

# RMS Express



# Overview

- Winlink Email System
- RMS Express Installation
- Winmor/Pactor Setup
- Message Writing/Reading/Attachments
- CMS Sessions (Winmor/Pactor Stations)
- Forwarding VHF/UHF Packet Messages
- Specialized Attachment Programs



# RMS Express Capabilities

- Worldwide E-mail Outside of Disaster Area
- E-mail to Suitably Equipped RACES Stations Within Disaster Area
- Direct Peer to Peer Communications
- Document Attachments
- Picture Attachments
- Encrypted (Bona Fide Emergencies Only)



# Winlink 2000 Email System

- Five Common Message Servers (CMS)
- Each a Mirror Image of Each Other
- Gateway Stations (Packet/Winmor/Pactor/Robust HF Packet/ APRS)+Telnet
- 100% Error Correcting (ARQ)
- Robust and Multiply Redundant



# White List Spam Filter

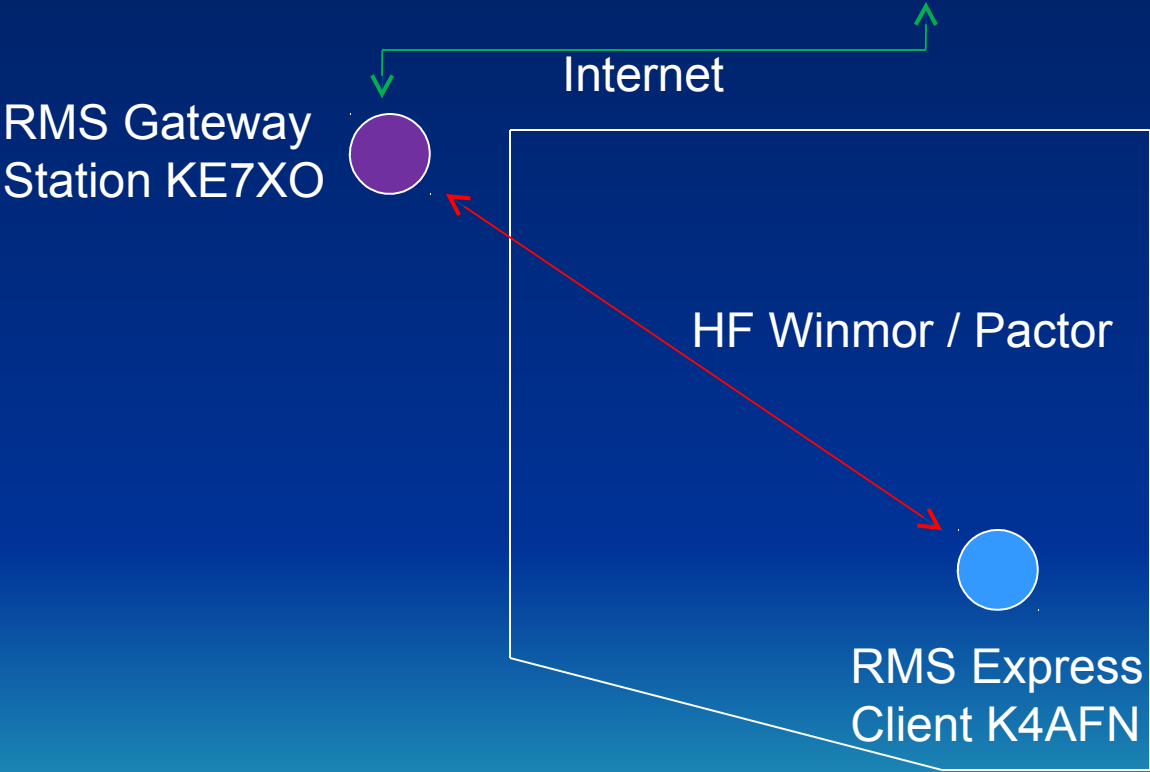
- Auto Updated By Your To/CC Addressees
- Addressees Retained For 400 Days
- Bypassed by //WL2K Leader in Subject Line
- Winlink to Winlink Addressees Bypass List
- Details Available On Winlink.org Site
  - Enter 'White List' in Site Search Box
  - Can Modify List Via Session

# Simple WL2K Session

Public Email Servers: Gmail / Hotmail / Yahoo/ etc.



CMS: Perth / San Diego / Brentwood / Halifax / Vienna



# Pactor Peer-to-Peer Session

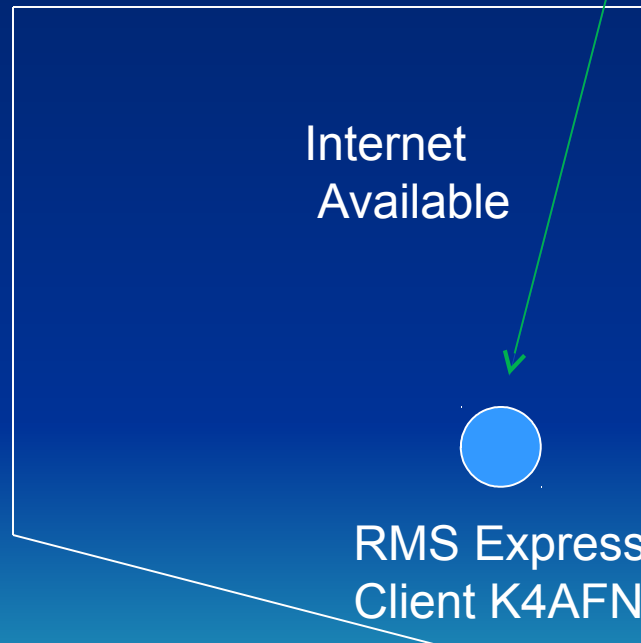


# Telnet WL2K Session (No Local Internet Failure)

Public Email Servers: Gmail / Hotmail / Yahoo/ etc.



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# Computer Requirements (Winmor)

- 700 MHz Pentium/Celeron 512 Meg Ram  
(Winmor)
- Windows XP or Later
- Microsoft .net v3.5
- Adequate USB/RS-232 Ports
  - Serial Gear USB/RS-232 Adapters

# Computer/Rig Interface Options

- Sound Transfer
  - Isolated vs. Direct
  - Dedicated Sound Card
- PTT Keying
  - VOX
  - Rig Control
  - RS-232 RTS DTS
- Rig Control (Optional)
  - Manual/Automatic



# Sound Card Interface Options

- SignalLink (Tigertronics)
  - Integrated Sound Card
  - VOX Keying
- Rig Blaster (Various Models)
  - Isolated Audio/Integrated Sound Card
  - USB/RS-232 Keying
- PSK31 Cable (eBay)
  - Integrated Rig Control
  - USB/RS-232 Keying

# RMS Installation

- Download From [winlink.org](http://winlink.org)
- Install Into Default Directories
- Run (Updates Itself)
- Extensive Help Files



# RMS Installation (cont)

- Files>RMS Express Setup....
  - Call Sign
  - Grid Square
  - Password (Not Recommended for PCRACES)
  - Display Incoming Messages
  - Options
  - Service Codes (Public Emcomm)



# Winmor TNC Setup

- Open Session dropdown box (Winmor WL2K)>Setup
- Sound Card Selection
- Leave Other Defaults
- Radio Setup (Control and Keying)
- Transmit Level Test (Set ~ 60% Po)
- DSP Speed Test (>50)



# Windows Mixer Settings

- Xmit Audio Level via Playback Volume Controls (Speaker/Wave)
- Adjust Full Up
- Receive Audio via Radio Volume Control
- Adjust for Winmor TNC Receive Level in Green



# SCS Pactor TNC Setup

- Open Session dropdown box (Pactor WL2K)>Setup
- Select Model and Parameters
- Radio Setup (Control and Keying)
- PSK Transmit Level Test (~40% No ALC!)
- FSK Transmit Level Test (~40% No ALC!)



# HF Channel Selector Setup

- Open Session (Winmor/Pactor WL2K)
- Filter Selection (Path Quality & Distance)
- Update Channels
- Update Channels Via Radio
- Propagation Prediction Sorted (Default)
  - Can Sort on Any Column
  - Solar Flux Index (SFI) Auto Updated



# Hour 1 Questions?

- Winlink Overview
- RMS Express Installation
- TNC Setup



# RMS Express Features

- Basic Message Handling
  - New Message
  - Reply
  - Reply All
  - Forward
  - Acknowledge Receipt
  - Post To Outbox Folder



# RMS Express Features (cont)

- From Station List (Optional Call Sign List)
- Winlink (WL2K) Messages
  - Multiple Addressees (To/CC)
  - Message Transfer Via WL2K Station Session
- Peer-To-Peer (P 2P)
  - Single Addressee Only
  - Station To Station Only, No WL2K



# RMS Express Features (cont)

- Text To Cell Phones
  - Requires AAANNNNNNN@Provider
  - Cell Phone Can Respond (Opens White List)
- Attachments
  - Text (.txt .pdf)
  - Signed Documents (.pdf)
  - Pictures (.jpg)
  - Encrypted (.pdf .gpg) Emergency Only!
  - HF Transfer Rate 10Kb~5 Min

# WL2K Session Features

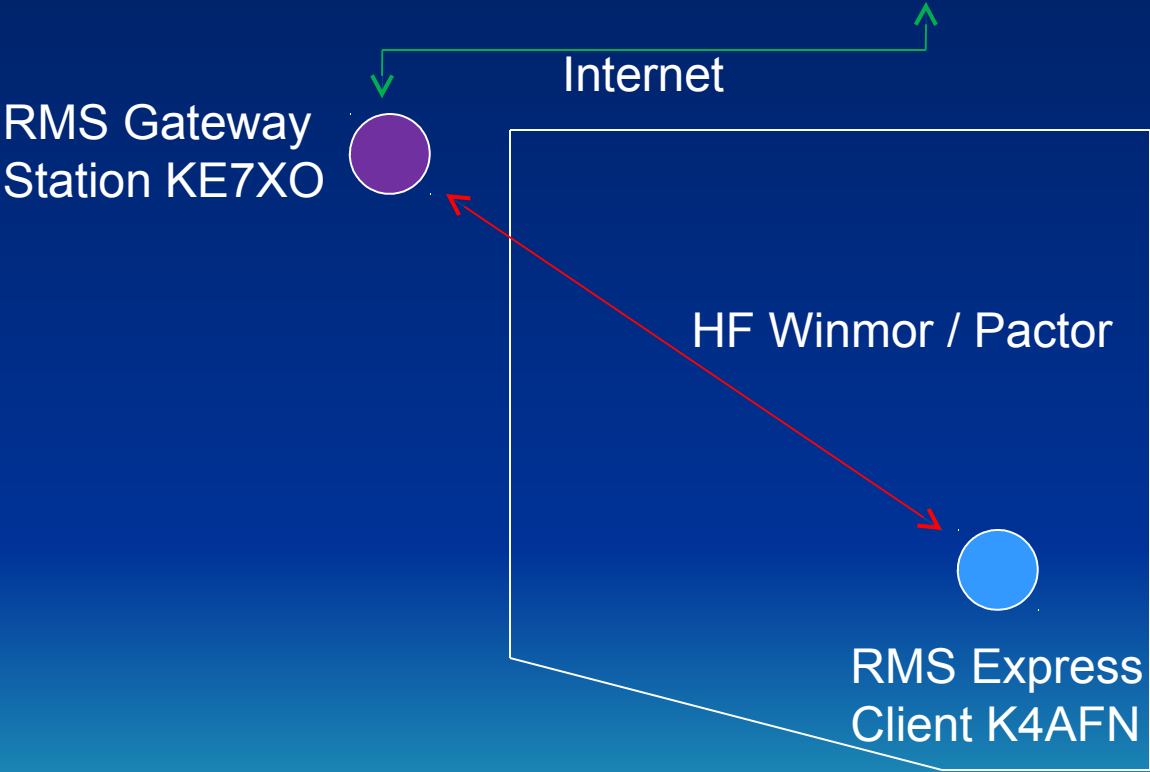
- Listen First Before Starting Session!
- Exchange Outbox for Inbox With CMS
- Optional Selection Of Incoming Messages
- Incomplete Message Repair
- Propagation SFI Auto Updated
- No CMS Available Rejects Connection
- Warning of Gateway Holding Messages
  - Sysop Employed RMS Relay Software

# Simple WL2K Session

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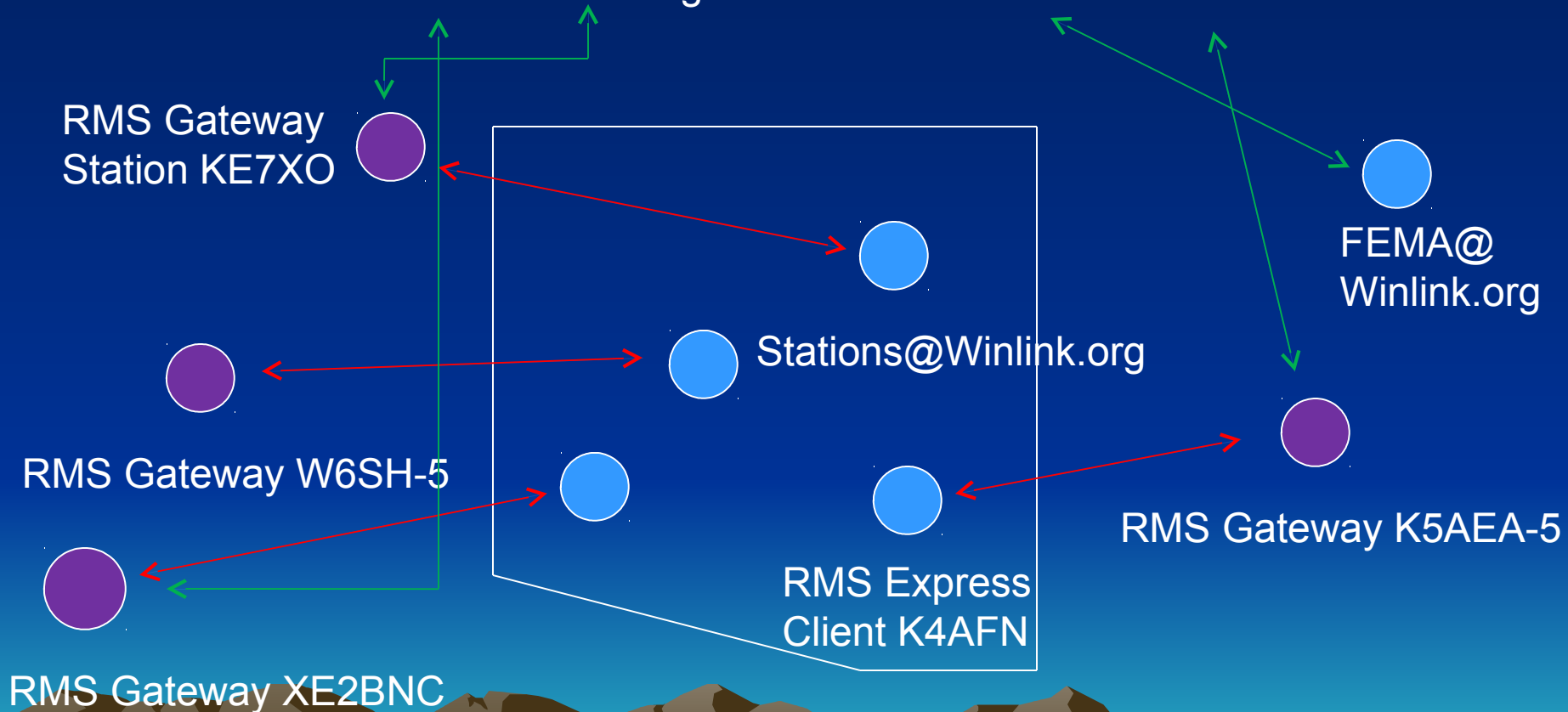


# Multiple Addressee WL2K Session

Public Email Servers: Gmail / Hotmail / Yahoo/ etc.



CMS: Perth / San Diego / Brentwood / Halifax / Vienna





# HF Session Techniques

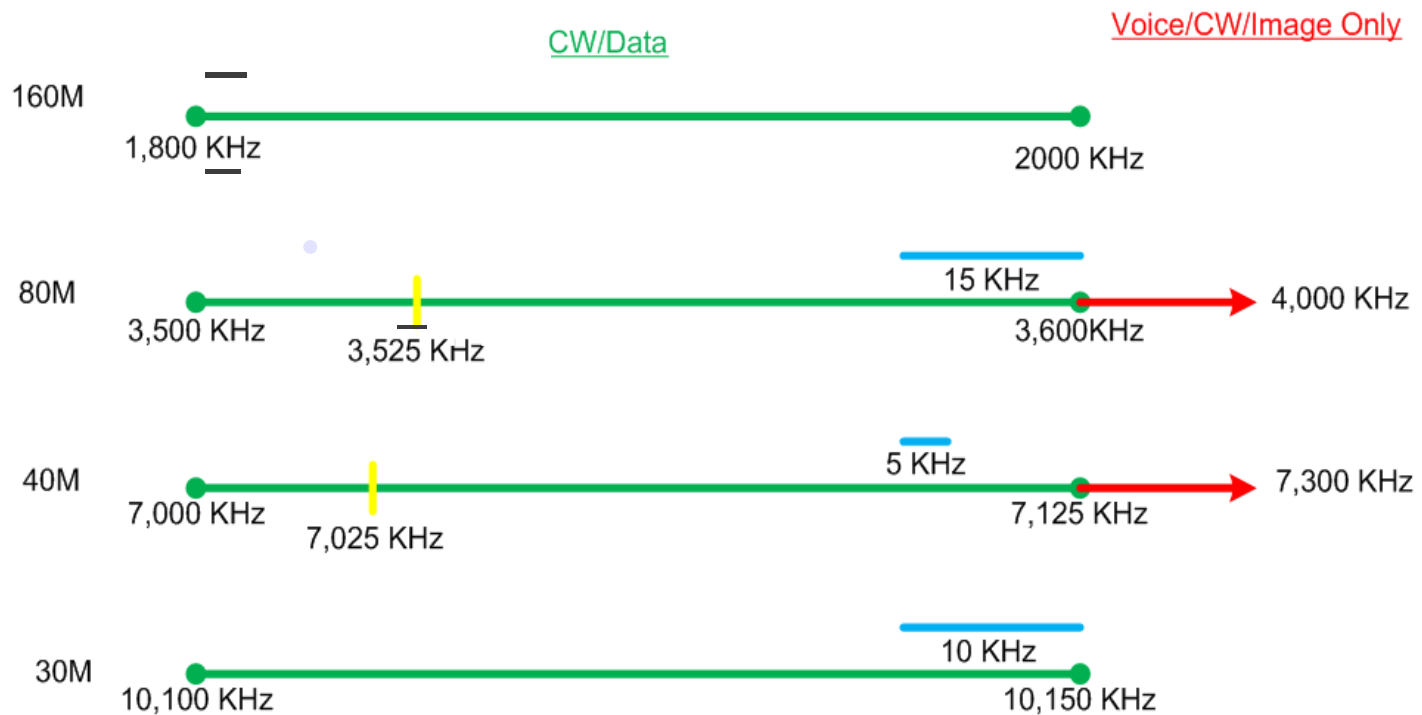
- Data Subbands P2P (Wide and Narrow)
- Auto-forwarding Subbands WL2K W Only
- Narrow Bandwidth Advantage
  - Less Crowded Band Segment
  - 6 db S/N Advantage For 500 Hz BW
  - 500 Hz Filter Rejects QRM/Improves AGC
- HF Gateway Station Frequency Rotation
- Timing A Busy Gateway Connection



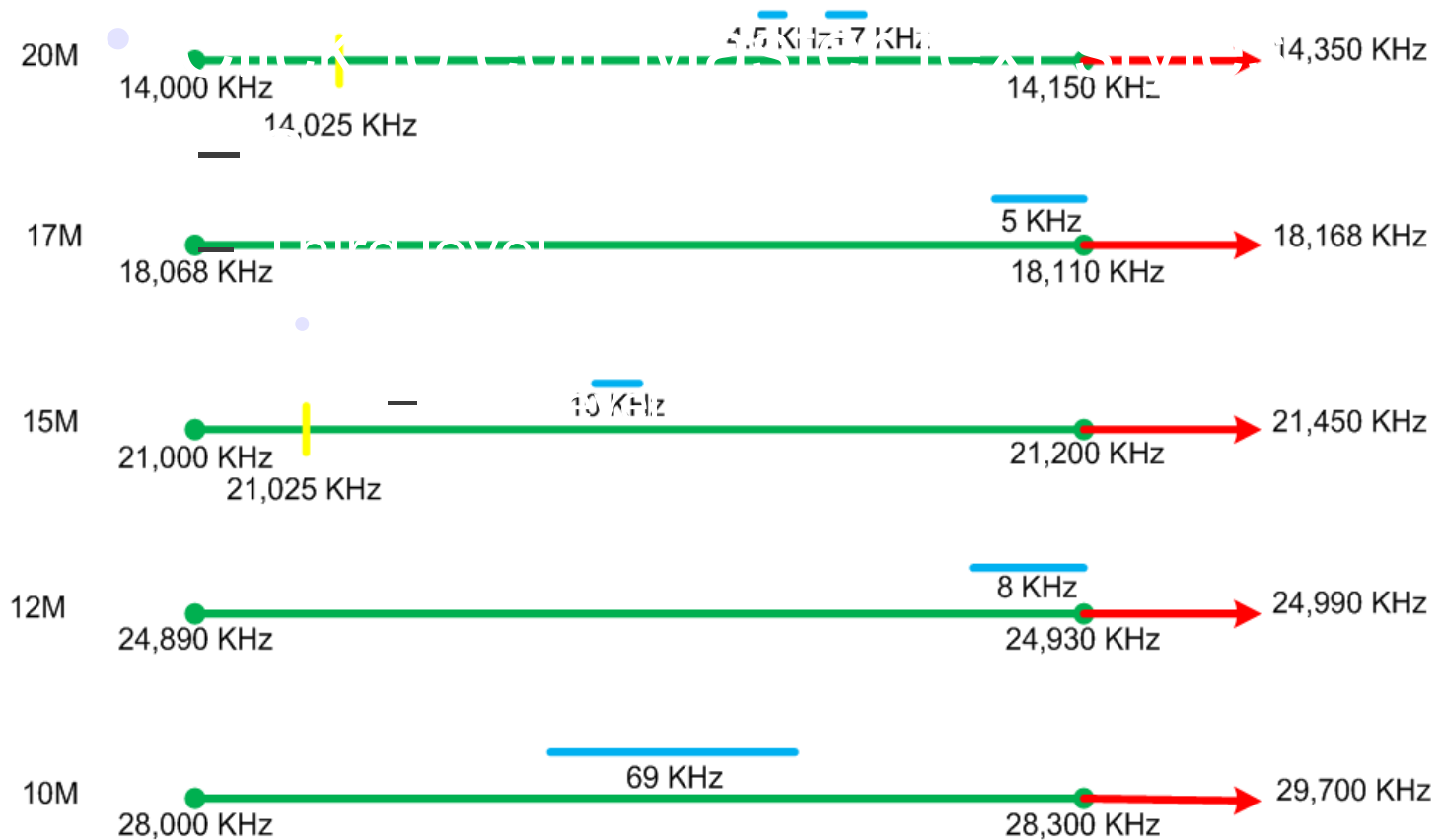
# US HF Data Band Plans

• **Click to edit**

Auto Forward Subband/  
Winlink W d a B a n d w i d t h



# US HF Data Band Plans (cont)



# Hour 2 Questions?

- RMS Express Basic Message Handling
- Attachments
- Winmor TNC and Sessions
- Pactor Sessions



# AB7AA Winlink Gateway Capabilities

- Simplex 1200 Baud Packet 144.93 MHz
- Mt Lmn Rptr 1200 Baud 145.15- MHz
- Simplex 9600 Baud 440.925 (EOC+Hosp)
- Winmor/Pactor 80/40M Wide and Narrow
- Satellite Internet
- Battery and Automatic Generator Backup



# AB7AA Winlink HF Gateway Characteristics

- NVIS Antenna
- HF Frequencies (All Upper Sideband)
  - 3587.5 KHz Winmor W/Pactor III 6 sec dwell
  - 3581 KHz Winmor N/Pactor I&II 6 sec dwell
  - 7065 KHz Winmor N/Pactor I&II 6 sec dwell
  - 7101.9 KHz Pactor III 3 sec dwell
- Possible 30/40M for Solar High Cycle
- 1807 KHz Freq for Future 2015 SSN Low



# AB7AA Winlink Gateway Vulnerabilities (Backup)

- Internet Failure (RMS Relay HF)
- Computer Failure (Re-Program Spare)
- Battery Depletion (Auto Generator)
- House AC Inverter Failure (No Present Backup)
- Battery Depletion after Generator Failure (Possible Future Solar)
- Sysop Incompetency (No Help in Sight)



# Peer Message Relay Options

- Gateway Station RMS Relay Software (Gateway Sysop Required)
- Simple Forward Message Option (VHF and HF Stations are now Married to Avoid Reply and White List Confusion)
- HF Relay Station Aliases Originators Callsign (Complicated to Implement But More Universal – Stations Not Married)



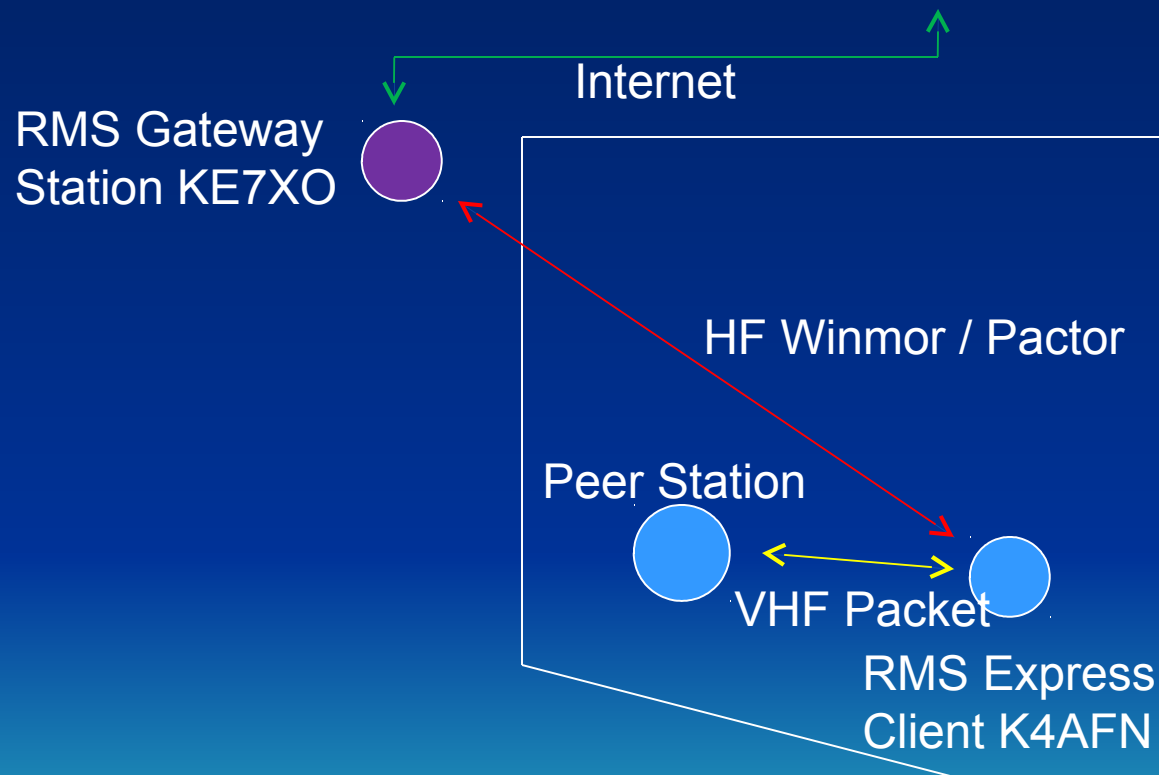


# Relaying Peer Messages

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# Forwarding Peer Messages (Alias Call Sign Method)

- Receive Message (Packet P2P Session)
- Change From/To/CC Addressees (Alias Peer)
- Forward Message (HF WL2K Session)
- Change Your From (Alias) Back to Yours!
- Forward Only One Message at a Time!
- Acknowledge to Peer After Forwarding




# Retrieving Peer Messages (Alias Call Sign Method)

- Change Station Call (Alias Peer)
- Retrieve All Peer's WL2K Messages Via HF WL2K Session
- Change Station Call (Alias) Back To Yours
- Forward All Messages To Peer Via Packet P2P Session



# FCC Part 97.113 Prohibited Transmissions

(4) Music using a phone emission except as specifically provided elsewhere in this section; communications intended to facilitate a criminal act; messages encoded for the purpose of obscuring their meaning, except as otherwise provided herein; obscene or indecent words or language; or false or deceptive messages, signals or identification;



# FCC Part 97.403 Safety of Life and Protection of Property

No provision of these rules prevents the use by an amateur station of any means of radio communication at its disposal to provide essential communication needs in connection with the immediate safety of human life and immediate protection of property when normal communication systems are not available.



# Part 97.403 Simplified

- Relief From *Any* Part 97 Rule Provided...
- 1) Threat to Life or Property...and...
- 2) Further Delay Increases Threat...and...
- 3) No Other Communications are Available
- Meeting all the above Criteria is not a rule violation! It is a rule itself!



# Attachment Generating Programs

- FLMsg (Free)
  - Forms (ICS, ARRL, MARS, Red Cross, etc.)
- Adobe Acrobat (\$)
  - PDF
  - Signatures
  - Encryption (Windows 128 Bit)
- GPG4Win (Free)
  - Signatures
  - Encryption (>2048 Bit)

# Practice! Practice! Practice!

- Telnet Session – RMS Express and Self Email
- Packet WL2K Session - RMS Express and Self Email (Local Gateway Required)
- Add Attachments to Above Sessions
- Winmor WL2K Session (Same as Above)
- Peer-to-Peer (With Attachments)
- Relay Peer Messages



# Questions?

- AB7AA Gateway
- Forwarding Peer Messages
- Retrieving Peer Messages
- FCC Rules
- Attachment Generating Programs



# Summary

- Winlink Email System
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- CMS Sessions (Winmor/Pactor Stations)
- Forwarding VHF/UHF Packet Messages
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# Failed Infrastructure Communications

- Requires Reliable Point-to-Point Emergency Communications
- RACES Provides Both Voice and Data Communications
- Exercise Cell Phone Communications Undermines this System



# RACES Data Capabilities

- Worldwide E-mail Outside of Disaster Area
- E-mail to Suitably Equipped RACES Stations Within Disaster Area
- Document Attachments
- Picture Attachments
- Encrypted (Bona Fide Emergencies Only)
- 100% Error Free
- Effectiveness Requires Exercise