't want to type it all back in! What now?

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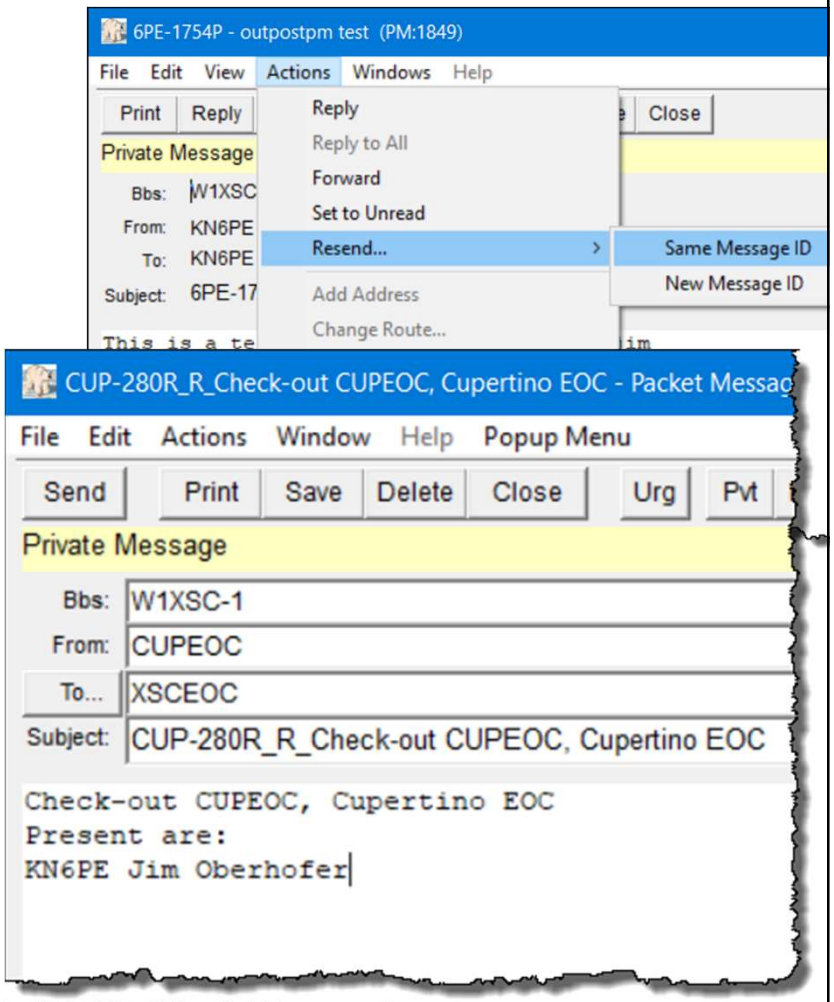
Resend Options (and the Subject Line)

- Three types of Message Resend
  1. Text Message, same Message ID or new Message ID
  2. PackItForm Message , same Message ID
  3. PackItForm Message , different Message ID

Resend option – Text Messages

Resend a message previously sent.

- **Sent** folder, open the message
- **Actions** > **Resend**… choose option
- Edit the message.
- For **Resend, Same Msg ID, manually** change the Message ID from -###**P** to -###**R** for **R**esend.
- Make whatever other changes you need to make, then
- Press **Send**, then **Send/Receive**.

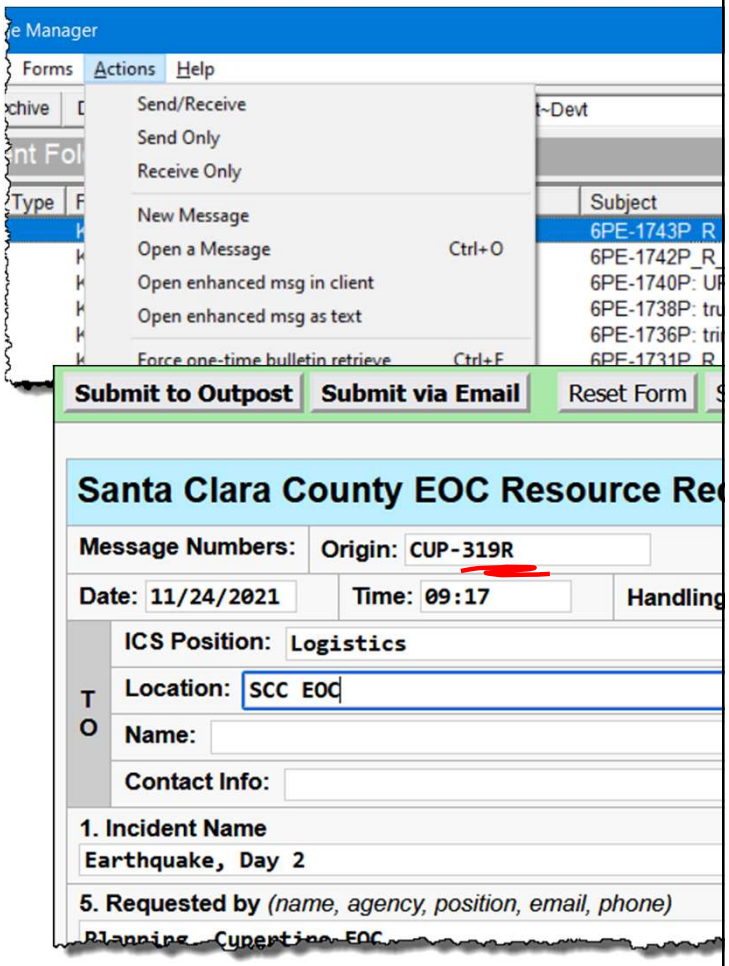


Resend option – PackItForm Messages

Same Message ID…

Resending ***PackItForm Messages*** depends on your option.

- Sent folder, **single-click** on the message to highlight it (not open it)
- **Actions** > **Open enhanced msg as text**
- Once the text opens, click on **Actions** > **Resend**… choose **Same Message ID**
- PackItForm opens a new copy in the Browser, ready for editing.
- **Manually** change the Message ID from -###**P** to -###**R** for **R**esend.
- Make other changes and continue as usual.



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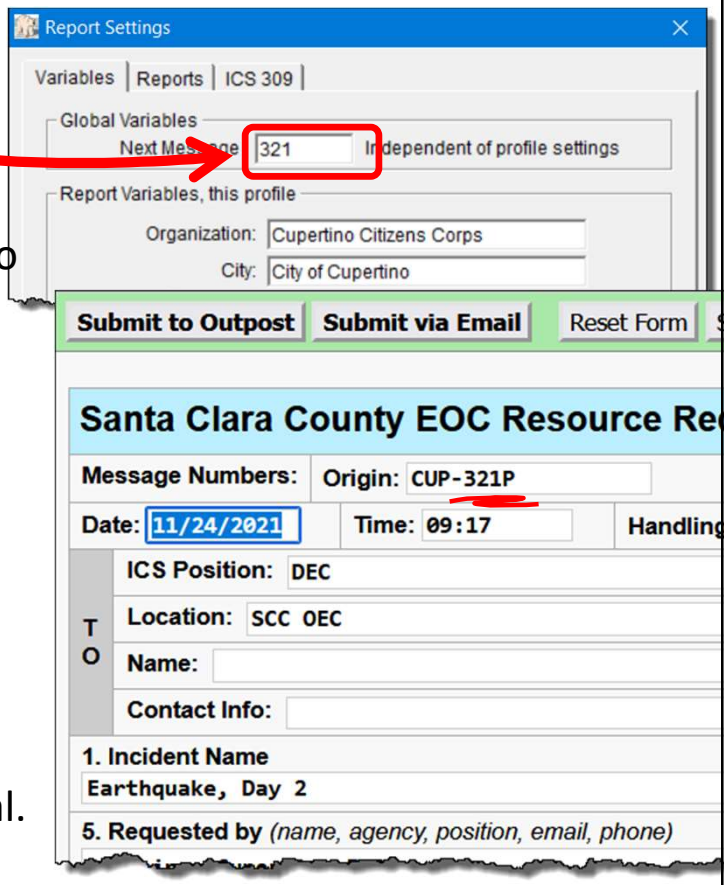
Resend option – PackItForm Messages

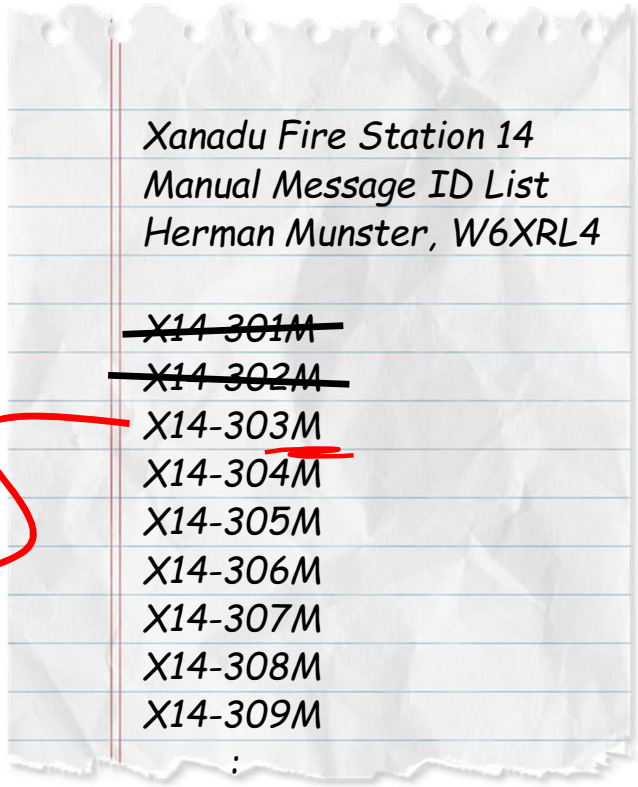
New Message ID…

- Get the Next Message Number:
  - In Outpost, **Tools** > **Report Settings**
  - Note the **Next Message** value. This is the number to use. Do not change it!
- Sent folder, **single-click** on the message to highlight it (not open it)
- **Actions** > **Open enhanced msg as text**
- Once the text opens, click on **Actions** > **Resend**… choose **New Message ID**
- The PackItForm will open in the browser.
- **Manually** change the PackItForm **Origin** message number with the number you noted above.
- Make other changes and continue as usual.



2. Manual Packet (and the Subject Line)

- Without Outpost, you have to manual Message ID tracking. One method:
- Any piece of paper will do.
- Create a list of message IDs to use.
  - Use the '**M**' suffix to indicate this is a **M**anual message and not conflict with Outpost's '**P**' (for packet) suffix.
- When you use one, cross it out.
- Example: given this list, your next Message ID is **X14-303M.**
- For packet messages sent or received, enter the Message ID in the next message; don't forget your ICS 309.



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1. Packet as a repeatable process

- Packet 3A – ***Packet systems and tools***
  - Packet Network Overview and Components
  - Packet Station HW & SW
  - Accessing the network
  - Standard workflow
  - Working with messages
- Packet 3B – ***Applying packet to a field deployment***
  - Customizing message handling
  - Miscellaneous Outpost settings
  - Localizing packet
  - Simulated field message exchange
- Packet 2 – ***Advanced Packet***
  - Manual packet messaging

Thinking in terms of a Packet Field Deployment

1. **First Shift…** when assigned to start up a station
2. **Initial station setup…** equipment check-out
3. **Packet Operations…** managing the message flow
4. **Incoming Shift Change…** if you are relieving someone else
5. **Outgoing Shift Change…** if you are being relieved
6. **Securing Operations…** when directed to shut down

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1. First Shift

Packet Field Deployment Process

1. First Shift: Establishing a packet station

_____ 1. Inform Resource Net Control that you have arrived. Check out of the Resource Net before you leave your car.

_____ 2. Check into the assigned voice net before you leave your car. Start an ICS 309 Comm Log for the voice net.

_____ 3. Make an ICS 214 Unit log entry.

_____ 4. Sign in on the site's ICS 211 Check-in sheet.

_____ 5. Find the supervisor and inform them of your arrival.

__✓__ 6. Request a safety and assignment briefing; get details on any site- or event-specific conditions that exist. You need to know:

- a. Supervisor's Name
- b. Activation Number
- c. Operational Period
- d. ICS Location
- e. Your Tactical Call and Message ID Prefix
- f. BBS to use
- g. Band and frequency
- h. Primary and secondary packet addresses for any preferred destinations

_____ 7. Find and establish the workspace to set up packet operations.

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2. Initial setup

Packet Field Deployment Process

2. Initial setup: Equipment check-out

✓ 8. Find, assess, and setup the packet radio equipment
(see *Section 3, Packet Startup Procedure)*

✓ 9. Confirm or set your User Identification (FCC Call Sign) and ***Tactical Call for the assigned agency***.

✓ 10. Check settings before transmitting:
- Correct BBS in Outpost
- Correct Interface in Outpost
- Correct radio frequency

_____ 11. Begin packet operations. Make ICS 214 Unit log entry.

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3. Packet Operations

Packet Field Deployment Process

3. **Packet Operations:** Managing the message flow

✓ 12. Download all notices to ensure you have the latest; read them.

✓ 13. Set up a folder named "SCC Notices" (**Tools** > **General Settings**, **Startup** tab) and move all notices to this folder.

✓ 14. Send a test message to yourself to confirm you can create, send to, and receive from the assigned BBS.

✓ 15. Create a Check-In message to your assigned agency using your Tactical call sign (see *Section 5 Check-in, Check-out Message*).

✓ 16. Send, receive, log and process packet messages. To only send a message as soon as it is created, use **Actions** > **Send Only**

✓ 17. Manually initiate an Outpost Send/Receive at least every 10 minutes.

✓ 18. If a message was not acknowledged:

a. Check the message address and BBS
b. Resend the message if needed
c. Let your supervisor know

… more

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3. Packet Operations (continued)

Packet Field Deployment Process

3. **Packet Operations:** Managing the message flow

✓ 19. If new notices are retrieved, follow any new instructions.

20. Maintain voice radio contact on the designated voice net.

21. Make ICS 214 Unit log entries as appropriate.

22. Report any issues or problems to your supervisor in person or over the voice net (if remote).

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4. Incoming Shift Change

Packet Field Deployment Process

4. Incoming Shift Change: If you are relieving someone else, do the following:

_____ 23. Inform Resource Net Control that you have arrived. Check out of the Resource Net before you leave your car.

_____ 24. Sign in on the local ICS 211 Check-in sheet.

_____ 25. Find the supervisor and inform them of your arrival.

_____ 26. Request a safety and assignment briefing; get details on any site- or event-specific conditions that exist.

_____ 27. Find the person you are relieving and receive a shift change briefing (see ***Shift Change Information*** below).

✓ 28. Make packet system updates – Station ID, Tactical Call, etc.

_____ 29. Make all relevant shift change entries in your ICS 214 Unit log.

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5. Outgoing Shift Change

Packet Field Deployment Process

5. Outgoing Shift Change: If you are being relieved, do the following:

_____ 30. When contacted by your replacement, provide a shift change briefing (see ***Shift Change Information*** below).

✓ 31. Generate and sign a packet ICS 309 Comm Log for your shift.

✓ 32. Generate all event packet documentation for your shift and deliver as instructed (see *Section 8 Archiving Event* Documentation).

_____ 33. Turn over all assigned equipment to your replacement.

_____ 34. Find your supervisor and inform them of the shift change and your departure.

_____ 35. Make the appropriate shift change entries in your ICS 214 Unit log. Complete and sign the form.

_____ 36. Turn in all paperwork to your supervisor.

_____ 37. Sign out on the site's ICS 211 Check-in sheet.

_____ 38. Check into the Resource Net. Inform Net Control what you plan to do (go home, return to EOC, etc.).

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6. Securing Operations

Packet Field Deployment Process

6. Securing Operations: when directed to shut down, do the following:

_____ 39. Get permission from your supervisor to shut down.

✓ 40. Create a text Check-Out message to your assigned agency using your Tactical Call sign (see *Section 6 Check-in, Check-out Message*).

✓ 41. Generate and sign a packet ICS 309 Comm Log for your shift.

✓ 42. Generate all event packet documentation for your shift and deliver as instructed (see *Section 8 Archiving Event* Documentation).

_____ 43. Complete and sign your ICS 214 Unit log.

_____ 44. Shut down and pack up all assigned equipment.

_____ 45. Turn in all paperwork to your supervisor.

_____ 46. Sign out on the site's ICS 211 Check-in sheet.

_____ 47. Check out of the assigned voice Net and check in with the Resource Net. Inform Net Control what you plan to do or where you will go.

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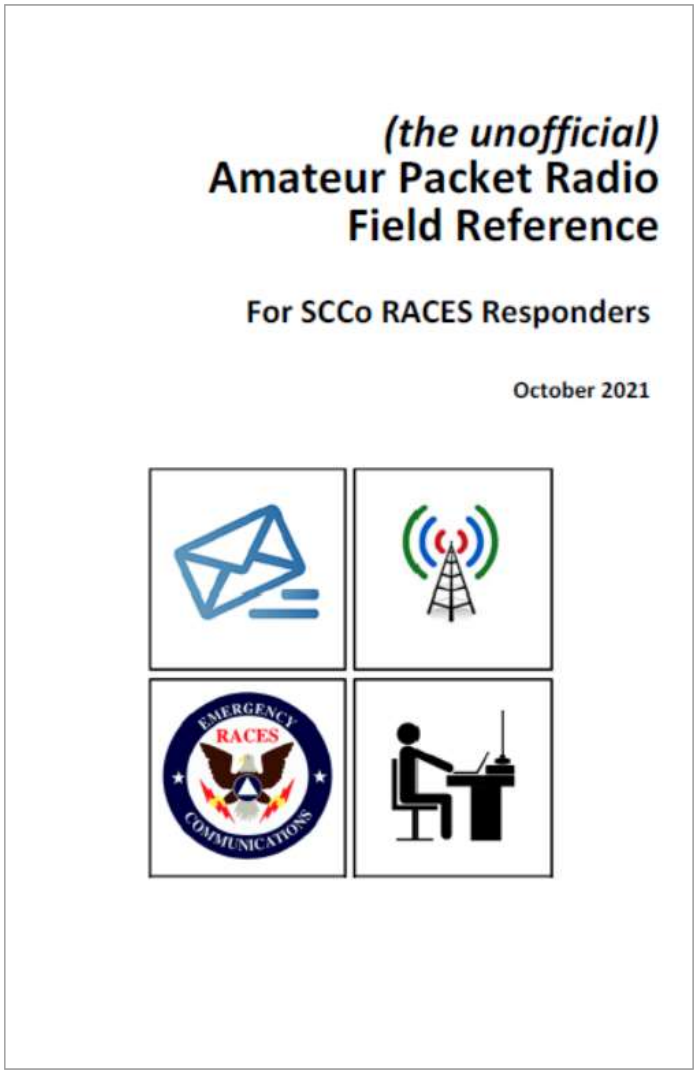
Amateur Packet Radio Field Reference (unofficial)

What is it

- Provides a reminder (job aid) for how to perform tasks that need to occur during a packet field deployment.
- Helps ensure task consistency, completeness, and operational alignment with SCCo RACES policies and procedures.

What it is not

- the only source of information on which you should rely.
- an official SCCo RACES deliverable.



 44

44

Amateur Packet Radio Field Reference (unofficial)

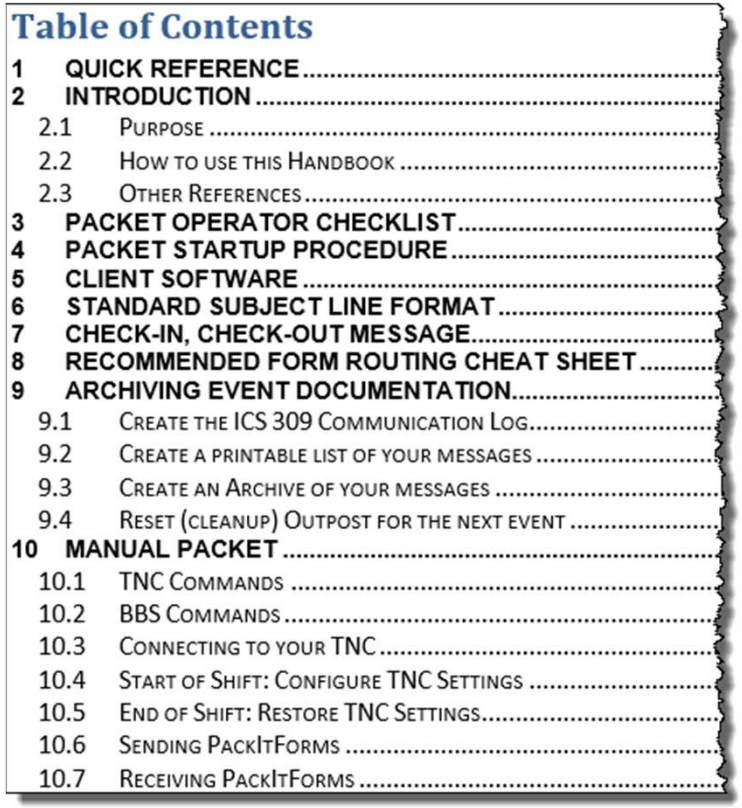


Table of Contents

Where to find it…

https://bit.ly/PacketFieldRefFull (.pdf)… great for storing on your laptop or tablet.

https://bit.ly/PacketFieldRefBooklet (.pdf)… formatted to create an ½ size booklet; just print, fold, and staple in the middle.

Or contact kn6pe@arrl.net

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What's the plan for 2022?

- Maintenance release planned
  - Fix reported bugs; Outpost enhancements, PackItForm enhancements
- Pop-up Packet Exercise
  - 30-Apr-2022
  - 8-Oct-2022
- Packet class schedule
  - Packet Type IIIA 6-Aug-2022
  - Packet Type IIIB 1-Oct-2022
  - Packet Type II 5-Nov-2022
- And, new class content, such as…

A look at DIY KPC-3 alignment

- Ensuring your TNC-Radio is properly set is critical to packet operations.
- This includes both Receive Volume and Transmit Level.
- The KPC-3x Manuals are good at describing what to do but lack an end to end description of exactly how this is to be done.
- Being able to make these settings is critical to Packet field operations.

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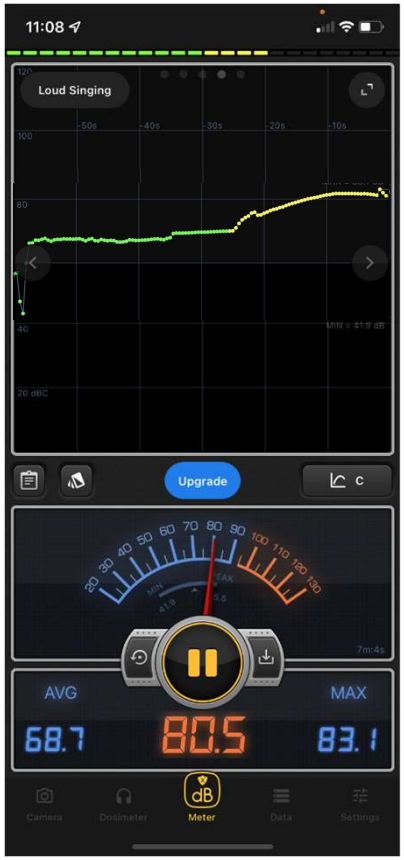
A look at DIY KPC-3 alignment

- Setting the Transmit level – you will need:
  - The latest KPC-3x manual for reference.
  - A KPC-3x to calibrate.
  - An HT to receive the transmitted CAL signals.
  - A dummy load (While not required, it is always good not to splatter your calibration tones all over the airwaves).
  - A smartphone app such as Decibel X to display the audio.



- Watch for a details in 2022 on a DIY approach to setting the transmit level.

For More Information

- Support
  - See the Santa Clara County ARES/RACES web site packet page
    - https://www.scc-ares-races.org/data/packet/index.html
  - Join the packet discussion group
- Practice
  - Send a message during the weekly packet net, either or both days
    - https://www.scc-ares-races.org/data/packet/weekly-packet-practice.html
    - Automated feedback to help you improve, verify you've got it right
  - Participate as a packet operator at drills and other events

Countywide Drill and SET

October 09, 2021

Andreas Ott, K6OTT

Revised 11-Dec-2021

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Drill Summary

- Deployment Drill Exercise, minimal info was given to participants
- Travel to location and set up, be prepared to operate and conquer the unknowns
- “Dress Rehearsal” before incident deployment
- Same location as 2019 with activities FieldOps, NetControl, PacketOps and Shadowing

More drill stats

- Day of drill: ~ 250 person hours on ICS-211
- Preparation: estimated ~ 300 person hours
- Post-processing of paperwork and evals: 100 hours
- Ratio of participants to staff is only 3:1

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Drill Feedback

- Packet messaging throughput outpaced voice about 8:1! Thank you, Mark!
- We will use more Outpost scripting in the future
- Quality of submitted documents is going up
- Timing of shifts and spacing of exercises (MSEL)
- Equipment problems at netcontrol (radio trailer)
- Intermod (frequencies) and fundamental overload (radio hardware quality)
- Evaluations at drills: delays and problems removed required activities, evaluators in double-duty roles

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Preliminary ARRL SET report 2021

- 42 participants (incl. 1 visitor, 1 remote)
- Of these were 13 new hams, licensed 2017 or later
- 2 message nets, command net, packet + voice net
- 25 voice messages (?), 198 packet messages (!)
- 17 ”agencies” EOCs, shelters, rovers, packet
- 12 “jurisdictions” Xanadu plus participating cities
- All stations on emergency power
- At least 723 points total, maybe some more

October Communications Drill and SET

Packet Operations Observations

Mark Laubach, K6FJC

Revised 24-Nov-2021

55

Packet Operations Summary

- 2 shifts, 7 + 5 = 12 simulated shelters
- Automated EOC Outpost Script drove messaging passing Task Groups
- 2 P2 evaluations, 8 P3 evaluations conducted
- 193 messages passed (not including Delivered receipts)
- Time performance overview (in minutes) highly variable:

	11	12	13	14	15	16	17	21	22	23	24	26
Check-In delta from shift start	00:57	01:14	00:43	01:34*	00:28	00:19	01:05	00:43	00:45	00:57	00:37	00:16
Immediate received from Check-in	00:36	00:17	00:49	00:32	00:11	00:26	00:39		00:39	00:29	00:31	
Check-Out delta from Check-in			01:28	00:35*	01:20	01:52	00:57	01:25	01:32	01:42	02:36	01:45
Check-Out delta from shift start			02:11	02:09	01:48	02:11	02:02	02:08	02:17	02:39	03:13	02:01

* First check-in message was sent at 0:34, but not properly formatted

Packet Operations Future Drill Considerations

- Increase training/emphasis on pre-event preparation
  - Each participant needs to understand their set-up time for time mgmt
  - Also, hopefully can reduce set-up time
- Expect some ”checklist education” on pre-operation readiness
  - What needs to be done before Check-In
- When the exercise follows a “deployment” scenario:
  - Defining a “shift” for packet didn’t work out as expected
    - Highly variable set up times
    - Management was not practicing “good” time management
  - Expect an “operational period” to be defined within a Shift
    - Model a served agency’s operational period requirements
    - Packet stations must be ready to go with Check-in at the start and will be closed down at the end
    - Each participant will need to plan accordingly lead-time and tear down

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Monthly Packet Message Passing Practice

- The Outpost script-driven messaging passing automation worked well during the October exercise
- We are going to trial a monthly packet message passing practice on December 15th. Starts at 09:00 on Wednesday the 15th and ends on 17:00 on Wednesday the 22nd.
  - Zoom "office hours" on the evening of Wednesday the 22nd.
- Participants will need to sign up for the SCC Event
  - Those that sign up will be assigned a tactical ID and ICS location
- This first trial will be a modified re-run of the SCCo exercise Message passing task group from 9 October
- Intent is to exercise 3rd party and operator-to-operator messages following a different scenario each month
  - Keep it interesting and non "cut and paste"

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Net Control Training for 2022

Type III Part A & B

Type II

Mark Laubach, K6FJC

Revised 24-Nov-2021

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Plans for 2022

- Continued emphasis on pre-class homework
  - Expect updated course materials one week before class
  - Homework will likely be moved to a separate handout / presentation
- Type III Part A
  - Add focus on pre-assignment readiness and planning
  - May include a new checklist or two…
- Type III Part B
  - Focus will remain on operating, but some added emphasis on process flow (hint: checklist)
- Type II
  - Rebalance of homework versus class material
  - Will try to develop additional class participation exercise(s)

Message Passing

Tim Howard, KE6TIM

Revised 04-Dec-2021

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Class Changes

- Added a homework component to class with a review during the first part of the class using message samples:
  - http://bit.ly/Med-Base
  - https://www.pge.com/en_US/safety/
  - The P/N is 5bcDEʊ
  - Meet at 37° 22’ 13.97” N, 122° 02’ 24.56” W
  - ICP located at 37 22.2328, 122 02.4093
  - 107A E 1st St Apt 3C
- Added Unknown Symbol/Character
- Added Superscript/Subscript
- Clarified other procedures to eliminate confusion and ambiguity

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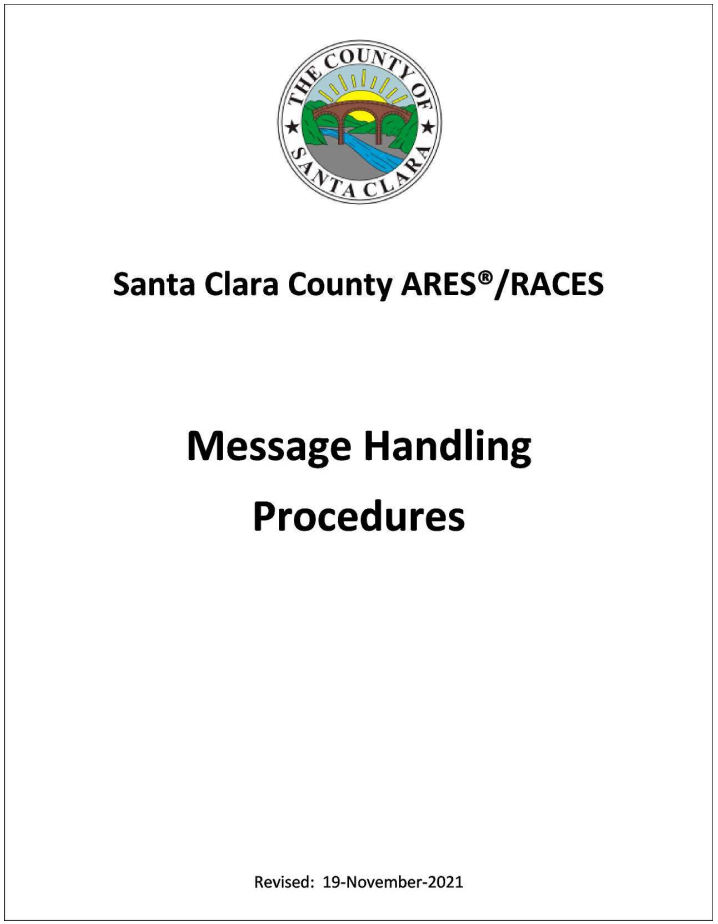
- Message Handling Procedures were updated based on:
  - Observations during drills, events, and credential evaluations
  - Feedback from this years two Message Passing Classes
  - Discussions with our message passing team.



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Unknown Symbol or Character

- Example:
  - Written: Send 50 ⸗ today
  - Spoken: "send *FIGURES* fife zero <pause> *UNKNOWN SYMBOL* <pause> today"

The receiver draws an empty box on their message form where the unknown symbol would appear.

Send 50 □ today

- Example:
  - Written: We can use ab§δ instead
  - Spoken: "We can use *MIXED GROUP* alpha bravo *UNKNOWN SYMBOL UNKNOWN SYMBOL* <pause> instead"

We can use ab□□ instead

SUBSCRIPT and SUPERSCRIPT

- Used to indicate the following character should be written a half-line lower (SUBSCRIPT) or higher (SUPERSCRIPT) than the rest of the text, such as subscripts and mathematical exponents
- Used with one character at a time
- Does NOT remain in effect until the end of the group

  - Examples:
    - Written: White blood cell count is 10^5
    - Spoken: "white blood cell count is *FIGURES* one zero *SUPERSCRIPT* fife"

    - Written: Model $XS4_{63}$
    - Spoken: "model *MIXED GROUP* x-ray sierra four *SUBSCRIPT* six *SUBSCRIPT* tree"

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SUBSCRIPT and SUPERSCRIPT

- When given a chemical symbol to send, if possible, ask the message author to provide the common English word for the chemical.
  If that is not possible, then use the procedure outlined above.

- Written by message author: H_2O_2

Corrected by message author: ~~H_2O_2~~ Hydrogen Peroxide

- Spoken: hydrogen peroxide (you might use I SPELL here to ensure precise copy

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INITIAL(S)

- Identifies one or more letters to follow
- Used for non-word letter groups
- Voice each letter phonetically
- Leave a pause after the last letter to help separate it from groups
- that follow
- Use for letter groups such as Initials, Abbreviations and Acronyms
- **Is immediately followed by white space or a punctuation mark . , : ; ! ?**

- These are Initials
  - ARRL
  - St.
  - Dr.
  - EOC
  - CA
  - T. (As in James T. Kirk)

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FIGURE(S)

- Identifies one or more numerals to follow
- Voice each digit separately
- **If anything, other than a numeral is present, it becomes a MIXED GROUP, MIXED GROUP FIGURE(S), or MIXED GROUP SYMBOL(S).**

- These are Figures
  - 145
  - 35
  - 13253

- These are NOT
  - -145 (Mixed Group Symbol)
  - 13,253 (Mixed Group Figures)
  - 2/3 (Mixed Group Figure)
  - 146.595 (Mixed Group Figures)
  - 408.555.1212 or 408-555-1212 (Telephone Figures)

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Symbols

Some symbols have context sensitive names

	Voicing
.	**decimal** *(in numbers)*, or **dot** *(in email, packet, and internet addresses)*, or **period** *(end of sentence and elsewhere)*
,	**comma**
:	**colon**
;	**semi-colon**
?	**question-mark**
!	**exclamation-point**
-	**minus-sign** *(in numbers)*, **hyphen** *(in words)*, or **dash** *(elsewhere)*
+	**plus-sign**
=	**equal-sign**
@	**at-sign**
#	**pound-sign**
$	**dollar-sign**

	Voicing
&	**ampersand**
*	**asterisk**
/	**slash**
\	**backslash**
“	**seconds** *(In GPS coordinates)*, **double-quote** *(elsewhere)*
‘	**apostrophe** *(within a word)*, **minutes** *(in GPS coordinates)*, or **single-quote** *(elsewhere)*
`	**back-quote**
%	**percent-sign**
(	**left-parenthesis**
)	**right-parenthesis**
[	**left-square-bracket**
]	**right-square-bracket**
{	**left-curly-bracket**
}	**right-curly-bracket**

	Voicing
<	**less-than-sign**
>	**greater-than-sign**
_	**underscore**
|	**vertical-line**
^	**caret** \ care et \
~	**tilde** \ till dee \
°	**degrees** *(in GPS coordinates)* **degree-sign** *(elsewhere)*

Voicings are shown in bold.

Voice hyphenated words as if they are a **single-word**.

Punctuation symbol voicings are underlined.

Context is shown in italics.

\ Pronunciation \ is between backslashes.

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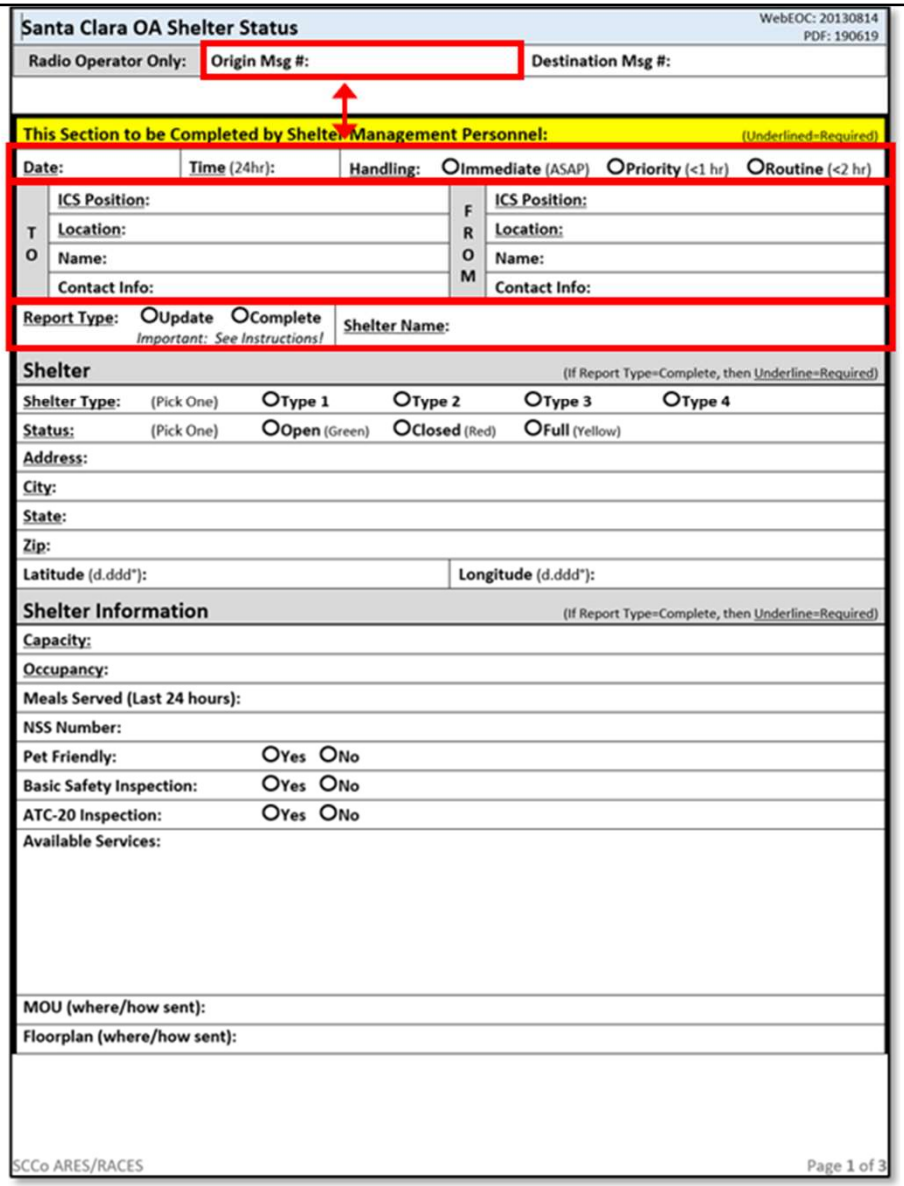
Recommended Field Groupings

- Msg Nbr, Date, Time, Handing
- To, From
- Report Type, Shelter Name
- Then go section by section
- Say section name
- Say field name(s) and value(s)
- Shoot for about 5 items (fields/groups) at a time
- Skip empty fields & sections

See examples of the other forms in Appendix A of the Message Handling Procedures document



Santa Clara OA Shelter Status WebEOC: 20130814 PDF: 190619

Radio Operator Only: Origin Msg #: Destination Msg #:

This Section to be Completed by Shelter Management Personnel: (Underlined=Required)

Date: Time (24hr): Handling: Immediate (ASAP) Priority (<1 hr) Routine (<2 hr)

TO		FROM	
	ICS Position:		ICS Position:
	Location:		Location:
	Name:		Name:
	Contact Info:		Contact Info:

Report Type: Update Complete *Important: See Instructions!* Shelter Name:

Shelter (If Report Type=Complete, then Underline=Required)

Shelter Type: (Pick One) Type 1 Type 2 Type 3 Type 4

Status: (Pick One) Open (Green) Closed (Red) Full (Yellow)

Address:

City:

State:

Zip:

Latitude (d.ddd°): Longitude (d.ddd°):

Shelter Information (If Report Type=Complete, then Underline=Required)

Capacity:

Occupancy:

Meals Served (Last 24 hours):

NSS Number:

Pet Friendly: Yes No

Basic Safety Inspection: Yes No

ATC-20 Inspection: Yes No

Available Services:

MOU (where/how sent):

Floorplan (where/how sent):

SCCo ARES/RACES Page 1 of 3

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APPENDIX B - Summary of Prowords used in Message Passing

Control Prowords

Define the start, end, or control the flow of the message.

- MESSAGE NUMBER
- ROGER
- BREAK
- STAND BY
- CONTINUE or GO
- NEWLINE
- END OF MESSAGE or MESSAGE ENDS
- SAY AGAIN or SPELL (PHONETICALLY)

Clarification Prowords

Always spoken AFTER a group. Clarifies or emphasizes what was just said .

- I SPELL
- I SAY AGAIN

Qualification prowords

Always spoken WITHIN a group. Defines a quality to allow precise copy.

- UPPERCASE and LOWERCASE
- SUBSCRIPT and SUPERSCRIPT

Introductory Prowords

Always spoken BEFORE a group. Alerts receiving operator to what is coming next.

- INITIAL(S)
- FIGURE(S)
- SYMBOL(S)
- MIXED GROUP, MIXED GROUP FIGURE(S), MIXED GROUP SYMBOL(S)
- TELEPHONE FIGURES
- GPS COORDIANTES
- AMATEUR CALL
- EMAIL ADDRESS
- PACKET ADDRESS
- INTERNET ADDRESS

It is important to use each proword in the right place (before, inside, or after a group) to avoid confusing the receiving station and slowing down the message transfer.

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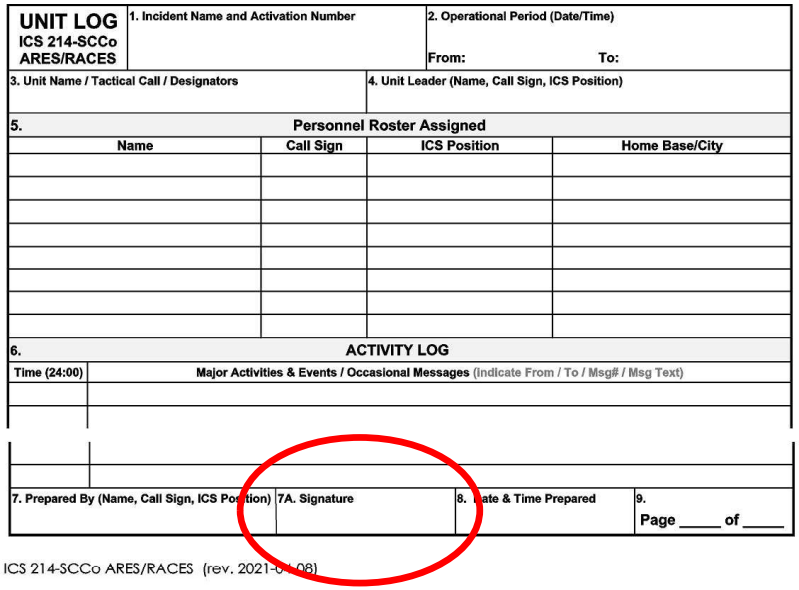
Form Updates

ICS 214 and ICS 309 revised to add a signature block



UNIT LOG
ICS 214-SCCo ARES/RACES

1. Incident Name and Activation Number	2. Operational Period (Date/Time) From: To:
3. Unit Name / Tactical Call / Designators	4. Unit Leader (Name, Call Sign, ICS Position)

5. Personnel Roster Assigned

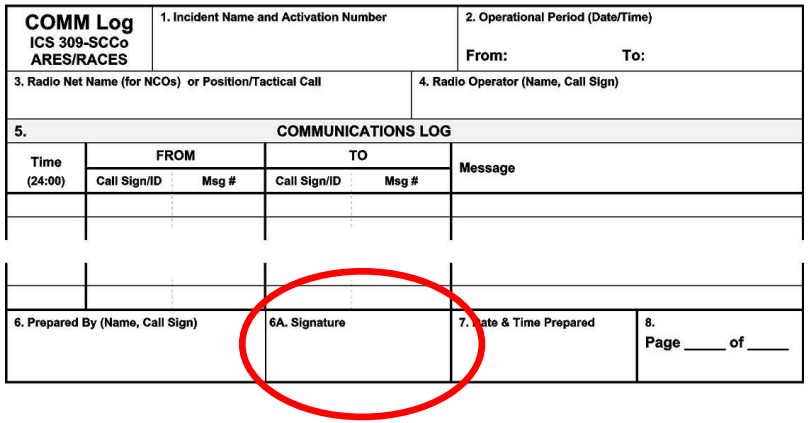
Name	Call Sign	ICS Position	Home Base/City

6. ACTIVITY LOG

Time (24:00)	Major Activities & Events / Occasional Messages (Indicate From / To / Msg# / Msg Text)

7. Prepared By (Name, Call Sign, ICS Position)	7A. Signature	8. Date & Time Prepared	9. Page ____ of ____

ICS 214-SCCo ARES/RACES (rev. 2021-04-08)



COMM Log
ICS 309-SCCo ARES/RACES

1. Incident Name and Activation Number	2. Operational Period (Date/Time) From: To:
3. Radio Net Name (for NCOs) or Position/Tactical Call	4. Radio Operator (Name, Call Sign)

5. COMMUNICATIONS LOG

Time (24:00)	FROM		TO		Message
	Call Sign/ID	Msg #	Call Sign/ID	Msg #	

6. Prepared By (Name, Call Sign)	6A. Signature	7. Date & Time Prepared	8. Page ____ of ____

ICS 309-SCCo ARES/RACES (Rev. 2021-Apr-08)

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SCCo BBS System update

Andreas Ott, K6OTT

Revised 11-Dec-2021

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Accomplished in 2021

- Slowly emerging from Pandemic restrictions: we were able to access field sites during second half of year
- Replaced 3 of 4 BBS computers with new hardware, virtualized BBS servers, backups
- Monitoring of network and power status
- Minor device and component maintenance, software upgrades

Plans for 2022

- Finish hardware replacement of BBS computers
- Plan for firewall replacement
- Add subscriber stations (at EOCs, hospitals)
- Plan for County EOC relocation ~2024
- Software improvements (servers and JNOS) – Big Thanks to Thomas KK6FPP and John W6JMK
- Possible automation of Practice Packet NetControl

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Changes to FCC Station Evaluation Rules

Yes, you need to do an RF Safety Evaluation

Andreas Ott, K6OTT

Revised 11-Dec-2021

Acknowledgement: Morris Jones, AD6ZH

Before

RF Safety Evaluation

- License requires evaluation
- FCC Bulletin OET 65 Appendix B is written specifically for hams
- Keep human exposure below specified levels (24-450MHz)
- Table shows when evaluation is required
- Power level includes both transmitter power and isotropic gain of antenna
  - Dipole => 2.15dBi

Band	Power	Band	Power
160m	500 W	6m	50 W
80	500	2m	50 W
40	500	1.25m	50 W
30	425	70cm	70 W
20	225	33	150
17	125	23	200
15	100	13	250
12	75		
10m	50 W		

-Outdated-

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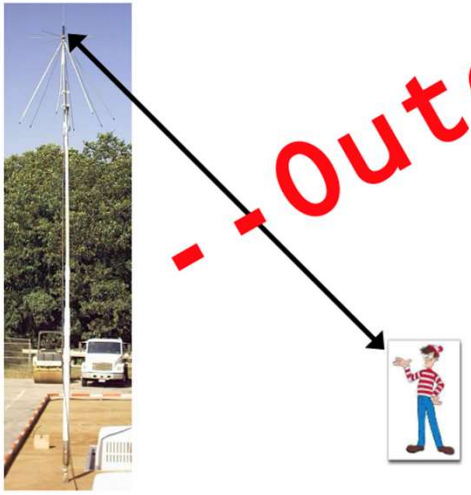
Before

From OET Bulletin 65 Appendix B…

- VHF/UHF - Less than 50 watts radiated, no evaluation needed
- Safe exposure distance from the antenna for 50 watt transmitter and different antennas from Bulletin 65 (worst case), watch for magmount on top of car @50 Watts



--Outdated--

	(dBi)	(feet)
144(2m)	3	10.6
	6	14.9
222(1.25m)	3	10.6
	6	14.9
450 (70 cm)	3	8.6
	6	12.2

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FCC Rule and Order 19-126 Effective May 2021

- From ARRL ARLB011:

The new rules do not change existing RF exposure (RFE) limits but do require that stations in all services, including amateur radio, be evaluated against existing limits, unless they are exempted. For stations already in place, that evaluation must be completed by May 3, 2023. After May 3 of this year, any new station, or any existing station modified in a way that's likely to change its RFE profile - such as different antenna or placement or greater power - will need to conduct an evaluation by the date of activation or change.

- https://docs.fcc.gov/public/attachments/FCC-19-126A1.pdf

(159 pages, contains submitted comments, and math)

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But how?

- ARRL web pages (info, FAQ, calculator)
- http://www.arrl.org/rf-exposure
- http://www.arrl.org/rf-exposure-calculator
- QST article September 2021, pp. 60-62
- To get proof of evaluation: do it on ARRL web calculator, and then print to PDF and save file
- Controlled and uncontrolled exposure (have different maximum permissible exposure limits), you want to note the two distances for your setup

And why would you care?

- RF energy gets absorbed into your body. It heats up tissue over time, and the more you transmit. It's accumulative, unless you let your tissue cool down in between transmissions (duty cycle).
- Human body is most susceptible to 30-300 MHz
- Controlled (your and your household) versus uncontrolled exposure (bystanders) have different maximum permissible exposure limits.

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For which stations?

- All stations! The way I read the R&O, this applies to your home station or your EOC, and you have until May 2023 to comply if you have had that station without changes since before May 2021, but it also applies to stations we (temporarily) set up in the field for drills and exercises, and after you make a change to any station.

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So, what are the new safe distances?

- It depends, they are the same as the old safe distances, but no more easy tables for lookup, and you will be surprised by what “used to be safe”
- Calculation is somewhat involved, as the rules are based on field strength and power density, two parameters not easily accessible; and dependent on the transmit frequency
- Variables to be filled in: transmitter power, feedline loss, antenna gain/loss, frequency, emission mode and transmitting duty cycle

Easy to understand principles

- Use low(er) power, as you should anyway
- Keep radio antenna away from body when feasible, or keep body away from radio antenna (heh)
- Let body cool down, exponential decay, take breaks in between transmissions (lower duty cycle)
- Keep transmissions short, efficiency as a goal
- Check common use cases: body-worn radio, magmount antenna on car roof, pushup mast
- Use conservative defaults as input

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Auxiliary documents

- Radio, antenna and feedline datasheets
- The ARRL calculator has a references, also to the math and code they use
- The former OET Bulletin 65 and Supplements **have not been updated** since the R&O became the law and are still “under review” https://www.fcc.gov/general/oet-bulletins-line

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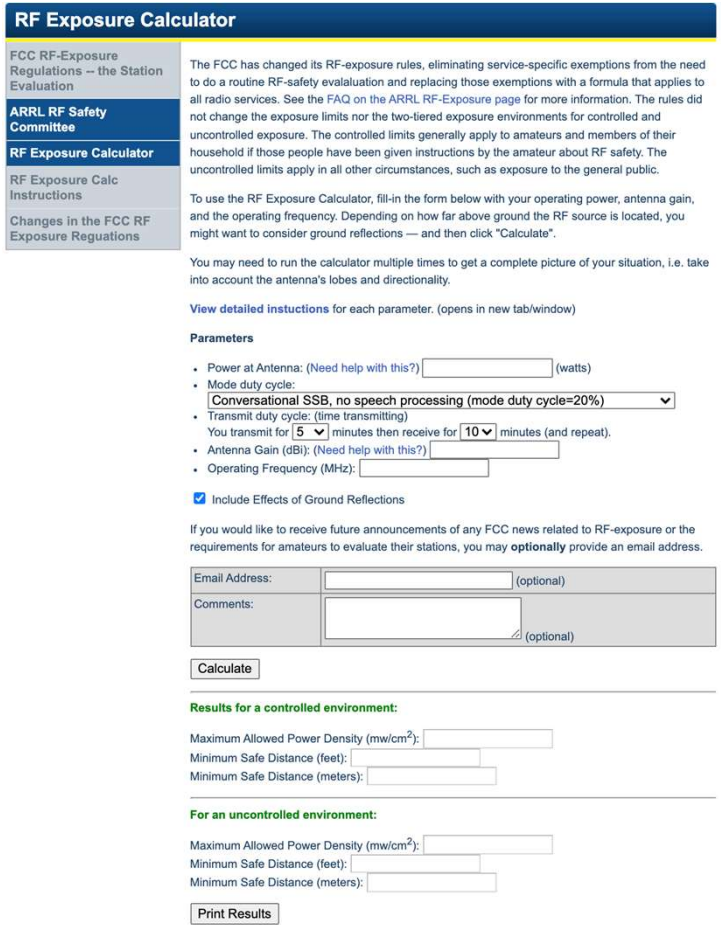
Live demo of ARRL calculator



RF Exposure Calculator

FCC RF-Exposure Regulations -- the Station Evaluation
ARRL RF Safety Committee
RF Exposure Calculator
RF Exposure Calc Instructions
Changes in the FCC RF Exposure Regulations

The FCC has changed its RF-exposure rules, eliminating service-specific exemptions from the need to do a routine RF-safety evalaluation and replacing those exemptions with a formula that applies to all radio services. See the FAQ on the ARRL RF-Exposure page for more information. The rules did not change the exposure limits nor the two-tiered exposure environments for controlled and uncontrolled exposure. The controlled limits generally apply to amateurs and members of their household if those people have been given instructions by the amateur about RF safety. The uncontrolled limits apply in all other circumstances, such as exposure to the general public.

To use the RF Exposure Calculator, fill-in the form below with your operating power, antenna gain, and the operating frequency. Depending on how far above ground the RF source is located, you might want to consider ground reflections — and then click "Calculate".

You may need to run the calculator multiple times to get a complete picture of your situation, i.e. take into account the antenna's lobes and directionality.

View detailed instuctions for each parameter. (opens in new tab/window)

Parameters

- Power at Antenna: (Need help with this?) (watts)
- Mode duty cycle: Conversational SSB, no speech processing (mode duty cycle=20%)
- Transmit duty cycle: (time transmitting) You transmit for 5 minutes then receive for 10 minutes (and repeat).
- Antenna Gain (dBi): (Need help with this?)
- Operating Frequency (MHz):

Include Effects of Ground Reflections

If you would like to receive future announcements of any FCC news related to RF-exposure or the requirements for amateurs to evaluate their stations, you may **optionally** provide an email address.

Email Address:	(optional)
Comments:	(optional)

Calculate

Results for a controlled environment:

Maximum Allowed Power Density (mw/cm^2):
Minimum Safe Distance (feet):
Minimum Safe Distance (meters):

For an uncontrolled environment:

Maximum Allowed Power Density (mw/cm^2):
Minimum Safe Distance (feet):
Minimum Safe Distance (meters):

Print Results

EC Reports

2021 Volunteer Hours

Andreas Ott, K6OTT

Revised 11-Dec-2021

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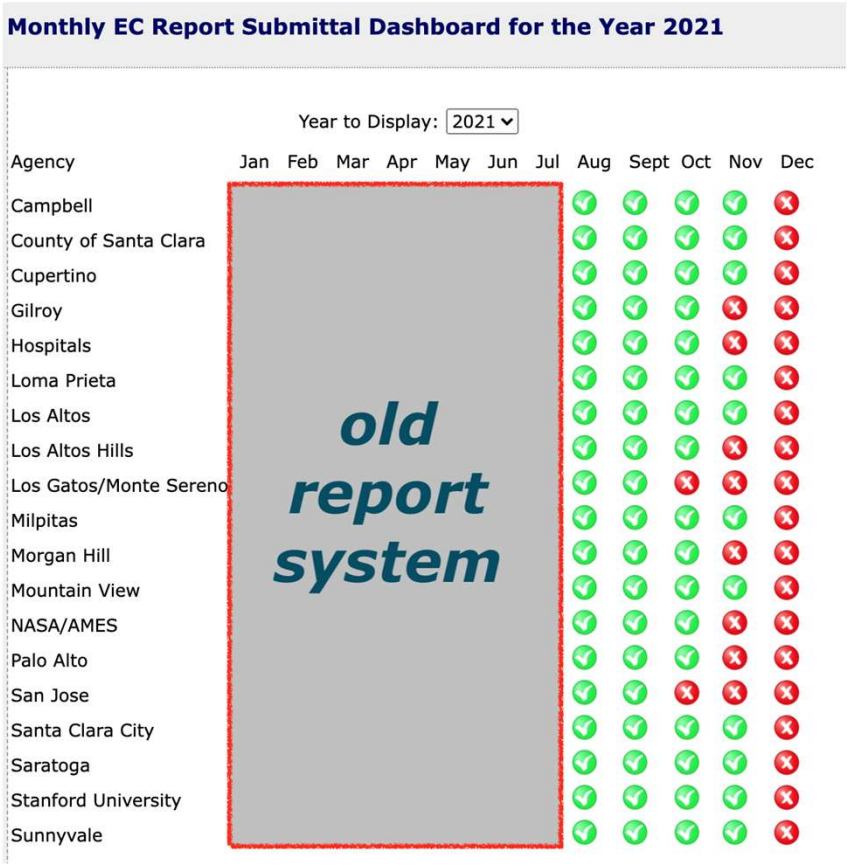
Overview 2021

- First 7 months:

89 reports

- 4 recent months:

66 reports



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Data entry

- Thank you for submitting reports and “activating” hours to be counted
- We will backfill data Jan-Jul 2021 by January, so that a full report will come out of the new system
- Please be patient and do not enter old data on your own, but go back and check (update?) when we tell you that it’s ready

Preliminary stats 2021

- Jan – Jul 2021: approx. 8,133 hours
- Aug – Nov 2021: approx. 5,264 hours
- Dec 2021 estimate: 1,100 hours
- Year 2021 summary: approx. 14,500 hours *

(Yes, there were more activities since July after restrictions were lifted, but we also think we are captioning more hours and more accurately through better reporting.)

* The equivalent of $ 2.175 M at minimum wage

2022 Training

Judy Halchin, KK6EWQ

Revised 3-Dec-2021

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2021 Review

- All the regular classes were offered
- Zoom-to-classroom transition
  - Plenty of masks and plenty of space
  - Largest classes stayed on Zoom
- Field Operations classes over the air
- Online class evaluation forms

2022 – What to expect

- Another good year for Gumby
- Watch your email and the sign-up pages
- Full slate of classes scheduled
- Packet practice and mini-drill – April 30
- Annual drill September 17 – mark your calendar

Credentials

Tim Howard, KE6TIM

Revised 30-Nov-2021

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Clarification of Requirements

- To earn a Credential, participation in Training Classes, Exercises, and Public Services events must be completed within two years.
- Participation in Exercises and Public Service events can not be used for more than one credential. For example: if a Public Service event is used for your C4, it can not also be used for an F3 Credential. A different Public Service event is required.
- Participation in an activity must be in the same role as the credential it is being applied to. For example: if you are working on a P3 Credential, the duties you performed at the activity must be packet-related. Working as a Field Operator will not satisfy the requirements for a Packet P3 Credential.
- Participation must be at a credential-approved activity.

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Clarification of Requirements

- Equipment checks are good for one-year. For example: if you completed an F3 equipment check, you can use that for an N3 within one year and do not need to repeat the equipment check.
- Where equipment requirements are different, you would only need to have the additional equipment checked.
- Radio familiarity and Knowledge tests are also valid for one year.
- Again, where requirements are different, only the additional requirements would need to be done.

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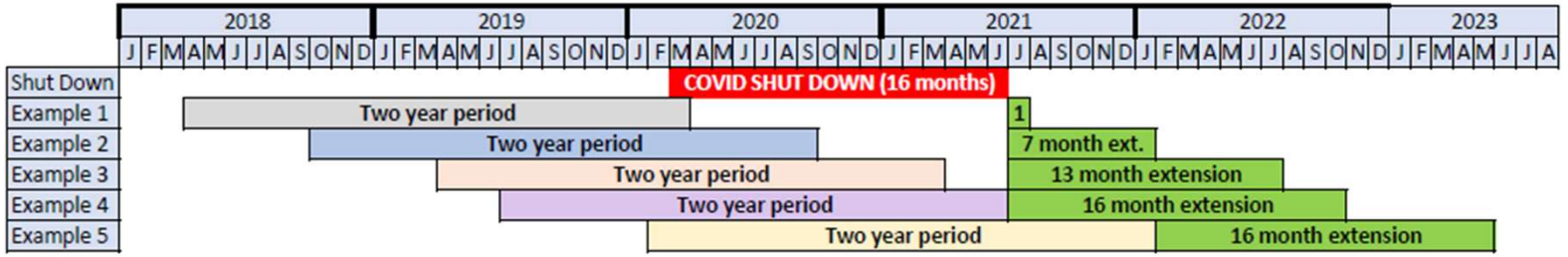
Clarification of Requirements

- To maintain Credentials, you must
  - Take part in two credential-qualified activities (exercises, events, incidents) within each two-year period
  - Or take part in one credential-qualified activity and at least one "End of Year Summary' class within a two-year period.

- Failure to do so will result in loss of Credentials. We made an exception for 2020 but will be looking at participation again moving forward.

- There is a reinstatement process outlined in the "Credential Program Handbook" that can occur within two years of losing a Credential.

COVID - Credential Requirement Extension



First canceled class was March 7, 2020
First canceled drill was March 21, 2020
First canceled public service event was April 25, 2020

Activities (Drills, Training, Public Service) resumed July 1, 2021.

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Q&A

All Training Staff

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Thank You!

Please check your email and follow the instructions to complete and return the Course Evaluation.

If you have questions or feedback about this or other training activities, you can join our Training discussion group.
https://scc-ares-races.groups.io/g/training
This is a moderated group.

See you at a training class or exercise next year!