



## Europe Urged To Push BPL AARC Has New Secretary

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EE Times: Latest news  
Europe urged to push broadband over power lines

John Walko  
(04/12/2005 6:55 AM EDT)  
URL: <http://www.eetimes.com/showArticle.jhtml?articleID=160701130>

LONDON—European regulators are urging governments and industry to increase R&D efforts into and deployment of broadband over power lines to homes and small businesses.

The European Commission (EC) this week issued a recommendation to national telecommunications and utilities regulators to remove “any unjustified regulatory obstacles,” especially from utilities, in order to open up the market for providing broadband over the power grid.

Similar to recent statements by the U.S. Federal Communications Commission, the EC sees “power line communications” (PLC), as it is known in Europe, as a way to liberalize the market and potentially cut the cost of broadband delivery.

National regulators are being urged to ensure a level playing field for PLC providers by making sure they do not face stricter standards on interference than those faced by other technologies.

The EC estimates that PLC could potentially increase broadband penetration in the 25 member states by between as much as 10 percent, particularly in rural areas. So far, there are few commercial broadband-over-power line networks, but trials are underway in Germany, Spain, France and Italy.

The Commission is also backing several R&D projects under its directive

At the last meeting, Dave, W8UKQ resigned due to his health, and the club needed to elect a new secretary. After several members declined nomination, Don, AB8KV was nominated and accepted the nomination. He was quickly railroaded, er, elected by unanimous ballot. Many thanks to Don for accepting the position. He has started off by doing a fine job on the minutes, which can be found on page 3 as usual.

Our former secretary has been taking treatments on Monday, Wednesday and Friday and says he feels tired and somewhat feverish for the rest of the day after the injection, but feels about normal on the off days. Dave said he probably won't make it to the meeting this month for that reason. He hasn't had any evaluation yet but will be getting one soon. Let's all hope he gets a good report and send him your best wishes.

### De Olde Meeting Announcement

The next meeting of the Alliance ARC will be on Wednesday, May 4th, in the cafeteria of the Alliance Community Hospital. Our meetings begin at 7:30 PM, and are an excellent opportunity for eyeball QSO's. Directions can be found on the K8LTG Repeater (145.370)  
See you there!

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## Editorial Comment

Does anyone else see in BPL the enormous potential for abuse by unscrupulous governments? During the cold war, we were able to beam Radio Free Europe broadcasts into the Soviet Union and in spite of jamming attempts, the broadcasts got thru sometimes. But suppose the airwaves of the entire planet are saturated with BPL hash. Proponents say they can notch out certain frequencies, but the only frequencies I've seen discussed are frequencies used by government agencies. I haven't seen any mention of protecting foreign broadcast frequencies or Ham Radio frequencies, for that matter. Just think how efficient jamming could become.

### Europe—BPL

*(Continued from page 1)*

aimed at developing devices and equipment, pushing standardization efforts and removing one of the perceived drawbacks to PLC—interference with existing radio transmitters.

The most important of these is the Open PLC European Research Alliance for new generation PLC integrated network (Opera), which has a budget of about 20 million euros, including 9 million euros from the European Commission.

In its latest pronouncement, the EC suggested that concerns over interference should not allow utilities to refuse to offer access to broadband service providers over their transmission network. The Commission argued there are fewer problems with interference than before, and that any remaining problems can be overcome relatively easily.

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## Meetings

The Alliance Amateur Radio Club meets on the First Wednesday of every month, in the cafeteria of the Alliance Community Hospital. Talk-in is on 145.37 @. Meetings begin at 7:30 PM. Visitors are always welcome.

## Nets

Thursday is our “net night,” with the following nets on tap:

### Ten meters

CW @ 8PM on 28.400 MHz  
SSB @ 8:30PM on 28.400 MHz

### 2 meters

9 PM on 145.37 MHz

## Internet

If you'd like to check us out on the web, our E-mail address is:

[w8lky@qsl.net](mailto:w8lky@qsl.net)

Our club home page is:

<http://www.w8lky.org>

## Newsletter Information

The Zero Beat is a publication of the Alliance Amateur Radio Club, P.O. Box 3344, Alliance, OH 44601

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You can submit material to the Zero Beat either electronically, to ke8ve@alliancelink.com, in person, or via snail mail. I can read most word processor formats, but prefer your files to be in straight text, E-mail, or Microsoft Word format.

## April Minutes

### ALLIANCE AMATEUR RADIO CLUB

April 6, 2005

The regular meeting of the Alliance Amateur Radio Club was held at the Alliance Community Hospital on April 6, 2005 at 7:30 PM with club president Robert Steele, K8RLS, presiding. There were 18 members and two guests present.

The Pledge of Allegiance was recited, followed by introductions. The meeting was being recorded to allow compilation of the minutes as no new secretary had yet been appointed following Dave Glass' resignation.

The minutes of the March meeting were published in the newsletter. The minutes were approved on a motion and seconded by Sam, KC8ETZ.

Mary Ann, KB8IVS, gave the treasurer's report. The report was approved on a motion from Howard, K8DXR, seconded by George, K3GP.

An announcement was made, as a follow-up to the newsletter, regarding the resignation of Dave Glass, W8UKQ, as secretary due to ill health. A call for nominations or volunteers for the position was then issued. Don Kingan, AB8KV, volunteered and was duly appointed as new secretary.

A statement from Dave, W8UKQ, was read regarding his pleasure at serving as secretary for 9-1/2 years and his hope to attend many more meetings of the AARC.

Club dues are due and should be turned in to Mary Ann, KB8IVS, as soon as possible.

Some further discussion concerning Field Day was held, primarily about the location for this year. Don, K8OMO, suggested that if it was desired to set up at a location other than Marlinton, Eric, N8HHV, had offered his property as a potential site, or possibly using Silver Park. It was pointed out that at Silver Park's closing time, the gates are locked and no one is to go in or out. Final choice of location must still be made.

There was some further discussion regarding a possible future hamfest for Alliance, with various comments, both pro and con. Further discussion will be held at future meetings.

Don, K8OMO, noted that more operators were still needed for the hospital-based Homeland Security station. The regular sessions are Tuesday evenings at 7 PM.

There were some further comments made regarding the ARRL's license change proposals, with most favoring retaining the current code requirements.

#### New Business:

It was noted that the Cuyahoga Falls hamfest was scheduled for April 17. Flyers were available.

The club's insurance is due by May 6. After brief discussion, the motion to pay the insurance was made by Howard, K8DXR and seconded by Larry, KE8VE.

A program was then presented about the WINLINK system by Terry Russ, N8ATZ, who is ARES emergency coordinator for Stark County, and Ralph Bugg, K8HSQ, technical advisor on WINLINK for Stark County ARES. At the conclusion of the program, a number of questions from club members about the system were addressed.

A motion was made and seconded to give a certificate of appreciation to Dave, W8UKQ, for his long and faithful service to the club.

The meeting was then adjourned at approximately 9:17 PM.

Respectfully submitted by Don Kingan, AB8KV, Secretary.

## THE WAYBACK MACHINE

ISSUE #17

by **Bill Continelli, W2XOY**

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Repeaters.. It seems they are everywhere, and they are. Several thousand amateur repeaters operate on our bands from 29.5 MHZ all the way thru the microwave range. In fact, there are more amateur repeaters in the U.S. & Canada than there are AM Broadcast Stations. How and when did this evolve? Let's take a look at the development of repeaters in the Amateur Community.

If you had to guess when the first repeater came on the air, what would you say? 1970?, 1965?, 1955? Try 1932!!! It was in the early 30'S that the first "Duplex Phone Relay Stations", (as they were then called), came into existence. W1AWW & W1HMO set up a manned relay station in a 90 foot wooden lookout tower near Springfield Mass. They used a superregenerative receiver tuned to 60 MC (the top of the old 5 meter band), and a modulated oscillator transmitter on 56 MC, ( the bottom of the band). Stations in Connecticut, Massachusetts or Rhode Island could transmit on 60 MC, and have their signals manually rebroadcast on 56 MC. This relay station, of course, was in operation only when amateurs were on duty at the lookout tower. Fully automatic repeater operation was still over 30 years away.

In the 1950'S and early 60'S, there were a few AM repeaters on the air in California. But for the most part, VHF operations in the 1940'S thru the late 60'S were on AM phone in the simplex mode, with a handful of sideband stations thrown in. Using crystal controlled transmitters with about 10 watts, and single conversion superhets, the typical VHF operator had a range of 10-15 miles, not counting any band openings.

There were a handful of FM stations of course, but the development of FM as a mainstream amateur mode of communication had been pushed aside by sideband. As early as 1940, QST had construction projects for a complete 112 MC FM station, but FM took a back seat in 1947 when sideband appeared. Now, however, thanks to an FCC edict, it was about to make a comeback.

In 1960, the FCC issued new requirements for the users of VHF commercial frequencies. Over the period from

1960 to 1970, commercial users gradually phased in narrow band (5 KC deviation) equipment to replace the wide band (15 KC) transceivers they had been using. Rather than revamp the older equipment to meet the new standards, they simply purchased new radios. The old units made their way to the surplus market, where they were quickly snapped up by amateurs. Converting this equipment to ham frequencies was relatively easy, and soon hundreds of stations were operating on 52.525 MC and 146.940. Why those frequencies? Well, 52.525 was the lowest 6 meter frequency on which wide band FM was allowed, and 146.94 was chosen to accommodate Technicians who weren't allowed above 147 MC. Thus, these became the first "calling Channels".

It wasn't long before some surplus commercial equipment was revamped into repeaters. Unlike the 1932 setup, these were fully automatic devices, with no need for a control operator to be present. This, however, presented problems. Part 97 at that time contained no provision for repeater operation, and it was unclear as to whether it was legal to operate a repeater without a control operator present. Many proposals were presented to the FCC to clarify the rules in regards to repeaters. FM and repeaters received considerable publicity in 1969 when Hurricane Camille caused widespread destruction in the Gulf Coast and Virginia. This was the first time mobile rigs, FM and repeaters were used extensively in an emergency. FM activity increased in late 1969 and early 1970 with the ARRL's announcement that it no longer considered Technicians to be just experimenters, but rather full fledged Communicators. Also adding to the popularity of FM was the introduction of the first commercial rigs for the amateur market, from manufacturers such as Galaxy, Clegg, and Drake. By 1970, it was clear that coordinated, legal growth of FM and repeaters was necessary.

In early 1970, the FCC proposed its first repeater rules. They were as follows: On 6 meters, repeater inputs would be from 52.5 TO 52.7, with the outputs at 53.0 to 53.2 MHZ.. For 2 meters, repeater inputs would be authorized from 146.3 to 146.6, and the corresponding outputs would be from 146.9 TO 147.2. On our 220 band, the input/output subbands were 223.1--223.3 and 224.1--224.3, while on 440 repeaters would be authorized on 447.7--448.9 for inputs and 449.1--449.3 for outputs. (By the way, it looks like the 1970 FCC proposal contained a typo in the 440 MHZ segments).

*(Continued on last page)*

# May 2005

Happy Birthday to: **WB8TPF, N8EAD**

| Sunday                                                                                                               | Monday                                                                           | Tuesday                                                                                                                                | Wednesday                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Thursday                                                                                                         | Friday                                                               | Saturday                                                                                                                                                                                                                                        |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |
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| <b>1</b><br>AGCW QRP/QRP Party<br><b>CUYAHOGA ARS VE, INDEPENDENCE, OH</b><br>May CW Sprint                          | <b>2</b><br>COLUM. COUNTY TRAINING NET 8:00PM<br>RSGB 80m Club Championship, SSB | <b>3</b><br>Homeland Security Net 7PM at ACH<br>NORTHERN COLUMBIANA ARES NET 9PM 147.255<br><b>PIONEER AR FELLOWSHIP VE, AKRON, OH</b> | <b>4</b><br><b>AARC Meeting 7:30</b><br>CARROLL CTY NET - 8PM - 147.075                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>5</b><br>AARC NETS 8:00, 8:30, 9:00<br><b>QCWA Net 7:30</b>                                                   | <b>6</b>                                                             | <b>7</b><br>10-10 Int. Spring Contest, CW<br>ARI International DX Contest Indiana QSO Party<br>MARAC County Hunter Contest, CW<br>Nevada QSO Party<br>New England QSO Party<br>Oregon QSO Party<br>US IPARC Annual Contest, CW<br><b>WB8TPF</b> |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |
| <b>8</b><br>US IPARC Annual Contest, SSB                                                                             | <b>9</b><br>COLUM. COUNTY TRAINING NET 8:00PM                                    | <b>10</b><br>Homeland Security Net 7PM at ACH<br>NORTHERN COLUMBIANA ARES NET 9PM 147.255                                              | <b>11</b><br>CARROLL CTY NET - 8PM - 147.075<br>RSGB 80m Club Championship, Data                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>12</b><br>AARC NETS 8:00, 8:30, 9:00<br><b>QCWA Net 7:30</b>                                                  | <b>13</b><br>MASSILLON NET 8:00PM 147.18                             | <b>14</b><br>50 MHz Spring Sprint<br>CQ-M International DX Contest<br>FISTS Spring Sprint<br>Mid-Atlantic QSO Party<br><b>N8EAD</b><br>Portuguese Navy Day Contest, CW/SSB<br>US Counties QSO Party, SSB<br>VOLTA WW RTTY Contest               |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |
| <b>15</b>                                                                                                            | <b>16</b><br>COLUM. COUNTY TRAINING NET 8:00PM                                   | <b>17</b><br>Homeland Security Net 7PM at ACH<br>NORTHERN COLUMBIANA ARES NET 9PM 147.255                                              | <b>18</b><br>CARROLL CTY NET - 8PM - 147.075                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>19</b><br>AARC NETS 8:00, 8:30, 9:00<br><b>QCWA Net 7:30</b><br>RSGB 80m Club Championship, CW                | <b>20</b><br><b>Dayton Hamvention</b><br>MASSILLON NET 8:00PM 147.18 | <b>21</b><br><b>Dayton Hamvention</b><br>EU PSK DX Contest<br>His Maj. King of Spain Contest, CW<br>Manchester Mineira CW Contest<br>Portuguese Navy Day Contest, PSK31<br>VK/Trans-Tasman 80m Contest, Phone                                   |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |
| <b>22</b><br><b>Dayton Hamvention</b><br>Manchester Mineira CW Contest<br><b>TRIANGLE ARC VE, EAST LIVERPOOL, OH</b> | <b>23</b><br>COLUM. COUNTY TRAINING NET 8:00PM                                   | <b>24</b><br>Homeland Security Net 7PM at ACH<br>NORTHERN COLUMBIANA ARES NET 9PM 147.255                                              | <b>25</b><br>CARROLL CTY NET - 8PM - 147.075                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>26</b><br>AARC NETS 8:00, 8:30, 9:00<br><b>MAHONING VALLEY ARA VE, YOUNGSTOWN, OH</b><br><b>QCWA Net 7:30</b> | <b>27</b><br>MASSILLON NET 8:00PM 147.18                             | <b>28</b><br><b>CANTON ARC/ MASSILLON ARC VE, CANTON, OH</b><br>CQ WW WPX Contest, CW                                                                                                                                                           |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |
| <b>29</b><br>ARCI Hootowl Sprint<br>MI QRP Memorial Day CW Sprint                                                    | <b>30</b><br>COLUM. COUNTY TRAINING NET 8:00PM                                   | <b>31</b><br>Homeland Security Net 7PM at ACH<br>NORTHERN COLUMBIANA ARES NET 9PM 147.255                                              | <div style="display: flex; justify-content: space-around;"> <table border="1" style="font-size: small;"> <caption>April</caption> <tr><th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th></tr> <tr><td></td><td></td><td></td><td></td><td></td><td>1</td><td>2</td></tr> <tr><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr> <tr><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td></tr> <tr><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td></tr> <tr><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr> </table> <table border="1" style="font-size: small;"> <caption>June</caption> <tr><th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td></tr> <tr><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr> <tr><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr> <tr><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td></tr> <tr><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td></tr> <tr><td>30</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table> </div> |                                                                                                                  |                                                                      |                                                                                                                                                                                                                                                 | 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 | 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 |  |  |  |  |  |  |
| S                                                                                                                    | M                                                                                | T                                                                                                                                      | W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | T                                                                                                                | F                                                                    | S                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |
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| 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                                                                                                                                                                                                                                              |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |
| 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                                                                                                                   |                                                                                  |                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                  |                                                                      |                                                                                                                                                                                                                                                 |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |

*Give a person a fish and you feed them for a day; teach that person to use the Internet and they won't bother you for weeks.*



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## Wayback Machine

*(Continued from page 4)*

"Whistle on" or other coded access would be required--carrier activated repeaters would NOT be allowed. No cross band, linked or chain repeaters or multiple outputs would be allowed. The maximum power permitted was 600 watts input (about 400 watts output). And, finally, the FCC declined to allow fully automatic repeater operation, the proposed rules required the licensee of a repeater station to be in attendance at the transmitter or at an authorized fixed control point and to monitor all transmissions of the station.

The proposed repeater rules appeared unduly restrictive to many hams. Except for 2 meters, each band had only a 200 KHZ wide input/output window. On 2 meters the input/output subbands were 300 KHZ wide--but 2/3 of the repeater output subband was above 147 MHZ--where Technicians weren't allowed!! The FCC had still not acted on the ARRL's 1969 proposal to open all VHF frequencies to Technicians. When the FCC was questioned on the legality of a Technician using a repeater whose input was within the 145-147 subband,

but whose output was above 147, they said the Technician operator **COULD NOT USE THE REPEATER**. The FCC went on to say "the licensee of such a repeater should sit there with the latest Callbook showing license class and keep his finger on the NO-NO button". (Yes, this is an actual quote). So much for liberal repeater rules.

Despite the FCC's rather restricted proposed rules, repeater operations flourished throughout 1970 & 1971. Over 200 repeaters were on the air by 1971, almost all of them in the 146--147 MHZ range so they could be used by Technicians. But, with the uncertain status of future FCC rules, the lack of national frequency standards, and the inability of Technicians to operate the full 2 meter band, a dark cloud hung over the FM world.

In our next installment, we will review the ARRL's national plan for 2 meter FM, as well as the revised FCC rules on repeater operation. I hope you will join me.