



Watts News



Monthly Newsletter of the
Olympia Amateur Radio Society
P.O. Box 2861, Olympia, WA 98507

April 2009
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President's Message

Hello everyone —

I hope April is going well for you. For those who attended Comm Academy, I hope it was interesting and educational.

I want to thank my daughters Alethea [KD7WXL] and Vania [KE7NVS] who in obedience to their dictatorial father got up at 0530 and came out just in case they might be needed.

73,

Klaus, AC7MG

— . . . —

Ward Silver to speak at April meeting

Today, April 4, I had the privilege of helping the MS walk. We met at Horizons Elementary School at around 0700 and talked until other people showed up, then once we were given our locations, we went out and got set up at those locations. The walk went pretty well and to the best of my knowledge, only one person was injured and that was at the school itself I believe.

When I was initially contacted about this event this year, I was informed we had set up the route in the past, but I had no knowledge of this. When I rode the course on bicycle, I noticed there were simple signs marking the course and another at the turn around point. I felt a bit foolish when I realized we could have done this as well, so perhaps next year.

I want to personally thank Tom [KE7EJJ], Larry [KD7TQW], and Sheryl [KE7YZA] for their part in making this a success. In addition

Ward Silver, N0AX, noted ham radio author and contributing editor to QST Magazine, will join us for the OARS April 15th meeting at the American Red Cross building in Olympia. Ward's very popular presentation "200 Meters and Beyond — The History and Future of Ham Radio" will be the theme for the evening. A full house is expected, so plan now to attend.

H. Ward Silver has the experience of a 20-year career as an electrical engineer developing instrumentation and medical electronics. He also spent 8 years in broadcasting, both programming and engineering.

In 2000 he turned to teaching and writing as a second career. He is a contributing editor to the Ameri-

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can Radio Relay League (ARRL) and author of the popular "Hands-On Radio" column in QST magazine every month. He is the author of the ARRL's Amateur Radio license study guides and numerous other articles. He developed the ARRL's on-line courses, "Antenna Design and Construction," "Analog Electronics," and "Digital Electronics." Along with his comedic alter-ego, Dr Beldar, Ward is a sought-after speaker and lecturer among hams.

When not in front of a computer screen, you will find Ward working on his mandolin technique and compositions.



Technical Curiosities

— By Lee Chambers, K17SS

It so happens that if a radio wave of constant wavelength is transmitted in pulses, it can be detected in a receiver at more than one radio frequency! The wave's power is spread over a band of frequencies. This is true regardless of how "sharply" the transmitter's circuitry is tuned.

This behavior is perplexing. If we plot one or more

License Exam Sessions
 6:00 pm before each monthly OARS meeting
 Walk-ins allowed
 To apply contact Klaus Neubert 753-1493
oars-ve@comcast.net

complete cycles of a transmitter's output wave and measure the spacing between zero crossings or even the rate of change of the wave's amplitude with time, we'll observe no change whatsoever in frequency as a result of having chopped the wave into pulses. No matter how we define frequency — whether in terms of wavelength, or period, or rate of change of phase with time — the transmitted wave has only one frequency.

If we transmit a continuous wave at a frequency (f?) and slowly tune a receiver — one hertz at a time — through the transmitter's frequency, we will find a strong output from the receiver at a single point on our hypothetical and very selective radio dial.

But, if we periodically key our CW transmitter "on" and "off" so that it transmits a continuous stream of pulses having a constant repetition of, for arguments sake, 1000 times a second, (a 1 kilohertz "Pulse Repetition Rate" — "PRF"), and although we make our keying as precise as we can, our transmitter's radio frequency phases between successive pulses will not be the same, but will vary slightly and randomly from pulse to pulse. Because of our signal's lower average power (the transmitter is "on" only part of the time), the receiver's output will not be seen as strong as before. It still will occur at the same point on the dial, which we'll call "f?". However, and much more interestingly, a careful plot of receiver output versus frequency won't be as sharp as before. In fact, if we look closely, we'll find received RF in a continuous band of frequencies extending from 1000 hertz below the transmitter's carrier frequency to 1000 hertz above it! Our null-to-null bandwidth will be 2 kilohertz.

Our signal also produces an output in a succession of contiguous bands above and below this central one. Within these outer bands, which are half as wide as the central one, the output is very much weaker, becoming more so the farther the bands are removed from f?. The plot thickens!

OARS OFFICERS FOR 2009			
President	Klaus Neubert	AC7MG	753-1493
Vice President	Ken Julian	K7VOX	951-6352
Secretary	Paul Taylor	KC7LA	866-0683
Treasurer	Ed Fitzgerald	N7WW	491-2289
Member at Large	Mark Dempsey	KE7JTU	943-0165
KEY CONTACTS			
RFI Committee	Ghery Pettit	N6TPT	412-1340
Repeater Committee	Larry Watkinson	KC7CKO	943-4352
Club License Trustee	Duane Braford	WB7ROZ	412-1902
Information Net	Duane Braford	WB7ROZ	412-1902
ARES Net	Tom Bohon	KE7EJJ	456-6260
OLY Packet Node	Larry Ikenberry	K7APT	943-7208
	Rick Taylor	K7CAH	943-6793
Packet BBS	George Lanning	KB6LE	866-2185
Newsletter	George Lanning	KB6LE	866-2185
OARS Website	George Lanning	KB6LE	866-2185
Classes	Lee Chambers	K17SS	866-0236
License Exams	Klaus Neubert	AC7MG	753-1493
Equip. Custodian	Larry Watkinson	KC7CKO	943-4352
REPEATERS:	147.36 MHz	224.46 MHz	441.40 MHz
PACKET:	145.07 MHz OLY Node		147.40 BBS
Membership is open to all interested radio amateurs. Yearly dues are: \$20 for individual, \$25 for family.			

Now, the width of our central band might be created by either the pulse repetition rate, or the pulse width, or both.

To see if it is the PRF, we transmit at several progressively lower PRFs. But, except for a reduction in receiver output due the lower average power (duty cycle) received, the receiver's spectrum output is unchanged. For a signal of the sort our simple transmitter puts out, the PRF does not affect the spectrum. In fact, if we stretch the "inter-pulse" period to days(!), we'll find that the spectrum of a single pulse is exactly the same as that of a stream of independent pulses. Bandwidth, we'll find, is not determined by the pulse repetition frequency.

What about pulse width? To find out, we repeat our transmissions using progressively narrower pulses. Our final pulse width is 1 microsecond long. The result of narrowing our pulses is striking. As pulse width decreases, the received bandwidth increases — tremendously. For the final pulse width we tried — 1 microsecond — the spectral bands we'll receive will extend from 1,000,000 hertz below f_c , to 1,000,000 hertz above it!

Of course we ham operators don't send 1 microsecond pulses, but radar systems do. This issue is just one of many facing radar designers, and it's interesting to think about.

Next month: how a receiver's noise figure is measured.

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The Talking Dog

— Keith Pugh W5IU

Nov 25, 2007

During the Texas QSO Party I drove around the back woods of East Texas. On one back road I saw a sign in front of a broken down shanty-style house: "Talking Dog for Sale."

Well I needed a break so I stopped to see what the deal was. I went into the backyard and see a nice looking Labrador retriever sitting there.

"You talk?" I ask. "Yep," the Lab replies. Well after I got over the shock of hearing a dog talk, I asked "So, what's your story?"

"Ah shucks there ain't much to tell. Is that a VUU screwdriver antenna on your truck out there?" "How did you know that," I ask?

The Lab looks up and says, "Well, I'm a ham radio operator. I got my ticket when I was a young pup and in no time at all I had my 5 band DXCC in Phone and CW. The CIA heard about me and asked me to do some spy work for them. I would hang around the communications centers and with my keen hearing I could copy the transmissions. Because no one figured a dog would be eavesdropping, I was one of their most valuable spies for eight years."

"Copying high speed CW all day really tired me out and I knew I wasn't getting any younger. So, I decided to settle down. I retired from the CIA (8 dog years is 56 CIA years) and joined a ham radio club. In fact I won first place in the Oklahoma OSO Party two years in a row. Then I had a mess of puppies and got away from Ham Radio for a while. I sure miss my radio. Why don't you buy me and I'll be your CW operator in the Texas QSO Party."

I said "let me see what I can do."

I went back in and asked the owner what he wants for the dog. "Ten dollars," the guy says. "Ten dollars? This dog is amazing! Why on earth are you selling him so cheap?"

"Because he's a liar. He never did any of that stuff. He's just a No Code Technician."

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Global Simulated Emergency Test Scheduled for April

The HQ Stations of all IARU Member-Societies, as well as the stations of Emergency Communications Groups, have been invited by IARU Region 1 to participate in the 2009 Global Simulated Emergency Test (GlobalSET), on Saturday, April 18, 2009 from 1100-1500 UTC. The GlobalSET will take place on and near the emergency Center of Activity (CoA) frequencies on 80, 40, 20, 17 and 15 meters, +/- QRM. Stations in the United States intending to participate need to register through their IARU International Emergency Communications Coordinator. For the United States, registrations should be e-mailed to ARRL Emergency Preparedness and

Response Manager Dennis Dura, K2DCD at, k2dcd@arrl.org.

Dura confirmed that W1AW will participate in the GlobalSET.

According to IARU Region 1 Emergency Communications Coordinator Greg Mossop, G0DUB, the GlobalSET is not a contest, but an emergency communications exercise to develop skills needed to provide an international emergency network.

Mossop said that the GlobalSET has four objectives:

- To increase the common interest in emergency communications.
- To test how usable the CoA frequencies are across ITU regions.
- To create practices for international emergency communications.
- To practice the relaying of messages using all modes: Voice (SSB), Data or CW.

“The exercise will build on earlier GlobalSET exercises and will focus on generating and relaying messages in a common format across country borders, rather than the information gathering capabilities that we’ve done in the past,” Mossop said. “We will pass messages in a format that we may have to use for the agencies we may serve. The message exchange will take longer than in previous exercises, and stations will have to be patient to transmit their messages across country and language boundaries.”

Each participating station is to send messages to their Regional HQ station using the IARU International Emergency Operating Procedure, using IARU message forms. Stations should relay the messages they receive to their Regional HQ station; the Region 2 station is TG0AA in Guatemala. To comply with license regulations, all messages should be addressed to Greg Mossop, G0DUB, and should come from a licensed radio amateur. Messages should contain fewer than 25 words and should not include anything that would be considered as a “real emergency” message by a listener. Mossop suggests constructing messages that include weather conditions, the number of operators at the station or even an interesting fact about the station. “There is no limit on the number of messages to be sent,” he said, “but each one must have a unique message number.”

Regional HQ stations will not be sending messages, only receiving them.

Mossop recommends that in order to create “a more realistic situation, please limit your transmitting power during the exercise to 100 W. We are especially interested in stations operating mobile/portable and/or on emergency power.”

Usually held in May, the 2009 GlobalSET was moved to April to tie into World Amateur Radio Day. The theme of the 2009 World Amateur Radio Day is Amateur Radio: Your Resource in Disaster and Emergency Communication. “This is an ideal opportunity to showcase the work of emergency communications groups around the world,” Mossop said.

For more information on the 2009 GlobalSET, including a list of CoA frequencies for Regions 1, 2 and 3, please see the GlobalSET announcement at: <http://www2.arrl.org/news/files/2009GlobalSET.pdf>

— *ARRL Bulletin ARLX005*



Camping Trip

The loaded mini-van pulled in to the only remaining campsite. Four children leaped from the vehicle and began feverishly unloading gear and setting up the tent. The boys rushed to gather firewood, while the girls and their mother set up the camp stove and cooking utensils.

A nearby camper marveled to the youngsters’ father, “That, sir, is some display of teamwork.”

The father replied, “I have a system: no one goes to the bathroom until the camp is set up.”

— *from W1GMF via packet*



Treasurer's Report

As of 3/31/09

GENERAL FUND (checking account)

Previous balance	\$ 1,675.70
Income	200.38
Expenses	25.00
Ending balance	1,851.08

REPEATER / PACKET FUND (savings account)

Previous balance	\$ 1,021.17
Income	2.55
Expenses	0.00
Ending balance	1,023.72

— Ed Fitzgerald, N7WW, Treasurer



OARS Net check-ins

The following stations checked in on the OARS General Information Net one or more times on March 3 or 17:

AA7YD	AB7PS	AC7MG	K7VOX
KB6LE	KC7LA	KD7SQU	KD7TQW
KD7YXY	KE7TQW	KE7WSE	KE7YYW
KI7CQ	KI7SS	N5MUR	N6TPT
N7JHJ	N7WW	NX6W	W7SAY
W7TAG			

Net control station reporting for the month was Rod, KI7CQ. Thank you for your support!!

The net meets at 7:30 every Tuesday evening on the 3 linked OARS repeaters: 147.36, 224.46, and 441.40 MHz. All Hams are invited to check in.



FCC Clarifies What Constitutes an Amateur Radio Repeater

In December 2007, Gary Mitchell, WB6YRU, President of the Northern California Packet Association (NCPA), filed a Petition with the FCC, asking for the Commission to clarify the definition of a repeater. According to Part 97, Section 3(a)(39), A repeater in the amateur service is “[a]n amateur station that simultaneously retransmits the transmission of another amateur station on a different channel or channels.”

Mitchell sought clarification on the word “simultaneously,” asking if it referred to the signal information being retransmitted, or to the fact that the receiver and transmitter must both be active at the same time while acting on the same signal information. On March 23, 2009, the Commission clarified that even if there is a slight delay between what is received and what it transmits (as in the case of D-STAR and other digital repeaters), it is considered simultaneous if the receiver and transmitter are both active at the same time.

Mitchell pointed out in his petition that while the Commission’s Rules specify on which bands amateur repeaters may operate, “some amateur repeaters are operating on bands other than set forth in Section 97.205(b) with systems that are essentially voice repeater stations, but that digitize and retransmit the user’s voice, on the theory that because there is a small delay in retransmitting the signal of another amateur station, the signal is not ‘simultaneously’ retransmitted and, therefore, the system is not a repeater.”

In its reply, the Commission pointed out that prior to 1994, a repeater was defined as “[a]n amateur station that automatically retransmits the signals of other stations.” This, the Commission told Mitchell, was revised to clarify “that certain accommodations for message forwarding systems do not apply to other operating activities such as repeaters and auxiliary stations.” The Commission proposed to define a repeater as “[a]n amateur station that instantaneously retransmits the transmission of another amateur station on a different channel or channels,” but ultimately replaced “instantaneously” with “simultaneously” because commenters noted that there is always a small propagation delay

through a repeater. As one commenter explained, "The word 'simultaneously' in this case means that the repeater is receiving and transmitting concurrently, whereas each signal might be slightly displaced in time between receive and transmit."

To be able to repeat another station's transmission, the Commission said that a repeater "must be able to receive a transmission from another station and retransmit it. Because the word 'simultaneously' in the definition is used to modify 'retransmit,' we believe it refers to a repeater station's transmitter being active when retransmitting the signal received by the repeater station's receiver from another amateur station. We conclude, therefore, that 'simultaneously' as used in the definition of a repeater refers to the receiver and transmitter both being active at the same time."

— *ARRL Bulletin ARLB018*

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FCC Denies Petition to Increase Size of Amateur Radio Question Pools

In April 2008, Michael Mancuso, KI4NGN, of Raleigh, North Carolina, filed a petition with the FCC, seeking to increase the size of the question pools that make up the Amateur Radio licensing exams. Mancuso sought to increase the question pool from 10 times the number of questions on an exam to 50 times more questions. On March 19, 2009, the Commission notified Mancuso that it was denying his petition.

In his 2008 petition, Mancuso claimed that the current question pool is too easy to memorize and "that there has been a significant increase in the number of Amateur Radio operators receiving their licenses over at least the last decade or more who do not appear to possess the knowledge indicated by the class of license that they have received. Most discussion about this topic, both on the air and on Internet forums, generally refers to these widespread observations as the 'dumbing down' of Amateur Radio. It has been widely assumed that the cause of this observed situation is based upon the subject material

addressed by the license examinations, that the material requirements specified for the examinations does [sic] not meet some minimum level of knowledge expected by some or many in the Amateur Radio community."

The FCC pointed out to Mancuso that each applicant for a new or upgraded Amateur Radio operator license "is required to pass a written examination in order to prove that he or she possesses the operational and technical qualifications required to perform properly the duties of an amateur service operator licensee, i.e., that he or she is qualified to be an amateur service licensee."

The Commission summed up Mancuso's petition, saying, "You argue that the current question pool size is no longer adequate, because online practice examinations enable examinees to memorize a question pool without fully comprehending the subject matter being tested. Consequently, you propose to increase the size of the question pools, in order to hinder memorization."

The Commission concluded that Mancuso did not present grounds for the Commission to amend its rules: "As noted above, the purpose of the examinations is not to demonstrate an applicant's comprehension of certain material, but rather to determine whether he or she can properly operate an amateur station. Moreover, your contention that there has been 'a significant increase in the number of Amateur Radio operators...who do not appear to possess the knowledge indicated by their class of license' is not supported by any data or facts."

The FCC pointed out to Mancuso that the Commission's Rules only dictate the minimum number of questions for each question pool for the three Amateur Radio license classes. This, the Commission told Mancuso, "does not prevent the National Conference of Volunteer Examiner Coordinators (NCVEC) from increasing the number of questions in a question pool should it decide that this is appropriate. We conclude, therefore, that the petition presents no evidence of an existing problem or other reason for a rule change."

— *ARRL Bulletin ARLB016*

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May 2009

OARS Calendar

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																																																		
					1 <div style="border: 1px solid green; padding: 2px; display: inline-block;">Deadline for Watts News Inputs</div>	2 <div style="border: 1px solid black; padding: 2px; display: inline-block;">7:15 AM Breakfast at Nickelby's 600 Trosper Rd</div> 10-10 Spring CW & Digital Contests <small>7th Area QSO Party MARAC CW & SSB Contests Radio Club of America QSO Party</small>																																																																																																		
3 <small>10-10 Spring CW & Digital Contests 7th Area QSO Party MARAC CW & SSB Contests Radio Club of America QSO Party</small>	4	5 7:00 PM ARES Net 7:30 PM OARS Net	6	7	8	9 50 MHz Spring Sprint Armed Forces Comm'n's Test CQ-M Intl DX Contest FISTS Spring Sprint CW																																																																																																		
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17 All America Contest CW Worked All Britain - LF Phone	18	19 7:00 PM ARES Net 7:30 PM OARS Net	20 <div style="border: 1px solid green; padding: 2px; display: inline-block;">7:00 PM - 9:00 PM OARS General Meeting at Red Cross</div>	21	22	23 Bill Windle QSO Party																																																																																																		
24	25	26 7:00 PM ARES Net 7:30 PM OARS Net	27	28	29	30 CQ WW WPX Contest CW Kids Roundup QRP ARCI Hootowl Sprint CW																																																																																																		
31 CQ WW WPX Contest CW Kids Roundup QRP ARCI Hootowl Sprint CW	<div style="display: flex; justify-content: space-around; align-items: center;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr><th colspan="7">April</th></tr> <tr><th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th></tr> </thead> <tbody> <tr><td></td><td></td><td></td><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td></tr> <tr><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td></tr> <tr><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td></tr> <tr><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td></td><td></td></tr> </tbody> </table> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr><th colspan="7">June</th></tr> <tr><th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th></tr> </thead> <tbody> <tr><td></td><td></td><td></td><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td></tr> <tr><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td></tr> <tr><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td></tr> <tr><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td></td><td></td></tr> </tbody> </table> </div>					April							S	M	T	W	T	F	S				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			June							S	M	T	W	T	F	S				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
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OARS Membership Application

New Date _____
 Renewal ARRL member? _____
Call Sign _____ License class _____
Name _____
Address _____
City, St. _____ ZIP _____
Home phone _____
Day phone _____
Email _____
Newsletter by Email? (yes/no) _____

Annual Dues: \$20 (\$25 family) — first year prorated by number of months.

If family membership, please attach above information for each family member.

Send to: OARS
PO Box 2861
Olympia, WA 98507

O A R S Meeting

Wednesday, April 15, 7:00 p.m.

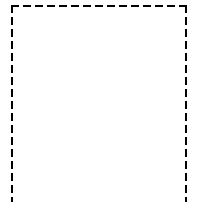
“The History and Future of Ham Radio”
— Ward Silver, N0AX

Red Cross Building
2618 12th Court SW, Olympia

An Invitation

If you are a Ham who has received this newsletter, but are not yet a member of OARS, you are cordially invited to join us. Submit the membership application at the left to OARS at PO Box 2861, Olympia WA 98507, or bring it to an OARS meeting and see Treasurer Ed Fitzgerald.

OARS
PO BOX 2861
OLYMPIA WA 98507



If the date on your address label is marked in red, it is time to renew!