

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of:)	
)	
The Amendment of Part 97 of the)	
Commission's Rules and Regulations)	
to Permit Greater Flexibility in Digital)	
Data Communications)	
)	WT-16-239
)	
The Amendment of Part 97 of the)	
Commission's Amateur Radio Service)	RM-11831
Rules to Reduce Interference and Add)	
Transparency to Digital Data)	
Communications)	
)	
By: W. Lee McVey, PE Ret.)	
W6EM)	
)	
)	
To: The Chief, Wireless)	
Telecommunications Bureau)	
)	
_____)	

COMMENTS IN SUPPORT OF NYU PETITION FOR DECLARATORY RULING

Introduction

I am pleased to offer my comments in support of the above captioned proceeding submitted on behalf of New York University by Dr. Theodore Rappaport, and Dr. Michael Marcus and request that the Commission act promptly in addressing this important subject. My further intent is to advise the Commission of several aspects of actions by the Amateur Radio Safety Foundation, Inc., also known as "Winlink" (ARSFI/Winlink). While there is need to clarify section 97.113(a)4 of the Commission's rules, to remove ambiguities with respect to intentional obscurity of amateur digital

transmissions, there is *little obscurity* in how it offers services in *direct competition* with commercial service providers. The exemplary activities that are cited below I believe constitute examples of how ARSFI/Winlink may have breached the rules.

I have also included an example of how, on one hand, ARSFI/Winlink actually promotes the obscurity of its content as a “selling point” in a presentation,¹ yet the manner in which its system is operated results in the transmission, via amateur radio, of 3rd party Internet-sourced emails and the display of some of them on accessible database records. Obscurity in transmission, then release of content makes little sense.

Specific Comments

First, and perhaps foremost, an explanation of what ARSFI/Winlink is. It is a self-proclaimed “not for profit” corporation, incorporated under the laws of the State of Florida. Excerpts from its most recent Federal Tax Return are attached as Appendix 1, and include details of direct annual payments to each of its officers and directors,² showing that they serve to benefit directly; and perhaps through enjoyment of the benefit of travel and other expenses via the accumulated assets of the corporation.³ All officers and directors are licensed amateur radio operators. Specific business titles, addresses, and amateur call signs are also included for those receiving income.⁴

1. ARSFI/Winlink officer authored an email directive to all of its customer base with instructions to lobby ARRL Directors on behalf of ARSFI/Winlink, Inc.

As US licensed amateurs, regulations require that we do not transmit material that constitutes a pecuniary interest, or on behalf of an employer.⁵ On August 24, 2019, Mr. Loring A. Kutchins, W3QA, ARSFI/Winlink President, sent an email, addressed to all

¹ Appendix 3.

² ARSFI 2018 Tax Return, p 2.

³ Id., p 4.

⁴ Id., p 3.

⁵ 47CFR§97.103(a)3.

licensed amateur Winlink account holders, requesting actions on behalf of and to the benefit of ARSFI/Winlink in obtaining favorable decision(s) from the American Radio Relay League's Board of Directors. With the apparent intent of garnering yet more amateur band spectrum space for ARSFI/Winlink system network operations, through a mass email campaign. Even though Kutchin's own radio equipment was likely not used to send the emails via amateur radio, many of the 114 individual amateur station Remote Message Servers, (RMS) automatically controlled digital stations that form the US Winlink radio network relayed the emails, via amateur radio. A listing of 114 RMS HF stations that may have transmitted the email is included as Appendix 2.⁶ A copy of the email follows:

Date: Sat, 24 Aug 2019 17:04:00 -0000
From: W3QA@winlink.org
Reply-To: W3QA@winlink.org
Subject: Call for action - Contact your ARRL Director
To: W1MAE@winlink.org,
W1MCG@winlink.org,
W1MFC@winlink.org,
W1MKD@winlink.org,
W1MKZ@winlink.org,
W1MSA@winlink.org,
W1MWB@winlink.org,
W1NCR@winlink.org,
W1NJC@winlink.org,
W1OEM@winlink.org,
W1OPR@winlink.org,
W1PBR@winlink.org,
W1PID@winlink.org,

Message-ID: IA7POF1CJFX8
X-Cancel: 2019/09/14 17:04
X-Source: W3QA
X-CMS: CMS-B
X-GroupDistribution: True
X-WL2KPrecedence: Routine
Content-Type: text/plain
Content-Transfer-Encoding: 8bit

To ALL US WINLINK USERS:
(Ignore the TO: header please, This is a mass message sent in small groups to all of Winlink's users.)

Urgent action requested!

Please read the article at:
https://winlink.org/content/what_was_arrl_thinking

⁶ The listing includes only US HF stations capable of using Pactors, Winmor, ARDOP or VARA codes.

The ARRL Directors have instructed their attorney to obtain FCC approval on an absurd change to Part 97 rules.

They want to require:

- 1) ALL digital stations operating with a bandwidth over 500 Hz to operate within the narrow automatic subbands defined by 97.221(b) REGARDLESS OF WHETHER THEY ARE AUTOMATIC OR NOT.
- 2) ALL stations with automatic features less than 500 Hz to also operate within the same sub bands.

On 40M, 17M and 12M the subbands are barely wide enough for one QSO of fast digital data, maybe two. On the other bands no more than five or six simultaneously.

Winlink, HFLink ALE stations, NTSD, Radio Relay International, and countless BBS stations use these US sub bands today. Pile on the rest of the many wide modes like Olivia and MT63 plus automatic stations now operating outside the subbands with less than 500 Hz BW, and you can imagine the mess.

This is a totally absurd objective without any notion of responsibility by the ARRL. In response, tell the Directors (addresses are in the article) this clearly. Tell them that widening the allowed spectrum for wider BW modes is absolutely required if they are going to redirect automatic and wide BW digital stations to operate on top of one another.

Please, get angry, and contact your Director today!

winlink.org - the article appears top dead center on the main page.

Sincerely,

Lor Kutchins W3QA
SHARES NWL4KL
President,
Amateur Radio Safety Foundation, Inc.
Winlink Development Team

2. ARSFI/Winlink operates what amounts to a Common Carrier Internet Email Service in direct competition with commercial services.

Land-based HF shortwave and satellite commercial services offer Internet email service for those who are traveling via recreational vehicle or navigating vessels on domestic or international waters; or that reside in areas lacking Internet service. Commercial HF radio or satellite service providers include, but are not limited to Sailmail, Inmarsat, and Hughes Net. Land-based email providers such as, AT&T, Centurylink, and numerous small utilities also provide email services to individual ARSFI/Winlink RMS amateur service licensees under the assumption or contract agreement, as the case may be, that such services are normally for personal and family use only. And as residential services, not to be used as a connection to the Internet for the purpose of sharing their connections with an uncontrolled universe of clients as with the 114 station

ARSFI/Winlink HF RMS network. There are other examples of service providers, including hundreds of not for profit Rural Utility System telecom utilities that provide service on a membership basis, as does ARSFI/Winlink.⁷ These rural US common carrier service providers are established not-for-profit businesses, and yet have ARSFI/Winlink using the Amateur Service to compete with them and supply Internet email service via amateur radio.⁸

3. ARSFI/Winlink operates under the assumption that content is obscured and cannot be easily monitored. A recent offer of a “viewing window” allows access to some system traffic, after the fact.

Users of ARSFI/Winlink for years have touted how difficult it is for 3rd parties to monitor/intercept digital message content. Largely, due to the method used by ARSFI/Winlink to digitally shorten the length of content by redefining ASCII character values in an ever-changing manner. Essentially using a dynamic adaptation of the Huffman method. Arguably, some have claimed that such a “compression” method is commonplace and is easily monitored. However, what looks to be some type of marketing presentation was found that contradicts any thoughts of easy interception. In the presentation, ARSFI/Winlink boasts of its content obscurity, up to and including encryption. While it is unclear just who the target audience of the presentation was, and the actual date it was made, it appears to be about 6 to 7 years old from some of the included content in the presentation. It is included as Appendix 3. Please note the claims made of privacy and outright *content encryption*.⁹ Its normal, everyday “compression” method can be considered, in light of varying HF band propagation conditions, to be obscured from 3rd parties. Moreover, it was apparently included as an

⁷ <https://www.rd.usda.gov/about-rd/agencies/rural-utilities-service>ties

⁸ See 47CFR§97.113(a)5.

⁹ Appendix 3, p 8. Yellow highlighted text.

accepted and understood-to-be-desirable attribute, apparently with the intention of adding value to ARSFI/Winlink usage to the intended audience.

4. ARSFI/Winlink may violate the Electronic Communications Privacy Act by public release of 3rd party, Internet-sourced emails.¹⁰

So, which is it? Is the Amateur Radio Service, by definition in the Communications Act of 1934, a service in which no content is to be assumed protected from public release, akin to broadcast station content? Or, is it as ARSFI/Winlink has marketed their service to be in the attached presentation slides: Content obscured from monitoring by 3rd parties? While ARSFI/Winlink at one time apparently preferred that it be obscured as an attribute, the Communications Act says otherwise: *no expectation of privacy*.¹¹

If amateur operators are responsible for controlling their stations as the Commission requires, *how is it that Internet-sourced emails are released by ARSFI/Winlink to be transmitted via amateur radio without first receiving prior permission from email authors?*

Perhaps it is obtained in some unknown way, but as I understand it, ARSFI/Winlink Central Message Servers (CMS) automatically receive incoming email messages directly from the Internet addressed to Winlink domain names and are stored until requested by mailbox address holders. This occurs without any review or control of the content of the email text or attachments prior to storage or retrieval. The problem arises when the request to retrieve stored email is from one of the 114 amateur radio RMS digital relay stations. The requesting amateur radio operator with a Winlink email address often receives his or her incoming email via radio through an RMS automatic digital station, thus releasing its content into the public domain without necessarily receiving author

¹⁰ 18USC§2702, et seq.

¹¹ 47USC§605(a) "This section shall not apply to the receiving, divulging, publishing, or utilizing the contents of any radio communication which is transmitted by ... an amateur radio station operator..."

permission to do so ahead of time. Examples of the type of 3rd party material *that clearly was not intended for all eyes to see* was included in a prior informal complaint to the Commission's Enforcement Bureau.¹² Evidence of a lack of control over the content by both ARSFI/Winlink and individual RMS amateur station licensees, being the first stations to transmit the digital content. As of late, ARSFI/Winlink also displays after the fact message content on its "viewing window," which is accessible to any licensed amateur.

Conclusion

If indeed the Commission decides to further clarify the intent of Section 97.113(a)4, it should, at the same time, consider the entirety of Section 97.113. And, just what *does* constitute unfair competition with established commercial services. And, the extent to what, if any, pecuniary interests and actions benefitting an employer can take place over the air in the Amateur Service. While it is one thing for well-intentioned individuals and entities to use offered services for good purposes, especially when all else fails, it is entirely another to allow serious infractions of rules and regulations to continue unchecked. Having seen emails via the "Winlink viewer" that purchase tickets, secure boat storage, and engage in pornographic exchanges is a sad testimonial for the Amateur Service.

Nevertheless, it is of paramount importance that whatever content is transmitted in the Amateur Service be decodable by objective 3rd party monitors, especially on the HF

¹² See Enforcement Bureau Complaint Ticket Number 3184322.

bands. Without that as a required condition, abuse will most certainly continue, unabated.

Respectfully,

/s/

W. Lee McVey, PE Ret.

W6EM

3 Squires Glenn Lane

Leeds, AL 35094-4564

November 23, 2019

Attachments: Appendices 1, 2, and 3.

Appendix 1.

ARSFI/Winlink 2018 Federal Tax Return

Form **990-EZ****Short Form****Return of Organization Exempt From Income Tax**

OMB No 1545-1150

2018**Open to Public Inspection**Department of the Treasury
Internal Revenue Service

Under section 501(c), 527, or 4947(a)(1) of the Internal Revenue Code (except private foundations)

▶ Do not enter social security numbers on this form as it may be made public.

▶ Go to www.irs.gov/Form990EZ for instructions and the latest information.

A For the 2018 calendar year, or tax year beginning		Jan 1,		, 2018, and ending		Dec 31,		, 20 18	
B Check if applicable		C Name of organization				D Employer identification number			
<input type="checkbox"/> Address change		Amateur Radio Safety Foundation Inc				20-5586920			
<input type="checkbox"/> Name change		Number and street (or P.O. box, if mail is not delivered to street address)				Room/suite			
<input type="checkbox"/> Initial return		6143 Anchor Lane				321-223-6958			
<input type="checkbox"/> Final return/terminated		City or town, state or province, country, and ZIP or foreign postal code				F Group Exemption Number ▶ c(3)			
<input type="checkbox"/> Amended return		Rockledge, FL 32955				03			
<input type="checkbox"/> Application pending									
G Accounting Method <input checked="" type="checkbox"/> Cash <input type="checkbox"/> Accrual Other (specify) ▶						H Check <input checked="" type="checkbox"/> if the organization is not required to attach Schedule B (Form 990, 990-EZ, or 990-PF)			
I Website: ▶ www.arsfi.org									
J Tax-exempt status (check only one) — <input checked="" type="checkbox"/> 501(c)(3) <input type="checkbox"/> 501(c)() (insert no) <input type="checkbox"/> 4947(a)(1) or <input type="checkbox"/> 527									
K Form of organization <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Trust <input type="checkbox"/> Association <input type="checkbox"/> Other									
L Add lines 5b, 6c, and 7b to line 9 to determine gross receipts. If gross receipts are \$200,000 or more, or if total assets (Part II, column (B)) are \$500,000 or more, file Form 990 instead of Form 990-EZ						\$			

Part I Revenue, Expenses, and Changes in Net Assets or Fund Balances (see the instructions for Part I)									
Check if the organization used Schedule O to respond to any question in this Part I <input type="checkbox"/>									
Revenue	1	Contributions, gifts, grants, and similar amounts received	1	76,980					
	2	Program service revenue including government fees and contracts	2	0					
	3	Membership dues and assessments	3	0					
	4	Investment income	4	119					
	5a	Gross amount from sale of assets other than inventory	5a						
	5b	Less cost or other basis and sales expenses	5b						
	5c	Gain or (loss) from sale of assets other than inventory (Subtract line 5b from line 5a)	5c	0					
	6	Gaming and fundraising events							
	6a	Gross income from gaming (attach Schedule G if greater than \$15,000)	6a						
	6b	Gross income from fundraising events (not including \$ of contributions from fundraising events reported on line 1) (attach Schedule G if the sum of such gross income and contributions exceeds \$15,000)	6b						
6c	Less direct expenses from gaming and fundraising events	6c							
6d	Net income or (loss) from gaming and fundraising events (add lines 6a and 6b and subtract line 6c)	6d	0						
7a	Gross sales of inventory, less returns and allowances	7a							
7b	Less cost of goods sold	7b							
7c	Gross profit or (loss) from sales of inventory (Subtract line 7b from line 7a)	7c	0						
8	Other revenue (describe in Schedule O)	8	0						
9	Total revenue. Add lines 1, 2, 3, 4, 5c, 6d, 7c, and 8	9	77,099						
Expenses	10	Grants and similar amounts paid (list in Schedule O)	10	200					
	11	Benefits paid to or for members	11	0					
	12	Salaries, other compensation, and employee benefits	12	0					
	13	Professional fees and other payments to independent contractors	13	11,192					
	14	Occupancy, rent, utilities, and maintenance	14	0					
	15	Printing, publications, postage, and shipping	15	218					
	16	Other expenses (describe in Schedule O)	16	15,453					
	17	Total expenses. Add lines 10 through 16	17	27,063					
Net Assets	18	Excess or (deficit) for the year (Subtract line 17 from line 9)	18	50,036					
	19	Net assets or fund balances at beginning of year (from line 27, column (A)) (must agree with end-of-year figure reported on prior year's return)	19	186,472					
	20	Other changes in net assets or fund balances (explain in Schedule O)	20	0					
	21	Net assets or fund balances at end of year. Combine lines 18 through 20	21	236,508					

For Paperwork Reduction Act Notice, see the separate instructions.

Cat No 106421

Form **990-EZ** (2018)

Part II Balance Sheets (see the instructions for Part II)Check if the organization used Schedule O to respond to any question in this Part II ☐

	(A) Beginning of year	(B) End of year
22 Cash, savings, and investments	186,472	22 236,508
23 Land and buildings		23 0
24 Other assets (describe in Schedule O)		24 0
25 Total assets	186,472	25 236,508
26 Total liabilities (describe in Schedule O)	0	26 0
27 Net assets or fund balances (line 27 of column (B) must agree with line 21)	186,472	27 236,508

Part III Statement of Program Service Accomplishments (see the instructions for Part III)Check if the organization used Schedule O to respond to any question in this Part III ☒**Expenses**

(Required for section 501(c)(3) and 501(c)(4) organizations, optional for others)

What is the organization's primary exempt purpose? Emergency Amateur Communications and Training

Describe the organization's program service accomplishments for each of its three largest program services, as measured by expenses. In a clear and concise manner, describe the services provided, the number of persons benefited, and other relevant information for each program title

28		
(Grants \$) If this amount includes foreign grants, check here <input type="checkbox"/>	28a	
29		
(Grants \$) If this amount includes foreign grants, check here <input type="checkbox"/>	29a	
30		
(Grants \$) If this amount includes foreign grants, check here <input type="checkbox"/>	30a	
31 Other program services (describe in Schedule O)		
(Grants \$) If this amount includes foreign grants, check here <input type="checkbox"/>	31a	
32 Total program service expenses (add lines 28a through 31a)	32	

Part IV List of Officers, Directors, Trustees, and Key Employees (list each one even if not compensated—see the instructions for Part IV)Check if the organization used Schedule O to respond to any question in this Part IV ☐

(a) Name and title	(b) Average hours per week devoted to position	(c) Reportable compensation (Forms W-2/1099-MISC) (if not paid, enter -0-)	(d) Health benefits, contributions to employee benefit plans, and deferred compensation	(e) Estimated amount of other compensation
Lor Kutchins President	20	1,399	0	0
Gerald Muething Sect/Treas	20	1,399	0	0
Stephen Waterman	20	1,399	0	0
Thomas Whiteside	20	1,399	0	0
Lee Inman	20	1,399	0	0
Phil Sherrod	20	1,399	0	0
Scott Miller	20	1,399	0	0
Tom Lafleur	20	1,399	0	0

Paid Officers and Directors

Amateur Radio Safety Foundation, Inc.
aka Winlink
6143 Anchor Lane
Rockledge, FL 32955

Muething, Jr., Gerald F. KN6KB
Title: Secretary/Treasurer
6143 Anchor Lane
Rockledge, FL 32955

Kutchins, Lor W3QA
Title: President
1054 Fork Point Road
Oriental, NC 28571

Waterman, R. Stephen K4CJX
Title: Director
5828 Beauregard Dr.
Nashville, TN 37215

Inman, Lee K0QED
Title: Director
9945 Burgess Road
Colorado Springs, CO 80908

Sherrod, Phil W4PHS
Title: Director
9207 Brushboro Drive
Brentwood, TN 37027

Lafleur, Tom KA6IQA
Title: Director
15055 Rancho Santa Fe Farms Rd
PO Box 3029
Rancho Santa Fe, CA 92067-3029

Whiteside, Tom N5TW
Title: Director
228 Wind Ridge Cove
Georgetown, TX 78628

Miller, Scott K K6SKM
Title: Director
6175 Syracuse Lane
San Diego, CA 92122

SCHEDULE O
(Form 990 or 990-EZ)

Department of the Treasury
Internal Revenue Service

Supplemental Information to Form 990 or 990-EZ

Complete to provide information for responses to specific questions on
Form 990 or 990-EZ or to provide any additional information.

▶ Attach to Form 990 or 990-EZ.
▶ Go to www.irs.gov/Form990 for the latest information.

OMB No 1545-0047

2018

**Open to Public
Inspection**

Name of the organization

Amateur Radio Safety Foundation Inc

Employer identification number

20-5586920

Grants To Organizations

\$ 200

Expenses.

Web and Network Expenses

\$3742

Software

1968

Equipment and Material

1469

Legal and Corporation Fees

707

Travel Meals and Expenses

6717

Recurring Services and Subscriptions

810

Bank Fees

40

Total 2018 Expenses

\$15453

Appendix 2.

Listing of ARSFI/Winlink Network Stations

CallSign	BaseCallSig	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
AB4NX	AB4NX	EM73WT	3,588.500	IARDOP 20C	00-23	Laurence	\ Stone Mountain, GA, USA	1
AB4NX	AB4NX	EM73WT	7,103.000	IARDOP 20C	00-23	Laurence	\ Stone Mountain, GA, USA	
AB4NX	AB4NX	EM73WT	10,145.000	ARDOP 20C	00-23	Laurence	\ Stone Mountain, GA, USA	
AB4NX-2	AB4NX	EM73WT	28,134.000	ARDOP 20C	00-23	Laurence	\ Stone Mountain, GA, USA	
AB4NX	AB4NX	EM73WT	3,588.500	I Pactor 1,2,	00-23	Laurence	\ Stone Mountain, GA, USA	
AB4NX	AB4NX	EM73WT	7,103.000	I Pactor 1,2,	00-23	Laurence	\ Stone Mountain, GA, USA	
AB4NX	AB4NX	EM73WT	10,145.000	Pactor 1,2,	00-23	Laurence	\ Stone Mountain, GA, USA	
AB4NX	AB4NX	EM73WT	3,588.500	I VARA	00-23	Laurence	\ Stone Mountain, GA, USA	
AB4NX	AB4NX	EM73WT	7,103.000	I VARA	00-23	Laurence	\ Stone Mountain, GA, USA	
AB4NX	AB4NX	EM73WT	10,145.000	VARA	00-23	Laurence	\ Stone Mountain, GA, USA	
AB4NX-2	AB4NX	EM73WT	28,134.000	VARA	00-23	Laurence	\ Stone Mountain, GA, USA	
AB4NX	AB4NX	EM73WT	3,588.500	I WINMOR 100	00-23	Laurence	\ Stone Mountain, GA, USA	
AB4NX	AB4NX	EM73WT	7,103.000	I WINMOR 100	00-23	Laurence	\ Stone Mountain, GA, USA	
AB4NX	AB4NX	EM73WT	10,145.000	WINMOR 100	00-23	Laurence	\ Stone Mountain, GA, USA	
AB4NX-2	AB4NX	EM73WT	28,134.000	WINMOR 100	00-23	Laurence	\ Stone Mountain, GA, USA	
AD5EO	AD5EO	EM34QN	3,590.000	IARDOP 20C	00-23	John Schou	Benton, AR, United States	2
AD5EO	AD5EO	EM34QN	7,103.000	IARDOP 20C	00-23	John Schou	Benton, AR, United States	
AD5EO	AD5EO	EM34QN	3,590.000	I WINMOR 100	00-23	John Schou	Benton, AR, United States	
AD5EO	AD5EO	EM34QN	7,103.000	I WINMOR 100	00-23	John Schou	Benton, AR, United States	
AE5ME-13	AE5ME	EM26BA	3,596.500	I VARA	00-23	Jeff Scoville	\ Broken Arrow, OK, USA	3
AE5ME-13	AE5ME	EM26BA	7,101.500	I VARA	00-23	Jeff Scoville	\ Broken Arrow, OK, USA	
AE5ME-13	AE5ME	EM26BA	3,596.500	I WINMOR 100	00-23	Jeff Scoville	\ Broken Arrow, OK, USA	
AE5ME-13	AE5ME	EM26BA	7,101.500	I WINMOR 100	00-23	Jeff Scoville	\ Broken Arrow, OK, USA	
AG6QO	AG6QO	CM98AM	3,586.500	I Pactor 1,2,	00-23	Joseph O. E	\ Winters, CA, USA	4
AG6QO	AG6QO	CM98AM	7,103.500	I Pactor 1,2,	00-23	Joseph O. E	\ Winters, CA, USA	
AG6QO	AG6QO	CM98AM	14,111.000	Pactor 1,2,	00-23	Joseph O. E	\ Winters, CA, USA	
AJ4FW	AJ4FW	FM07BC	3,595.000	IARDOP 20C	00-23	Rick	\ Wirtz, Virginia, USA	5
AJ4FW	AJ4FW	FM07BC	7,103.700	IARDOP 20C	00-23	Rick	\ Wirtz, Virginia, USA	
AJ4FW	AJ4FW	FM07BC	10,146.000	ARDOP 20C	00-23	Rick	\ Wirtz, Virginia, USA	
AJ4FW	AJ4FW	FM07BC	14,098.700	ARDOP 20C	00-23	Rick	\ Wirtz, Virginia, USA	
AJ4FW	AJ4FW	FM07BC	3,595.000	I Pactor 1,2,	00-23	Rick	\ Wirtz, Virginia, USA	
AJ4FW	AJ4FW	FM07BC	7,103.700	I Pactor 1,2,	00-23	Rick	\ Wirtz, Virginia, USA	
AJ4FW	AJ4FW	FM07BC	10,146.000	Pactor 1,2,	00-23	Rick	\ Wirtz, Virginia, USA	
AJ4FW	AJ4FW	FM07BC	14,098.700	Pactor 1,2,	00-23	Rick	\ Wirtz, Virginia, USA	
AJ4FW	AJ4FW	FM07BC	3,595.000	I VARA	00-23	Rick	\ Wirtz, Virginia, USA	
AJ4FW	AJ4FW	FM07BC	7,103.700	I VARA	00-23	Rick	\ Wirtz, Virginia, USA	
AJ4FW	AJ4FW	FM07BC	10,146.000	VARA	00-23	Rick	\ Wirtz, Virginia, USA	
AJ4FW	AJ4FW	FM07BC	14,098.700	VARA	00-23	Rick	\ Wirtz, Virginia, USA	
AJ4FW	AJ4FW	FM07BC	3,595.000	I WINMOR 100	00-23	Rick	\ Wirtz, Virginia, USA	
AJ4FW	AJ4FW	FM07BC	7,103.700	I WINMOR 100	00-23	Rick	\ Wirtz, Virginia, USA	
AJ4FW	AJ4FW	FM07BC	10,146.000	WINMOR 100	00-23	Rick	\ Wirtz, Virginia, USA	
AJ4FW	AJ4FW	FM07BC	14,098.700	WINMOR 100	00-23	Rick	\ Wirtz, Virginia, USA	
AJ4GU	AJ4GU	EM83AL	7,089.500	IARDOP 50C	00-23	MICHAEL D	\ MCDONOUGH, GA, USA	6
AJ4GU	AJ4GU	EM83AL	7,104.000	I Pactor 1,2,	00-23	MICHAEL D	\ MCDONOUGH, GA, USA	
AJ4GU	AJ4GU	EM83AL	7,089.500	I WINMOR 500	00-23	MICHAEL D	\ MCDONOUGH, GA, USA	

CallSign	BaseCallSig	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
AJ4GU	AJ4GU	EM83AL	7,104.000	I WINMOR 100-23		MICHAEL D MCDONOUGH, GA, USA		
AJ7C	AJ7C	DM04TA	3,597.000	I ARDOP 20C 00-23		Kevin Shen Culver City, CA, USA		7
AJ7C	AJ7C	DM04TA	7,102.000	I ARDOP 20C 00-23		Kevin Shen Culver City, CA, USA		
AJ7C	AJ7C	DM04TA	14,108.000	ARDOP 20C 00-23		Kevin Shen Culver City, CA, USA		
AJ7C	AJ7C	DM04TA	3,597.000	I Pactor 1,2, 00-23		Kevin Shen Culver City, CA, USA		
AJ7C	AJ7C	DM04TA	7,102.000	I Pactor 1,2, 00-23		Kevin Shen Culver City, CA, USA		
AJ7C	AJ7C	DM04TA	14,108.000	Pactor 1,2, 00-23		Kevin Shen Culver City, CA, USA		
AJ7C	AJ7C	DM04TA	3,597.000	I VARA 00-23		Kevin Shen Culver City, CA, USA		
AJ7C	AJ7C	DM04TA	7,102.000	I VARA 00-23		Kevin Shen Culver City, CA, USA		
AJ7C	AJ7C	DM04TA	14,108.000	VARA 00-23		Kevin Shen Culver City, CA, USA		
AJ7C	AJ7C	DM04TA	3,597.000	I WINMOR 100-23		Kevin Shen Culver City, CA, USA		
AJ7C	AJ7C	DM04TA	7,102.000	I WINMOR 100-23		Kevin Shen Culver City, CA, USA		
AJ7C	AJ7C	DM04TA	14,108.000	WINMOR 100-23		Kevin Shen Culver City, CA, USA		
AK4SK	AK4SK	EM60VL	3,570.000	I ARDOP 50C 23-12		Nabholz, CI Freeport, FL, United States		8
AK4SK	AK4SK	EM60VL	3,591.000	I ARDOP 20C 23-12		Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	7,064.000	I ARDOP 50C	5-Oct	Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	7,102.700	I ARDOP 20C	5-Oct	Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	10,130.000	ARDOP 50C	3-Dec	Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	10,145.500	ARDOP 20C	3-Dec	Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	14,065.000	ARDOP 50C 13-22		Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	14,103.500	ARDOP 20C 13-22		Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	3,591.000	I VARA 23-12		Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	7,102.700	I VARA	5-Oct	Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	10,145.500	VARA	3-Dec	Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	14,103.500	VARA 13-22		Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	3,570.000	I WINMOR 5 23-12		Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	3,591.000	I WINMOR 1 23-12		Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	7,064.000	I WINMOR 5	5-Oct	Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	7,102.700	I WINMOR 1	5-Oct	Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	10,130.000	WINMOR 5	3-Dec	Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	10,145.500	WINMOR 1	3-Dec	Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	14,065.000	WINMOR 5 13-22		Nabholz, CI Freeport, FL, United States		
AK4SK	AK4SK	EM60VL	14,103.500	WINMOR 1 13-22		Nabholz, CI Freeport, FL, United States		
K0SI	K0SI	EM39UA	3,586.500	I ARDOP 20C 00-23		Don Moore Columbia, MO, USA		9
K0SI	K0SI	EM39UA	7,103.500	I ARDOP 20C 00-23		Don Moore Columbia, MO, USA		
K0SI	K0SI	EM39UA	3,586.500	I WINMOR 100-23		Don Moore Columbia, MO, USA		
K0SI	K0SI	EM39UA	7,103.500	I WINMOR 100-23		Don Moore Columbia, MO, USA		
K1EHZ	K1EHZ	FN42EX	3,596.500	I ARDOP 20C 00-23		Jay Taft Bedford, NH, USA		10
K1EHZ	K1EHZ	FN42EX	3,596.500	I Pactor 1,2, 00-23		Jay Taft Bedford, NH, USA		
K1EHZ	K1EHZ	FN42EX	3,596.500	I VARA 00-23		Jay Taft Bedford, NH, USA		
K1EHZ	K1EHZ	FN42EX	3,596.500	I WINMOR 100-23		Jay Taft Bedford, NH, USA		
K2RDX	K2RDX	CM97AH	3,591.000	I ARDOP 20C	13-Feb	John A. Me San Jose, CA, USA		11
K2RDX	K2RDX	CM97AH	7,096.500	I ARDOP 50C 00-23		John A. Me San Jose, CA, USA		
K2RDX	K2RDX	CM97AH	7,102.500	I ARDOP 20C 00-23		John A. Me San Jose, CA, USA		
K2RDX	K2RDX	CM97AH	10,147.000	ARDOP 20C 14-01		John A. Me San Jose, CA, USA		

CallSign	BaseCallSig	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
K2RDX	K2RDX	CM97AH	14,107.500	ARDOP 20C	14-01	John A. Me	San Jose, CA, USA	12
K2RDX	K2RDX	CM97AH	3,591.000	I Pactor 1,2,	13-Feb	John A. Me	San Jose, CA, USA	
K2RDX	K2RDX	CM97AH	7,096.500	I Pactor 1,2	00-23	John A. Me	San Jose, CA, USA	
K2RDX	K2RDX	CM97AH	7,102.500	I Pactor 1,2,	00-23	John A. Me	San Jose, CA, USA	
K2RDX	K2RDX	CM97AH	10,147.000	Pactor 1,2,	14-01	John A. Me	San Jose, CA, USA	
K2RDX	K2RDX	CM97AH	14,107.500	Pactor 1,2,	14-01	John A. Me	San Jose, CA, USA	
K2RDX	K2RDX	CM97AH	3,591.000	I WINMOR 1	13-Feb	John A. Me	San Jose, CA, USA	
K2RDX	K2RDX	CM97AH	7,096.500	I WINMOR 5	00-23	John A. Me	San Jose, CA, USA	
K2RDX	K2RDX	CM97AH	7,102.500	I WINMOR 1	00-23	John A. Me	San Jose, CA, USA	
K2RDX	K2RDX	CM97AH	10,147.000	WINMOR 1	14-01	John A. Me	San Jose, CA, USA	
K2RDX	K2RDX	CM97AH	14,107.500	WINMOR 1	14-01	John A. Me	San Jose, CA, USA	
K3DO	K3DO	FM19GL	3,595.500	IARDOP 20C	00-23	James Mye	Knoxville, MD, US	12
K3DO	K3DO	FM19GL	7,104.000	IARDOP 20C	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	14,105.000	ARDOP 20C	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	18,109.500	ARDOP 20C	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	21,096.500	ARDOP 20C	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	28,131.500	ARDOP 20C	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	3,595.500	I Pactor 1,2,	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	7,104.000	I Pactor 1,2,	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	14,105.000	Pactor 1,2,	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	18,109.500	Pactor 1,2,	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	21,096.500	Pactor 1,2,	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	28,131.500	Pactor 1,2,	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	3,595.500	I VARA	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	7,104.000	I VARA	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	14,105.000	VARA	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	18,109.500	VARA	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	21,096.500	VARA	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	28,131.500	VARA	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	3,595.500	I WINMOR 1	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	7,104.000	I WINMOR 1	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	14,105.000	WINMOR 1	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	18,109.500	WINMOR 1	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	21,096.500	WINMOR 1	00-23	James Mye	Knoxville, MD, US	
K3DO	K3DO	FM19GL	28,131.500	WINMOR 1	00-23	James Mye	Knoxville, MD, US	
K4FEM	K4FEM	EM74UV	3,590.500	IARDOP 20C	00-23	Wallace Wi	Mineral Bluff, GA, USA	13
K4FEM	K4FEM	EM74UV	3,590.500	I VARA	00-23	Wallace Wi	Mineral Bluff, GA, USA	
K4FEM	K4FEM	EM74UV	3,590.500	I WINMOR 1	00-23	Wallace Wi	Mineral Bluff, GA, USA	
K5RAV	K5RAV	EL16CE	3,596.000	IARDOP 20C	00-23	David	Harlingen, TX, USA	14
K5RAV	K5RAV	EL16CE	7,102.000	IARDOP 20C	00-23	David	Harlingen, TX, USA	
K5RAV	K5RAV	EL16CE	10,143.700	ARDOP 20C	00-23	David	Harlingen, TX, USA	
K5RAV	K5RAV	EL16CE	14,110.000	ARDOP 20C	00-23	David	Harlingen, TX, USA	
K5RAV	K5RAV	EL16CE	3,596.000	I Pactor 3	00-23	David	Harlingen, TX, USA	
K5RAV	K5RAV	EL16CE	7,102.000	I Pactor 3	00-23	David	Harlingen, TX, USA	
K5RAV	K5RAV	EL16CE	10,143.700	Pactor 3	00-23	David	Harlingen, TX, USA	

CallSign	BaseCall	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
K5RAV	K5RAV	EL16CE	14,110.000	Pactor 3	00-23	David	Harlingen, TX, USA	15
K5RAV	K5RAV	EL16CE	3,596.000	I VARA	00-23	David	Harlingen, TX, USA	
K5RAV	K5RAV	EL16CE	7,102.000	I VARA	00-23	David	Harlingen, TX, USA	
K5RAV	K5RAV	EL16CE	10,143.700	VARA	00-23	David	Harlingen, TX, USA	
K5RAV	K5RAV	EL16CE	14,110.000	VARA	00-23	David	Harlingen, TX, USA	
K5USF	K5USF	CM98FN	3,587.500	I ARDOP 20C	00-23	Tedeschi, J	West Sacramento, CA, USA	15
K5USF	K5USF	CM98FN	3,587.500	I VARA	00-23	Tedeschi, J	West Sacramento, CA, USA	
K5USF	K5USF	CM98FN	3,587.500	I WINMOR 100	00-23	Tedeschi, J	West Sacramento, CA, USA	
K6CYC	K6CYC	DM03SX	7,103.500	I Pactor 3	00-23	CALIFORNI	Marina del Rey, CA, United States	16
K6CYC	K6CYC	DM03SX	10,146.200	Pactor 3	00-23	CALIFORNI	Marina del Rey, CA, United States	
K6CYC	K6CYC	DM03SX	14,108.500	Pactor 3	00-23	CALIFORNI	Marina del Rey, CA, United States	
K6ETA	K6ETA	CM88QF	3,593.500	I ARDOP 20C	00-23	Steve Fisch	Petaluma, CA, USA	17
K6ETA	K6ETA	CM88QF	7,102.000	I ARDOP 20C	00-23	Steve Fisch	Petaluma, CA, USA	
K6ETA	K6ETA	CM88QF	10,145.500	ARDOP 20C	00-23	Steve Fisch	Petaluma, CA, USA	
K6ETA	K6ETA	CM88QF	14,107.500	ARDOP 20C	00-23	Steve Fisch	Petaluma, CA, USA	
K6IXA	K6IXA	CM97QI	7,102.400	I ARDOP 20C	00-23	Grady Willi	Atwater, CA, USA	18
K6IXA	K6IXA	CM97QI	10,143.700	ARDOP 20C	00-23	Grady Willi	Atwater, CA, USA	
K6IXA	K6IXA	CM97QI	14,102.700	ARDOP 20C	00-23	Grady Willi	Atwater, CA, USA	
K6IXA	K6IXA	CM97QI	7,076.900	I Pactor 1,2	00-23	Grady Willi	Atwater, CA, USA	
K6IXA	K6IXA	CM97QI	7,102.400	I Pactor 3	00-23	Grady Willi	Atwater, CA, USA	
K6IXA	K6IXA	CM97QI	10,122.900	Pactor 1,2	00-23	Grady Willi	Atwater, CA, USA	
K6IXA	K6IXA	CM97QI	10,143.700	Pactor 3	00-23	Grady Willi	Atwater, CA, USA	
K6IXA	K6IXA	CM97QI	14,064.900	Pactor 1,2	00-23	Grady Willi	Atwater, CA, USA	
K6IXA	K6IXA	CM97QI	14,102.700	Pactor 3	00-23	Grady Willi	Atwater, CA, USA	
K6IXA	K6IXA	CM97QI	7,102.400	I VARA	00-23	Grady Willi	Atwater, CA, USA	
K6IXA	K6IXA	CM97QI	10,143.700	VARA	00-23	Grady Willi	Atwater, CA, USA	
K6IXA	K6IXA	CM97QI	14,102.700	VARA	00-23	Grady Willi	Atwater, CA, USA	
K6IXA	K6IXA	CM97QI	7,102.400	I WINMOR 100	00-23	Grady Willi	Atwater, CA, USA	
K6IXA	K6IXA	CM97QI	10,143.700	WINMOR 100	00-23	Grady Willi	Atwater, CA, USA	
K6IXA	K6IXA	CM97QI	14,102.700	WINMOR 100	00-23	Grady Willi	Atwater, CA, USA	
K6SDR	K6SDR	CM87RX	3,589.000	I ARDOP 20C	00-23	Steve Reyn	San Rafael, CA, USA	19
K6SDR	K6SDR	CM87RX	7,103.700	I ARDOP 20C	00-23	Steve Reyn	San Rafael, CA, USA	
K6SDR	K6SDR	CM87RX	10,146.200	ARDOP 20C	00-23	Steve Reyn	San Rafael, CA, USA	
K6SDR	K6SDR	CM87RX	14,105.500	ARDOP 20C	00-23	Steve Reyn	San Rafael, CA, USA	
K6SDR	K6SDR	CM87RX	3,589.000	I Pactor 3	00-23	Steve Reyn	San Rafael, CA, USA	
K6SDR	K6SDR	CM87RX	7,103.700	I Pactor 3	00-23	Steve Reyn	San Rafael, CA, USA	
K6SDR	K6SDR	CM87RX	10,146.200	Pactor 3	00-23	Steve Reyn	San Rafael, CA, USA	
K6SDR	K6SDR	CM87RX	14,105.500	Pactor 3	00-23	Steve Reyn	San Rafael, CA, USA	
K6SDR	K6SDR	CM87RX	3,589.000	I VARA	00-23	Steve Reyn	San Rafael, CA, USA	
K6SDR	K6SDR	CM87RX	7,103.700	I VARA	00-23	Steve Reyn	San Rafael, CA, USA	
K6SDR	K6SDR	CM87RX	10,146.200	VARA	00-23	Steve Reyn	San Rafael, CA, USA	
K6SDR	K6SDR	CM87RX	14,105.500	VARA	00-23	Steve Reyn	San Rafael, CA, USA	
K6SDR	K6SDR	CM87RX	3,589.000	I WINMOR 100	00-23	Steve Reyn	San Rafael, CA, USA	
K6SDR	K6SDR	CM87RX	7,103.700	I WINMOR 100	00-23	Steve Reyn	San Rafael, CA, USA	
K6SDR	K6SDR	CM87RX	10,146.200	WINMOR 100	00-23	Steve Reyn	San Rafael, CA, USA	

CallSign	BaseCallSign	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
K6SDR	K6SDR	CM87RX	14,105.500	WINMOR	100-23	Steve Reyn	San Rafael, CA, USA	20
K7DAV	K7DAV	DN40BX	3,597.000	IARDOP	200-23	Brad Wilco	Farmington, UT, USA	
K7DAV	K7DAV	DN40BX	7,065.900	IARDOP	500-23	Brad Wilco	Farmington, UT, USA	
K7DAV	K7DAV	DN40BX	7,104.500	IARDOP	200-23	Brad Wilco	Farmington, UT, USA	
K7DAV	K7DAV	DN40BX	3,597.000	I Pactor 1,2,	00-23	Brad Wilco	Farmington, UT, USA	
K7DAV	K7DAV	DN40BX	7,065.900	I Pactor 1,2	00-23	Brad Wilco	Farmington, UT, USA	
K7DAV	K7DAV	DN40BX	7,104.500	I Pactor 3	00-23	Brad Wilco	Farmington, UT, USA	
K7DAV	K7DAV	DN40BX	14,107.000	Pactor 3	4-Dec	Brad Wilco	Farmington, UT, USA	
K7DAV	K7DAV	DN40BX	3,597.000	I VARA	00-23	Brad Wilco	Farmington, UT, USA	
K7DAV	K7DAV	DN40BX	7,104.500	I VARA	00-23	Brad Wilco	Farmington, UT, USA	
K7DAV	K7DAV	DN40BX	3,597.000	I WINMOR	100-23	Brad Wilco	Farmington, UT, USA	
K7DAV	K7DAV	DN40BX	7,104.500	I WINMOR	100-23	Brad Wilco	Farmington, UT, USA	
K7ENN	K7ENN	CN85RM	3,597.000	IARDOP	200-23	Kenn Clulo	Portland, OR, United States	21
K7ENN	K7ENN	CN85RM	3,597.000	I VARA	00-23	Kenn Clulo	Portland, OR, United States	
K7ENN	K7ENN	CN85RM	3,597.000	I WINMOR	100-23	Kenn Clulo	Portland, OR, United States	
K7HTZ	K7HTZ	CN87OD	3,589.000	IARDOP	200-23	Mark Ande	Olympia, HI, USA	22
K7HTZ	K7HTZ	CN87OD	7,104.500	IARDOP	200-23	Mark Ande	Olympia, HI, USA	
K7HTZ	K7HTZ	CN87OD	10,144.000	ARDOP	200-23	Mark Ande	Olympia, HI, USA	
K7HTZ	K7HTZ	CN87OD	14,110.000	ARDOP	200-23	Mark Ande	Olympia, HI, USA	
K7HTZ	K7HTZ	CN87OD	3,589.000	I Pactor 3	00-23	Mark Ande	Olympia, HI, USA	
K7HTZ	K7HTZ	CN87OD	7,104.500	I Pactor 3	00-23	Mark Ande	Olympia, HI, USA	
K7HTZ	K7HTZ	CN87OD	10,144.000	Pactor 3	00-23	Mark Ande	Olympia, HI, USA	
K7HTZ	K7HTZ	CN87OD	14,110.000	Pactor 3	00-23	Mark Ande	Olympia, HI, USA	
K7HTZ	K7HTZ	CN87OD	3,589.000	I VARA	00-23	Mark Ande	Olympia, HI, USA	
K7HTZ	K7HTZ	CN87OD	7,104.500	I VARA	00-23	Mark Ande	Olympia, HI, USA	
K7HTZ	K7HTZ	CN87OD	10,144.000	VARA	00-23	Mark Ande	Olympia, HI, USA	
K7HTZ	K7HTZ	CN87OD	14,110.000	VARA	00-23	Mark Ande	Olympia, HI, USA	
K7HTZ	K7HTZ	CN87OD	3,589.000	I WINMOR	100-23	Mark Ande	Olympia, HI, USA	
K7HTZ	K7HTZ	CN87OD	7,104.500	I WINMOR	100-23	Mark Ande	Olympia, HI, USA	
K7HTZ	K7HTZ	CN87OD	10,144.000	WINMOR	100-23	Mark Ande	Olympia, HI, USA	
K7HTZ	K7HTZ	CN87OD	14,110.000	WINMOR	100-23	Mark Ande	Olympia, HI, USA	
K7IF	K7IF	CN87OA	3,589.900	IARDOP	200-23	Robert Kall	Lacey, Wa, USA	23
K7IF	K7IF	CN87OA	7,103.400	IARDOP	200-23	Robert Kall	Lacey, Wa, USA	
K7IF	K7IF	CN87OA	10,146.400	ARDOP	200-23	Robert Kall	Lacey, Wa, USA	
K7IF	K7IF	CN87OA	14,097.000	ARDOP	200-23	Robert Kall	Lacey, Wa, USA	
K7IF	K7IF	CN87OA	3,589.900	I Pactor 3	00-23	Robert Kall	Lacey, Wa, USA	
K7IF	K7IF	CN87OA	7,103.400	I Pactor 3	00-23	Robert Kall	Lacey, Wa, USA	
K7IF	K7IF	CN87OA	10,146.400	Pactor 3	00-23	Robert Kall	Lacey, Wa, USA	
K7IF	K7IF	CN87OA	14,097.000	Pactor 3	00-23	Robert Kall	Lacey, Wa, USA	
K7IF	K7IF	CN87OA	3,589.900	I VARA	00-23	Robert Kall	Lacey, Wa, USA	
K7IF	K7IF	CN87OA	7,103.400	I VARA	00-23	Robert Kall	Lacey, Wa, USA	
K7IF	K7IF	CN87OA	10,146.400	VARA	00-23	Robert Kall	Lacey, Wa, USA	
K7IF	K7IF	CN87OA	14,097.000	VARA	00-23	Robert Kall	Lacey, Wa, USA	
K7IF	K7IF	CN87OA	3,589.900	I WINMOR	100-23	Robert Kall	Lacey, Wa, USA	
K7IF	K7IF	CN87OA	7,103.400	I WINMOR	100-23	Robert Kall	Lacey, Wa, USA	

CallSign	BaseCallSig	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
K7IF	K7IF	CN87OA	10,146.400	WINMOR 100-23		Robert Kall	Lacey, Wa, USA	24
K7IF	K7IF	CN87OA	14,097.000	WINMOR 100-23		Robert Kall	Lacey, Wa, USA	
K7MM	K7MM	DN16KJ	3,597.000	I Pactor 1,2, 00-23		Dan Ranso	Clarkston, WA, USA	24
K7MM	K7MM	DN16KJ	7,102.400	I Pactor 1,2, 00-23		Dan Ranso	Clarkston, WA, USA	
K7MM	K7MM	DN16KJ	7,103.700	I Pactor 1,2, 00-23		Dan Ranso	Clarkston, WA, USA	
K7MM	K7MM	DN16KJ	10,145.900	Pactor 1,2, 00-23		Dan Ranso	Clarkston, WA, USA	
K7MM	K7MM	DN16KJ	14,110.500	Pactor 1,2, 00-23		Dan Ranso	Clarkston, WA, USA	
K7MM	K7MM	DN16KJ	18,107.000	Pactor 1,2, 00-23		Dan Ranso	Clarkston, WA, USA	
K7NHV	K7NHV	CN87SK	3,599.000	IARDOP 20C 00-23		Al Francis	Vashon, WA, USA	25
K7NHV	K7NHV	CN87SK	7,103.700	IARDOP 20C 00-23		Al Francis	Vashon, WA, USA	
K7NHV	K7NHV	CN87SK	10,146.500	ARDOP 20C 00-23		Al Francis	Vashon, WA, USA	
K7NHV	K7NHV	CN87SK	3,599.000	I Pactor 3 00-23		Al Francis	Vashon, WA, USA	
K7NHV	K7NHV	CN87SK	7,103.700	I Pactor 3 00-23		Al Francis	Vashon, WA, USA	
K7NHV	K7NHV	CN87SK	10,146.500	Pactor 3 00-23		Al Francis	Vashon, WA, USA	
K7NHV	K7NHV	CN87SK	3,599.000	I VARA 00-23		Al Francis	Vashon, WA, USA	
K7NHV	K7NHV	CN87SK	7,103.700	I VARA 00-23		Al Francis	Vashon, WA, USA	
K7NHV	K7NHV	CN87SK	10,146.500	VARA 00-23		Al Francis	Vashon, WA, USA	
K7RHT	K7RHT	CN97RD	3,586.500	IARDOP 20C 00-23		RANDY TH	Ellensburg, WA, USA	26
K7RHT	K7RHT	CN97RD	7,101.700	IARDOP 20C 00-23		RANDY TH	Ellensburg, WA, USA	
K7RHT	K7RHT	CN97RD	10,143.000	ARDOP 20C 00-23		RANDY TH	Ellensburg, WA, USA	
K7RHT	K7RHT	CN97RD	14,108.000	ARDOP 20C 00-23		RANDY TH	Ellensburg, WA, USA	
K7RHT	K7RHT	CN97RD	3,586.500	I Pactor 3 00-23		RANDY TH	Ellensburg, WA, USA	
K7RHT	K7RHT	CN97RD	7,101.700	I Pactor 3 00-23		RANDY TH	Ellensburg, WA, USA	
K7RHT	K7RHT	CN97RD	10,143.000	Pactor 3 00-23		RANDY TH	Ellensburg, WA, USA	
K7RHT	K7RHT	CN97RD	14,108.000	Pactor 3 00-23		RANDY TH	Ellensburg, WA, USA	
K7RHT	K7RHT	CN97RD	3,586.500	I VARA 00-23		RANDY TH	Ellensburg, WA, USA	
K7RHT	K7RHT	CN97RD	7,101.700	I VARA 00-23		RANDY TH	Ellensburg, WA, USA	
K7RHT	K7RHT	CN97RD	10,143.000	VARA 00-23		RANDY TH	Ellensburg, WA, USA	
K7RHT	K7RHT	CN97RD	14,108.000	VARA 00-23		RANDY TH	Ellensburg, WA, USA	
K7RHT	K7RHT	CN97RD	3,586.500	I WINMOR 100-23		RANDY TH	Ellensburg, WA, USA	
K7RHT	K7RHT	CN97RD	7,101.700	I WINMOR 100-23		RANDY TH	Ellensburg, WA, USA	
K7RHT	K7RHT	CN97RD	10,143.000	WINMOR 100-23		RANDY TH	Ellensburg, WA, USA	
K7RHT	K7RHT	CN97RD	14,108.000	WINMOR 100-23		RANDY TH	Ellensburg, WA, USA	
K7UNI	K7UNI	DN05WH	3,595.000	IARDOP 20C 00-23		Union Cour	La Grande, OR, USA	27
K7UNI	K7UNI	DN05WH	7,102.000	IARDOP 20C 00-23		Union Cour	La Grande, OR, USA	
K7UNI	K7UNI	DN05WH	10,146.500	ARDOP 20C 00-23		Union Cour	La Grande, OR, USA	
K7UNI	K7UNI	DN05WH	3,584.000	I Pactor 1,2 00-23		Union Cour	La Grande, OR, USA	
K7UNI	K7UNI	DN05WH	7,098.000	I Pactor 1,2 00-23		Union Cour	La Grande, OR, USA	
K7UNI	K7UNI	DN05WH	10,134.000	Pactor 1,2 00-23		Union Cour	La Grande, OR, USA	
K7UNI	K7UNI	DN05WH	3,595.000	I VARA 00-23		Union Cour	La Grande, OR, USA	
K7UNI	K7UNI	DN05WH	7,102.000	I VARA 00-23		Union Cour	La Grande, OR, USA	
K7UNI	K7UNI	DN05WH	10,146.500	VARA 00-23		Union Cour	La Grande, OR, USA	
K7UNI	K7UNI	DN05WH	3,595.000	I WINMOR 100-23		Union Cour	La Grande, OR, USA	
K7UNI	K7UNI	DN05WH	7,102.000	I WINMOR 100-23		Union Cour	La Grande, OR, USA	
K7UNI	K7UNI	DN05WH	10,146.500	WINMOR 100-23		Union Cour	La Grande, OR, USA	

CallSign	BaseCallSig	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
K9BBS-10	K9BBS	EM68SR	3,587.500	IARDOP 50C	00-23	Jerome Kut Mitchell, IN, USA		28
K9BBS-10	K9BBS	EM68SR	7,102.500	IARDOP 50C	00-23	Jerome Kut Mitchell, IN, USA		
K9BBS-10	K9BBS	EM68SR	14,112.500	ARDOP 50C	00-23	Jerome Kut Mitchell, IN, USA		
K9BBS-10	K9BBS	EM68SR	18,109.500	ARDOP 50C	00-23	Jerome Kut Mitchell, IN, USA		
K9BBS-10	K9BBS	EM68SR	28,150.000	ARDOP 50C	00-23	Jerome Kut Mitchell, IN, USA		
K9BBS-10	K9BBS	EM68SR	147.555	M ARDOP 20C	00-23	Jerome Kut Mitchell, IN, USA		
K9BBS-10	K9BBS	EM68SR	3,587.500	I Pactor 1,2	00-23	Jerome Kut Mitchell, IN, USA		
K9BBS-10	K9BBS	EM68SR	14,112.500	Pactor 1,2	00-23	Jerome Kut Mitchell, IN, USA		
K9BBS-10	K9BBS	EM68SR	18,109.500	Pactor 1,2	00-23	Jerome Kut Mitchell, IN, USA		
K9BBS-10	K9BBS	EM68SR	28,150.000	Pactor 1,2	00-23	Jerome Kut Mitchell, IN, USA		
K9BBS-10	K9BBS	EM68SR	7,102.500	I VARA	00-23	Jerome Kut Mitchell, IN, USA		
K9BBS-10	K9BBS	EM68SR	3,587.500	I WINMOR 50C	00-23	Jerome Kut Mitchell, IN, USA		
K9BBS-10	K9BBS	EM68SR	7,102.500	I WINMOR 50C	00-23	Jerome Kut Mitchell, IN, USA		
K9BBS-10	K9BBS	EM68SR	14,112.500	WINMOR 50C	00-23	Jerome Kut Mitchell, IN, USA		
K9BBS-10	K9BBS	EM68SR	18,109.500	WINMOR 50C	00-23	Jerome Kut Mitchell, IN, USA		
K9BBS-10	K9BBS	EM68SR	28,150.000	WINMOR 50C	00-23	Jerome Kut Mitchell, IN, USA		
K9CTB-10	K9CTB	EM79AQ	7,102.500	IARDOP 50C	00-23	Solon Xenia Indianapolis, Indiana, USA		29
K9CTB-10	K9CTB	EM79AQ	7,102.500	I WINMOR 50C	00-23	Solon Xenia Indianapolis, Indiana, USA		
K9EYZ-10	K9EYZ	EM50PM	3,591.000	IARDOP 20C	00-23	Galle, Lauri Vancleave, MS, USA		30
K9EYZ-10	K9EYZ	EM50PM	7,102.500	IARDOP 20C	00-23	Galle, Lauri Vancleave, MS, USA		
K9EYZ-10	K9EYZ	EM50PM	3,591.000	I VARA	00-23	Galle, Lauri Vancleave, MS, USA		
K9EYZ-10	K9EYZ	EM50PM	7,102.500	I VARA	00-23	Galle, Lauri Vancleave, MS, USA		
K9EYZ-10	K9EYZ	EM50PM	7,102.500	I WINMOR 100C	00-23	Galle, Lauri Vancleave, MS, USA		
K9WRA	K9WRA	EN50JS	10,144.600	Pactor 1,2,	00-23	Woodford Roanoke, IL, USA		31
KA0NPJ	KA0NPJ	EM48VG	3,591.000	I Pactor 1,2,	00-23	Graham Blk St Louis, MO, USA		32
KA0NPJ	KA0NPJ	EM48VG	7,101.200	I Pactor 1,2,	00-23	Graham Blk St Louis, MO, USA		
KA0NPJ	KA0NPJ	EM48VG	10,148.800	Pactor 1,2,	22-Dec	Graham Blk St Louis, MO, USA		
KA0NPJ	KA0NPJ	EM48VG	14,096.200	Pactor 1,2,	22-Dec	Graham Blk St Louis, MO, USA		
KA7HRC	KA7HRC	CN95GQ	3,595.000	I Pactor 1,2,	00-23	Kenneth Ja Hood River, OR, USA		33
KB3PCY	KB3PCY	FM29EV	3,593.500	IARDOP 20C	00-23	Martin Odc kennett Square, PA, USA		34
KB3PCY	KB3PCY	FM29EV	10,147.500	ARDOP 20C	00-23	Martin Odc kennett Square, PA, USA		
KB3PCY	KB3PCY	FM29EV	14,109.000	ARDOP 20C	00-23	Martin Odc kennett Square, PA, USA		
KB3PCY	KB3PCY	FM29EV	3,593.500	I Pactor 1,2,	00-23	Martin Odc kennett Square, PA, USA		
KB3PCY	KB3PCY	FM29EV	10,147.500	Pactor 1,2,	00-23	Martin Odc kennett Square, PA, USA		
KB3PCY	KB3PCY	FM29EV	14,109.000	Pactor 1,2,	00-23	Martin Odc kennett Square, PA, USA		
KB3PCY	KB3PCY	FM29EV	3,593.500	I VARA	00-23	Martin Odc kennett Square, PA, USA		
KB3PCY	KB3PCY	FM29EV	10,147.500	VARA	00-23	Martin Odc kennett Square, PA, USA		
KB3PCY	KB3PCY	FM29EV	14,109.000	VARA	00-23	Martin Odc kennett Square, PA, USA		
KB3PCY	KB3PCY	FM29EV	3,593.500	I WINMOR 100C	00-23	Martin Odc kennett Square, PA, USA		
KB3PCY	KB3PCY	FM29EV	10,147.500	WINMOR 100C	00-23	Martin Odc kennett Square, PA, USA		
KB3PCY	KB3PCY	FM29EV	14,109.000	WINMOR 100C	00-23	Martin Odc kennett Square, PA, USA		
KB5HCD	KB5HCD	EL29FU	7,101.900	IARDOP 20C	00-23	Alan Isaach Houston, Tx, USA		35
KB5HCD	KB5HCD	EL29FU	10,145.200	ARDOP 20C	00-23	Alan Isaach Houston, Tx, USA		
KB5HCD	KB5HCD	EL29FU	14,103.200	ARDOP 20C	00-23	Alan Isaach Houston, Tx, USA		
KB5HCD	KB5HCD	EL29FU	18,106.900	ARDOP 20C	00-23	Alan Isaach Houston, Tx, USA		

CallSign	BaseCallSig	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
KB5HCD	KB5HCD	EL29FU	7,101.900	I Pactor 3	00-23	Alan Isaach	Houston, Tx, USA	
KB5HCD	KB5HCD	EL29FU	10,145.200	Pactor 3	00-23	Alan Isaach	Houston, Tx, USA	
KB5HCD	KB5HCD	EL29FU	14,103.200	Pactor 3	00-23	Alan Isaach	Houston, Tx, USA	
KB5HCD	KB5HCD	EL29FU	18,106.900	Pactor 3	00-23	Alan Isaach	Houston, Tx, USA	
KB5HCD	KB5HCD	EL29FU	7,101.900	I VARA	00-23	Alan Isaach	Houston, Tx, USA	
KB5HCD	KB5HCD	EL29FU	10,145.200	VARA	00-23	Alan Isaach	Houston, Tx, USA	
KB5HCD	KB5HCD	EL29FU	14,103.200	VARA	00-23	Alan Isaach	Houston, Tx, USA	
KB5HCD	KB5HCD	EL29FU	18,106.900	VARA	00-23	Alan Isaach	Houston, Tx, USA	
KB5HCD	KB5HCD	EL29FU	7,101.900	I WINMOR 1	00-23	Alan Isaach	Houston, Tx, USA	
KB5HCD	KB5HCD	EL29FU	10,145.200	WINMOR 1	00-23	Alan Isaach	Houston, Tx, USA	
KB5HCD	KB5HCD	EL29FU	14,103.200	WINMOR 1	00-23	Alan Isaach	Houston, Tx, USA	
KB5HCD	KB5HCD	EL29FU	18,106.900	WINMOR 1	00-23	Alan Isaach	Houston, Tx, USA	
KB5LZK	KB5LZK	EM34UT	3,598.500	I ARDOP 20C	00-23	KB5WBH	North Little Rock, Ar, USA	36
KB5LZK	KB5LZK	EM34UT	7,101.600	I ARDOP 20C	00-23	KB5WBH	North Little Rock, Ar, USA	
KB5LZK	KB5LZK	EM34UT	10,145.000	ARDOP 20C	00-23	KB5WBH	North Little Rock, Ar, USA	
KB5LZK	KB5LZK	EM34UT	3,598.500	I Pactor 1,2	00-23	KB5WBH	North Little Rock, Ar, USA	
KB5LZK	KB5LZK	EM34UT	7,068.900	I Pactor 1,2	00-23	KB5WBH	North Little Rock, Ar, USA	
KB5LZK	KB5LZK	EM34UT	7,101.600	I Pactor 1,2	00-23	KB5WBH	North Little Rock, Ar, USA	
KB5LZK	KB5LZK	EM34UT	10,145.000	Pactor 3	00-23	KB5WBH	North Little Rock, Ar, USA	
KB5LZK	KB5LZK	EM34UT	3,598.500	I VARA	00-23	KB5WBH	North Little Rock, Ar, USA	
KB5LZK	KB5LZK	EM34UT	7,101.600	I VARA	00-23	KB5WBH	North Little Rock, Ar, USA	
KB5LZK	KB5LZK	EM34UT	10,145.000	VARA	00-23	KB5WBH	North Little Rock, Ar, USA	
KB5LZK	KB5LZK	EM34UT	3,598.500	I WINMOR 1	00-23	KB5WBH	North Little Rock, Ar, USA	
KB5LZK	KB5LZK	EM34UT	7,101.600	I WINMOR 1	00-23	KB5WBH	North Little Rock, Ar, USA	
KB5LZK	KB5LZK	EM34UT	10,145.000	WINMOR 1	00-23	KB5WBH	North Little Rock, Ar, USA	
KB5MAC	KB5MAC	EM20FA	3,572.000	I ARDOP 50C	00-23	alan isaach	Houston, Tx, USA	37
KB5MAC	KB5MAC	EM20FA	3,594.000	I ARDOP 20C	00-23	alan isaach	Houston, Tx, USA	
KB5MAC	KB5MAC	EM20FA	7,082.500	I ARDOP 50C	00-23	alan isaach	Houston, Tx, USA	
KB5MAC	KB5MAC	EM20FA	7,103.300	I ARDOP 20C	00-23	alan isaach	Houston, Tx, USA	
KB5MAC	KB5MAC	EM20FA	3,572.000	I Pactor 1,2	00-23	alan isaach	Houston, Tx, USA	
KB5MAC	KB5MAC	EM20FA	3,594.000	I Pactor 3	00-23	alan isaach	Houston, Tx, USA	
KB5MAC	KB5MAC	EM20FA	7,082.500	I Pactor 1,2	00-23	alan isaach	Houston, Tx, USA	
KB5MAC	KB5MAC	EM20FA	7,103.300	I Pactor 3	00-23	alan isaach	Houston, Tx, USA	
KB5MAC	KB5MAC	EM20FA	3,594.000	I VARA	00-23	alan isaach	Houston, Tx, USA	
KB5MAC	KB5MAC	EM20FA	7,103.300	I VARA	00-23	alan isaach	Houston, Tx, USA	
KB5MAC	KB5MAC	EM20FA	3,572.000	I WINMOR 5	00-23	alan isaach	Houston, Tx, USA	
KB5MAC	KB5MAC	EM20FA	3,594.000	I WINMOR 1	00-23	alan isaach	Houston, Tx, USA	
KB5MAC	KB5MAC	EM20FA	7,082.500	I WINMOR 5	00-23	alan isaach	Houston, Tx, USA	
KB5MAC	KB5MAC	EM20FA	7,103.300	I WINMOR 1	00-23	alan isaach	Houston, Tx, USA	
KB5OZE	KB5OZE	EL49WU	3,588.000	I ARDOP 20C	00-23	Mike Deco	Marrero, La, US	38
KB5OZE	KB5OZE	EL49WU	7,103.000	I ARDOP 20C	00-23	Mike Deco	Marrero, La, US	
KB5OZE	KB5OZE	EL49WU	10,145.000	ARDOP 20C	00-23	Mike Deco	Marrero, La, US	
KB5OZE	KB5OZE	EL49WU	3,588.000	I VARA	00-23	Mike Deco	Marrero, La, US	
KB5OZE	KB5OZE	EL49WU	7,103.000	I VARA	00-23	Mike Deco	Marrero, La, US	
KB5OZE	KB5OZE	EL49WU	10,145.000	VARA	00-23	Mike Deco	Marrero, La, US	

CallSign	BaseCallSign	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
KB5OZE	KB5OZE	EL49WU	3,588.000	I WINMOR 100-23		Mike Deco	Marrero, La, US	39
KB5OZE	KB5OZE	EL49WU	7,103.000	I WINMOR 100-23		Mike Deco	Marrero, La, US	
KB5OZE	KB5OZE	EL49WU	10,145.000	WINMOR 100-23		Mike Deco	Marrero, La, US	
KB6YNO	KB6YNO	CM88QG	14,063.900	Pactor 1,2 00-23		Eric Simmo	Petaluma, CA, USA	
KB6YNO	KB6YNO	CM88QG	14,108.900	Pactor 3 00-23		Eric Simmo	Petaluma, CA, USA	
KB6YNO	KB6YNO	CM88QG	18,098.900	Pactor 1,2 00-23		Eric Simmo	Petaluma, CA, USA	40
KB6YNO	KB6YNO	CM88QG	18,109.000	Pactor 3 00-23		Eric Simmo	Petaluma, CA, USA	
KC0TPS	KC0TPS	EM48VN	7,104.000	I Pactor 1,2, 00-23		Carondolet	Saint Louis, Missouri, USA	
KC0TPS	KC0TPS	EM48VN	10,145.900	Pactor 1,2, 00-23		Carondolet	Saint Louis, Missouri, USA	
KC0TPS	KC0TPS	EM48VN	14,098.700	Pactor 1,2, 00-23		Carondolet	Saint Louis, Missouri, USA	
KC5GOI	KC5GOI	EM13KG	7,102.000	I Pactor 1,2 00-23		Guy Story	Denton, Texas, USA	41
KC5GOI	KC5GOI	EM13KG	14,113.000	Pactor 1,2 00-23		Guy Story	Denton, Texas, USA	
KC5GOI	KC5GOI	EM13KG	7,102.000	I WINMOR 100-23		Guy Story	Denton, Texas, USA	
KC5GOI	KC5GOI	EM13KG	14,113.000	WINMOR 500-23		Guy Story	Denton, Texas, USA	
KC5TEL-10	KC5TEL	EM45PU	145.770	M VARA 00-23		Mike Nettl	Jonesboro, Arkansas, USA	42
KC5TSU	KC5TSU	EM13LD	3,598.000	I ARDOP 20C 00-23		Heath Garr	Lake Dallas, TX, USA	43
KC5TSU	KC5TSU	EM13LD	7,102.000	I ARDOP 20C 00-23		Heath Garr	Lake Dallas, TX, USA	
KC5TSU	KC5TSU	EM13LD	14,104.200	ARDOP 20C 00-23		Heath Garr	Lake Dallas, TX, USA	
KC5TSU	KC5TSU	EM13LD	3,598.000	I Pactor 1,2, 00-23		Heath Garr	Lake Dallas, TX, USA	
KC5TSU	KC5TSU	EM13LD	7,102.000	I Pactor 1,2, 00-23		Heath Garr	Lake Dallas, TX, USA	
KC5TSU	KC5TSU	EM13LD	14,104.200	Pactor 1,2, 00-23		Heath Garr	Lake Dallas, TX, USA	
KC5TSU	KC5TSU	EM13LD	3,598.000	I VARA 00-23		Heath Garr	Lake Dallas, TX, USA	
KC5TSU	KC5TSU	EM13LD	7,102.000	I VARA 00-23		Heath Garr	Lake Dallas, TX, USA	
KC5TSU	KC5TSU	EM13LD	14,104.200	VARA 00-23		Heath Garr	Lake Dallas, TX, USA	
KC5TSU	KC5TSU	EM13LD	3,598.000	I WINMOR 100-23		Heath Garr	Lake Dallas, TX, USA	
KC5TSU	KC5TSU	EM13LD	7,102.000	I WINMOR 100-23		Heath Garr	Lake Dallas, TX, USA	
KC5TSU	KC5TSU	EM13LD	14,104.200	WINMOR 100-23		Heath Garr	Lake Dallas, TX, USA	
KC7ZBI	KC7ZBI	CN85AX	3,589.000	I Pactor 1,2, 00-23		Ed Clark	cannon beach, or, usa	44
KC8YJJ	KC8YJJ	EN90PL	3,589.500	I ARDOP 20C 00-23		Gary Roser	Toronto, Ohio, USA	45
KC8YJJ	KC8YJJ	EN90PL	7,102.500	I ARDOP 20C 00-23		Gary Roser	Toronto, Ohio, USA	
KC8YJJ	KC8YJJ	EN90PL	3,589.500	I Pactor 1,2, 00-23		Gary Roser	Toronto, Ohio, USA	
KC8YJJ	KC8YJJ	EN90PL	7,102.500	I Pactor 1,2, 00-23		Gary Roser	Toronto, Ohio, USA	
KC8YJJ	KC8YJJ	EN90PL	3,589.500	I VARA 00-23		Gary Roser	Toronto, Ohio, USA	
KC8YJJ	KC8YJJ	EN90PL	7,102.500	I VARA 00-23		Gary Roser	Toronto, Ohio, USA	
KC8YJJ	KC8YJJ	EN90PL	3,589.500	I WINMOR 100-23		Gary Roser	Toronto, Ohio, USA	
KC8YJJ	KC8YJJ	EN90PL	7,102.500	I WINMOR 100-23		Gary Roser	Toronto, Ohio, USA	
KC9YIJ-10	KC9YIJ	EM48WV	3,597.000	I ARDOP 20C 00-23		Mark Lanhi	Alton, IL, USA	46
KC9YIJ-10	KC9YIJ	EM48WV	7,104.500	I ARDOP 20C 00-23		Mark Lanhi	Alton, IL, USA	
KD0SFY	KD0SFY	DM78OV	3,584.500	I ARDOP 50C 00-23		John Blood	Colorado Springs, CO, USA	47
KD0SFY	KD0SFY	DM78OV	7,098.500	I ARDOP 50C 00-23		John Blood	Colorado Springs, CO, USA	
KD0SFY	KD0SFY	DM78OV	7,102.500	I ARDOP 20C 00-23		John Blood	Colorado Springs, CO, USA	
KD0SFY	KD0SFY	DM78OV	14,094.500	ARDOP 50C 13-23		John Blood	Colorado Springs, CO, USA	
KD0SFY	KD0SFY	DM78OV	14,105.500	ARDOP 20C 13-23		John Blood	Colorado Springs, CO, USA	
KD0SFY	KD0SFY	DM78OV	7,102.500	I VARA 00-23		John Blood	Colorado Springs, CO, USA	
KD0SFY	KD0SFY	DM78OV	3,584.500	I WINMOR 500-23		John Blood	Colorado Springs, CO, USA	

CallSign	BaseCallSign	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
KD0SFY	KD0SFY	DM78OV	7,098.500	I WINMOR	5 00-23	John Blood	Colorado Springs, CO, USA	48
KD0SFY	KD0SFY	DM78OV	7,102.500	I WINMOR	1 00-23	John Blood	Colorado Springs, CO, USA	
KD0SFY	KD0SFY	DM78OV	14,094.500	WINMOR	5 13-23	John Blood	Colorado Springs, CO, USA	
KD0SFY	KD0SFY	DM78OV	14,105.500	WINMOR	1 13-23	John Blood	Colorado Springs, CO, USA	
KD5REJ	KD5REJ	EL07GM	3,591.000	I ARDOP	20 00-23	Van A Eash	Laredo, Texas, USA	48
KD5REJ	KD5REJ	EL07GM	7,103.500	I ARDOP	20 00-23	Van A Eash	Laredo, Texas, USA	
KD5REJ	KD5REJ	EL07GM	10,147.000	ARDOP	20 00-23	Van A Eash	Laredo, Texas, USA	
KD5REJ	KD5REJ	EL07GM	14,097.000	ARDOP	20 00-23	Van A Eash	Laredo, Texas, USA	
KD5REJ	KD5REJ	EL07GM	3,591.000	I Pactor 3	00-23	Van A Eash	Laredo, Texas, USA	
KD5REJ	KD5REJ	EL07GM	7,103.500	I Pactor 3	00-23	Van A Eash	Laredo, Texas, USA	
KD5REJ	KD5REJ	EL07GM	10,147.000	Pactor 3	00-23	Van A Eash	Laredo, Texas, USA	
KD5REJ	KD5REJ	EL07GM	14,097.000	Pactor 3	00-23	Van A Eash	Laredo, Texas, USA	
KD5REJ	KD5REJ	EL07GM	3,591.000	I VARA	00-23	Van A Eash	Laredo, Texas, USA	
KD5REJ	KD5REJ	EL07GM	7,103.500	I VARA	00-23	Van A Eash	Laredo, Texas, USA	
KD5REJ	KD5REJ	EL07GM	10,147.000	VARA	00-23	Van A Eash	Laredo, Texas, USA	
KD5REJ	KD5REJ	EL07GM	14,097.000	VARA	00-23	Van A Eash	Laredo, Texas, USA	
KD5REJ	KD5REJ	EL07GM	3,591.000	I WINMOR	1 00-23	Van A Eash	Laredo, Texas, USA	
KD5REJ	KD5REJ	EL07GM	7,103.500	I WINMOR	1 00-23	Van A Eash	Laredo, Texas, USA	
KD5REJ	KD5REJ	EL07GM	10,147.000	WINMOR	1 00-23	Van A Eash	Laredo, Texas, USA	
KD5REJ	KD5REJ	EL07GM	14,097.000	WINMOR	1 00-23	Van A Eash	Laredo, Texas, USA	
KD6OAT	KD6OAT	DN40BO	3,594.000	I ARDOP	20 00-23	Ken Adlam	Sandy, UT, USA	49
KD6OAT	KD6OAT	DN40BO	7,097.000	I ARDOP	50 00-23	Ken Adlam	Sandy, UT, USA	
KD6OAT	KD6OAT	DN40BO	10,141.700	ARDOP	20 00-23	Ken Adlam	Sandy, UT, USA	
KD6OAT	KD6OAT	DN40BO	10,145.000	ARDOP	20 00-23	Ken Adlam	Sandy, UT, USA	
KD6OAT	KD6OAT	DN40BO	14,109.500	ARDOP	20 00-23	Ken Adlam	Sandy, UT, USA	
KD6OAT	KD6OAT	DN40BO	3,594.000	I WINMOR	1 00-23	Ken Adlam	Sandy, UT, USA	
KD6OAT	KD6OAT	DN40BO	7,097.000	I WINMOR	5 00-23	Ken Adlam	Sandy, UT, USA	
KD6OAT	KD6OAT	DN40BO	10,141.700	WINMOR	1 00-23	Ken Adlam	Sandy, UT, USA	
KD6OAT	KD6OAT	DN40BO	10,145.000	WINMOR	1 00-23	Ken Adlam	Sandy, UT, USA	
KD6OAT	KD6OAT	DN40BO	14,109.500	WINMOR	1 00-23	Ken Adlam	Sandy, UT, USA	
KD7UHR	KD7UHR	EM58BQ	3,591.000	I ARDOP	20 00-23	Neil Radicic	Collinsville, IL, USA	50
KD7UHR	KD7UHR	EM58BQ	7,101.500	I ARDOP	20 00-23	Neil Radicic	Collinsville, IL, USA	
KD7UHR	KD7UHR	EM58BQ	14,101.700	ARDOP	20 00-23	Neil Radicic	Collinsville, IL, USA	
KD7UHR	KD7UHR	EM58BQ	3,591.000	I VARA	00-23	Neil Radicic	Collinsville, IL, USA	
KD7UHR	KD7UHR	EM58BQ	7,101.500	I VARA	00-23	Neil Radicic	Collinsville, IL, USA	
KD7UHR	KD7UHR	EM58BQ	14,101.700	VARA	00-23	Neil Radicic	Collinsville, IL, USA	
KD7UHR	KD7UHR	EM58BQ	3,591.000	I WINMOR	1 00-23	Neil Radicic	Collinsville, IL, USA	
KD7UHR	KD7UHR	EM58BQ	7,101.500	I WINMOR	1 00-23	Neil Radicic	Collinsville, IL, USA	
KD7UHR	KD7UHR	EM58BQ	7,110.000	I WINMOR	5 00-23	Neil Radicic	Collinsville, IL, USA	
KD7UHR	KD7UHR	EM58BQ	14,101.700	WINMOR	1 00-23	Neil Radicic	Collinsville, IL, USA	
KD7ZDO	KD7ZDO	CN85QH	3,587.500	I ARDOP	20 00-23	David Kidd	Oregon City, OR, USA	51
KD7ZDO	KD7ZDO	CN85QH	7,103.000	I ARDOP	20 00-23	David Kidd	Oregon City, OR, USA	
KD7ZDO	KD7ZDO	CN85QH	10,148.700	ARDOP	20 00-23	David Kidd	Oregon City, OR, USA	
KD7ZDO	KD7ZDO	CN85QH	14,102.700	ARDOP	20 00-23	David Kidd	Oregon City, OR, USA	
KD7ZDO	KD7ZDO	CN85QH	3,587.500	I Pactor 3	00-23	David Kidd	Oregon City, OR, USA	

Callsign	BaseCall	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
KD7ZDO	KD7ZDO	CN85QH	7,103.000	I Pactor 3	00-23	David Kidd	Oregon City, OR, USA	52
KD7ZDO	KD7ZDO	CN85QH	10,148.700	Pactor 3	00-23	David Kidd	Oregon City, OR, USA	
KD7ZDO	KD7ZDO	CN85QH	14,102.700	Pactor 3	00-23	David Kidd	Oregon City, OR, USA	
KD7ZDO	KD7ZDO	CN85QH	3,587.500	I VARA	00-23	David Kidd	Oregon City, OR, USA	
KD7ZDO	KD7ZDO	CN85QH	7,103.000	I VARA	00-23	David Kidd	Oregon City, OR, USA	
KD7ZDO	KD7ZDO	CN85QH	10,148.700	VARA	00-23	David Kidd	Oregon City, OR, USA	
KD7ZDO	KD7ZDO	CN85QH	14,102.700	VARA	00-23	David Kidd	Oregon City, OR, USA	
KD7ZDO	KD7ZDO	CN85QH	3,587.500	I WINMOR 1	00-23	David Kidd	Oregon City, OR, USA	
KD7ZDO	KD7ZDO	CN85QH	7,103.000	I WINMOR 1	00-23	David Kidd	Oregon City, OR, USA	
KD7ZDO	KD7ZDO	CN85QH	10,148.700	WINMOR 1	00-23	David Kidd	Oregon City, OR, USA	
KD7ZDO	KD7ZDO	CN85QH	14,102.700	WINMOR 1	00-23	David Kidd	Oregon City, OR, USA	
KF7RFI	KF7RFI	CN95IC	3,587.500	I VARA	00-23	Wayne A O	Maupin, OR, USA	52
KF7RFI	KF7RFI	CN95IC	3,597.000	I VARA	00-23	Wayne A O	Maupin, OR, USA	
KF7RFI	KF7RFI	CN95IC	7,105.500	I VARA	00-23	Wayne A O	Maupin, OR, USA	
KF7RFI	KF7RFI	CN95IC	10,143.700	VARA	23-Feb	Wayne A O	Maupin, OR, USA	
KF7RFI	KF7RFI	CN95IC	10,145.000	VARA	00-23	Wayne A O	Maupin, OR, USA	
KF7RFI	KF7RFI	CN95IC	3,587.500	I WINMOR 1	00-23	Wayne A O	Maupin, OR, USA	
KF7RFI	KF7RFI	CN95IC	3,597.000	I WINMOR 1	00-23	Wayne A O	Maupin, OR, USA	
KF7RFI	KF7RFI	CN95IC	7,097.000	I WINMOR 5	00-23	Wayne A O	Maupin, OR, USA	
KF7RFI	KF7RFI	CN95IC	7,105.500	I WINMOR 1	00-23	Wayne A O	Maupin, OR, USA	
KF7RFI	KF7RFI	CN95IC	10,143.700	WINMOR 1	23-Feb	Wayne A O	Maupin, OR, USA	
KF7RFI	KF7RFI	CN95IC	10,145.000	WINMOR 1	00-23	Wayne A O	Maupin, OR, USA	
KG5YXP	KG5YXP	EM00XG	7,040.000	I ARDOP 50C	00-23	James Bise	Dripping Springs, TX, USA	53
KG5YXP	KG5YXP	EM00XG	7,101.500	I ARDOP 20C	00-23	James Bise	Dripping Springs, TX, USA	
KG5YXP	KG5YXP	EM00XG	14,040.000	ARDOP 50C	00-23	James Bise	Dripping Springs, TX, USA	
KG5YXP	KG5YXP	EM00XG	14,096.500	ARDOP 20C	00-23	James Bise	Dripping Springs, TX, USA	
KG5YXP	KG5YXP	EM00XG	7,101.500	I VARA	00-23	James Bise	Dripping Springs, TX, USA	
KG5YXP	KG5YXP	EM00XG	14,096.500	VARA	00-23	James Bise	Dripping Springs, TX, USA	
KG5YXP	KG5YXP	EM00XG	7,040.000	I WINMOR 5	00-23	James Bise	Dripping Springs, TX, USA	
KG5YXP	KG5YXP	EM00XG	7,101.500	I WINMOR 1	00-23	James Bise	Dripping Springs, TX, USA	
KG5YXP	KG5YXP	EM00XG	14,040.000	WINMOR 5	00-23	James Bise	Dripping Springs, TX, USA	
KG5YXP	KG5YXP	EM00XG	14,096.500	WINMOR 1	00-23	James Bise	Dripping Springs, TX, USA	
KG7AV	KG7AV	CN94IB	3,586.500	I ARDOP 20C	00-23	Spreier, Ra	Bend, OR, USA	54
KG7AV	KG7AV	CN94IB	7,103.500	I ARDOP 20C	00-23	Spreier, Ra	Bend, OR, USA	
KG7AV	KG7AV	CN94IB	14,103.500	ARDOP 20C	00-23	Spreier, Ra	Bend, OR, USA	
KG7AV	KG7AV	CN94IB	21,094.500	ARDOP 20C	00-23	Spreier, Ra	Bend, OR, USA	
KG7AV	KG7AV	CN94IB	3,586.500	I VARA	00-23	Spreier, Ra	Bend, OR, USA	
KG7AV	KG7AV	CN94IB	7,103.500	I VARA	00-23	Spreier, Ra	Bend, OR, USA	
KG7AV	KG7AV	CN94IB	14,103.500	VARA	00-23	Spreier, Ra	Bend, OR, USA	
KG7AV	KG7AV	CN94IB	21,094.500	VARA	00-23	Spreier, Ra	Bend, OR, USA	
KG7AV	KG7AV	CN94IB	3,586.500	I WINMOR 1	00-23	Spreier, Ra	Bend, OR, USA	
KG7AV	KG7AV	CN94IB	7,103.500	I WINMOR 1	00-23	Spreier, Ra	Bend, OR, USA	
KG7AV	KG7AV	CN94IB	14,103.500	WINMOR 1	00-23	Spreier, Ra	Bend, OR, USA	
KG7AV	KG7AV	CN94IB	21,094.500	WINMOR 1	00-23	Spreier, Ra	Bend, OR, USA	
KH6NS	KH6NS	BL02HE	3,586.500	I ARDOP 20C	00-23	KKH6NS	Kilauea, HI, USA	55

CallSign	BaseCallSign	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
KH6NS	KH6NS	BL02HE	7,104.000	IARDOP 20C	00-23	KKH6NS	Kilauea, Hi, USA	56
KH6NS	KH6NS	BL02HE	3,586.500	I Pactor 1,2,	00-23	KKH6NS	Kilauea, Hi, USA	
KH6NS	KH6NS	BL02HE	7,104.000	I Pactor 1,2,	00-23	KKH6NS	Kilauea, Hi, USA	
KH6NS	KH6NS	BL02HE	3,586.500	I VARA	00-23	KKH6NS	Kilauea, Hi, USA	
KH6NS	KH6NS	BL02HE	7,104.000	I VARA	00-23	KKH6NS	Kilauea, Hi, USA	
KH6NS	KH6NS	BL02HE	3,586.500	I WINMOR 100	00-23	KKH6NS	Kilauea, Hi, USA	
KH6NS	KH6NS	BL02HE	7,104.000	I WINMOR 100	00-23	KKH6NS	Kilauea, Hi, USA	
KH6SF	KH6SF	BK29KL	7,104.000	IARDOP 20C	00-23	Sean Fendt	Mountain View, HI, USA	56
KH6SF	KH6SF	BK29KL	10,149.000	ARDOP 20C	00-23	Sean Fendt	Mountain View, HI, USA	
KH6SF	KH6SF	BK29KL	14,110.500	ARDOP 20C	00-23	Sean Fendt	Mountain View, HI, USA	
KH6SF	KH6SF	BK29KL	7,104.000	I Pactor 1,2,	00-23	Sean Fendt	Mountain View, HI, USA	
KH6SF	KH6SF	BK29KL	10,149.000	Pactor 1,2,	00-23	Sean Fendt	Mountain View, HI, USA	
KH6SF	KH6SF	BK29KL	14,110.500	Pactor 1,2,	00-23	Sean Fendt	Mountain View, HI, USA	
KH6SF	KH6SF	BK29KL	7,104.000	I VARA	00-23	Sean Fendt	Mountain View, HI, USA	
KH6SF	KH6SF	BK29KL	10,149.000	VARA	00-23	Sean Fendt	Mountain View, HI, USA	
KH6SF	KH6SF	BK29KL	14,110.500	VARA	00-23	Sean Fendt	Mountain View, HI, USA	
KH6SF	KH6SF	BK29KL	7,104.000	I WINMOR 100	00-23	Sean Fendt	Mountain View, HI, USA	
KH6SF	KH6SF	BK29KL	10,149.000	WINMOR 100	00-23	Sean Fendt	Mountain View, HI, USA	
KH6SF	KH6SF	BK29KL	14,110.500	WINMOR 100	00-23	Sean Fendt	Mountain View, HI, USA	
KH6SP	KH6SP	BL01XM	10,143.000	Pactor 1,2,	16-15	Gus MacFe	Wahiawa, HI, USA	57
KH6SP	KH6SP	BL01XM	18,107.000	Pactor 1,2,	16-15	Gus MacFe	Wahiawa, HI, USA	
KH6UL	KH6UL	BL01XM	14,106.000	Pactor 1,2,	16-15	Gus MacFe	Wahiawa, HI, USA	58
KH6UL	KH6UL	BL01XM	21,095.000	Pactor 1,2,	16-15	Gus MacFe	Wahiawa, HI, USA	
KK4NTE	KK4NTE	EM74VV	7,104.000	IARDOP 20C	00-23	Joe Owens	Morganton, GA, USA	59
KK4NTE	KK4NTE	EM74VV	7,104.000	I VARA	00-23	Joe Owens	Morganton, GA, USA	
KK4NTE	KK4NTE	EM74VV	7,104.000	I WINMOR 100	00-23	Joe Owens	Morganton, GA, USA	
KK4QAM-1	KK4QAM	EM62BC	3,587.500	I WINMOR 100	00-23	Don Gibbs	SWEET WATER, AL, United States	60
KK4SIH	KK4SIH	EM70VN	14,106.000	ARDOP 20C	00-23	Don Pace	Tallahassee, FL, USA	61
KK4SIH	KK4SIH	EM70VN	14,106.000	VARA	00-23	Don Pace	Tallahassee, FL, USA	
KL7EDK	KL7EDK	BP64DV	3,595.000	I Pactor 1,2,	00-23	Jerry	Fairbanks, Alaska, USA	62
KL7EDK	KL7EDK	BP64DV	7,065.900	I Pactor 1,2	00-23	Jerry	Fairbanks, Alaska, USA	
KL7EDK	KL7EDK	BP64DV	7,103.500	I Pactor 3	00-23	Jerry	Fairbanks, Alaska, USA	
KL7EDK	KL7EDK	BP64DV	10,147.700	Pactor 1,2,	00-23	Jerry	Fairbanks, Alaska, USA	
KL7EDK	KL7EDK	BP64DV	14,064.000	Pactor 1,2	00-23	Jerry	Fairbanks, Alaska, USA	
KL7EDK	KL7EDK	BP64DV	14,110.500	Pactor 3	00-23	Jerry	Fairbanks, Alaska, USA	
KL7EDK	KL7EDK	BP64DV	3,595.000	I VARA	00-23	Jerry	Fairbanks, Alaska, USA	
KL7EDK	KL7EDK	BP64DV	7,103.500	I VARA	00-23	Jerry	Fairbanks, Alaska, USA	
KL7EDK	KL7EDK	BP64DV	14,110.500	VARA	00-23	Jerry	Fairbanks, Alaska, USA	
KL7EDK	KL7EDK	BP64DV	3,595.000	I WINMOR 100	00-23	Jerry	Fairbanks, Alaska, USA	
KL7EDK	KL7EDK	BP64DV	7,103.500	I WINMOR 100	00-23	Jerry	Fairbanks, Alaska, USA	
KL7NMC	KL7NMC	BP51BE	3,589.000	I Pactor 1,2,	00-23	Kent Petty	Eagle River, AK, USA	63
KL7NMC	KL7NMC	BP51BE	7,075.900	I Pactor 1,2	00-23	Kent Petty	Eagle River, AK, USA	
KL7NMC	KL7NMC	BP51BE	7,101.700	I Pactor 3	00-23	Kent Petty	Eagle River, AK, USA	
KL7NMC	KL7NMC	BP51BE	10,143.700	Pactor 1,2,	00-23	Kent Petty	Eagle River, AK, USA	
KM0R	KM0R	EM38TX	3,597.000	I Pactor 3	00-23	Don Moore	Columbia, MO, USA	64

CallSign	BaseCallSig	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
KM0R	KM0R	EM38TX	7,062.900	I Pactor 1,2	00-23	Don Moore	Columbia, MO, USA	65
KM0R	KM0R	EM38TX	7,104.000	I Pactor 3	00-23	Don Moore	Columbia, MO, USA	
KO0000	KO0000	DM26JG	3,584.000	IARDOP 50C	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	3,587.000	IARDOP 20C	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	7,098.000	IARDOP 50C	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	7,101.500	IARDOP 20C	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	7,103.500	IARDOP 20C	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	7,108.000	IARDOP 50C	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	10,146.000	ARDOP 20C	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	14,105.000	ARDOP 20C	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	3,584.000	I Pactor 1,2	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	3,587.000	I Pactor 3	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	7,098.000	I Pactor 1,2	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	7,101.500	I Pactor 3	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	7,103.500	I Pactor 3	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	7,108.000	I Pactor 1,2	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	10,146.000	Pactor 1,2,	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	14,105.000	Pactor 1,2,	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	3,587.000	I VARA	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	7,101.500	I VARA	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	7,103.500	I VARA	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	10,146.000	VARA	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	14,105.000	VARA	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	3,584.000	I WINMOR 500	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	3,587.000	I WINMOR 100	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	7,098.000	I WINMOR 500	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	7,101.500	I WINMOR 100	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	7,103.500	I WINMOR 100	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	7,108.000	I WINMOR 500	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	10,146.000	WINMOR 100	00-23	Richard	North Las Vegas, NV, USA	
KO0000	KO0000	DM26JG	14,105.000	WINMOR 100	00-23	Richard	North Las Vegas, NV, USA	
KQ4ET	KQ4ET	FM16XU	3,589.000	IARDOP 20C	00-23	Joel Michel	Virginia Beach, Virginia, USA	66
KQ4ET	KQ4ET	FM16XU	7,101.500	IARDOP 20C	00-23	Joel Michel	Virginia Beach, Virginia, USA	
KQ4ET	KQ4ET	FM16XU	3,589.000	I Pactor 1,2,	00-23	Joel Michel	Virginia Beach, Virginia, USA	
KQ4ET	KQ4ET	FM16XU	7,101.500	I Pactor 1,2,	00-23	Joel Michel	Virginia Beach, Virginia, USA	
KQ4ET	KQ4ET	FM16XU	7,102.700	I Pactor 1,2,	00-23	Joel Michel	Virginia Beach, Virginia, USA	
KQ4ET	KQ4ET	FM16XU	10,146.500	Pactor 1,2,	00-23	Joel Michel	Virginia Beach, Virginia, USA	
KQ4ET	KQ4ET	FM16XU	14,098.000	Pactor 1,2,	00-23	Joel Michel	Virginia Beach, Virginia, USA	
KQ4ET	KQ4ET	FM16XU	18,106.900	Pactor 1,2,	00-23	Joel Michel	Virginia Beach, Virginia, USA	
KQ4ET	KQ4ET	FM16XU	21,098.500	Pactor 1,2,	00-23	Joel Michel	Virginia Beach, Virginia, USA	
KX4Z	KX4Z	EL89RQ	3,595.500	IARDOP 20C	00-23	Gordon Gik	Newberry, FL, USA	67
KX4Z	KX4Z	EL89RQ	7,103.500	IARDOP 20C	00-23	Gordon Gik	Newberry, FL, USA	
KX4Z	KX4Z	EL89RQ	10,141.500	ARDOP 20C	00-23	Gordon Gik	Newberry, FL, USA	
KX4Z	KX4Z	EL89RQ	14,098.000	ARDOP 20C	00-23	Gordon Gik	Newberry, FL, USA	
KX4Z	KX4Z	EL89RQ	3,595.500	I Pactor 1,2,	00-23	Gordon Gik	Newberry, FL, USA	

CallSign	BaseCallSign	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
KX4Z	KX4Z	EL89RQ	7,103.500	I Pactor 1,2,	00-23	Gordon Gil Newberry, FL, USA		
KX4Z	KX4Z	EL89RQ	10,141.500	Pactor 1,2,	00-23	Gordon Gil Newberry, FL, USA		
KX4Z	KX4Z	EL89RQ	14,098.000	Pactor 1,2,	00-23	Gordon Gil Newberry, FL, USA		
KX4Z	KX4Z	EL89RQ	3,595.500	I WINMOR 100-	23	Gordon Gil Newberry, FL, USA		
KX4Z	KX4Z	EL89RQ	7,103.500	I WINMOR 100-	23	Gordon Gil Newberry, FL, USA		
KX4Z	KX4Z	EL89RQ	10,141.500	WINMOR 100-	23	Gordon Gil Newberry, FL, USA		
KX4Z	KX4Z	EL89RQ	14,098.000	WINMOR 100-	23	Gordon Gil Newberry, FL, USA		
KX5DX	KX5DX	EM11EB	14,108.000	WINMOR 100-	23	Carlos Cres Nolanville, TX, United States		68
N0DAJ	N0DAJ	DM34OA	3,587.000	I ARDOP 20C	00-23	Doug Jarmi Wickenburg, Arizona, U.S.A.		69
N0DAJ	N0DAJ	DM34OA	7,103.000	I ARDOP 20C	00-23	Doug Jarmi Wickenburg, Arizona, U.S.A.		
N0DAJ	N0DAJ	DM34OA	14,103.000	ARDOP 20C	00-23	Doug Jarmi Wickenburg, Arizona, U.S.A.		
N0DAJ	N0DAJ	DM34OA	3,587.000	I VARA	00-23	Doug Jarmi Wickenburg, Arizona, U.S.A.		
N0DAJ	N0DAJ	DM34OA	7,103.000	I VARA	00-23	Doug Jarmi Wickenburg, Arizona, U.S.A.		
N0DAJ	N0DAJ	DM34OA	14,103.000	VARA	00-23	Doug Jarmi Wickenburg, Arizona, U.S.A.		
N0DAJ	N0DAJ	DM34OA	3,587.000	I WINMOR 100-	23	Doug Jarmi Wickenburg, Arizona, U.S.A.		
N0DAJ	N0DAJ	DM34OA	7,103.000	I WINMOR 100-	23	Doug Jarmi Wickenburg, Arizona, U.S.A.		
N0DAJ	N0DAJ	DM34OA	14,103.000	WINMOR 100-	23	Doug Jarmi Wickenburg, Arizona, U.S.A.		
N0LCR-1	N0LCR	EN47DA	3,586.500	I ARDOP 20C	00-23	Lake Count Two Harbors, Minnesota, USA		70
N0LCR-1	N0LCR	EN47DA	3,596.500	I ARDOP 20C	00-23	Lake Count Two Harbors, Minnesota, USA		
N0LCR-1	N0LCR	EN47DA	7,103.500	I ARDOP 20C	00-23	Lake Count Two Harbors, Minnesota, USA		
N0LCR-1	N0LCR	EN47DA	7,113.500	I ARDOP 50C	00-23	Lake Count Two Harbors, Minnesota, USA		
N0LCR-1	N0LCR	EN47DA	3,586.500	I VARA	00-23	Lake Count Two Harbors, Minnesota, USA		
N0LCR-1	N0LCR	EN47DA	3,596.500	I VARA	00-23	Lake Count Two Harbors, Minnesota, USA		
N0LCR-1	N0LCR	EN47DA	7,103.500	I VARA	00-23	Lake Count Two Harbors, Minnesota, USA		
N0LCR-1	N0LCR	EN47DA	3,586.500	I WINMOR 100-	23	Lake Count Two Harbors, Minnesota, USA		
N0LCR-1	N0LCR	EN47DA	3,596.500	I WINMOR 100-	23	Lake Count Two Harbors, Minnesota, USA		
N0LCR-1	N0LCR	EN47DA	7,103.500	I WINMOR 100-	23	Lake Count Two Harbors, Minnesota, USA		
N0LCR-1	N0LCR	EN47DA	7,113.500	I WINMOR 500-	23	Lake Count Two Harbors, Minnesota, USA		
N2LEE	N2LEE	FM18HX	3,590.000	I Pactor 3	00-23	Lee Love Herndon, VA, USA		71
N2LEE	N2LEE	FM18HX	7,102.500	I Pactor 3	00-23	Lee Love Herndon, VA, USA		
N2LEE	N2LEE	FM18HX	3,590.000	I VARA	00-23	Lee Love Herndon, VA, USA		
N2LEE	N2LEE	FM18HX	7,102.500	I VARA	00-23	Lee Love Herndon, VA, USA		
N2LEE	N2LEE	FM18HX	3,590.000	I WINMOR 100-	23	Lee Love Herndon, VA, USA		
N2LEE	N2LEE	FM18HX	7,102.500	I WINMOR 100-	23	Lee Love Herndon, VA, USA		
N3FCX	N3FCX	FM29IV	14,110.000	Pactor 1,2,	00-23	DANIEL VEISECANE, PA., U.S.A.		72
N3HYM-10	N3HYM	FM19FK	3,587.500	I ARDOP 10C	00-23	Ray Adkins Frederick, MD, US		73
N3HYM-10	N3HYM	FM19FK	7,102.500	I ARDOP 10C	00-23	Ray Adkins Frederick, MD, US		
N3HYM-10	N3HYM	FM19FK	10,148.500	ARDOP 10C	00-23	Ray Adkins Frederick, MD, US		
N3HYM-10	N3HYM	FM19FK	18,109.500	ARDOP 10C	00-23	Ray Adkins Frederick, MD, US		
N3HYM-10	N3HYM	FM19FK	21,096.500	ARDOP 10C	00-23	Ray Adkins Frederick, MD, US		
N3HYM-10	N3HYM	FM19FK	28,131.500	ARDOP 10C	00-23	Ray Adkins Frederick, MD, US		
N3HYM-10	N3HYM	FM19FK	3,587.500	I Pactor 1,2,	00-23	Ray Adkins Frederick, MD, US		
N3HYM-10	N3HYM	FM19FK	7,102.500	I Pactor 1,2,	00-23	Ray Adkins Frederick, MD, US		
N3HYM-10	N3HYM	FM19FK	10,148.500	Pactor 1,2,	00-23	Ray Adkins Frederick, MD, US		
N3HYM-10	N3HYM	FM19FK	18,109.500	Pactor 1,2,	00-23	Ray Adkins Frederick, MD, US		

CallSign	BaseCallSig	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
N3HYM-10	N3HYM	FM19FK	21,096.500	Pactor 1,2,	00-23	Ray Adkins	Frederick, MD, US	74
N3HYM-10	N3HYM	FM19FK	28,131.500	Pactor 1,2,	00-23	Ray Adkins	Frederick, MD, US	
N3HYM-10	N3HYM	FM19FK	3,587.500	I VARA	00-23	Ray Adkins	Frederick, MD, US	
N3HYM-10	N3HYM	FM19FK	7,102.500	I VARA	00-23	Ray Adkins	Frederick, MD, US	
N3HYM-10	N3HYM	FM19FK	10,148.500	VARA	00-23	Ray Adkins	Frederick, MD, US	
N3HYM-10	N3HYM	FM19FK	18,109.500	VARA	00-23	Ray Adkins	Frederick, MD, US	
N3HYM-10	N3HYM	FM19FK	21,096.500	VARA	00-23	Ray Adkins	Frederick, MD, US	
N3HYM-10	N3HYM	FM19FK	28,131.500	VARA	00-23	Ray Adkins	Frederick, MD, US	
N3HYM-10	N3HYM	FM19FK	3,587.500	I WINMOR 100	00-23	Ray Adkins	Frederick, MD, US	
N3HYM-10	N3HYM	FM19FK	7,102.500	I WINMOR 100	00-23	Ray Adkins	Frederick, MD, US	
N3HYM-10	N3HYM	FM19FK	10,148.500	WINMOR 100	00-23	Ray Adkins	Frederick, MD, US	
N3HYM-10	N3HYM	FM19FK	18,109.500	WINMOR 100	00-23	Ray Adkins	Frederick, MD, US	
N3HYM-10	N3HYM	FM19FK	21,096.500	WINMOR 100	00-23	Ray Adkins	Frederick, MD, US	
N3HYM-10	N3HYM	FM19FK	28,131.500	WINMOR 100	00-23	Ray Adkins	Frederick, MD, US	
N4BTA	N4BTA	EM74UB	28,131.500	ARDOP 20C	00-23	Bret Arnolc	Alpharetta, GA, USA	74
N4BTA	N4BTA	EM74UB	28,131.500	VARA	00-23	Bret Arnolc	Alpharetta, GA, USA	
N4BTA	N4BTA	EM74UB	28,131.500	WINMOR 100	00-23	Bret Arnolc	Alpharetta, GA, USA	
N4SER	N4SER	EL87SF	3,595.000	I ARDOP 20C	00-23	Den Spiess	Nokomis, FL, USA	75
N4SER	N4SER	EL87SF	7,103.700	I ARDOP 20C	00-23	Den Spiess	Nokomis, FL, USA	
N4SER	N4SER	EL87SF	10,146.000	ARDOP 20C	00-23	Den Spiess	Nokomis, FL, USA	
N4SER	N4SER	EL87SF	14,098.700	ARDOP 20C	00-23	Den Spiess	Nokomis, FL, USA	
N4SER	N4SER	EL87SF	3,595.000	I Pactor 3	00-23	Den Spiess	Nokomis, FL, USA	
N4SER	N4SER	EL87SF	7,103.700	I Pactor 3	00-23	Den Spiess	Nokomis, FL, USA	
N4SER	N4SER	EL87SF	10,146.000	Pactor 3	00-23	Den Spiess	Nokomis, FL, USA	
N4SER	N4SER	EL87SF	14,098.700	Pactor 3	00-23	Den Spiess	Nokomis, FL, USA	
N4SER	N4SER	EL87SF	3,595.000	I VARA	00-23	Den Spiess	Nokomis, FL, USA	
N4SER	N4SER	EL87SF	7,103.700	I VARA	00-23	Den Spiess	Nokomis, FL, USA	
N4SER	N4SER	EL87SF	10,146.000	VARA	00-23	Den Spiess	Nokomis, FL, USA	
N4SER	N4SER	EL87SF	14,098.700	VARA	00-23	Den Spiess	Nokomis, FL, USA	
N4SER	N4SER	EL87SF	3,595.000	I WINMOR 100	00-23	Den Spiess	Nokomis, FL, USA	
N4SER	N4SER	EL87SF	7,103.700	I WINMOR 100	00-23	Den Spiess	Nokomis, FL, USA	
N4SER	N4SER	EL87SF	10,146.000	WINMOR 100	00-23	Den Spiess	Nokomis, FL, USA	
N4SER	N4SER	EL87SF	14,098.700	WINMOR 100	00-23	Den Spiess	Nokomis, FL, USA	
N5MDT	N5MDT	EM20EJ	7,104.500	I Pactor 1,2,	00-23	Mark Taylo	Montgomery, Tx, USA	76
N5MDT	N5MDT	EM20EJ	7,104.500	I WINMOR 500	00-23	Mark Taylo	Montgomery, Tx, USA	
N5TW	N5TW	EM10CJ	3,596.000	I ARDOP 20C	00-23	Tom White	Georgetown, Texas, USA	77
N5TW	N5TW	EM10CJ	7,066.000	I ARDOP 50C	00-23	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CJ	7,091.500	I ARDOP 50C	00-23	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CJ	7,102.000	I ARDOP 20C	00-23	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CP	10,148.000	ARDOP 20C	00-23	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CP	14,110.000	ARDOP 20C	00-23	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CJ	3,596.000	I Pactor 3	00-23	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CJ	7,066.000	I Pactor 1,2	00-23	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CJ	7,091.500	I Pactor 1,2	00-23	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CJ	7,102.000	I Pactor 3	00-23	Tom White	Georgetown, Texas, USA	

CallSign	BaseCallSig	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
N5TW	N5TW	EM10CP	10,148.000	Pactor 3	00-23	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CP	14,110.000	Pactor 3	00-23	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CJ	3,596.000	I V A R A	00-23	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CJ	7,102.000	I V A R A	00-23	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CP	10,148.000	V A R A	00-23	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CP	14,110.000	V A R A	00-23	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CJ	3,596.000	I W I N M O R	1 0 0 - 2 3	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CJ	7,066.000	I W I N M O R	5 0 0 - 2 3	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CJ	7,091.500	I W I N M O R	5 0 0 - 2 3	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CJ	7,102.000	I W I N M O R	1 0 0 - 2 3	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CP	10,148.000	W I N M O R	1 0 0 - 2 3	Tom White	Georgetown, Texas, USA	
N5TW	N5TW	EM10CP	14,110.000	W I N M O R	1 0 0 - 2 3	Tom White	Georgetown, Texas, USA	
N7LOB	N7LOB	CN86BX	3,591.000	I A R D O P	2 0 0 0 - 2 3	Leslie O`Bri	Aberdeen, WA, USA	78
N7LOB	N7LOB	CN86BX	3,591.000	I P a c t o r 3	0 0 - 2 3	Leslie O`Bri	Aberdeen, WA, USA	
N7LOB	N7LOB	CN86BX	3,591.000	I V A R A	0 0 - 2 3	Leslie O`Bri	Aberdeen, WA, USA	
N7LOB	N7LOB	CN86BX	3,591.000	I W I N M O R	1 0 0 - 2 3	Leslie O`Bri	Aberdeen, WA, USA	
N7TRY-2	N7TRY	CN85NI	7,102.500	I W I N M O R	1 0 0 - 2 3	Todd Kolm	Sherwood, OR, USA	79
N7TRY-2	N7TRY	CN85NI	14,110.500	W I N M O R	1 0 0 - 2 3	Todd Kolm	Sherwood, OR, USA	
NF9D	NF9D	EN51TW	3,595.000	I A R D O P	2 0 0 0 - 2 3	Bill Muhr	Campton Hills, Illinois, USA	80
NF9D	NF9D	EN51TW	3,595.000	I W I N M O R	1 0 0 - 2 3	Bill Muhr	Campton Hills, Illinois, USA	
NH6NN	NH6NN	BL11CJ	3,593.500	I A R D O P	2 0 0 0 - 2 3	Joe Speron	Honolulu, HI, USA	81
NH6NN	NH6NN	BL11CJ	7,101.500	I A R D O P	2 0 0 0 - 2 3	Joe Speron	Honolulu, HI, USA	
NH6NN	NH6NN	BL11CJ	10,141.500	A R D O P	2 0 0 0 - 2 3	Joe Speron	Honolulu, HI, USA	
NH6NN	NH6NN	BL11CJ	3,593.500	I P a c t o r 3	0 0 - 2 3	Joe Speron	Honolulu, HI, USA	
NH6NN	NH6NN	BL11CJ	7,101.500	I P a c t o r 3	0 0 - 2 3	Joe Speron	Honolulu, HI, USA	
NH6NN	NH6NN	BL11CJ	10,141.500	P a c t o r 3	0 0 - 2 3	Joe Speron	Honolulu, HI, USA	
NH6NN	NH6NN	BL11CJ	3,593.500	I V A R A	0 0 - 2 3	Joe Speron	Honolulu, HI, USA	
NH6NN	NH6NN	BL11CJ	7,101.500	I V A R A	0 0 - 2 3	Joe Speron	Honolulu, HI, USA	
NH6NN	NH6NN	BL11CJ	10,141.500	V A R A	0 0 - 2 3	Joe Speron	Honolulu, HI, USA	
NH6NN	NH6NN	BL11CJ	3,593.500	I W I N M O R	1 0 0 - 2 3	Joe Speron	Honolulu, HI, USA	
NH6NN	NH6NN	BL11CJ	7,101.500	I W I N M O R	1 0 0 - 2 3	Joe Speron	Honolulu, HI, USA	
NH6NN	NH6NN	BL11CJ	10,141.500	W I N M O R	1 0 0 - 2 3	Joe Speron	Honolulu, HI, USA	
NH7HI	NH7HI	BL20EA	3,596.500	I A R D O P	2 0 0 0 - 2 3	North Haw	Kamuela, HI, USA	82
NH7HI	NH7HI	BL20EA	7,101.500	I A R D O P	2 0 0 0 - 2 3	North Haw	Kamuela, HI, USA	
NH7HI	NH7HI	BL20EA	3,596.500	I P a c t o r 3	0 0 - 2 3	North Haw	Kamuela, HI, USA	
NH7HI	NH7HI	BL20EA	7,101.500	I P a c t o r 3	0 0 - 2 3	North Haw	Kamuela, HI, USA	
NH7HI	NH7HI	BL20EA	3,596.500	I V A R A	0 0 - 2 3	North Haw	Kamuela, HI, USA	
NH7HI	NH7HI	BL20EA	7,101.500	I V A R A	0 0 - 2 3	North Haw	Kamuela, HI, USA	
NH7HI	NH7HI	BL20EA	3,596.500	I W I N M O R	1 0 0 - 2 3	North Haw	Kamuela, HI, USA	
NH7HI	NH7HI	BL20EA	7,101.500	I W I N M O R	1 0 0 - 2 3	North Haw	Kamuela, HI, USA	
NS0A	NS0A	EN41VL	3,587.500	I A R D O P	2 0 0 0 - 2 3	William Ga	Geneseo, IL, USA	83
NS0A	NS0A	EN41VL	7,103.500	I A R D O P	2 0 0 0 - 2 3	William Ga	Geneseo, IL, USA	
NS0A	NS0A	EN41VL	14,115.000	A R D O P	5 0 0 0 - 2 3	William Ga	Geneseo, IL, USA	
NS0A	NS0A	EN41VL	3,587.500	I V A R A	0 0 - 2 3	William Ga	Geneseo, IL, USA	
NS0A	NS0A	EN41VL	7,103.500	I V A R A	0 0 - 2 3	William Ga	Geneseo, IL, USA	

CallSign	BaseCallSign	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
NS0A	NS0A	EN41VL	3,587.500	I WINMOR	100-23	William Ga	Geneseo, IL, USA	
NS0A	NS0A	EN41VL	7,103.500	I WINMOR	100-23	William Ga	Geneseo, IL, USA	
NS0A	NS0A	EN41VL	14,115.000	WINMOR	500-23	William Ga	Geneseo, IL, USA	
NX4AC	NX4AC	EM81DD	7,089.000	I WINMOR	500-23	Andy Clark	Moultrie, GA, USA	84
W0MAC	W0MAC	EM20GA	3,584.500	IARDOP	500 00-23	Alan Isaach	Houston, TX, USA	85
W0MAC	W0MAC	EM20GA	3,592.000	IARDOP	200 00-23	Alan Isaach	Houston, TX, USA	
W0MAC	W0MAC	EM20GA	7,066.000	IARDOP	500 00-23	Alan Isaach	Houston, TX, USA	
W0MAC	W0MAC	EM20GA	7,101.600	IARDOP	200 00-23	Alan Isaach	Houston, TX, USA	
W0MAC	W0MAC	EM20GA	3,584.500	I Pactor 1,2	00-23	Alan Isaach	Houston, TX, USA	
W0MAC	W0MAC	EM20GA	3,592.000	I Pactor 3	00-23	Alan Isaach	Houston, TX, USA	
W0MAC	W0MAC	EM20GA	7,066.000	I Pactor 1,2	00-23	Alan Isaach	Houston, TX, USA	
W0MAC	W0MAC	EM20GA	7,101.600	I Pactor 3	00-23	Alan Isaach	Houston, TX, USA	
W0MAC	W0MAC	EM20GA	3,592.000	I VARA	00-23	Alan Isaach	Houston, TX, USA	
W0MAC	W0MAC	EM20GA	7,101.600	I VARA	00-23	Alan Isaach	Houston, TX, USA	
W0MAC	W0MAC	EM20GA	3,584.500	I WINMOR	500-23	Alan Isaach	Houston, TX, USA	
W0MAC	W0MAC	EM20GA	3,592.000	I WINMOR	100-23	Alan Isaach	Houston, TX, USA	
W0MAC	W0MAC	EM20GA	7,066.000	I WINMOR	500-23	Alan Isaach	Houston, TX, USA	
W0MAC	W0MAC	EM20GA	7,101.600	I WINMOR	100-23	Alan Isaach	Houston, TX, USA	
W0VG	W0VG	DM79IO	10,145.000	ARDOP	200 00-23	JOHN MAX	EVERGREEN, CO, USA	86
W0VG	W0VG	DM79IO	14,105.000	ARDOP	200 00-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	18,107.500	ARDOP	200 00-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	21,098.000	ARDOP	200 00-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	28,135.000	ARDOP	200 00-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	10,145.000	Pactor 3	00-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	14,105.000	Pactor 3	00-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	18,107.500	Pactor 3	00-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	21,098.000	Pactor 3	00-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	28,135.000	Pactor 3	00-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	10,145.000	VARA	00-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	14,105.000	VARA	00-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	18,107.500	VARA	00-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	21,098.000	VARA	00-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	28,135.000	VARA	00-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	10,145.000	WINMOR	100-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	14,105.000	WINMOR	100-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	18,107.500	WINMOR	100-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	21,098.000	WINMOR	100-23	JOHN MAX	EVERGREEN, CO, USA	
W0VG	W0VG	DM79IO	28,135.000	WINMOR	100-23	JOHN MAX	EVERGREEN, CO, USA	
W1EO	W1EO	FN42IM	1,845.000	IARDOP	500 00-23	doc	carlisle, ma, usa	87
W1EO	W1EO	FN42IM	3,597.900	IARDOP	200 00-23	doc	carlisle, ma, usa	
W1EO	W1EO	FN42IM	7,102.500	IARDOP	200 00-23	doc	carlisle, ma, usa	
W1EO	W1EO	FN42IM	10,144.500	ARDOP	200 00-23	doc	carlisle, ma, usa	
W1EO	W1EO	FN42IM	14,104.200	ARDOP	200 00-23	doc	carlisle, ma, usa	
W1EO	W1EO	FN42IM	1,845.000	I Pactor 1,2	00-23	doc	carlisle, ma, usa	
W1EO	W1EO	FN42IM	3,597.900	I Pactor 3	00-23	doc	carlisle, ma, usa	

CallSign	BaseCallSig	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
W1EO	W1EO	FN42IM	7,102.500	I Pactor 3	00-23	doc	carlisle, ma, usa	
W1EO	W1EO	FN42IM	10,144.500	Pactor 3	00-23	doc	carlisle, ma, usa	
W1EO	W1EO	FN42IM	14,104.200	Pactor 3	00-23	doc	carlisle, ma, usa	
W1EO	W1EO	FN42IM	3,597.900	I VARA	00-23	doc	carlisle, ma, usa	
W1EO	W1EO	FN42IM	7,102.500	I VARA	00-23	doc	carlisle, ma, usa	
W1EO	W1EO	FN42IM	10,144.500	VARA	00-23	doc	carlisle, ma, usa	
W1EO	W1EO	FN42IM	14,104.200	VARA	00-23	doc	carlisle, ma, usa	
W1EO	W1EO	FN42IM	1,845.000	I WINMOR 5	00-23	doc	carlisle, ma, usa	
W1EO	W1EO	FN42IM	3,597.900	I WINMOR 10	00-23	doc	carlisle, ma, usa	
W1EO	W1EO	FN42IM	7,102.500	I WINMOR 10	00-23	doc	carlisle, ma, usa	
W1EO	W1EO	FN42IM	10,144.500	WINMOR 10	00-23	doc	carlisle, ma, usa	
W1EO	W1EO	FN42IM	14,104.200	WINMOR 10	00-23	doc	carlisle, ma, usa	
W2GSA	W2GSA	FN20WD	7,090.500	I ARDOP 50C	00-23	Howard Su	Eatontown, NJ, USA	88
W2GSA	W2GSA	FN20WD	7,090.500	I WINMOR 5	00-23	Howard Su	Eatontown, NJ, USA	89
W3JY	W3JY	FN20FA	3,591.000	I Pactor 1,2,	00-23	AMES JR, JK	Malvern, PA, USA	
W3JY	W3JY	FN20FA	7,100.400	I Pactor 1,2	00-23	AMES JR, JK	Malvern, PA, USA	
W3JY	W3JY	FN20FA	14,113.900	Pactor 1,2	00-23	AMES JR, JK	Malvern, PA, USA	90
W5KAM	W5KAM	EM20BE	3,599.000	I Pactor 3	00-23	KEN MILLEI	HOCKLEY, TEXAS, USA	
W5KAM	W5KAM	EM20BE	7,104.000	I Pactor 3	00-23	KEN MILLEI	HOCKLEY, TEXAS, USA	
W5KAM	W5KAM	EM20BE	14,097.500	Pactor 3	00-23	KEN MILLEI	HOCKLEY, TEXAS, USA	
W5KAM	W5KAM	EM20BE	3,599.000	I VARA	00-23	KEN MILLEI	HOCKLEY, TEXAS, USA	
W5KAM	W5KAM	EM20BE	7,104.000	I VARA	00-23	KEN MILLEI	HOCKLEY, TEXAS, USA	
W5KAM	W5KAM	EM20BE	14,097.500	VARA	00-23	KEN MILLEI	HOCKLEY, TEXAS, USA	
W5KAM	W5KAM	EM20BE	3,599.000	I WINMOR 10	00-23	KEN MILLEI	HOCKLEY, TEXAS, USA	
W5KAM	W5KAM	EM20BE	7,104.000	I WINMOR 10	00-23	KEN MILLEI	HOCKLEY, TEXAS, USA	91
W5KAV	W5KAV	CN86KT	3,594.000	I Pactor 1,2,	00-23	Chuck Verd	Rochester, WA, U.S.A.	
W5KAV	W5KAV	CN86KT	10,145.900	Pactor 1,2,	00-23	Chuck Verd	Rochester, WA, U.S.A.	92
W5RGV	W5RGV	EL16CE	3,596.000	I ARDOP 20C	00-23	David DWo	Harlingen, Texas, USA	
W5RGV	W5RGV	EL16CE	7,102.000	I ARDOP 20C	00-23	David DWo	Harlingen, Texas, USA	
W5RGV	W5RGV	EL16CE	10,146.200	ARDOP 20C	00-23	David DWo	Harlingen, Texas, USA	
W5RGV	W5RGV	EL16CE	3,596.000	I Pactor 3	00-23	David DWo	Harlingen, Texas, USA	
W5RGV	W5RGV	EL16CE	7,102.000	I Pactor 3	00-23	David DWo	Harlingen, Texas, USA	
W5RGV	W5RGV	EL16CE	10,146.200	Pactor 3	00-23	David DWo	Harlingen, Texas, USA	
W5RGV	W5RGV	EL16CE	3,596.000	I VARA	00-23	David DWo	Harlingen, Texas, USA	
W5RGV	W5RGV	EL16CE	7,102.000	I VARA	00-23	David DWo	Harlingen, Texas, USA	
W5RGV	W5RGV	EL16CE	10,146.200	VARA	00-23	David DWo	Harlingen, Texas, USA	
W5RGV	W5RGV	EL16CE	3,596.000	I WINMOR 10	00-23	David DWo	Harlingen, Texas, USA	
W5RGV	W5RGV	EL16CE	7,102.000	I WINMOR 10	00-23	David DWo	Harlingen, Texas, USA	
W5RGV	W5RGV	EL16CE	10,146.200	WINMOR 10	00-23	David DWo	Harlingen, Texas, USA	
W6IDS	W6IDS	EM79NV	3,569.000	I ARDOP 50C	00-11	Howard	Richmond, IN, USA	93
W6IDS	W6IDS	EM79NV	7,084.500	I ARDOP 50C	00-23	Howard	Richmond, IN, USA	
W6IDS	W6IDS	EM79NV	7,102.500	I ARDOP 50C	00-23	Howard	Richmond, IN, USA	
W6IDS	W6IDS	EM79NV	3,576.900	I Pactor 1,2	00-11	Howard	Richmond, IN, USA	
W6IDS	W6IDS	EM79NV	3,587.500	I Pactor 1,2	00-11	Howard	Richmond, IN, USA	

CallSign	BaseCallSign	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
W6IDS	W6IDS	EM79NV	7,084.500	I Pactor 1,2	00-23	Howard	Richmond, IN, USA	
W6IDS	W6IDS	EM79NV	3,569.000	I WINMOR 5	00-11	Howard	Richmond, IN, USA	
W6IDS	W6IDS	EM79NV	7,084.500	I WINMOR 5	00-23	Howard	Richmond, IN, USA	
W6IDS	W6IDS	EM79NV	7,102.500	I WINMOR 5	00-23	Howard	Richmond, IN, USA	
W6IM	W6IM	DM12JR	7,072.000	I Pactor 1,2	00-23	San Diego \	San Diego, CA, United States	94
W6IM	W6IM	DM12JR	7,102.000	I Pactor 3	00-23	San Diego \	San Diego, CA, United States	
W6IM	W6IM	DM12JR	10,145.000	Pactor 3	00-23	San Diego \	San Diego, CA, United States	
W6IM	W6IM	DM12JR	14,097.000	Pactor 3	00-23	San Diego \	San Diego, CA, United States	
W7DEM	W7DEM	DM09DD	7,103.000	I ARDOP 20C	00-23	David Law	Carson City, NV, USA	95
W7DEM-1C	W7DEM	DM09DD	7,103.000	I Pactor 1,2,	00-23	David Law	Carson City, NV, USA	
W7DEM	W7DEM	DM09DD	7,103.000	I WINMOR 1	00-23	David Law	Carson City, NV, USA	
W7JSN	W7JSN	DN15BF	3,595.000	I ARDOP 20C	00-23	Jason	Union, OR, United States	96
W7JSN	W7JSN	DN15BF	3,595.000	I VARA	00-23	Jason	Union, OR, United States	
W7JSN	W7JSN	DN15BF	3,595.000	I WINMOR 1	00-23	Jason	Union, OR, United States	
W7VMI	W7VMI	CN87SK	3,588.500	I Pactor 3	00-23	Al Francisco	Vashon, WA, USA	97
W7VMI	W7VMI	CN87SK	7,102.500	I Pactor 3	00-23	Al Francisco	Vashon, WA, USA	
W7VMI	W7VMI	CN87SK	10,142.500	Pactor 3	00-23	Al Francisco	Vashon, WA, USA	
W7YAM	W7YAM	CN85JF	7,104.000	I ARDOP 20C	00-23	Potter	Newberg, Or, USA	98
W7YAM	W7YAM	CN85JF	7,104.000	I Pactor 1,2,	00-23	Potter	Newberg, Or, USA	
W7YAM	W7YAM	CN85JF	7,104.000	I VARA	00-23	Potter	Newberg, Or, USA	
W7YAM	W7YAM	CN85JF	7,104.000	I WINMOR 1	00-23	Potter	Newberg, Or, USA	
W8NSA	W8NSA	EN75LH	7,102.500	I Pactor 3	00-23	Jim Cook	Petoskey, MI, U.S.A	99
W9FE	W9FE	EM59AA	3,597.000	I ARDOP 20C	00-23	Carlos Arzu	Bunker Hill, IL, USA	100
W9FE	W9FE	EM59AA	7,104.500	I ARDOP 20C	00-23	Carlos Arzu	Bunker Hill, IL, USA	
W9FE	W9FE	EM59AA	3,597.000	I WINMOR 1	00-23	Carlos Arzu	Bunker Hill, IL, USA	
W9FE	W9FE	EM59AA	7,104.500	I WINMOR 1	00-23	Carlos Arzu	Bunker Hill, IL, USA	
WA4DYD-1	WA4DYD	EM83EV	28,193.500	ARDOP 50C	00-23	Stan Edwar	Monroe, GA, USA	101
WA4DYD	WA4DYD	EM83EV	28,121.500	Pactor 1,2,	00-23	Stan Edwar	Monroe, GA, USA	
WA4DYD-1	WA4DYD	EM83EV	28,193.500	WINMOR 5	00-23	Stan Edwar	Monroe, GA, USA	
WA5TED	WA5TED	DM93AN	7,103.000	I ARDOP 20C	00-23	GARY	lubbock, tx, lubbock	102
WA5TED	WA5TED	DM93AN	10,144.000	ARDOP 20C	00-23	GARY	lubbock, tx, lubbock	
WA5TED	WA5TED	DM93AN	14,098.500	ARDOP 20C	00-23	GARY	lubbock, tx, lubbock	
WA5TED	WA5TED	DM93AN	7,103.000	I VARA	00-23	GARY	lubbock, tx, lubbock	
WA5TED	WA5TED	DM93AN	10,144.000	VARA	00-23	GARY	lubbock, tx, lubbock	
WA5TED	WA5TED	DM93AN	14,098.500	VARA	00-23	GARY	lubbock, tx, lubbock	
WA5TED	WA5TED	DM93AN	7,103.000	I WINMOR 1	00-23	GARY	lubbock, tx, lubbock	
WA5TED	WA5TED	DM93AN	10,144.000	WINMOR 1	00-23	GARY	lubbock, tx, lubbock	
WA5TED	WA5TED	DM93AN	14,098.500	WINMOR 1	00-23	GARY	lubbock, tx, lubbock	
WA6TVD	WA6TVD	DM09DJ	3,586.500	I ARDOP 20C	00-23	George Mc	Reno, Nevada, United Stat	103
WA6TVD	WA6TVD	DM09DJ	7,103.500	I ARDOP 20C	00-23	George Mc	Reno, Nevada, United Stat	
WA6TVD	WA6TVD	DM09DJ	3,586.500	I Pactor 3	00-23	George Mc	Reno, Nevada, United Stat	
WA6TVD	WA6TVD	DM09DJ	7,103.500	I Pactor 3	00-23	George Mc	Reno, Nevada, United Stat	
WA6TVD	WA6TVD	DM09DJ	3,586.500	I WINMOR 1	00-23	George Mc	Reno, Nevada, United Stat	
WA6TVD	WA6TVD	DM09DJ	7,103.500	I WINMOR 1	00-23	George Mc	Reno, Nevada, United Stat	
WA7ODN	WA7ODN	CN82LN	3,597.000	I ARDOP 20C	00-23	Joe Stodola	Grants Pass, OR, USA	104

CallSign	BaseCallSign	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
WA7ODN	WA7ODN	CN82LN	7,102.500	IARDOP 20C	00-23	Joe Stodola	Grants Pass, OR, USA	
WA7ODN	WA7ODN	CN82LN	3,597.000	I V A R A	00-23	Joe Stodola	Grants Pass, OR, USA	
WA7ODN	WA7ODN	CN82LN	7,102.500	I V A R A	00-23	Joe Stodola	Grants Pass, OR, USA	
WA7ODN	WA7ODN	CN82LN	3,597.000	I W I N M O R	100-23	Joe Stodola	Grants Pass, OR, USA	
WA7ODN	WA7ODN	CN82LN	7,102.500	I W I N M O R	100-23	Joe Stodola	Grants Pass, OR, USA	
WB2LMV	WB2LMV	FN21TS	7,103.500	IARDOP 20C	00-23	Glenn L Ro	Napanoch, NY, USA	105
WB2LMV	WB2LMV	FN21TS	7,103.500	I P a c t o r 1,2,	00-23	Glenn L Ro	Napanoch, NY, USA	
WB2LMV	WB2LMV	FN21TS	7,103.500	I V A R A	00-23	Glenn L Ro	Napanoch, NY, USA	
WB2LMV	WB2LMV	FN21TS	7,103.500	I W I N M O R	100-23	Glenn L Ro	Napanoch, NY, USA	
WB5HUP	WB5HUP	EM50PM	7,104.000	IARDOP 20C	00-23	Lloyd Kirk	Vanceleave, MS, US	106
WB5HUP	WB5HUP	EM50PM	7,104.000	I V A R A	00-23	Lloyd Kirk	Vanceleave, MS, US	
WB5HUP	WB5HUP	EM50PM	7,104.000	I W I N M O R	100-23	Lloyd Kirk	Vanceleave, MS, US	
WB9FHP	WB9FHP	EM68SM	3,576.500	IARDOP 50C	00-23	Larry B Jon	Paoli, IN, USA	107
WB9FHP	WB9FHP	EM68SM	7,075.500	IARDOP 50C	00-23	Larry B Jon	Paoli, IN, USA	
WB9FHP	WB9FHP	EM68SM	10,134.500	ARDOP 50C	00-23	Larry B Jon	Paoli, IN, USA	
WB9FHP	WB9FHP	EM68SM	10,147.500	ARDOP 50C	00-23	Larry B Jon	Paoli, IN, USA	
WB9FHP	WB9FHP	EM68SM	14,079.500	ARDOP 50C	00-23	Larry B Jon	Paoli, IN, USA	
WB9FHP	WB9FHP	EM68SM	14,086.500	ARDOP 50C	00-23	Larry B Jon	Paoli, IN, USA	
WB9FHP	WB9FHP	EM68SM	21,076.500	ARDOP 50C	00-23	Larry B Jon	Paoli, IN, USA	
WB9FHP	WB9FHP	EM68SM	3,576.500	I W I N M O R	500-23	Larry B Jon	Paoli, IN, USA	
WB9FHP	WB9FHP	EM68SM	7,075.500	I W I N M O R	500-23	Larry B Jon	Paoli, IN, USA	
WB9FHP	WB9FHP	EM68SM	10,134.500	WINMOR 500	00-23	Larry B Jon	Paoli, IN, USA	
WB9FHP	WB9FHP	EM68SM	10,147.500	WINMOR 500	00-23	Larry B Jon	Paoli, IN, USA	
WB9FHP	WB9FHP	EM68SM	14,079.500	WINMOR 500	00-23	Larry B Jon	Paoli, IN, USA	
WB9FHP	WB9FHP	EM68SM	14,086.500	WINMOR 500	00-23	Larry B Jon	Paoli, IN, USA	
WB9FHP	WB9FHP	EM68SM	21,076.500	WINMOR 500	00-23	Larry B Jon	Paoli, IN, USA	
WC7EC	WC7EC	CN95JO	3,596.500	I P a c t o r 1,2	00-23	H Hugh Flir	Mosier, OR, US	108
WC7EC	WC7EC	CN95JO	7,102.500	I P a c t o r 3	00-23	H Hugh Flir	Mosier, OR, US	
WC7EC	WC7EC	CN95JO	10,144.700	P a c t o r 1,2	00-23	H Hugh Flir	Mosier, OR, US	
WD1O	WD1O	FN53IX	3,589.500	I P a c t o r 1,2,	00-23	Richard J B	Tenants Harbor, ME	109
WD1O	WD1O	FN53IX	7,102.500	I P a c t o r 1,2,	00-23	Richard J B	Tenants Harbor, ME	
WD1O	WD1O	FN53IX	3,589.500	I W I N M O R	100-23	Richard J B	Tenants Harbor, ME	
WD1O	WD1O	FN53IX	7,102.500	I W I N M O R	100-23	Richard J B	Tenants Harbor, ME	
WD4SEN	WD4SEN	EM90CC	3,587.500	IARDOP 20C	00-23	Ray Cook	Middleburg, Florida, USA	110
WD4SEN	WD4SEN	EM90CC	7,101.500	IARDOP 20C	00-23	Ray Cook	Middleburg, Florida, USA	
WD4SEN	WD4SEN	EM90CC	10,142.500	ARDOP 20C	00-23	Ray Cook	Middleburg, Florida, USA	
WD4SEN	WD4SEN	EM90CC	14,097.000	ARDOP 20C	00-23	Ray Cook	Middleburg, Florida, USA	
WD4SEN	WD4SEN	EM90CC	3,587.500	I P a c t o r 1,2,	00-23	Ray Cook	Middleburg, Florida, USA	
WD4SEN	WD4SEN	EM90CC	7,101.500	I P a c t o r 1,2,	00-23	Ray Cook	Middleburg, Florida, USA	
WD4SEN	WD4SEN	EM90CC	10,142.500	P a c t o r 1,2,	00-23	Ray Cook	Middleburg, Florida, USA	
WD4SEN	WD4SEN	EM90CC	14,097.000	P a c t o r 1,2,	00-23	Ray Cook	Middleburg, Florida, USA	
WD4SEN	WD4SEN	EM90CC	3,587.500	I V A R A	00-23	Ray Cook	Middleburg, Florida, USA	
WD4SEN	WD4SEN	EM90CC	7,101.500	I V A R A	00-23	Ray Cook	Middleburg, Florida, USA	
WD4SEN	WD4SEN	EM90CC	10,142.500	V A R A	00-23	Ray Cook	Middleburg, Florida, USA	
WD4SEN	WD4SEN	EM90CC	14,097.000	V A R A	00-23	Ray Cook	Middleburg, Florida, USA	

CallSign	BaseCallSign	GridSquare	Frequency	Mode	Hours	Sysop	QTH	
WD4SEN	WD4SEN	EM90CC	3,587.500	I WINMOR	100-23	Ray Cook	Middleburg, Florida, USA	
WD4SEN	WD4SEN	EM90CC	7,101.500	I WINMOR	100-23	Ray Cook	Middleburg, Florida, USA	
WD4SEN	WD4SEN	EM90CC	10,142.500	WINMOR	100-23	Ray Cook	Middleburg, Florida, USA	
WD4SEN	WD4SEN	EM90CC	14,097.000	WINMOR	100-23	Ray Cook	Middleburg, Florida, USA	
WH6FG	WH6FG	BL01FW	7,101.500	I ARDOP	2000-23	James R. Pi	Kalaheo, Hi, USA	111
WH6FG	WH6FG	BL01FW	14,096.500	ARDOP	2000-23	James R. Pi	Kalaheo, Hi, USA	
WH6FG	WH6FG	BL01FW	21,091.500	ARDOP	2000-23	James R. Pi	Kalaheo, Hi, USA	
WH6FG	WH6FG	BL01FW	7,101.500	I Pactor	1,2, 00-23	James R. Pi	Kalaheo, Hi, USA	
WH6FG	WH6FG	BL01FW	14,096.500	Pactor	1,2, 00-23	James R. Pi	Kalaheo, Hi, USA	
WH6FG	WH6FG	BL01FW	21,091.500	Pactor	1,2, 00-23	James R. Pi	Kalaheo, Hi, USA	
WH6FG	WH6FG	BL01FW	7,101.500	I VARA	00-23	James R. Pi	Kalaheo, Hi, USA	
WH6FG	WH6FG	BL01FW	14,096.500	VARA	00-23	James R. Pi	Kalaheo, Hi, USA	
WH6FG	WH6FG	BL01FW	21,091.500	VARA	00-23	James R. Pi	Kalaheo, Hi, USA	
WH6FQE-1	WH6FQE	BL11AJ	7,102.500	I ARDOP	2000-23	RC Andersc	Aiea, Hawaii, USA	112
WH6FQE-1	WH6FQE	BL11AJ	10,145.000	ARDOP	2000-23	RC Andersc	Aiea, Hawaii, USA	
WH6FQE-1	WH6FQE	BL11AJ	14,103.500	ARDOP	2000-23	RC Andersc	Aiea, Hawaii, USA	
WH6FQE-1	WH6FQE	BL11AJ	21,093.000	ARDOP	2000-23	RC Andersc	Aiea, Hawaii, USA	
WH6FQE-1	WH6FQE	BL11AJ	28,148.500	ARDOP	2000-23	RC Andersc	Aiea, Hawaii, USA	
WH6FQE	WH6FQE	BL11AJ	7,102.500	I Pactor	1,2, 00-23	RC Andersc	Aiea, Hawaii, USA	
WH6FQE	WH6FQE	BL11AJ	10,145.000	Pactor	1,2, 00-23	RC Andersc	Aiea, Hawaii, USA	
WH6FQE	WH6FQE	BL11AJ	14,103.500	Pactor	1,2, 00-23	RC Andersc	Aiea, Hawaii, USA	
WH6FQE	WH6FQE	BL11AJ	21,093.000	Pactor	1,2, 00-23	RC Andersc	Aiea, Hawaii, USA	
WH6FQE	WH6FQE	BL11AJ	28,148.500	Pactor	1,2, 00-23	RC Andersc	Aiea, Hawaii, USA	
WH6FQE-1	WH6FQE	BL11AJ	7,102.500	I VARA	00-23	RC Andersc	Aiea, Hawaii, USA	
WH6FQE-1	WH6FQE	BL11AJ	14,103.500	VARA	00-23	RC Andersc	Aiea, Hawaii, USA	
WH6FQE-1	WH6FQE	BL11AJ	7,102.500	I WINMOR	100-23	RC Andersc	Aiea, Hawaii, USA	
WH6FQE-1	WH6FQE	BL11AJ	10,145.000	WINMOR	100-23	RC Andersc	Aiea, Hawaii, USA	
WH6FQE-1	WH6FQE	BL11AJ	14,103.500	WINMOR	100-23	RC Andersc	Aiea, Hawaii, USA	
WH6FQE-1	WH6FQE	BL11AJ	21,093.000	WINMOR	100-23	RC Andersc	Aiea, Hawaii, USA	
WH6FQE-1	WH6FQE	BL11AJ	28,148.500	WINMOR	100-23	RC Andersc	Aiea, Hawaii, USA	
WW4MSK	WW4MSK	EM74UW	3,588.500	I ARDOP	2000-23	Wallace Wi	Mineral Bluff, GA, USA	113
WW4MSK	WW4MSK	EM74UW	3,592.500	I ARDOP	2000-23	Wallace Wi	Mineral Bluff, GA, USA	
WW4MSK	WW4MSK	EM74UW	7,103.500	I ARDOP	2000-23	Wallace Wi	Mineral Bluff, GA, USA	
WW4MSK	WW4MSK	EM74UW	7,105.500	I ARDOP	5000-23	Wallace Wi	Mineral Bluff, GA, USA	
WW4MSK	WW4MSK	EM74UW	3,588.500	I Pactor	1,2 00-23	Wallace Wi	Mineral Bluff, GA, USA	
WW4MSK	WW4MSK	EM74UW	3,592.500	I Pactor	1,2, 00-23	Wallace Wi	Mineral Bluff, GA, USA	
WW4MSK	WW4MSK	EM74UW	7,103.500	I Pactor	1,2, 00-23	Wallace Wi	Mineral Bluff, GA, USA	
WW4MSK	WW4MSK	EM74UW	7,105.500	I Pactor	1,2 00-23	Wallace Wi	Mineral Bluff, GA, USA	
WW4MSK	WW4MSK	EM74UW	3,592.500	I VARA	00-23	Wallace Wi	Mineral Bluff, GA, USA	
WW4MSK	WW4MSK	EM74UW	7,103.500	I VARA	00-23	Wallace Wi	Mineral Bluff, GA, USA	
WW4MSK	WW4MSK	EM74UW	3,588.500	I WINMOR	100-23	Wallace Wi	Mineral Bluff, GA, USA	
WW4MSK	WW4MSK	EM74UW	3,592.500	I WINMOR	100-23	Wallace Wi	Mineral Bluff, GA, USA	
WW4MSK	WW4MSK	EM74UW	7,103.500	I WINMOR	100-23	Wallace Wi	Mineral Bluff, GA, USA	
WW4MSK	WW4MSK	EM74UW	7,105.500	I WINMOR	500-23	Wallace Wi	Mineral Bluff, GA, USA	
WX4PCA-1	WX4PCA	EM73NU	3,591.000	I WINMOR	100-23	LEE	DALLAS, GA, PAULDING	114

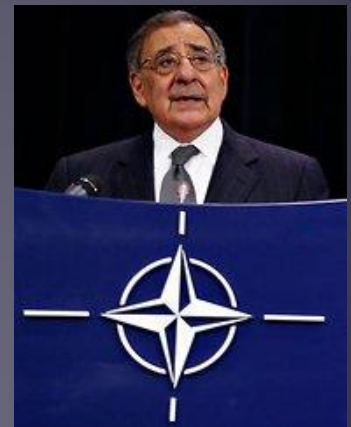
Appendix 3.
ARSF/Winlink Marketing Presentation

The *Winlink 2000* Radio e-Mail Network

E-mail with or without the Internet



Developed by
The Winlink Development Team



Defense Secretary Leon Panetta warns of "Cyber Pearl Harbor".

What is Winlink 2000

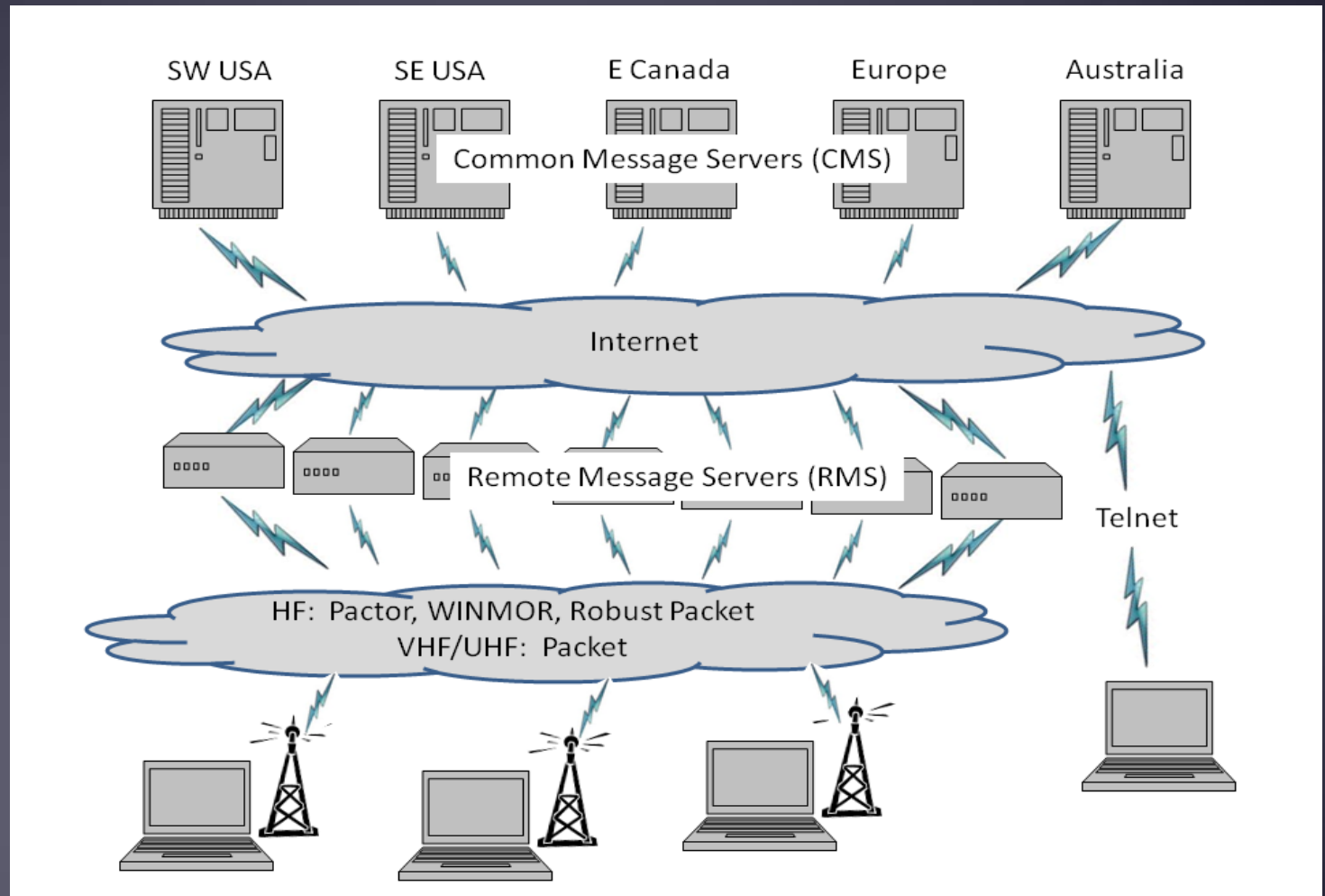
- Worldwide system for sending e-mail via radio
- Provides e-mail from almost anywhere in the world.
- Provides vital support for 10,000+ sailors
- Adopted for contingency communication by many government agencies
- Used by infrastructure-critical NGOs such as International & American Red Cross, Southern Baptist Disaster Relief, DHS Tiered AT&T Disaster Response & Recovery, FedEx, Bridgestone Emergency Response Team, etc.

Winlink Operating Modes

- For efficiency, reliability and flexibility, the Winlink system provides three modes for transferring messages:
 - **Conventional** system that stores messages on CMS “backbone” servers.
 - **Hybrid MESH network** that transfers messages over long distances using radio-only HF forwarding.
 - **Peer-to-Peer** direct connections between two client stations without any use of Internet or infrastructure.

Winlink 2000 Architecture (Conventional Mode)

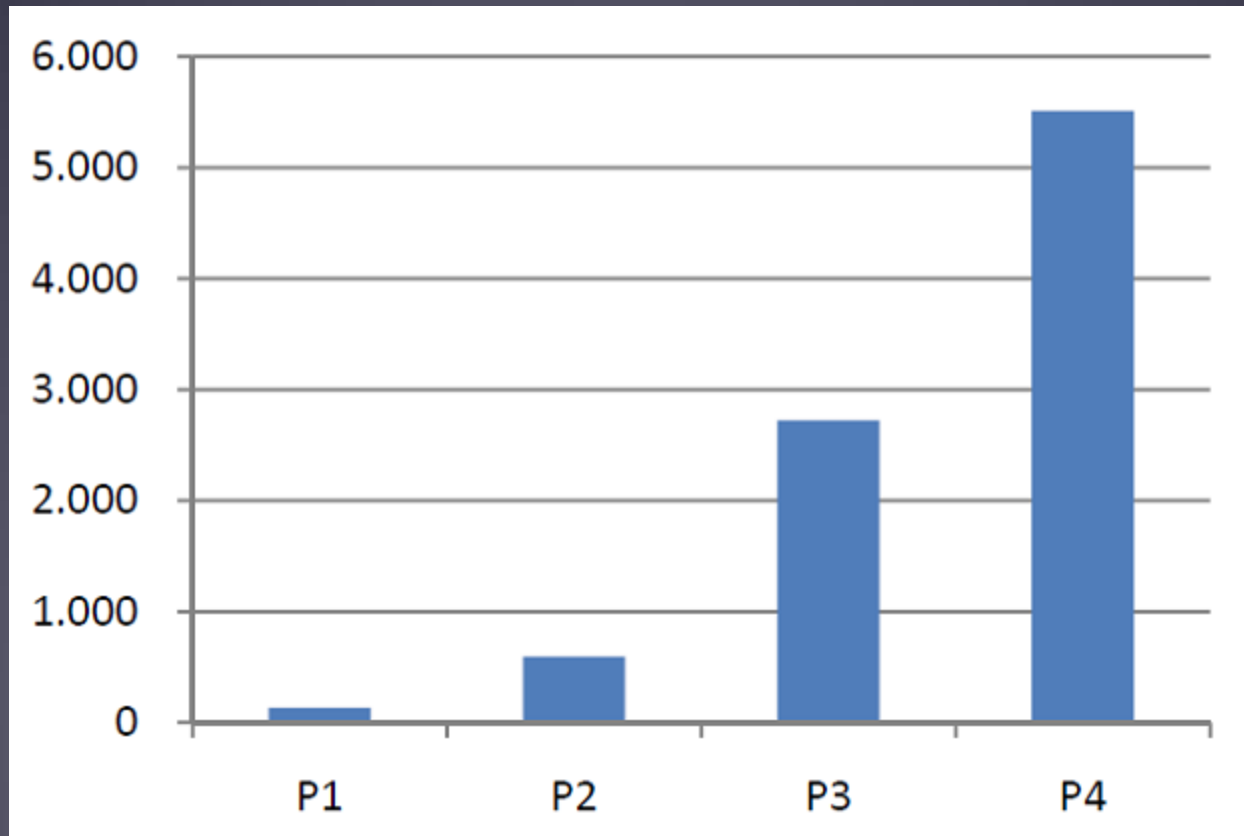
- CMS
- RMS
(gateway)
- Client
(you)



Winlink Connection Modes

- **HF Pactor 1, 2, 3 and 4** – Fast and reliable but requires an expensive modem (\$1500+).
- **HF WINMOR** – “Poor man’s Pactor”. Not as good as Pactor, but operates with inexpensive sound card device (\$100). Speed between Pactor 2 and 3.
- **VHF/UHF Packet**
 - **9600 baud** – Fast, reliable, range limited and requires \$400 modem (Kantronics or SCS Tracker).
 - **1200 baud** – Slower, but can use inexpensive Byonics TinyTrak-4 modem.
- **Telnet** – Non-radio connection through the Internet. Good for training and use if radio is down or network is busy.

Pactor Speeds (typical k bits per second)



Signalink External Soundcard for Winmor

- External Signalink soundcard costs about \$100 and works well for Winmor and all other digital modes.
- Connect to computer via USB and radio data port.
- Winmor speed is between Pactor 2 and Pactor 3.



What Winlink 2000 Offers for EmComm

- Flexibility:
 - Internet-only (Telnet) direct connections to Winlink.
 - Radio link bridge to Internet e-mail
 - Radio-only store and forward messaging
 - Peer-to-peer connections between radio end-users
 - **Various levels of security including message encryption**
 - 100% accurate transmissions
- Interoperability: Connect different types of systems
 - Bridge different radio capabilities (VHF/UHF/HF)
 - Bridge protocols: Pactor, Winmor, Packet
 - Seamless integration with Internet e-mail
- Geographical dispersion and redundancy for reliability

What Winlink Offers for EmComm (more)

- Standard e-mail format with many features
 - Binary file attachments (pictures, pdf, spreadsheets)
 - Automatic message compression/decompression
- Time independence (except for peer-to-peer)
- Good operation at most power levels
- Not limited by station-to-station propagation
- Message logging, and ICS report generation
- Wide adoption by EmComm related agencies

Concern About “Cyber-Pearl Harbor” Attack

- *The New York Times*, October 11, 2012
- “The most destructive possibilities, Mr. Panetta said, involve ‘cyber-actors launching several attacks on our critical infrastructure at one time, in combination with a physical attack.’ He described the collective result as a ‘cyber-Pearl Harbor that would cause physical destruction and the loss of life, an attack that would paralyze and shock the nation and create a profound new sense of vulnerability’.”

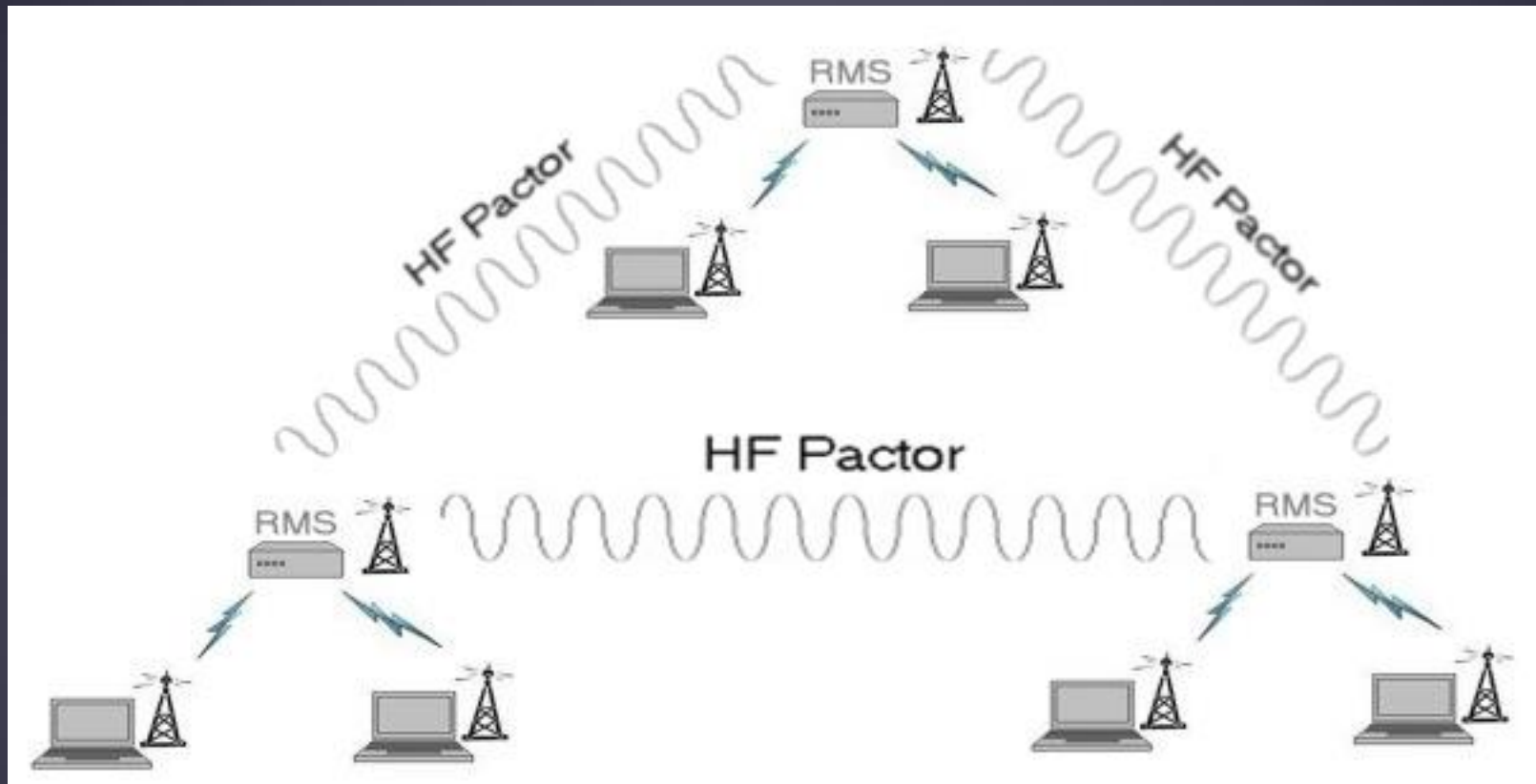
Winlink Without the Internet

- *The New York Times, Feb. 28, 2014*

“Mobile, landline and Internet access has been cut off in parts of the Crimea region, according to a statement from Ukrtelecom, the Ukrainian National Telecommunications operator.

“The company said on Friday that ‘unknown people seized several communications hubs in Crimea’ and damaged fiber-optic cable belonging to the company. As a result, the company said it had ‘lost the technical capacity to provide connection between the peninsula and the rest of Ukraine and probably across the peninsula, too.’”

Radio-Only Winlink Network (No Internet)



Key Points About the Winlink Hybrid Network

- Wide-area, MESH network using HF forwarding.
- Currently providing nation-wide e-mail support for MARS, SHARES and civil agencies.
- Satisfies DoDI requirement for radio-only operation.
- Uses standard Winlink client e-mail programs.
- Supports standard e-mail with file attachments.
- Message routing is dynamic and fully automatic.
- Radio Message Servers (RMSs) run in normal Winlink Internet mode and switch automatically to radio-only network mode to forward radio-only messages.
- Users can connect using Pactor, Winmor or Packet.
- Pactor is used for backbone links between RMSs.

Selecting Message Pickup Stations

- During radio-only (no Internet) operation, messages sent to you will be stored in databases on the RMSs you select as your *Message Pickup Stations* (MPS).
- Each person can select up to 3 MPS, but to reduce network traffic, it is recommended that only 2 MPS be used.
- A duplicate copy of each message is delivered to each MPS, and you can pick up your messages from either MPS.
- Once a message has been downloaded from one MPS, RMS Express will not download the same message from another MPS.
- You can register MPS with RMS Express using an Internet connection or a radio message.

Updating the MPS List and Selecting MPS

The screenshot shows the 'Hybrid Network Parameters' dialog box. It contains a title bar with a close button, a descriptive text box, a section for 'Message Pickup Stations (MPS)' with three dropdown menus, several action buttons, a 'Last update' timestamp, a warning message, a checkbox, and 'Save'/'Cancel' buttons at the bottom.

Callouts and their targets:

- Select first MPS:** Points to the 'MPS 1' dropdown menu.
- Select second MPS:** Points to the 'MPS 2' dropdown menu.
- Register MPS via Internet:** Points to the 'Register MPS via Internet' button.
- Download list of available MPS via Internet:** Points to the 'Update list of RMS available as MPS' button.
- Display list of available MPS:** Points to the 'Display list of RMS available as MPS' button.
- Queue radio message to register MPS:** Points to the 'Queue radio message to register my MPS' button.

Dialog Box Content:

Hybrid Network Parameters

Parameters specified on this screen control the flow of messages when they are being sent via radio-only forwarding.

Message Pickup Stations (MPS)

MPS 1: N5TW
MPS 2: VE1YZ
MPS 3:

Update list of RMS available as MPS
Display list of RMS available as MPS
Register MPS via Internet
Queue radio message to register my MPS

Last update: 2014-04-25-11:02

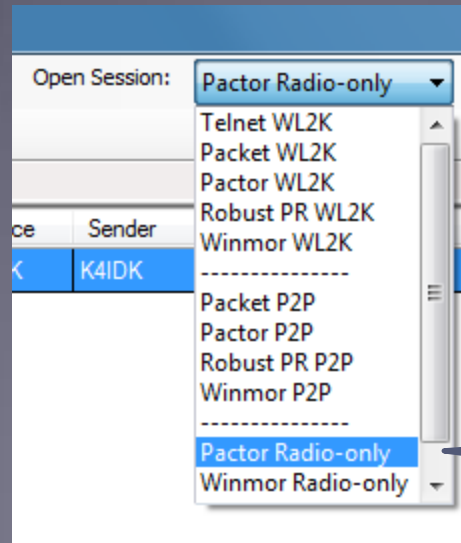
When operating in radio-only mode, incoming messages for you will be held on the designated Message Pickup Station RMS until you pick them up.

☐ Add /auto/ to subject lines

Save Cancel

Sending/Receiving Radio-Only Messages

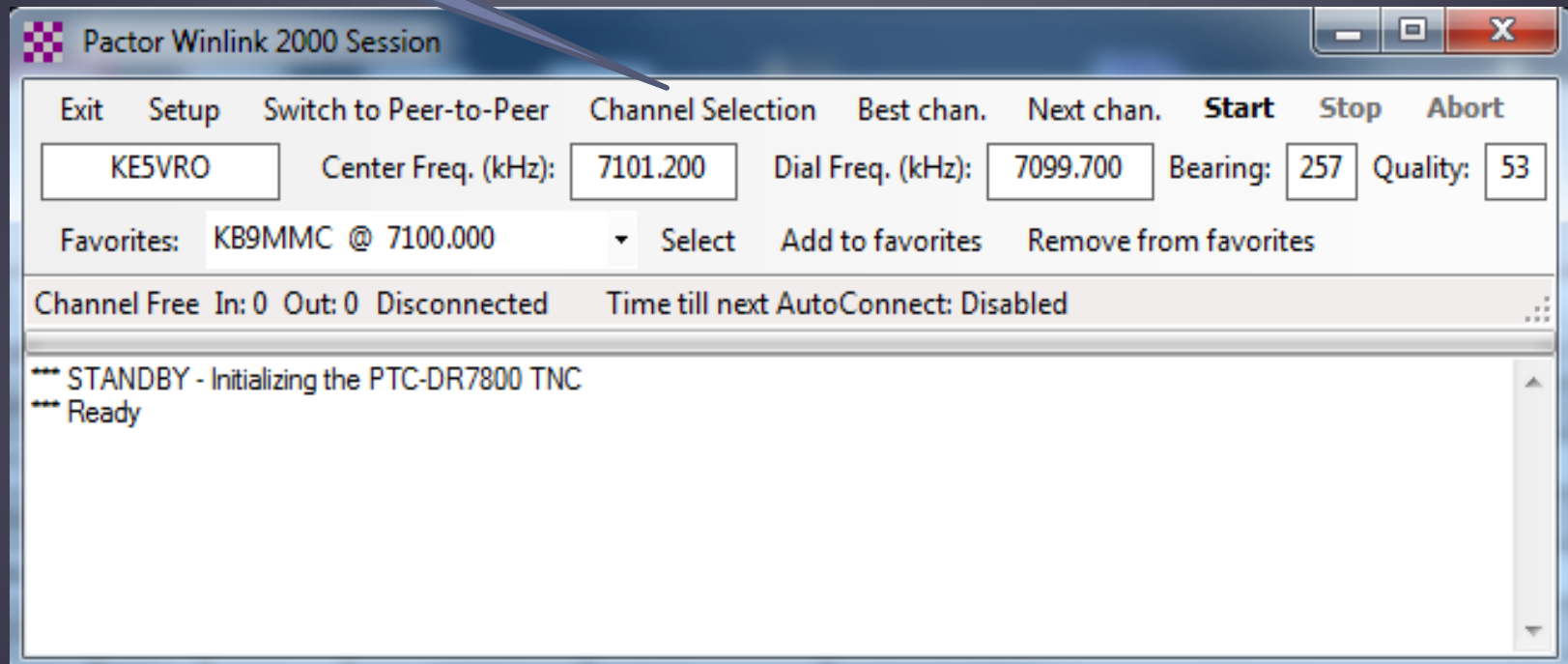
- Compose one or more messages to send
- Open a “Radio-only” Pactor or Winmor sending session
- Select the hybrid RMS
- Start sending



Select Pactor or
Winmor Radio-only
session on main screen

Open a Pactor or Winmor Sending Session and Click the Button to Select Channels

Select RMS
channel



Select a Hybrid RMS Channel

Update channels by
Internet or radio

HF Channel Selector

Exit Select Update Table Update Table Via Radio SFI Radio-only capable RMS

Callsign	Frequency (kHz)	Mode	Grid Square	Hours	Group	Distance (mi)	Bearing (Degrees)	Path Reliability Estimate	Path Quality Estimate
KC4TVO	10139.500	P3	EM85WX	00-23	PUBLIC	265	089	80	49
N4MEH	10143.700	P4, P3, P2, P1	EM84QM	00-23	PUBLIC	261	112	80	48
WX4J	14066.900	P2, P1	EM90EB	00-23	PUBLIC	511	142	72	47
K8KHW	10134.500	P2, P1	EM99UJ	00-23	PUBLIC	388	051	71	46
KN6KB	14066.500	P2, P1	EL98PF	00-23	PUBLIC	647	144	66	44
KN6KB	14110.500	P3	EL98PF	00-23	PUBLIC	647	144	66	44
VA3LKI	14112.000	P4, P3, P2, P1	FN04CR	00-23	PUBLIC	706	030	63	44
KK5AN	14098.700	P3	EM11CC	00-23	PUBLIC	713	245	61	43
WB9AYD	14098.700	P3, P2, P1	EL87SF	00-23	PUBLIC	660	156	65	43
W5WSR	14105.600	P3, P2, P1	EL29GA	00-23	PUBLIC	694	228	62	43
KC4TVO	7103.700	P3, P2, P1	EM85WX	00-23	PUBLIC	265	089	61	43
N5TW	14110.000	P3	EM10CP	00-23	EMCOMM	729	243	60	43
N4MEH	7104.500	P4, P3, P2, P1	EM84QM	00-23	PUBLIC	261	112	61	42
WX4J	10143.400	P3	EM90EB	00-23	PUBLIC	511	142	57	42
KE5VRO	7101.200	P3, P2, P1	EM34UU	00-23	EMCOMM	315	257	52	41
VA3LKI	18108.500	P4, P3, P2, P1	FN04CR	00-23	PUBLIC	706	030	50	40
KE5VRO	7068.900	P2, P1	EM34UU	00-23	EMCOMM	315	257	52	40

Make sure list
of radio-only
RMS is
selected

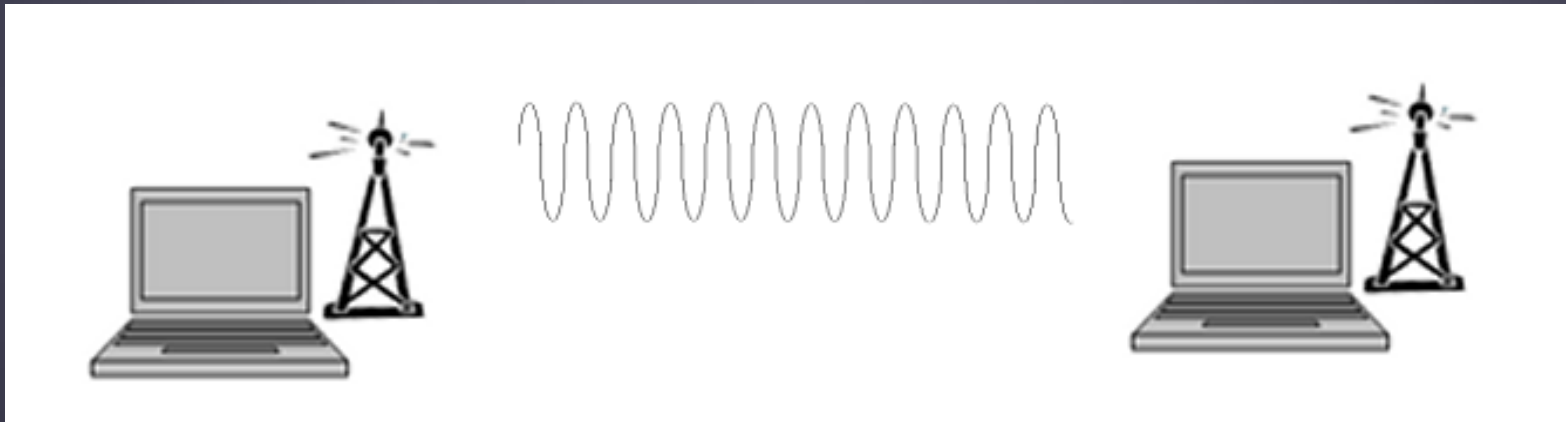
Double click
the channel
you want to
select

Adaptive Message Routing Through MESH Network

- Fully automatic, wide-area MESH network routing.
- Not limited by source-to-destination propagation.
- If a direct link is not available to the destination MPS, intermediate RMS will relay the message.
- The optimum path is computed by each RMS based on HF propagation estimates, time of day, Pactor speed, message size and other factors. This is *Adaptive Routing*.
- Each intermediate RMS recomputes the optimum path.
- If a RMS is unavailable, the system will route around it.
- Busy RMS are tried a few times and then routed around.
- Radio messages can be relayed through RMS that are or are not connected to the Internet.

Winlink Peer-To-Peer Radio-Only Operation

- Peer-to-peer: direct radio connection between end-users
- The Internet is not used, all communication by radio.
- Only the two client stations are involved.
- 100% error-free transmission and file attachments.



Composing a Peer-to-Peer Message

- “To” field is callsign of station to receive message.
- Must check the radio button specifying peer-to-peer.

Enter a new message

Close Select Template Attachments Post to Outbox Save in Drafts Folder Spell Check

From: W4PHS

To: K4CJX;

Cc:

Subject: Peer to peer message

Attach:

☐ Winlink Message ☒ Peer-to-Peer Message ☐ Request read receipt

Steve,

This message is being sent peer-to-peer.

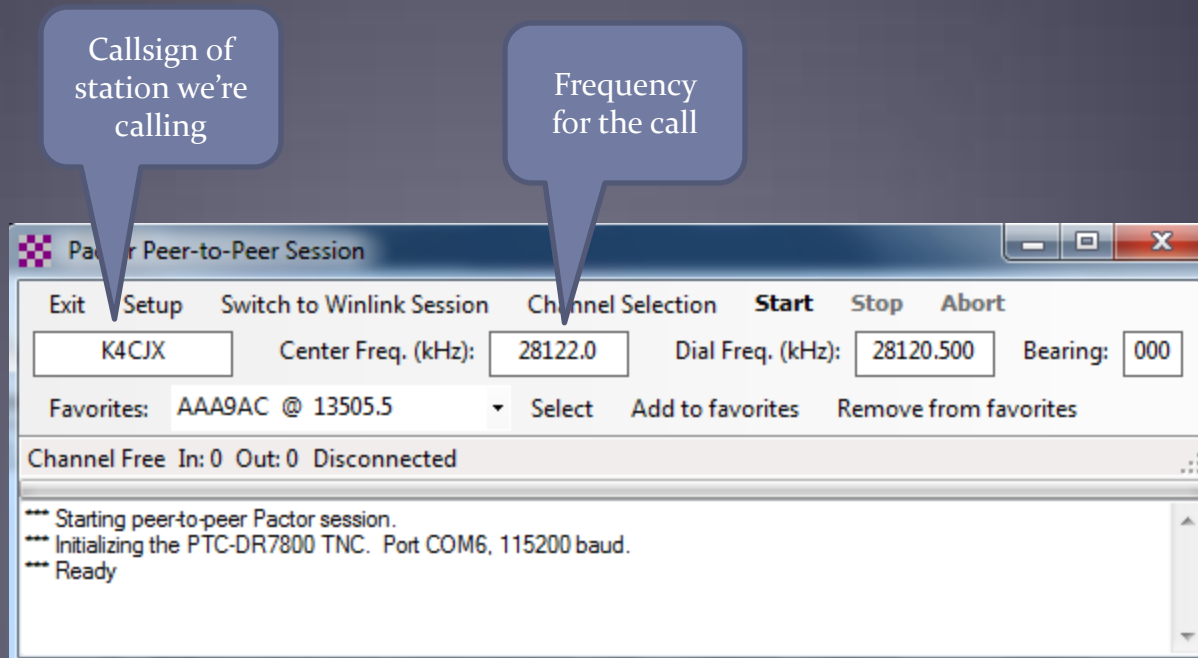
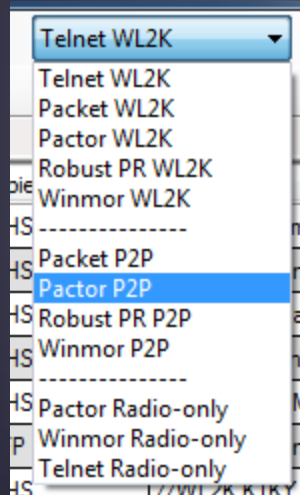
Phil
W4PHS

Select “Peer-to-Peer Message”

Send message when connected to this station

Sending a Peer-to-Peer Message

- Open a peer-to-peer (“P2P”) session.
- Manually enter the stations callsign and frequency.



Conclusion

- Winlink use continues to grow, especially for EmComm.
- The Winlink Development Team continues to enhance capabilities to adapt to changing needs.
- Winlink now has three modes of operation:
 - Conventional connections to a CMS backbone server
 - Hybrid (Radio-only) MESH network with HF relaying
 - Peer-to-Peer connections between client stations
- The new Winlink Hybrid Network allows Winlink to continue handling messages via HF forwarding if the Internet is down.
- Steady improvements are being implemented.



- Thank you!
- Questions?
- Information about Winlink can be found at www.winlink.org
- White papers about Winlink can be found at www.qrz.com/db/W4PHS