

The OVH ARC Newsletter
OLE VIRGINIA HAMS" AMATEUR RADIO CLUB, INC.
Post Office Box 1255, Manassas, Va. 20108
OVH FM Repeaters - 146.970- & 224.660- & 442.200+ & 443.500+
OVH D-STAR Repeaters - W4OVH - 146.865- & 442.5125+ (now temporarily out of service)
Web Site at <http://w4ovh.net>

OLE VIRGINIA TIMES

November 2015

Next Meeting: Monday, November 16, 2015

PRESIDENT'S LETTER:

Hello to all; I trust everyone had a safe Halloween.

As we begin our "final approach" for the year, OVH is as busy as ever - there is a lot going on in the next month or so; but it is also time to reflect on the many "thanks" that are in order for recent activities.

Just during the past month I've noted a few observations: many of our members recently trudged out in the very early morning darkness to support communications needed for the annual Marine Corps Marathon; Mark /WA4KFZ has just wrapped up another successful Technician Licensing Class, along with our VE team, headed by John / KG4NXT administering the exam; Stu / W4PR and Art / W1CRO for chasing down and securing our club call signs (see article elsewhere this newsletter); our Technical Committee members for diagnosing and alleviating repeater problems; Paul / W4ZB editing the monthly newsletter, keeping the OVH web site up to date, and prodding me each month for this column—all while piloting his way around the country; Theresa / KG4TVM coordinating our holiday party (13 December, Yorkshire Restaurant—details elsewhere in this Newsletter) along with many other activities, along with Art / W1CRO in updating our club membership roster, Terry / KC4DV in heading up again the 2016 Manassas Hamfest planning and operation committee, and Terry / WA5NTI especially for his activities with the 4H and youth oriented activities, and Clarence / K4CNM for his involvement in many OVH activities, including the BBHN group, and George / K4GVT for his technical work and coordination with the City of Manassas again for its upcoming Christmas Parade.



I didn't specifically mention the OVH's officers and directors (all of whom are dedicated), and I'm sure I may have missed mentioning a few other too, but that can happen when you get older so please don't feel slighted if I forgot to mention you. As you can see from this month's Reminders column, there are many other club activities ongoing

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Ole Virginia Hams Amateur Radio Club, Inc.

Post Office Box 1255
Manassas, Virginia 20108

OFFICERS

President:	Wayne Phillips	N7QLK	393-8447
Vice Pres:	Clarence Meese	K4CNM	791-6424
Secretary:	Byron Dillon	AK4XR	222-2095
Treasurer:	Terry Erlacher	KC4DV	571-292-1490

DIRECTORS

Don (Butch) Blasdell	W4HJL	369-2877
Arthur Whittum	W1CRO	791-4330
Charlie Dale	WA4YGI	361-3091
Bob Zaepfel	K4HJF	282-2451

WEEKLY FM REPEATER NET COORDINATOR

Thurs - 8:00 PM Local Time	JOHN / KG4NXT	257-3566
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HAMFEST 2015 - Chairman

Terry	KC4DV	571-292-1490
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FIELD DAY 2015 - Co-Chairs

John	KG4NXT	257-3566
Ken	KM4ABL	753-7863
Byron	AK4XR	222-2095

CLUB ROSTER / DATABASE

Arthur	W1CRO	791-4330
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EDUCATION

Mark	WA4KFZ	818-8033
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CLUB EMERGENCY COORDINATOR

Clarence Meese	K4CNM	791-6424
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ARES - EMERGENCY COORDINATOR

David Lane	KG4GIY	703-628-3868
email: KG4GIY@ARRL.NET		
Prince William County ARES website	http://pwcares.org	

FINANCE

Arthur	W1CRO	791-4330
Mark	WA4KFZ	818-8033
Terry	KC4DV	571-292-1490

GENERATORS

Steve	N4OGR	361-0008
Keith	KM4AA	909-1512
Al	KB4BHB	368-4794

HISTORIAN

Theresa	KG4TVM	257-3566
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WEBMASTER — W4OVH.NET

Paul	W4ZB	754-0910
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EMAIL REFLECTOR — w4ovh@googlegroups.com

David Lane	KG4GIY	628-3868
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JOTA

Scott	KB8NUM	365-2642
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LEGAL

Bob	K4HJF	282-2451
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MEMBERSHIP CHAIRMAN

Luther	KJ4FDK	361-4885
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NEWSLETTER

Paul	W4ZB	754-0910
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NEWSLINE FOR THE WEEKLY NET

John H.	KG4NXT	257-3566
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PROGRAMS FOR MEETINGS

Terry	KC4DV	571-292-1490
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QUARTERMASTER

Steve	N4OGR	361-0008
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REPEATER CONTROLLERS

George	K4GVT	791-5956
Arthur	W1CRO	791-4330
Butch	W4HJL	369-2877
Steve	N4OGR	361-0008
David	KG4GIY	361-3042
Russ	WB4HHN	368-6435

W4OVH — TRUSTEE

Stu	W4PR	335-5267
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W4PVA — TRUSTEE

John	KG4NXT	257-3566
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SCHOLARSHIP

Jim	W4JTP	392-0150
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SUNSHINE

Theresa	KG4TVM	257-3566
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TECHNICAL COMMITTEE

George	K4GVT	791-5956
Arthur	W1CRO	791-4330
Butch	W4HJL	369-2877
Bill	N4SV	590.9562
Bob	K4HJF	335-1939
David	KG4GIY	628-3868

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The OVH ARC regular monthly meeting is at 7:30 p.m. every third Monday. In July, 2014, and is held in the Main Conference Room in the Manassas Public Works Building, 8500 Public Works Drive, Manassas, Virginia. Members, prospective members and other interested persons are invited to attend without obligation. Local information can also be obtained through the OVH's FM repeaters on 146.970-, 224.660-, 442.200+ and 443.500+ MHz. The OVH's two D-Star repeaters on 146.865- and 442.5125+ MHz are temporarily off the air due to maintenance work beyond the OVH's control. Up to date information about OVH activities and its meetings is also available during the OVH's nets on its FM Repeaters each Thursday night at 8:00 p.m. or on 80 meters (3710 KHz) LSB each Sunday night at 7:00 p.m. (8:00 pm in Summer) or through the OVH's web site at <http://w4ovh.net>

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and coming up shortly, headed by dedicated members, who would love to hear from others for volunteer support. Also, with more events coming up in the New Year, we're always soliciting for chairpersons for them. Lot of things to do.

Two closing thoughts. I keep Alan / WA2GTT in my thoughts and prayers, as I'm certain we all do, as he continues with his recovery. Also, as I watch world events unfold in the news, I'm reminded of how valuable our military veterans' service means and recognize their sacrifices. To them, current and former, thank you and happy Veterans Day.

I hope to see all of you at the Monday, Nov 16th, next regular OVH meeting, 7:30 pm at the Manassas Public Works, 8500 Public Works Drive, Manassas, Virginia. Even if you can't make the upcoming meeting, be sure to mark your calendar for the December 13th Year End/ Christmas Party to which all members and their families are invited, and plan to come to that.

Keep the thoughts and ideas coming to me at: N7QLK@ARRL.net.

73 Wayne N7QLK

Sunshine Corner:

Happy birthday wishes this November to Wayne / N7QLK, Kevin / KA4RNH, Jim / KK4CWO, Baofang / KK4JFK, Theresa / KG4TVM, Butch / W4HJL, Greg / KM4CCG, Gene / KD4RHC, Charlie / WA4YGI and Joe / AB4QV

Happy Veterans Day to each of our club members who have served. Our hats are off to each of you for your dedication.

Sending lots of sunshine to Alan / WA2GTT as he continues to get his strength back.

Special thanks to Mark / WA4KFZ for completing another very successful Technician Licensing Class. Everyone who attended passed and now hold a Technician or higher class license; one guy passed both Tech and General. The VEC session run by hubby KG4NXT, Luther / KJ4FDK, Dan / WB4KLC, Al / KB4BHB, Wayne / N7QLK, Ray / KM4EKR, Byron / AK4XR, Clarence / K4CNM and Steve / N4OGR for the examinees produced 4 new Techs, 2 new Generals and 1 new Extra Class. Thanks to all!

Please mark your calendars for Sunday, December 13th. Our annual Year End / Christmas / Holiday Party will be held at Yorkshire Restaurant starting at 6 pm that evening. This is a family event so all OVH members should bring family members too; the main course will be provided, but please bring a pot luck side or dessert dish to share with the group. Also we will be collecting new, unwrapped toys for the Toys for Tots campaign.

The OVH will again be helping with communications during the City of Manassas' Christmas Parade on Saturday morning, December 5th. This is a major event locally – the City has sponsored and coordinated that parade each year for many, many years. Most communications during the parade will be on the 443.500 repeater using handhelds. If you are able to participate, please contact George / K4GVT and watch the OVH email reflector.

Hamfest Committee planning meetings are in full swing again for the 2016 Manassas Hamfest. All are invited to participate and attend the monthly meetings to see how that event is planned and put on. Watch the OVH email reflector for notice of the next meeting in early December or contact Terry / KC4DV who is the Hamfest Chairman.

Happy Thanksgiving to you and your family! Yes, there will be a Thursday night net on Thanksgiving evening at 8:00 pm as there is every Thursday evening – be sure to check in!

73 Theresa KG4TVM email: kg4tvm@hotmail.com

Minutes of the Ole Virginia Hams Amateur Radio Club Meeting October 19, 2015:

OVH President, Wayne / N7QLK called the meeting to order at 7:30 pm. Meeting was held at the Manassas City Public Works Building in Manassas, Virginia.

After the Pledge, all present stated their names and call signs. There were 25 OVH members and 3 guests attending.

BUSINESS MEETING

Minutes from the September meeting were sent out in the Newsletter. Motion to accept September's minutes with no corrections or amendments by Bob / K4HJF, seconded by Al / KB4BHB, motion passed.

Treasurer's report – Terry / KC4DV gave the report, motion by Al / KB4BHB to approved the Treasurer's report as presented. John / KG4NXT seconded the motion. Motion passed by vote of all members in attendance.

Membership – Luther / KJ4FDK presented Judy Colovus (no callsign yet), who was read in last month, to the members for a vote of membership. The vote was unanimous. Welcome to both Judy and her husband, Kevin, who was voted in last month. Both are currently in Mark's Tech class and hopefully will have their callsign after the next VEC session in November. Luther / KJ4FDK, read in the application for membership from Bill Lesser / KM4KWX who was present. Bill will be voted on in Novembers meeting.

ARES – no report.

Repeaters- George / K4GVT, reported that the repeaters are up and running. The duplexer was tuned up on the "97" machine. It looks like we can begin working at Mt. Pone to put the antennas back up since the painting is finished. Work to put the new shed at that location will begin soon also.

Training- Mark / WA4KFZ report that the class for the Technician License has started and there were 9 students initially. As of the meeting there were two classes left in November with a VE session on November 10 from 7pm to 9pm.at the Public Works building.

Scholarship- No report on scholarships applications at this time of the year.

Hamfest – Terry / KC4DV will have at planning meeting for the 2016 Hamfest on November 4th. More details to come out on the reflector. This is early, but there were only three attendees at the first meeting in early October.

Field Day event in June – still looking for a Chairman

Sunshine Corner – Theresa / KG4TVM wished Terry / WA5NTI a Happy Birthday. She also mentioned the mini-Tri, which was well attended. It was the last one of the season.

JOTA- was held on October 17th at the Braemar Swim Club Pavilion in Bristow.

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4-H – Terry / WA5NTI responded “no report, no activities.”

Year End / Christmas / Holiday Party!!- Theresa / KG4TVM announced that the Holiday party will be on Sunday, December 13th at the Yorkshire Restaurant. All OVH members and their families are invited. Main Course will be provided, but plan to bring Pot Luck side or dessert dish to share. Also, bring a toy for “Toys for Tots”. Al / KB4BHB has the deer meat for John / KG4NXT’s chili, which is very popular.

Trailer committee- it needs to be washed before any vinyl lettering can be applied however with the low temperatures we may need to wait for warmer weather.

Break

50-50- George K4GVT won \$9.00, which he donated, to the club.

Convoy on the air stats: 2296 contacts made, 247 hours on the air, 177 QSL cards received (more expected), 76 log sheets, 13 different operators participated, 2 clubs and 1 month of fun.

BBHN- there will another be a meeting / workshop at the Central Library Community Room from 10am to 4pm on Saturday, November 14th. All are welcome to stop by any time and stay as little or as much as they want.

The City of Manassas Christmas Parade will be held on the first Saturday in December in the morning. George / K4GVT is again coordinating the OVH’s participation.

The Club’s license for W4PVA has expired and John / KG4NXT was unable to renew due to technical issues with the FCC. The renewal has to be done by an officer of the club. Art / W1CRO who is a director of the club has taken on the task of getting the license renewed.

Stu / W4PR made a motion to adjourn; Theresa / KG4TVM seconded, motion passed and meeting adjourned.

Reminders about some upcoming events / calendar dates:

PUBLIC SERVICE EVENTS:

Saturday, December 5, 2015 - OVH to communications support for the City of Manassas’ Christmas Parade. OVH volunteers or those interested in participating, contact George / K4GVT who is coordinating the event with the City of Manassas. email: george@k4gvt.com Assembly of the participants will be at 7:00 am in Manassas on December 5th.

OVH YEAR END PARTY

Sunday, December 13, 2015 at 6:00 pm at the Yorkshire Restaurant, 7537 Centreville Road, Manassas, Virginia: OVH’s Year End/Christmas/Holiday party. Save the date - all OVH members and their families are invited to this annual OVH club event. The main course will be provided, but please bring a Pot-Luck side or dessert dish to share. Also please bring an unwrapped gift for Toys-for-Tots.

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SPECIAL HAM RADIO EVENTS:

Saturday, November 14, 2015, 10:00 am to 4:00 pm at the Community Room at the Central Community Library, 8601 Mathis Avenue, Manassas: BBHN systems and applications meeting. This is highly recommended for anyone interested in Ham Radio BroadBand Ham Network (BBHN) systems, applications, configuration, testing, opportunities to talk live with and get hands on assistance from the local experts on these subjects.

Third Thursday evening each month - AMRAD meets in McLean, Virginia - meetings usually consist of high level amateur radio related technical presentations on specific topics. Check the <http://amrad.org> web site for upcoming topics, and exact dates, times and places.

UPCOMING HAMFESTS:

Saturday, February 6, 2016, Richmond Frostfest Hamfest in Richmond, Virginia. More info online at <http://frostfest.com> First "local a" Hamfest of the year - a couple of carloads for OVHers usually drive down to Richmond for this early in the morning so ask around if you need a ride.

Sunday, March 20, 2016 - Vienna Wireless' Winterfest at the close by George Mason University Annandale Campus in Fairfax County. OVH usually has a table at this Hamfest.

OVH HAMFEST COMMITTEE MEETING:

Early December ??, 2015, evening in Manassas, date, time and place to be announced for the Third Hamfest Committee meeting for the June 2016 Manassas Hamfest. Check the OVH email reflector for more details, date, time and place. All are welcome to attend.

PUBLIC SERVICE / TRAINING / ARES EVENTS

Always check the online Calendar by David / KG4GIY at <http://www.pwcares.org> for the latest updates. David maintains a comprehensive calendar for upcoming events at that web site. Complete direct contact information for David appears on page 2 of this Newsletter.

A BRIEF HISTORY AND DISCUSSION ABOUT THE CURRENT USE OF THE TWO OVH CLUB LICENSE CALLSIGNS: W4OVH and W4PVA

The Ole Virginia Hams Amateur Radio Club (OVH) currently has and uses two separate callsigns for station operation at special events and Field Days: W4OVH and W4PVA.

The OVH's original callsign (long ago) was WA4FPM which was later followed by W1CRO. In the mid-1980's, after vanity callsigns became available from the FCC, the OVH voted to obtain a vanity callsign that matched the club name. As a result, after some time and effort, the FCC issued the callsign W4OVH to the OVH and that was then (and for a long time) the only callsign used for all OVH events. However, shortly after a very popular, nationally known and active founding member of the OVH, Harry D. Vorhauer (W4PVA), passed away on December 23, 2004, the OVH obtained his callsign (W4PVA) as an In Memoriam club license callsign.

For a considerable time (until quite recently), the OVH's Trustee held both licenses on behalf of the OVH which regularly used both. But with the FCC's busy bureaucracy, the FCC eventually changed the rules, specifying that one individual could not act a trustee for more than one club license (FCC Q&A: A club station license makes it possible for members of an amateur radio club to have a station operated under a unique call sign. It conveys no operating privileges. An individual may serve as the trustee **Cont'd on page 7**

for only one club station license grant. This rule change has prompted the OVH recently to designate two Trustees individuals; Stu / W4PR for W4OVH and Arthur / W1CRO for W4PVA.

The mechanics of using the two callsigns (except for use on the OVH's repeaters - which is not discussed here) is as follows: The Trustee for the particular license to be used, be it W4OVH or W4PVA, grants permission to operate under the license and designates control operator(s) for the duration of a particular event (e.g., Field Day). The control operator(s) are the individuals on site responsible for ensuring that operation under the particular/callsign is maintained in accordance with FCC rules. This includes proper radio procedure and adherence to current FCC rules, especially with respect to logging contacts. The control operator(s) must have a copy of the club license at the site where the special event is taking place. Both Stu and Art will routinely provide either a hard copy or an email attachment for use by control operator(s).

Logging of contacts during special events, by the way, should always be more than just writing in the call sign of the station contacted. For all contests, especially, each contact must list a call sign, DATE AND TIME, and exchange. Although OVH special event operations don't necessarily intend go after contacts to "make the biggest possible score", the other amateurs we contact may be doing just that; incorrect (or failure to) log the accurate date, time and contest exchange not only messes up the OVH event log, but it also perhaps deprives the other operator of a needed contact or points. So good operating practices should always be followed with logging of contacts.

Arthur / W1CRO

A few pictures from the October 17, 2015 Boy Scout JOTA event at the Braemer Center, Bristow, Virginia



Attempting a two way voice contact with another ham radio station through an orbiting satellite transponder using a small VHF/UHF transceiver with a hand held and hand pointed directional yagi antenna

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Excitement of making a first HF contact!

Knowing how to use computers is an essential element of modern digital communications - even with ham radio



Be Considerate When Sending Images Over The OVH Email Reflector And Some Related Comments About Sending Digital Files Over Radio Circuits

OVH members are very fortunate to have access to an excellent “closed” email reflector system which was setup years ago by David / KG4GIY with GoogleGroups. The system is very reliable and works extremely well to provide means for any OVH member registered on the system to send immediately an email message (including with file attachments) to himself / herself and all other OVH members who are registered.

Occasionally an OVH user will send a quite large filesize file with the email, most commonly as an attached file or less frequently as an embedded high resolution image. With high resolution digital cameras proliferating, including in pocket smart phones, almost everyone is now taking more and more pictures which we want to share with others. Many of these newer cameras devices produce

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color image files with file sizes in the 3 to 10+ megabyte range which are great for high resolution image manipulation and improvement (e.g., using Photoshopping) and very high quality color image printing. Unfortunately, these high resolution color image files are 10 to 100 times or more larger (in filesize) than what is actually required just for good image quality viewing on the recipient's computer / tablet / smart phone screen. Sometimes, almost always without much forethought, such very large image files are sent via email to a recipient who is only, at best, expected to view the image on screen for a short time before deleting it. This scenario of sending very large filesize color image files via email (without much forethought) by no means is happening just on the OVH email reflector. It has become very easy to do that without much thinking about it and many are doing it without much thinking about it.

What is the problem here? For some email recipients, the receipt of a few very large files via email can unexpectedly fill up an email account storage limit, resulting in further incoming emails bouncing back to the later senders as undeliverable, a condition which will persist until the unread email storage is downloaded by the recipient and then deleted from the email server. Certainly not all email server setups have relatively low filesize storage limits (e.g. 10 to 30 Mb), but many do. Those can be easily, quickly and unexpectedly clogged up by the receipt of a series of large files. A month or two ago, a user on the OVH reflector started an interesting email thread with a large embedded color image file. Because the image file was embedded in the email itself (it was not a separate attached file), each time someone responded to that email thread back to the reflector, the full original (very large) embedded file was re-sent back to the OVH email reflector. Because several recipients responded to the email thread back to the reflector, more than 40 Mb of email traffic was generated in less than a day. This overloaded email storage limits and created "undeliverable" bounces for some email users.

What can be done to avoid this problem? The most basic thing is think about what you are doing before just doing it. Is there any need to send a very large color image file to everyone on the reflector because everyone on the reflector will want to print it out in color at full available resolution? If not, consider sending only a reduced file size image which can be viewed with good resolution on screen. Use a file resolution reduction program to reduce the file size from the 3+ Mb image filesize down to the 100 to 300 Kb filesize range. Many programs and applications are available to do that. If you think perhaps someone on the reflector will want to print the full resolution image, offer to make the full resolution image available upon request rather than just sending it to everyone (most don't want or need the full resolution image). Or you can post the full resolution (very large size) image on a web link such as dropbox.com (or a private web site) and give a URL link to it in your email to the reflector. Following good practices such as these will avoid clogging email accounts of other reflector users (with unwanted high resolution images) - which is very annoying for such users when it happens. Yes, users who experience this type of problem could upgrade or improve their email systems to avoid "seeing" this problem - but remember, simple upgrades do not eliminate the problem (they just mask the problem or for the moment prevent it from being "seen") and costs money and time which those users may not want to expend. So, our suggestion is to be considerate, think about this, and think what you are doing before you just do it!

As ham radio operators in the modern digital communications age, we should all be knowledgeable and routinely sensitive and attentive to these type of issues - which are by no means restricted just to email communications via the Internet. For example, what if one wants to send a digital image file via a slow speed HF radio connection/circuit (e.g. SSTV, RTTY, PACTOR, etc.)? In that type of scenario, good practice requires that the digital image filesize be reduced to that which will provide the minimum acceptable image resolution for the recipient before the file is sent. Why? Sending a very large (highest available resolution) file may not be possible or practical on a slow speed HF digital circuit; propagation conditions may change sufficiently that circuit becomes unusable before a very large file can be sent completely - whereas a smaller file (which still provides adequate resolutions for the intended use) can be sent quickly. Good practices for web page design for many years have required the use of minimal file sizes for images to minimize image download times before an accessed web page can be displayed and viewed on screen. Certainly just about everyone has experienced and noticed that some personal web sites have image files which load (download) very slowly before they can be viewed on screen. Most often this is due to poor web page design in which the web page creator has used very large resolution image files rather than smaller image files which are adequate for on screen viewing.

SOME POSSIBLY USEFUL OR INTERESTING INFORMATION

1. Need a simple, easy way to determine the coordinates for your location? Go to <http://mapper.acme.com> to get very exact Latitude / Longitude coordinates for any point which can be located on a Google Map display.

2. Need to send / receive email but only have an HF (high frequency band) ham radio transceiver to use? Check out <http://winlink.org> to learn about the Winlink network. Winlink and its predecessors have been around now for nearly 25 years. Its present HF embodiment is based upon an automated worldwide network of PACTOR HF ham stations, which make it possible to send and receive email, including limited size file attachments via the Winlink network, using an HF radio, connected through the system to the Internet. This system is designed and intended to be used mostly by mobile operators (e.g., on small boats), emergency communications networks and experimenters. Limitations of the system are the use of HF (propagation is often times not reliable) and the relatively sparse locations geographically of the HF network PACTOR stations. For more reliable mobile communications, consider using a satphone (satellite telephone) with dial up voice connection capability and/or an Internet connection capability which allows sending/receiving email.

3. SKYWARN. The SKYWARN program sponsored by the National Weather Service has been around for almost 45 years and many hams are active participants. The SKYWARN program is designed or intended to allow rapid, real-time collection and dissemination of severe weather observations from trained (but non-professional) observers. Severe weather (severe thunderstorms, tornados, flooding, etc.) is often quite localized. It is necessary to take a NOAA course to become an accredited SKYWARN observer. If interested, Google wiki skywarn or contact the several OVH members who participate. To learn more about severe weather and how to make observations, check out <http://www.nws.noaa.gov/om/brochures/SGJune6-11.pdf> Additionally, two online courses about SKYWARN are offered at <https://www.meted.ucar.edu> You need will to register there to access the courses but they are free. The meted.ucar.edu web site also offers many other free online courses on weather related topics, including Space Weather. An excellent online resource!

4. Severe weather thunderstorms are always accompanied by lightning and tracking lightning provides a good way to locate current thunderstorms. The Storm Prediction Center offers a continuously updated, animated weather graphic of rainstorms at http://www.spc.noaa.gov/exper/mesoanalysis/activity_loop2.gif for the continental USA (CONUS). Another professional website at <http://thunderstorm.vaisala.com/explorer.html> provides a corresponding near real-time lightning stroke graphic for CONUS and supplied its data to NOAA. Interestingly, a group in Germany has developed (and sells online) its own low cost lightning detection sensors and established an Internet connected network of volunteer operated lightning detection sensors worldwide. That group now provides an online, near real-time worldwide map of (aged) lightning strikes at <http://blitzortung.org>. [Blitzortung is German for "lightning location." Remember the famous reindeer named Donner and Blitzen = Thunder and Lightning in English.] The blitzortung maps compare very well to the Vaisala map data.

5. More on weather and ham radio. The Citizen Weather Observer Program (http://wxqa.com/cwop_info.htm) (CWOPS) is another private group which attempts to aggregate via the Internet locally collected surface weather data from automated weather sensors maintained by volunteers at their locations. Radio hams who maintain such weather sensor systems can be signed up at <http://www.findu.com/citizenweather/signup.html> almost automatically. The type of surface weather data collected by CWOPS stations is comparable to METAR data collected at larger airports and disseminated internationally in support of aviation operations; METAR data can be accessed by airport code at <http://aviationweather.gov/adds/metars> [KHEF = Manassas Regional Airport, KIAD = Dulles Airport, UUEE= Moscow Sheremetyevo Airport, CYYZ = Toronto Pierson Airport, etc, etc.] Of course, CWOPS surface weather data collected by volunteers is not certified and may not be as accurate as METAR data.

6. In addition to airport collection of METAR data, various World Meteorological Organization (WMO) identified weather stations continuously collect SYNOP surface weather data at numerous non-airport locations worldwide. A very innovative US located web site at <http://weatherobs.com> set up by an individual in the UK aggregates and displays on a worldwide Google map surface weather data (collected by and disseminated over the Internet from the US government) METAR, SYNOP and CWOP sources in near realtime. Very interesting!