



THE BEAVER VALLEY AMATEUR RADIO ASSOCIATION  
 WWW.W3SGJ.ORG  
 BEAVER COUNTYS ONLY 75 YEAR ARRL AFFILIATED CLUB!

# The eQRM Newsletter

Home of W3SGJ/R  
 145.310- 100 Hz PL

Volume 1, Issue 11  
 November 24, 2007

## COMMENTARY: TIME FOR A REALITY CHECK

*(Editor's Note: Please note that the following article is a Commentary and does not reflect the opinions of the ARRL or the BVARA.)*

Time for a reality check.

A few issues ago, I submitted what I affectionally termed, WA3ZRM's Agenda for the BVARA. Not being the creative sort, naturally, I stole the agenda from the ARRL! The agenda was filled with ideas and activities that any amateur radio club would enjoy.

Well... that was the easy part. It was very simple to cut and paste the League's work into an e-mail. Getting club members motivated to act on the agenda though, is another matter.

Over the past few months, I've had two opportunities to sit down and talk face to face with

ARRL Atlantic Division Director Bill Edgar, N3LLR and our new WPA Section Manager John Rodgers, N3MSE about the future of our hobby. Talking with Bill and John made me feel positive about our hobby. Their realistic and down to earth attitudes can make almost any amateur excited about ham radio.

Following each of my conversations with them, I'd spend time and reflect on what I could do to help preserve and grow renewed interest in our hobby. As a result, I've elected to devote some energy into this newsletter with the hope that I can sculpt it into a vehicle for positive change. And, what is this change you might ask? Well, there are two parts:

The WA3ZRM Agenda for the BVARA; and,

The WA3ZRM Agenda for the ARRL.

As I previously mentioned, the first part was easy to put together- I simply stole it from the League. The second part, however, is not that simple. My agenda for the ARRL actually requires some creative thought and originality. Additionally, it requires a blending of both agendas into a cohesive mechanism for revitalization and growth within our hobby.

So, where do we go from here? It's back to the reality check.

First, let's look at the local BVARA agenda. It's filled with all sorts of exciting and interesting activities and projects. But, to the shrewd reader, they will notice that two key ingredients are missing. One, the agenda lacks measurable goals and objectives, and two; the agenda lacks a finan-

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### Newsletter & Information Exchange

- Have your club's latest news and happenings printed here for FREE!
- Is your club having a VE session or classes? Let me know and I'll help spread the word!
- Planning a Hamfest? Drop me a line and get some FREE PR in the eQRM!
- Having an ARRL night, special speaker or program? The eQRM can help by spreading the news within our region!

Continued on Page 3

# NOVEMBER 2007

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	Dinner 3
4	5	6	Nets 7	Lunch 8	Meeting 9	Dinner 10
11	12	13	Nets 14	Lunch 15	16	Dinner 17
18	19	20	Nets 21	22	23	Dinner 24
25	26	27	Nets 28	Lunch 29	30	

The Beaver Valley Amateur Radio Association meets at the Beaver County Emergency Operations Center located at 250 East End Avenue, Beaver, PA on the second Thursday of every month at 7:30 PM. Everyone is welcome.

Don't forget to listen to the BVARA club nets every Wednesday Night! 2 Meter Net on 145.31MHz 100Hz PL at 8:30PM and the 10 Meter Net 28.370 QSY +/- 10 at 9:00PM. Also, don't forget the Rip Vanwinkle Net on 2 meters at 7:00AM daily.

The BVARA 10 Meter Net Lunch group will be meeting this Thursday at Eat & Park in Center Twp. The Saturday Dinner group will be meeting at Vesuvio's in Monaca. on Saturday, November 24 at 6:30 PM. All area amateurs are invited. **DON'T FORGET THE BVARA CHRISTMAS PARTY TO BE HELD AT FIRE MOUNTAIN ON FRIDAY DECEMBER 14 AT 7:00 pm. THERE WILL BE A \$5.00 GRAB BAG! ANY CLUB MEMBER THAT WOULD LIKE TO PARTICIPATE IN THE GRAB BAG EXCHANGE IS ASKED TO BRING A WRAPPED GIFT WITH A VALUE OF \$5.00.**

**DECEMBER VE TEST SESSION:** The BVARA will sponsor ARRL VE examinations at the Community College of Beaver County's Aviation Science building, 125 Cessna Drive, (Chippewa Twp.) Beaver Falls, PA, on December 1, 2007. For more info on the test session, contact Tony, KE3ED @ 724-774-4173 or by e-mail at KE3ED@arrl.net.

## 2008 BVARA OFFICERS & DIRECTORS

- President:** Gary Hutchinson, KA3TYK
- First Vice President:** Robert DeMarco, WA3ZRM
- Second Vice President:** Debbie Mehutes, KB3EAO
- Acting Secretary:** Phyliss Pander, N3KUG
- Secretary Elect:** Norm Trunick (Call Sign Pending)
- Treasurer:** Shawn Hastwell, KB8UDE
- Director:** Chris Moratis, W3OUF
- Director:** Jack Spencer, WB1BSU
- Trustee:** Tony Petrucci, KE3ED/W3SGJ
- Chief Engineer:** David Heim, KA3SMF

## CLUB NOTES

- The next BVARA e-Board meeting date has yet to be announced. KA3TYK's e-mail has been down and I have been unable to touch-base with him.
- There are still some openings for ARRL SSC positions within the club. To learn more about these positions, click on the links below:
  - [Official Emergency Station](http://www.arrl.org/FandES/field/org/oes.html)
  - [Official Relay Station](http://www.arrl.org/FandES/field/org/ors.html)
  - [Technical Specialist](http://www.arrl.org/FandES/field/org/ts.html)
  - [Public Information Officer](http://www.arrl.org/FandES/field/org/pio.html)
  - [Local Government Liaison](http://www.arrl.org/FandES/field/org/lgl.html)
  - [Official Observer](http://www.arrl.org/FandES/field/org/oo.html)



## COMMENTARY CONTINUED FROM PAGE 1

-cial/marketing plan needed to carry out these goals and objectives. What do I mean by this? Well, let's do some simple math.

Let's say the BVARA recruits 40 members for the 2008 fiscal year. At \$20 per membership, that gives the club \$800 in working capital. Now, let's look at the yearly expenses. Rent for the repeater site at \$20 per month; telephone cost for the repeater site at \$30 per month; and, an annual liability insurance premium of \$400 comes to a total of \$1000 per year. With \$800 in revenues and \$1000 in expenses... uhhmmm... the BVARA has put itself on the same financial footing as the federal government: Deficit Spender!

Naturally, by now, you must be thinking, the BVARA needs to do one of two things: increase revenues or decrease expenses; or, perhaps some combination of the two. So, what's necessary to make this determination? STRATEGIC PLANNING!

In past issues of this newsletter, I've spent a good deal of digital ink on the concept of strategic planning. Let's now take a look at the requirements needed for the BVARA to create and deploy a unified strategic plan.

First, the development of a strategic plan requires a minimum of two meetings per month. The first meeting would be an informal gathering of the club's executive board that could be held at a local restaurant on a specific date and time each month. Five officers and/or directors of the club are needed to

establish a quorum. Naturally, to avoid the appearance of impropriety, this meeting would be open to any club member that would like to attend. The primary purpose of this meeting would be to design the strategic framework necessary for the club to prosper and grow. This framework would then be presented at the second monthly meeting which is the club's regular business meeting. This would allow all club members to provide input and vote on the strategic direction of the club.

Now isn't that simple? In my opinion, the dates and location of the executive board meetings should be announced at the upcoming Christmas Party on December 14. What do you think?

Thus far, I've spent a great deal of time addressing my first agenda item. Now, let's shift gears and focus on the second.

To begin, I'd like to say that I am a strong supporter of the ARRL. It is my opinion that both Bill Edgar and John Rodgers are doing a fantastic job for both the division and section. Additionally, I believe the League is amateur radio's one best hope for the future of our hobby. That said, I would now like to offer a few suggestions on how the ARRL can better assist affiliated clubs and enhance growth opportunities for our hobby.

The WA3ZRM ARRL Agenda consists of six key points:

1. A Hard Copy Loose Leaf Affiliated Club Operations Manual with Monthly Updates;

2. Web Space Utilizing Template Design Software for Affiliated Clubs to Maintain Websites;

3. A Once a Month Affiliated Club Newsletter with Exclusive Content and Hard Copy Mailing Option;

4. A Website Specifically Designed to Capture Teen Interests;

5. A More Precise Methodology to Incorporate ARRL Curriculum as Continuing Education Credit for Teachers; and,

6. A More Precise Methodology in Determining the ARRL's Overall Strategic Goals and Objectives.

What follows is an amplified summary of above listed points:

1. A Hard Copy Loose Leaf Affiliated Club Operations Manual with Monthly Updates.

A quick visit to the ARRL's website

<http://www.arrl.org/FandES/field/club/recources-for%20clubs.html> will reveal several tools the League offers clubs. Additionally, a broader search of the website will unveil additional information, tools and resources beneficial to affiliated clubs. That's the good news... now for a suggestion:

The ARRL should provide each of its affiliated clubs with a written Operations Manual that details up to date and more integral specifics on how a club can operate efficiently and profitably. This manual should include details on how a club can write a comprehensive

*Continued on Page 4*

# THE HAM'S HOROSCOPE

BY MADAM ZELDA, STIARS

That's Gold	I'm Happy	Can't Complain	Not Happy	Turn down the heat

Sign	Romance	Home & Family	Finances	Career	General
Aries					
Taurus					
Gemini					
Cancer					
Leo					
Virgo					
Libra					
Scorpio					
Sagittarius					
Capricorn					
Aquarius					
Pisces					

Full moon's always highlight relationships and this month those most affected are Sagittarius and Gemini, especially those born early in the signs. There is the need for all to look a little closer at relationships in general and identify areas that need improving or even letting go. Cancer and Capricorn need to pay closer attention to health, particularly issues around habitual behavior. Could be a good time to kick those nasty habits. Family and career receive a boost of positive energy. For Leo and Aquarius, the emphasis will be on creativity and the need to be more social. Take advantage of any opportunity that arises in this area but be mindful that you may stretch the budget if you over do things. Virgo and Pisces for you the emphasis is on home and career. There is also a need for give and take in relationships. Libra and Aries, for you this Full Moon brings opportunity to expand your horizons and open your mind. This is positive time for projects that are close to the heart and relationships should be sailing along nicely. Scorpio and Taurus for you this full moon, puts the focus on your financial sector allowing you to identify problem areas and make the necessary changes. Avoid indulgence as this may have ramifications on your physical self. **LUCKY NUMBERS FOR ALL HAM'S THIS WEEK: 12, 33, 7, 4, 6 AND 22.**

## COMMENTARY CONTINUED

business plan as well as a strategic plan. Additionally, the manual should supply forms that could be sent to Section Managers on a monthly basis insuring essential open communication channels necessary for healthy organizational functionality. A simple way to produce this manual would be to organize, update and add to documents already found on the ARRL website. Once completed, the manual could be converted into a PDF for fast and easy distribution.

### 2. Web Space Utilizing Template Design Software for Affiliated Clubs to Maintain Websites.

In case you have not noticed, ham radio club websites can be found all over the Internet. Why not establish a central ARRL affiliated club server that provides web space for League clubs? Both server and site design interface software

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# COMMENTARY CONTINUED

are freely available at <http://sourceforge.net/> I believe that the creation of such a resource for affiliated clubs is a vital component to health club functionality.

3. A Once a Month Affiliated Club Newsletter with Exclusive Content and Hard Copy Mailing Option.

A review of existing club support materials found on the ARRL website includes repeated references to the importance of club newsletters. To this end, I suggest that the League offers a syndicated news service specifically designed for affiliated clubs. This service would include exclusive content available only to affiliated clubs as well as a web based software design tool that would allow clubs to incorporate local news into a standardized newsletter template. Such a service could easily be incorporated into the aforementioned affiliated club web space resource and allow for automated e-mailing to club members. Additionally, for a fee, the ARRL could exercise its "economy of scale" power by offering an optional bulk rate mailing option to club's whose members do not have e-mail access.

4. A Website Specifically Designed to Capture Teen Interests.

Ok, it's time for another reality check. Is the Hello Radio website <http://www.helloradio.org/> designed to capture teen interests? No, I'm not knocking the site; but rather, simply asking the question, "...does this website provide the content necessary to capture and hold teen interests?" As a former



**BY BECOMING A MEMBER OF THE BVARA, YOU CAN HELP SECURE THE FUTURE OF AMATEUR RADIO IN BEAVER COUNTY. ADDITIONALLY, THE BVARA RECEIVES A PORTION OF EACH ARRL OR WORLD RADIO SUBSCRIPTION YOU PURCHASE!**

### Join the BVARA, ARRL and World Radio

Sign up for:	Price	Quantity
<input type="checkbox"/> BVARA FULL MEMBERSHIP	20.00	
<input type="checkbox"/> BVARA STUDENT MEMBERSHIP	15.00	
<input type="checkbox"/> BVARA ASSOCIATE MEMBERSHIP	10.00	
<input type="checkbox"/> BVARA SPOUSE/CHILD MEMBERSHIP	5.00	
<input type="checkbox"/> ONE YEAR ARRL MEMBERSHIP	39.00	
<input type="checkbox"/> WORLD RADIO SUBSCRIPTION	21.00	

Subtotal: \_\_\_\_\_  
 Donation: \_\_\_\_\_  
 Total: \_\_\_\_\_

ARRL MEMBER?  YES  No

Your License Class (if any):

- Novice
- Technician
- General
- Advanced
- Extra

Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Phone \_\_\_\_\_

Your Call Sign: \_\_\_\_\_

Exp. date \_\_\_\_\_

Signature \_\_\_\_\_

**Make Check or Money order payable to:  
 The Beaver Valley Amateur Radio Association  
 P.O. Box 424  
 South Heights, PA. 15081**



## COMMENTARY CONTINUED

educator, one of my responsibilities was to introduce software into a K12 environment that produced positive outcomes. If the attraction of youth to our hobby is fundamental to its survival, I must comment that the Hello Radio website is not an adequate gateway for achieving this purpose. Today, teens are looking for exciting sites that offer numerous youth oriented activities and communications tools. Based on this reality, I suggest that the League look into developing a website specifically geared for teen interests.

5. A More Precise Methodology to Incorporate ARRL Curriculum as Continuing Education Credit for Teachers.

Without a doubt, the ARRL has created some of the best amateur radio educational materials I have ever seen; however, are these materials reaching educators? Over two thirds of the states require K12 educators to complete some form of continuing education in order to retain their certification. Why then, are so few teachers aware that continuing education credits are available for amateur radio? As a casual observer and former educator, discrimination about continuing education opportunities for educators seems limited to those in the existing amateur community. Have efforts been made to work with both the US Department of Education and various State Department's of Education on offering ARRL curriculum to educators for continuing education credit? I am a firm believer that youth involvement in our hobby is essential to its sur-

vival. What better way than to have them introduced to it than via the classroom? Such an initiative should be central in discussions amongst the League's 15 Division Directors. Meeting with Secretaries of Education from various states is not a complex matter. A simple phone call to arrange an appointment is all it takes! Making educators aware of League programs should be to TOP PRIORITY for the ARRL.

6. A More Precise Methodology in Determining and Disseminating the ARRL's Overall Strategic Goals and Objectives.

Recently, I requested a copy of the League's Strategic Plan. I was expecting to receive a PDF file that contained the ARRL's strategies for the future growth and expansion of our hobby. How does the League anticipate growth patterns in our hobby? What marketing methods will be utilized to attract new hams and retain current members? How will specific target markets be reached? What are the specific measurable goals the League has in place to meet its strategic objectives?

Although I have yet to receive a copy of the plan, many of my questions were addressed, in person, by Bill Edgar during our previously mentioned meetings. During those meetings, Bill reminded me that he is only one of 15 elected ARRL Directors and that the ARRL, like any complex organization, requires time to develop and implement changes and new initiatives. Bill also reassured me that both he and the

League are making every effort to preserve and expand our hobby.

Well, I hope you have enjoyed this long winded commentary. In future issues of the eQRM I hope to expand on this commentary and continue to provide a vehicle for open communications within the WPA ARRL Section.



## GREAT DX BOOKS

By AC6V

Antennas Revealed -- By Ms  
Clipbord of the HOA  
Seven Years Before The Mast --  
A no-rotor station  
The Rise And Fall of The Sun  
Spot Cycle  
Gone With The Wind -- A Quad  
Story  
Much Ado About Nothing --  
DXing Exposed  
War and DXing  
Don Quadotee -- Attacked a 160  
Meter Quad  
Of Man And Mouse -- Computer  
Fiction  
The Sound and the Fury -- Pile-  
ups Explained  
Atlas Shrugged  
Casey At The Mike

## Propagation de K7RA

This is an off-schedule bulletin before Thanksgiving. Because ARRL headquarters is closed on Friday, the day this bulletin is normally released, and this bulletin was written before the end of our reporting week (which is Thursday through Wednesday), the sunspot, solar flux and geophysical numbers normally at the end of this bulletin will appear in a new propagation bulletin on Monday, November 26. Friday, November 30 will find us back on the regular schedule.

Another sunspot appeared in the past week, but just for two days, November 16-17. The sunspot number was 13 on both days.

Neil Klagge, W0YSE of Layton, Utah wondered why the last Propagation Forecast Bulletin ARLP047 said there was only one sunspot on November 6 when the sunspot number for that day was 11. That is because of the arcane method used to derive sunspot numbers. A sunspot number of 11 means just one sunspot. The number is derived by counting 10 points for each sunspot group, and adding one point for each spot. So 11 is also the minimum non-zero sunspot number. It is either 0, or 11, or something higher, with nothing from 1-10. So in reality, this week when we said there was one sunspot for November 16-17, because the sunspot number was 13, that can only mean that there was one group of sunspots, but three spots were observed, although they were tiny.

We had some geomagnetic activity

this week from a coronal wind stream. On November 20 the planetary K index rose to 6 for one period, and the planetary A index for the day was 28. Alaska's College A index was 48. The predicted planetary A index for November 21-27 is 20, 15, 10, 8, 15, 10 and 5. Note that this weekend, November 24-25, is the CQ Worldwide DX CW Contest. Sunspot and solar flux numbers should remain about the same, with an occasional spot appearing, and solar flux hanging around 70 or slightly lower.

Jon Jones, N0JK noted some trans-equatorial 6-meter e-skip propagation from Florida to Brazil on the evening of November 18. From 2358z November 18 through 0002z November 19, KE4WBO worked PY2XB. K4CVL, also in Florida, worked P43A in Aruba on 6 meters at the same time, 0001z. All reported good signals.

If you would like to make a comment or have a tip for our readers, email the author at, [k7ra@arrl.net](mailto:k7ra@arrl.net).

For more information concerning radio propagation, see the ARRL Technical Information Service at, <http://www.arrl.org/tis/info/propagation.html>. For a detailed explanation of the numbers used in this bulletin see, <http://www.arrl.org/tis/info/k9la-prop.html>. An archive of past propagation bulletins is at <http://www.arrl.org/wlaw/prop/>. Monthly propagation charts between four USA regions and twelve overseas locations are at,

<http://www.arrl.org/qst/propcharts/>.

## Great Ham Lies

de AC6V

I only own one radio!!  
Ur 599 (ur call again please).  
Your QSL is in the Mail  
I'll Never Build Another Kit Project

I bought my mint TS-950SDX for \$300.00.

I worked him on the first call.  
I never worked DX on a net!!

After a long boring QSO:

XYL says dinner is ready.

Just got the \_\_\_\_ call.

We're losing propagation (wiggle the RF Pwr control)

QRM Now -- Better Sign while we can!

OOpps -- there's the doorbell

Gotta land line OM -- 73

OOppss Rover!!! Gotta run and empty the dog!!

Oh shoot, lightning in the area, gotta shut down!

XYL says time to take my pills. Gotta go!

Time for the local repeater net, Gotta go!

I am just running a few watts, opps there goes the circuit breaker.

I usually copy code around 40 wpm but have an ear infection so using phone now.

Love code but had my Vibroplex stolen so have to use phone.



# DX NEWS VIA THE ARRL

This weeks bulletin was made possible with information provided by IK1QBT, NC1L, the OPDX Bulletin, DXNL, 425 DX News, The Daily DX, Contest Corral from QST and the ARRL Contest Calendar and WA7BNM web sites. Thanks to all.

UGANDA, 5X. Nick, G3RWF will be QRV as 5X1NH as a Single Op/Low Power entry in the CQ WW CW contest. He is here until November 30 and is also active on all HF bands using CW, SSB, RTTY and PSK. QSL to home call.

SENEGAL, 6W. T98A will be QRV as 6W1SJ as a Single Op/All Band entry in the CQ WW CW contest. QSL via T93Y.

TONGA, A3. Dr. Tomas, VK2CCC is QRV as A35MT from Tongatapu Island, IOTA OC 049, until November 26. Activity is mainly on the low bands using mostly CW. This includes an entry in the CQ WW CW contest as a Single Op entry. QSL direct.

CUBA, CO. Juan, CO8TW will be QRV as a Single Op/Single Band/Low Power entry on 20 meters during the CQ WW CW contest. QSL via HB9SVT.

TAJIKISTAN, EY. Nodir, EY8MM will be a Single Op/Single Band entry on 160 meters during the CQ WW CW contest. QSL via K1BV.

FRENCH GUIANA, FY. Didier, FY5FY will be QRV as a Single Op/All Band/QRP entry in the CQ WW CW contest. QSL to home call.

JERSEY, GJ. Rich, K2WR, Dick, GU4CHY and possibly others will be QRV as MJ0AWR and GJ4CHY, respectively, until November 25. Look

for them to be QRV as GJ2A as either a Multi/Single or Multi 2 entry in the CQ WW CW contest. QSL GJ2A via K2WR. QSL MJ0AWR via K2WR and GJ4CHY via GU4CHY.

THAILAND, HS. Fred, K3ZO will be QRV as HS0ZAR as a Single Op/All Band entry in the CQ WW CW contest. QSL to home call. In addition, Cha, HS8KAY will be QRV from Phuket Island, IOTA AS 053, in the CQ WW CW contest as a Single Op/Single Band/Low Power entry on 20 meters.

ITALY, I. Look for IZ1GAR, I1NVU and IK7JWY to be QRV as IH9R, IH9U and IH9M, respectively, during the CQ WW CW contest as Single Op/Single Band/High power entries on 40, 15 and 80 meters, respectively. QSL to home calls.

SARDINIA, IS0. Martin, OK1FUA will be QRV as IS0N as a Single Op/Power Band/Low Power entry on either 80 or 40 meters during the CQ WW CW contest. QSL via OK1MG.

TURKEY, TA. TA2RC will be a Single Op/Single Band/Low Power entry on 160 meters on the CQ WW CW contest. QSL to home call. In addition, LZ1NK is QRV as TA3/LZ1NK until November 26. He will be active as TC3A from Bursa as a Single Op/Single Band/Low Power entry on 40 meters in the CQ WW CW contest. QSL to home call.

ASIATIC RUSSIA, UA0. RZ9AR, RZ9AW and RA9AA will be QRV as RK9AWN as a Multi/Single entry in the CQ WW CQ contest.

CAMBODIA, XU. KM0O is QRV as XU7MWA until November 26. This includes being QRV in the CQ WW CW contest as a Single Op/High Power

entry. QSL to home call. In addition, F6BUM is QRV as XU7BUM until December 12 and active using only CW in his spare time. QSL via F6CXJ.

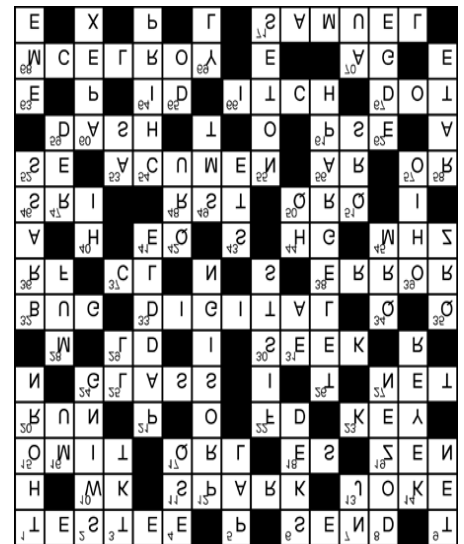
INDONESIA, YB. YB3MM will be QRV from Karimunjawa Island, IOTA OC186, during the CQ WW CW contest. QSL via IZ8CCW.

MACEDONIA, Z3. A group of German operators will be QRV as Z37M as a Multi/2 entry in the CQ WW CW contest. QSL via Z37M.

## The Amateur Radio Crossword Puzzler

By H. Ward Silver, NOAX

Whether or not the FCC decides to require CW ability as a gateway to amateur radio, hams will no doubt be using this most venerable of all wireless protocols well into the future. Just because it's not required doesn't mean it's going away - and why should it? CW is fun and useful and one of the biggest bangs for the buck in ham radio! With all that going for it, I'm sure there will be an article some day announcing the third century of CW - de NOAX. See next page:





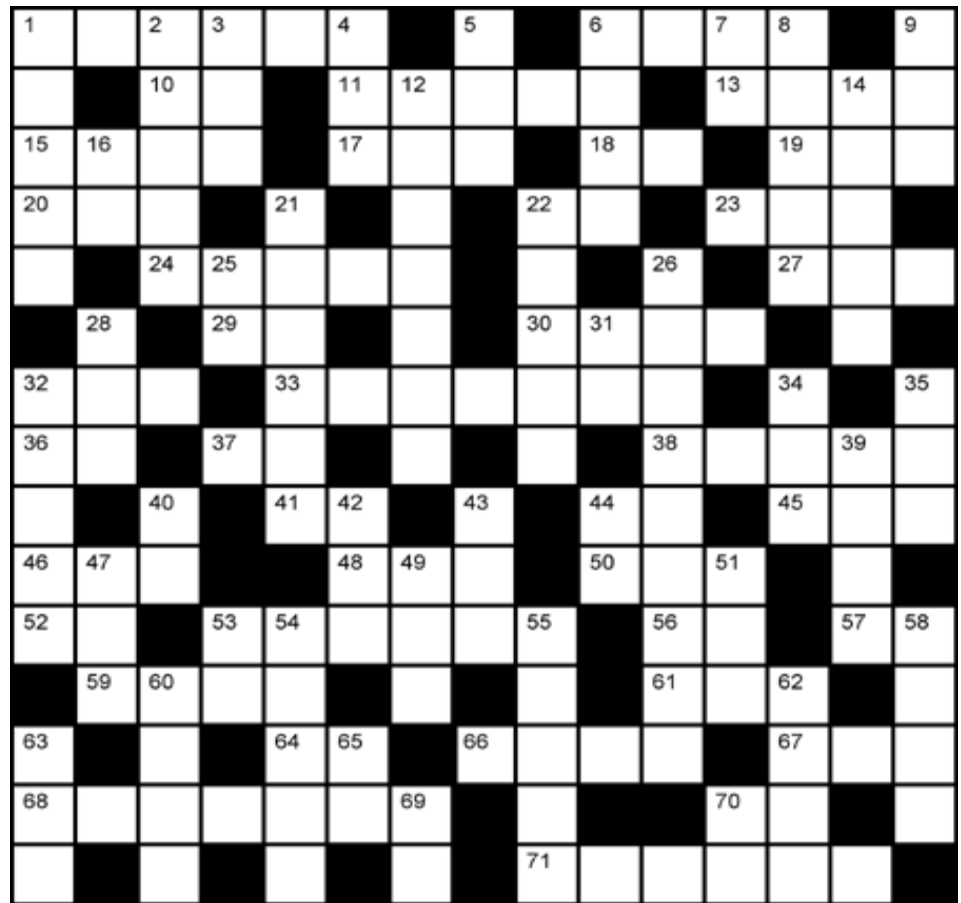
## Morse Code—200 Years and Going

### Across

1. Taker of the CW exam
6. Generate code
10. Weak (CW abbr.)
11. First CW mode
13. Something that makes you say 39 Down
15. To save time, CW ops do this to letters
17. I am listening here (Q-signal)
18. And (CW abbr.)
19. Listening to CW has this quality
20. Rapid sequence of QSOs
22. Biggest ham event, but not a contest (abbr.)
23. Simplest code making device
24. Too much code will turn your arm to this
27. Organized on-the-air meeting
29. Load (abbr.)
30. Look for
32. Semi-automatic code generator
33. CW was the first of this type of mode
36. Radio signals (abbr.)
37. I am closing the station (CW abbr.)
38. Eight dots signify this
41. Equalize (abbr.)
44. Thermometer metal (chemical symbol)
45. Unit of frequency (abbr.)
46. Sorry (CW abbr.)
48. CW signal report
50. Speed up (Q-signal)
52. Every state is this direction from KL7
53. Fast and accurate
56. End of message (CW abbr.)
57. A CW signal is on .. off
59. The longer code element
61. The magic word (CW abbr.)
64. A call sign is your radio .. (abbr.)
66. Nagging desire to send code
67. The shorter code element
68. CW "Speed King"
70. With 70 Down two precious metals (chemical symbol)
71. Inventor of Morse

### Down

1. The exam can be one of these in your side



2. Syncopated code rhythm
3. License (CW abbr.)
4. Equivalent of OM
5. Buddy
6. Prearranged contact
7. Original home state of RCA Labs
8. At 5 wpm, each word takes this many seconds
9. Number of call districts in the US
12. CW abbreviations used for traffic control
14. Device that generates code electronically
16. Vacuum tube gain
21. User interface for 14 Down
22. CW Club
25. Telephone (CW abbr.)
26. First medium to use the code
28. Highest frequency that works
31. Add an 'r' to get the thing you use to receive a code transmission
32. This is what code users pound
34. Interference (Q-signal)
35. Who is calling me? (Q-signal)
39. Home state to the biggest US hamfest
40. The telegrapher's laugh
42. I have nothing for you (Q-signal)
43. Saint or suite (abbr.)
44. The ARRL's is in Newington, CT
47. This color means overload!
49. Surface-mount (abbr.)
51. Slow down (Q-signal)
53. Stand by (CW abbr.)
54. CW signal that changes frequency during each character
55. CW signals and musical .... sound alike
58. Number of characters per unit of time
60. The pinnacle or peak of achievement
62. Rising and falling, they determine bandwidth of code signals
63. A very weak signal mode that uses CW to bounce signals back to earth (abbr.)
65. Just .. it
69. Women that have their own radio league (abbr.)
70. With 70 Across two precious metals (chemical symbol)