


## Packet Level 1 Part B

Santa Clara County ARES®/RACES  
Last Updated 2011-Feb-06



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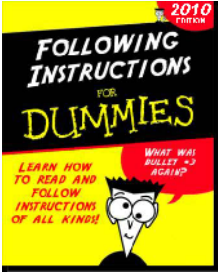
## Agenda

- Packet 1B
  - Packet Operations
    - Install Outpost/PacFORMS
    - Verify Setting
    - Operating Notes
    - Message Addressing
    - Using PacFORMS
  - Exercises
    - Connect to a BBS
    - Send messages
- Packet 1A
  - Role of the Packet Operator
  - Packet Basics
  - County BBS Architecture
  - County Standard Packet Station
  - KPC 3+ Terminal Node Controller Basics
  - Outpost & PacFORMS
  - ICS Forms for the Packet Operator

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## Housekeeping

- Pen/pencil & paper
- Cell phones & pagers
- Side conversations
- Questions
- Breaks
- Restrooms
- In case of emergency



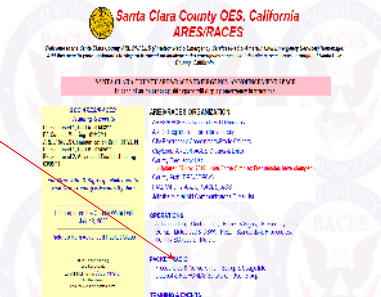
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## Before We Get Started...

“Go to the website...”  
“What was that URL again???”  
“Go to the packet page”

Click on “Packet Radio” on the main page

What's There?  
Network Status and Updates  
Frequency Lists  
Configuration Information  
Operating Information  
Software



[www.scc-ares-races.org](http://www.scc-ares-races.org)

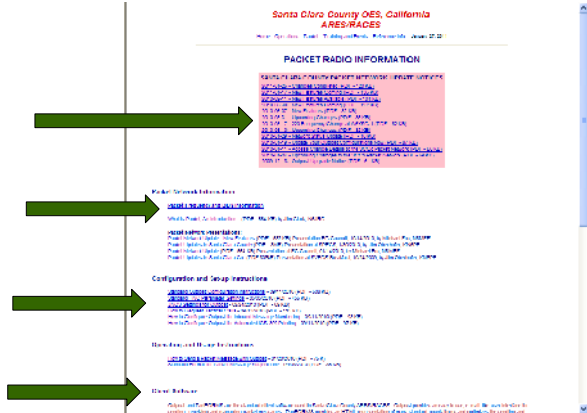
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## Learning Objectives

By the end of this course, you should be able to:

- Install and configure (or verify) Outpost and PacFORMS software
- Use basic TNC commands to verify system setup and operation
- Send and receive PacFORMS messages using Outpost

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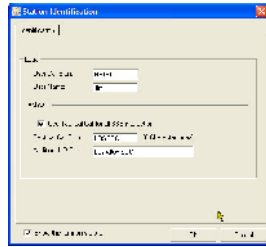


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## Outpost – Opening Setup

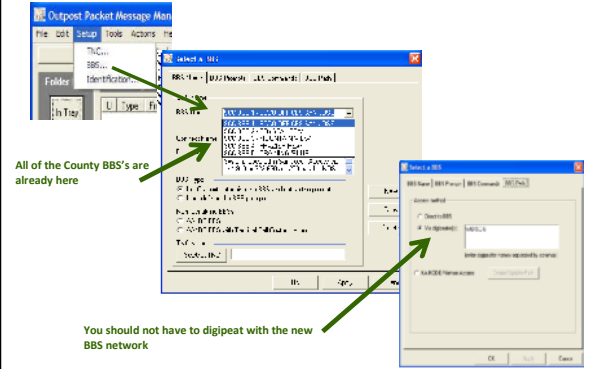
- User call sign
  - Your FCC call sign or the FCC call sign of the agency
- Name
  - Your full name
- Tactical Call
  - The assigned tactical call sign
  - If “Use Tactical Call ...” is checked, Outpost will log into BBS using this call sign
- Additional ID Text
  - Sent along with FCC call sign and tactical call in final ID packet



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13

## Selecting a BBS system

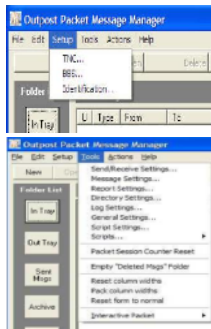


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16

## Configuring Outpost

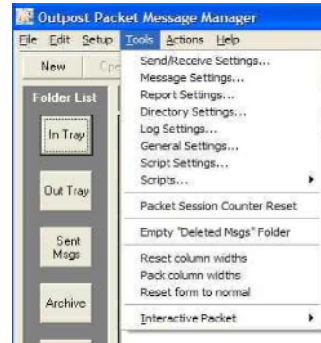
- All configuration items are under two Menu items
- The “Setup” menu
  - TNCs preconfigured
  - Santa Clara County BBS's preloaded
- The “Tools” menu
  - Standard options preset



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14

## Configuring Tools Settings



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17

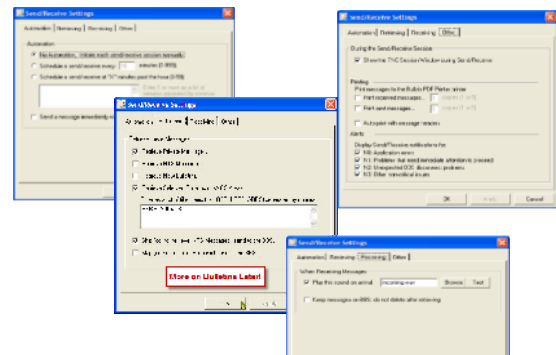
## Santa Clara County TNC Settings

- Settings sent to TNC when Outpost connects
    - Assures efficient operation in BBS network
    - Unique for each model TNC
    - Consult web site for full document
    - This is done automatically for you. No action needed on your part!
- BUT
- AGWPE settings have to be done manually
  - <http://www.scc-ares-races.org/packet.html>

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15

## Standard Message Settings



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18

### Standard Message Settings

Standard setting is "Not Checked"

19

### January 26 2011 Changes

- New Combined Installer for Outpost/PacFORMS
- BBS call sign and hostname changes

Location	New	
	Call Sign	Hostname
SCCo Office Bldg in San Jose	W6XSC-1	w6xsc-1.ampr.org
Crystal Peak (South County)	W6XSC-2	w6xsc-2.ampr.org
Mountain View	W6XSC-3	w6xsc-3.ampr.org
Frazier Peak (above Milpitas)	W6XSC-4	w6xsc-4.ampr.org
Training/Backup	W6XSC-5	w6xsc-5.ampr.org

22

### Standard Message Settings (cont.)

20

### Jan 26 BBS Network Update

23

## OPERATIONS

21

### New Frequency Assignments

- Check packet frequency list  
– <http://www.scc-ares-races.org/packet.html>

**Santa Clara County Backbone BBS Notices**

Backbone BBSs provide routing and other services to all agencies in the county.

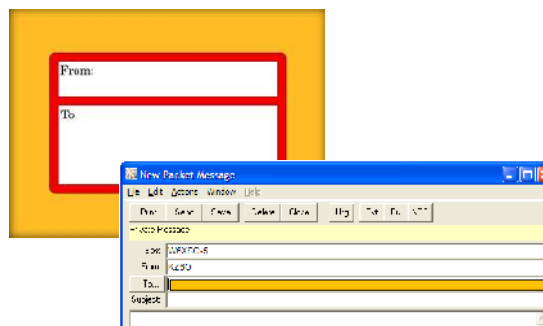
Cell Sign	Host/Domain	3m Access	1.5M Access	Location	Comments
W6XSC-1	W6XSC-1.ampr.org	144.870 (1.1)	221.800	Santa Clara Co Office Bldg/San Jose	JNCS 2477 UFS
W6XSC-2	W6XSC-2.ampr.org	144.870	none	Crystal Peak (South County)	JNCS 2477 UFS
W6XSC-3	W6XSC-3.ampr.org	144.870	221.840	Mountain View	JNCS 2477 UFS
W6XSC-4	W6XSC-4.ampr.org	144.890	221.880	Frazier Peak (above Milpitas)	JNCS 2477 UFS
W6XSC-5	W6XSC-5.ampr.org	varies	varies	Extra - for training, backup, etc.	JNCS

**NOTE:**  
(1.) The 3m access frequency for W6XSC-1 is temporarily remaining on its historical frequency to ease user transition in the new backbone nodes. This frequency will change to 144.870 as soon as practical.

24

## City/Agency BBS Assignments

- Each city/agency has a primary and secondary BBS assignment
- All users within the city or agency should use the same BBS, if possible
- Individuals log in with their FCC call sign
- Agencies or locations log in with tactical calls
  - Tactical calls to support local needs may also be requested
  - PKTXXX has been assigned for training purposes
- Find your Primary and Secondary Nodes on the following slides



## ADDRESSING

## BBS Assignments (1)

#	Agency	Prefix	Primary BBS (2.1)	Secondary BBS (2.2)
<b>Santa Clara County Cities and Agencies</b>				
1	Campbell, City of	CBL	W6XSC-1	W6XSC-3
2	County Communications Center	CCC	W6XSC-1	W6XSC-3
3	Cupertino, City of	CUP	W6XSC-1	W6XSC-3
4	Gilroy, City of	GIL	W6XSC-2	W6XSC-1
5	Hospitals (all SCCC) & DEOC	HOS	W6XSC-2	W6XSC-1
6	Loma Prieta Region	LJP	W6XSC-1	W6XSC-3
7	Los Altos, City of	LOS	W6XSC-3	W6XSC-1
8	Los Altos Hills, Town of	LAH	W6XSC-3	W6XSC-1
9	Los Gatos, City of	LGT	W6XSC-1	W6XSC-3
10	Los Gatos Red Cross	LGR	W6XSC-1	W6XSC-3
11	Millipitas, City of	MLP	W6XSC-1	W6XSC-3
12	Monte Sereno, City of	MBO	W6XSC-1	W6XSC-3
13	Morgan Hill, City of	MHG	W6XSC-2	W6XSC-1

## Standard Address Format

- Same as Internet e-mail address format
  - <user>@<host>.<domain>
- <user> part may be
  - FCC call sign (for individuals)
  - Tactical Call (must be previously defined)
    - Examples: XSCEOC, HOSDOC, etc.
- <host> part may be
  - One of the five SCCo BBSs: W6XSC-1 thru W6XSC-5
- <domain> part is: ampr.org
  - ampr.org is the domain name for the AMPR net, a worldwide network of Amateur Radio packet systems
- Examples:
  - n6mef@w6xsc-3.ampr.org xsceoc@w6xsc-1.ampr.org

## BBS Assignments (2)

#	Agency	Prefix	Primary BBS (2.1)	Secondary BBS (2.2)
<b>Santa Clara County Cities and Agencies</b>				
14	Mountain View, City of	MTV	W6XSC-3	W6XSC-1
15	NASA/Ames	NAM	W6XSC-3	W6XSC-1
16	Palo Alto, City of	PAF	W6XSC-3	W6XSC-1
17	Palo Alto Red Cross	PAR	W6XSC-3	W6XSC-1
18	San Jose, City of	SJC	W6XSC-1	W6XSC-3
19	San Jose Red Cross	SJR	W6XSC-1	W6XSC-3
20	San Jose Water Co	SJW	W6XSC-1	W6XSC-3
21	Santa Clara, City of	SNC	W6XSC-1	W6XSC-3
22	Santa Clara County	XSC	W6XSC-1	W6XSC-3
23	Santa Clara Valley Water District	VWD	W6XSC-1	W6XSC-3
24	Saratoga, City of	SAR	W6XSC-1	W6XSC-3
25	Stanford University	STU	W6XSC-3	W6XSC-1
26	Sunnyvale, City of	SNY	W6XSC-1	W6XSC-3

## Shortcut – Same BBS

- If the recipient is on the same BBS, you only need the <user> part
- Example:
  - N6MEF is connected to W6XSC-3
  - Sending message to K6FSH on W6XSC-3
  - Any of the following will work:
    - Standard:
      - To: k6fsh@w6xsc-3.ampr.org
    - Same BBS:
      - To: k6fsh

## Shortcut – Tactical Calls

- Each city/agency is assigned one or more tactical calls and a primary BBS
- By default, messages addressed to just a tactical call (with no “@<host>.<domain>” part) will automatically be forwarded to the primary BBS for that agency
- This eliminates having to know where the tactical calls are normally located
- Examples:
  - To: [XSCEOC](#)
    - Will be automatically forwarded to [XSCEOC@W6XSC-1.ampr.org](#)
  - To: [MTVEOC](#)
    - Will be automatically forwarded to [MTVEOC@W6XSC-3.ampr.org](#)
- Primary BBSs listed on county website

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31

## QUIZ

- KZ6O is logged into W6XSC-2
- You are logged into W6XSC-2
  - Address a message to KZ6O
    - A. To: KZ6O
    - B. To: [KZ6O@w6xsc-2](#)
    - C. To: [KZ6O@w6xsc-2.ampr.org](#)
- Which addresses work?

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34

## Overriding Tactical Call Forwarding

- The purpose of this network is to handle traffic in emergencies
  - Each BBS is well constructed with back-up power, etc.
  - But if we don't plan for outages, we're missing the point!
- Each city/agency has a primary and secondary BBS assignment
  - If the primary BBS is down, move to assigned secondary BBS
- ALL messages to tactical calls at a *secondary* BBS MUST include @<host>.<domain> part,  
EVEN IF you are connected to the same BBS!
  - Otherwise, auto-forwarding will try to forward it to the down BBS
- Example:
  - W6XSC-1 down due to structure collapse in earthquake
  - XSCEOC moves to W6XSC-2
  - K6FSH connects to W6XSC-2; sends message to XSCEOC on W6XSC-2
    - To: [xsceoc@w6xsc-2.ampr.org](#)

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32

## QUIZ

- KZ6O is logged into W6XSC-2
- You are logged into W6XSC-1
  - Address a message to KZ6O
    - A. To: KZ6O
    - B. To: [KZ6O@w6xsc-2.ampr.org](#)
- Which addresses work?

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35

## Summary of Message Addressing

- Standard: <user>@<host>.<domain> (always works)
  - To: [n6mef@w6xsc-3.ampr.org](#)
  - To: [k6pmm@w6xsc-2.ampr.org](#)
- Sender and recipient on same BBS: <user>
  - To: n6mef
- Tactical call (if primary BBS is up): <tactical>
  - To: xsceoc
- Tactical call (if primary BBS is down):  
<tactical>@<host>.<domain>
  - To: [xsceoc@w6xsc-2.ampr.org](#)  
EVEN IF you are also connected to W6XSC-2!

AP

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33

## QUIZ

- You are logged into W6XSC-3 and want to send a message to the Morgan Hill EOC
  - Address a message to be delivered to the EOC
    - A. To: MRGEOC
    - B. To: [MRGEOC@w6xsc-3.ampr.org](#)
    - C. To: [MRGEOC@w6xsc-2.ampr.org](#)
- Which addresses work?

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36

## QUIZ

- You are logged into W6XSC-3, W6XSC-1 is down
  - Address a message to the Morgan Hill EOC
    - A. To: MRGEOC
    - B. To: MRGEOC@w6xsc-3.ampr.org
    - C. To: MRGEOC@w6xsc-2.ampr.org
- Which addresses work?

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37

## BULLETINS

- Distributing network-wide messages



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40

## QUIZ

- You are logged into W6XSC-1, W6XSC-2 is down
  - Address a message to the Morgan Hill EOC
    - A. To: MRGEOC
    - B. To: MRGEOC@w6xsc-2.ampr.org
    - C. To: MRGEOC@w6xsc-1.ampr.org
- Which addresses work?

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38

## SCCo Bulletin Areas

- Santa Clara County ARES/RACES uses only two bulletin areas
  - perm
    - Used for bulletins which don't expire
    - Examples: standard county procedures
  - 30days
    - Bulletins posted here automatically expire 30 date posted
    - Examples: Monday & Tuesday night check-in lists, drills, events, incidents
- Advantages
  - Limits on-air time required to check bulletins
  - Focuses readership so important info is not missed
  - Automates expiration of old news
  - Outpost only downloads a given bulletin once



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41

## BREAK



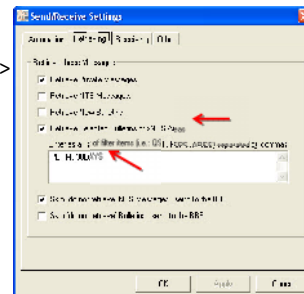
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39

## Configuring Outpost for Bulletin Access

- In Outpost:
  - Tools >
  - Send/Receive Settings >
  - Retrieving

\* For reference only. This information is pre-configured for you by the installer.



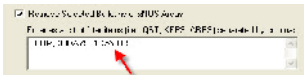
- Check "Retrieve Selected Bulletins or xNOS Areas"
- Enter as a list of filter items: "PERM,30DAYS" (no space)

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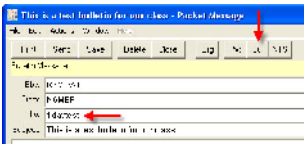
42

## Testing and Experimenting with Bulletins

- DO NOT send test or "unofficial" messages to the county bulletin areas: "perm" and "30days"
  - Only authorized users should post to "perm" and "30days"
- DO test and experiment with the "1daytest" bulletin area
- To retrieve:



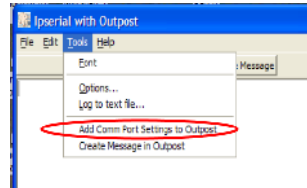
- To send:



Don't forget to remove it later!

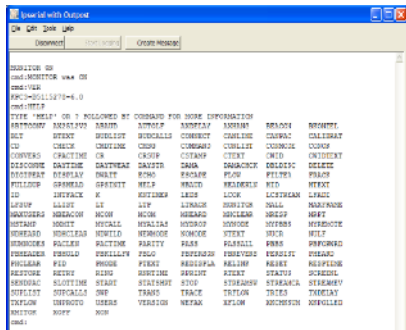
## Outpost Interactive Packet

- Once serial settings are confirmed
  - Can move settings to Outpost

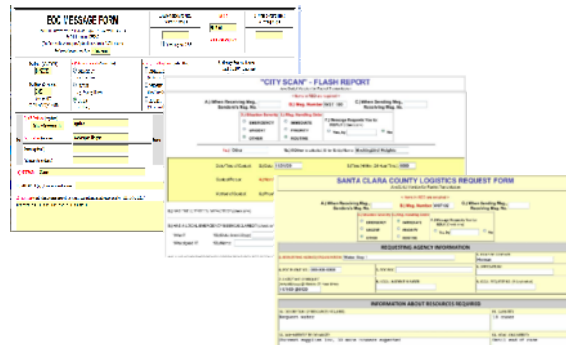


## Outpost Interactive Tools - Serial

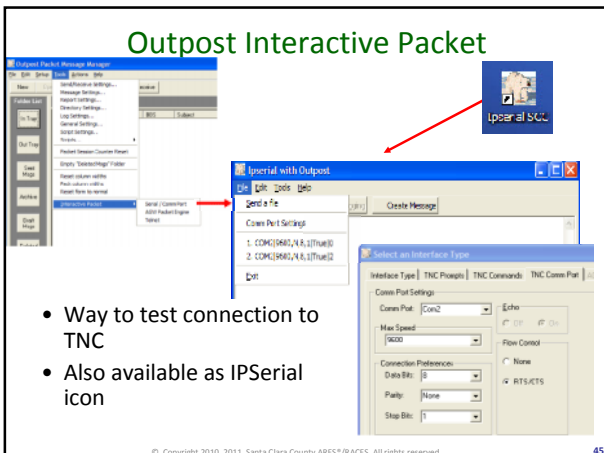
- Serial communications with the TNC like Hyperterminal



## PacFORMS



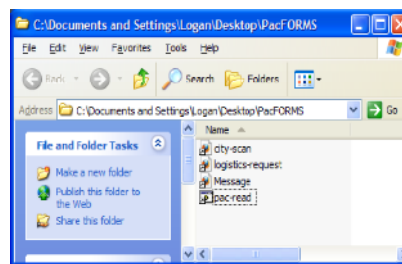
## Outpost Interactive Packet



- Way to test connection to TNC
- Also available as IPSerial icon

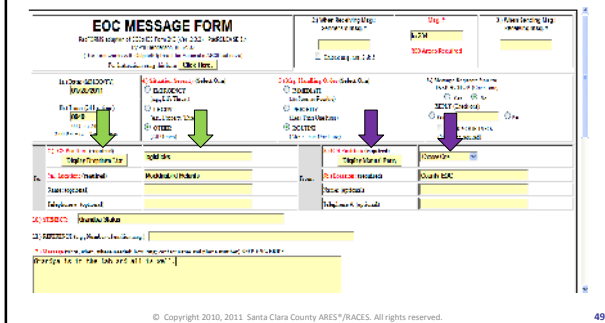
## PacFORMS Installation

- Part of Outpost Installation
- Folder on desktop with shortcuts to forms
- Also in the Start menus



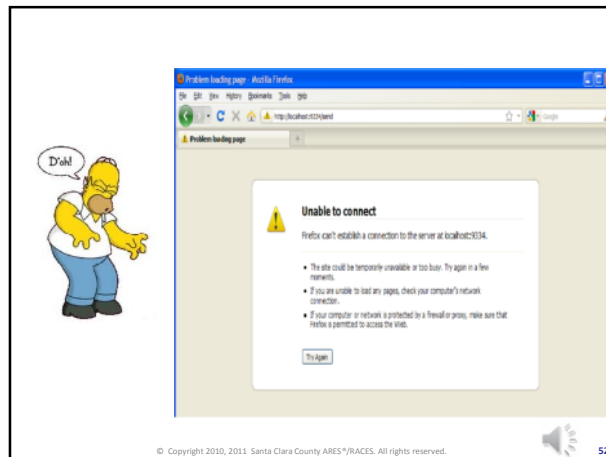
## Creating a PacForm

- Double click shortcut –or– select from Run menu
  - Default web browser will start
  - Form will be displayed with fields to be completed



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49

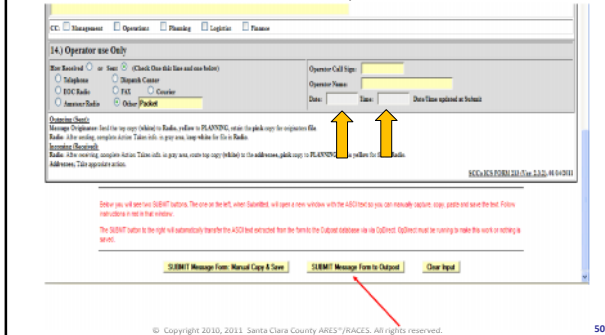


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52

## Message Is Ready To Send To Outpost

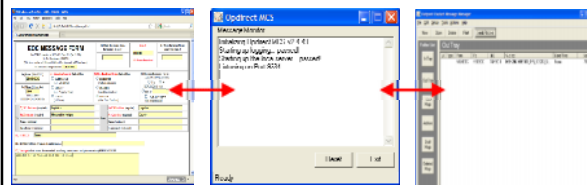
- Fill in the blanks
- Click the Submit button to send to Outpost



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50

## Recovery....



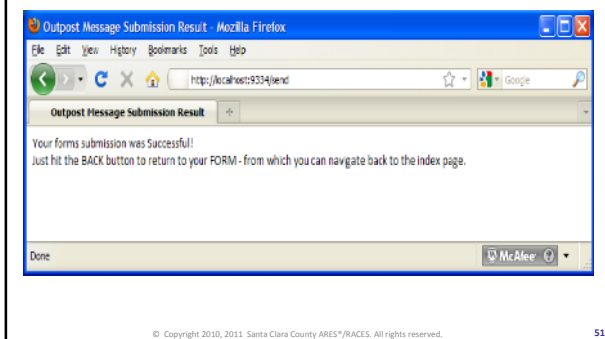
- Is Opdirect running?
  - Opdirect interfaces PacFORMS to Outpost
- Solution –
  - Click Opdirect icon on desktop Or restart Outpost
  - “Back” on web browser
  - Click “Submit” button again

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53

## Direct To Outpost Method – Step 2

- Form disappears and results of transfer appear



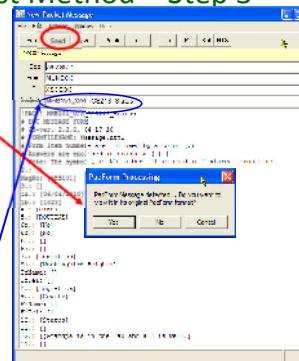
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51

## Direct To Outpost Method – Step 3

- Condensed and formatted message appears
  - “Yes” - Display again as form
  - “No” - Continue
- Click “Send” button to put into Outpost OutTray
- Note: message can be edited in this window
  - Use caution since PacFORMS depends on specific format

**New!!**  
Subject Line is automatically filled in for you

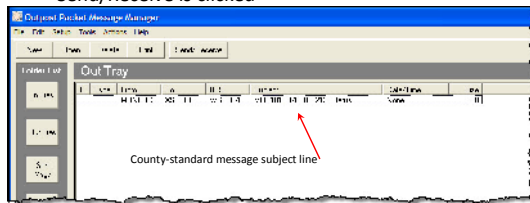


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54

## Direct To Outpost Method – Step 4

- Message is in the OutTray and will be sent when “Send/Receive is clicked



Subject Line Format: MHB101 – The message number entered in the message form  
O – the Situation Severity – (Emergency, Urgent, Other)  
R – Message Handling – (Immediate, Priority, Routine)  
ICS213 – The form type being sent (in this case an ICS213)  
Status – The first part of the Subject line from the message

## Training BBS Environment

- BBS: W6XSC-5
  - 144.910 MHz
  - 223.560 MHz
  - 433.570 MHz
- EOC: PKTEOC
- User Tactical Call: PKT001-PKT100 from card
- Please use lowest possible power, worst antenna, or a dummy load

## Send a message the “hard way”

- Connect to the BBS using IPSerial
- Use these BBS commands
  - S “your call” – Send a message to “your call”
    - When prompted add a subject
    - When prompted type body of message
    - When done, type [Enter] then “/EX” and [Enter]
  - LM – List your messages
    - Note the number of the message you sent
  - R ### - Read message number ###
  - K ### - Kill (delete) message number ###
  - B - Bye

## Thank You!



Don't forget to fill out your evaluation forms

Questions, comments, suggestions?  
KZ6O@arrl.net

## Hands On

- Verify operation of the packet station
- Send check in message to PKTEOC
- Read any new bulletins
- Perform requested tasks
- Use remaining time for "playing around"
- Send check out message to PKTEOC
- Fill out your evaluation form
- Pack up and go home.

## Reference Material

