

# OLE VIRGINIA TIMES

## October 2019

### Next Meeting: Tuesday, October 15, 2019

#### PRESIDENT'S LETTER:

Greetings to all this October. The cooler weather certainly is appreciated.

Speaking of cooler weather, wasn't the weather at the Prince William Half Marathon great last weekend? I don't want to jinx it, but I think the weather has been great at the four previous PWHMs too. We certainly had a great time a checkpoint B again this year.

I showed up at the checkpoint B about 0545 thinking I would be the first one there. Nope! John / KG4NXT was already there and waiting. So we set up our equipment and some chairs to sit in while waiting for the runners to arrive. Duane / KK4BZ showed up while we were still setting up and he set up his equipment with lightning speed. He has a vertical antenna that he attaches to a length of PVC pipe; his HT is attached to that and arranged so that his speaker/mic hangs down just at the right height for quick operator access. You can tell some thought has gone into its construction. John / KG4NXT call it "The Staff of Duane".

You are probably thinking, this is what we do, set up for different events like this, that is the challenging part that we love to do. That and operating of course. However, what I look forward to every year at this event is watching Duane / KK4BZ, cheer the runners on. It's kind of catching, that is I find myself cheering on the runners too. Even John / KG4NXT is cheering them on also. But we can't come close to the level of cheering that Duane / KK4BZ is doing. I believe there is a video to support my case somewhere. Our check point is at a parking lot like a cul-de-sac. The runners enter and run around the perimeter. We are at the exit end and so we see the runners entering, going around the loop and running by us at the exit end. They hear Duane as they are entering and as they come around we can see the big smiles on their faces as they

**Cont'd on Page 3**



# Ole Virginia Hams Amateur Radio Club, Inc.

Post Office Box 1255  
Manassas, Virginia 20108

## OFFICERS

President:	Byron Dillon	AK4XR	222-2095
Vice Pres:	Jeff Fuller	WB6UIE	791-5916
Secretary:	John Heartney	KG4NXT	257-3566
Treasurer:	Don Meyerhoff	WA2SWX	597-3211

## DIRECTORS

Don (Butch) Blasdel	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 2019 - Chairman

Don	WA2SWX	597-3211
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## FIELD DAY 2019

Byron	AK4XR	222-2095
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## CLUB ROSTER / DATABASE

Arthur	W1CRO	791-4330
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## EDUCATION

Mark	WA4KFZ	818-8033
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## CLUB EMERGENCY COORDINATOR

Open

## ARES - EMERGENCY COORDINATOR

David Lane	KG4GIY	703-628-3868
	email:	KG4GIY@ARRL.NET
Prince William County ARES website	http://	<a href="http://pwcares.org">pwcares.org</a>

## FINANCE

Arthur	W1CRO	791-4330
Mark	WA4KFZ	818-8033
Don	WA2SWX	597-3211

## GENERATORS

Steve	N4OGR	361-0008
Al	KB4BHB	368-4794

## HISTORIAN

Theresa	KG4TVM	257-3566
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## WEB COMMITTEE — W4OVH.NET

Kevin	KX4KU	540-445-5183
Andy	KJ4MTP	786-4651
John	KG4NXT	257-3566
Ken	KN4DD	622-2638

## TWITTER & FACEBOOK ACCOUNT MODERATOR

Jeff	KM4FTK	830-4155
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## EMAIL REFLECTOR — w4ovh@googlegroups.com

David Lane	KG4GIY	628-3868
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## JOTA - 2018

John	KG4NXT	257-3566
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## LEGAL

Bob	K4HJF	282-2451
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## MEMBERSHIP CHAIRMAN

Luther	WA3FMO	361-4885
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## NEWSLETTER

Paul	W4ZB	754-0910
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## NEWSLINE FOR THE WEEKLY NET

John.	KG4NXT	257-3566
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## PROGRAMS

Jeff	WB6UIE	791-5916
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## QUARTERMASTER

Steve	N4OGR	361-0008
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## REPEATER CONTROLLERS

John	KG4NXT	257-3566
Ken	KE2N	753-8587
George	K4GVT	791-5956
Arthur	W1CRO	791-4330
Butch	W4HJL	369-2877
Steve	N4OGR	361-0008
David	KG4GIY	361-3042

## W4OVH — TRUSTEE

Wayne	N7QLK	571-237-0520
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## W4PVA — TRUSTEE

Arthur	W1CRO	791-4330
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## SCHOLARSHIP

Sandy Knight	KM4JUS	901-4664
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## SUNSHINE

Theresa	KG4TVM	257-3566
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## TECHNICAL COMMITTEE

Ken	KE2N	753-8587
Andy	KJ4MTP	786-4651
George	K4GVT	791-5956
Arthur	W1CRO	791-4330
Butch	W4HJL	369-2877
Bob	K4HJF	335-1939
David	KG4GIY	628-3868

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go by. His cheers are simple. "It's all downhill from here" with a "Trust me" thrown in occasionally before that cheer. It's all great fun. Thanks to Wayne / N7QLK, for organizing our club's participation in this event for the fourth year.

Our next breakfast get together will be Saturday morning, October 12th at 0800 at the Yorkshire Restaurant. I may be out of town this Saturday, but you don't need me there for a good time. I will put out reminders on the reflector Friday.

Make sure to check out the VP's Corner on the club web site. I am hoping to learn the Morse Code and have signed up for the online class by CW OPS. Unfortunately or fortunately, it doesn't start till January. I really want to start learning it soon. Thankfully I can go through the homework assignments while I wait. The good thing about having to wait to January is, since I am so busy with work, I haven't had time to study the homework assignments which would be bad if I was actually taking part in the classes now.

I know a few club members are participating in the Marine Corp Marathon at the end of the month. I had a great time when I was able to participate. I was going to sign up to help this year, however, I will be out west helping my father with his seasonal migration to Arizona. I am hoping Mark / WA4KFZ will report/ present to the club his experience with AREDN at the marathon. I was hoping we might be able to use AREDN at some of the events our club participates in. I think it could be a valuable asset at many events. It could really make our club more visible and bring more interest from the public in Amateur Radio.

Happy Halloween! Finally, I hope everyone will be able to make the upcoming regular OVH meeting next Tuesday!

73 BYRON AK4XR

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## Sunshine Corner:

Happy birthday in October to the following OVH club members: Doc / W1IMX, Robert / KK4MXU, Ray / KM4EKR, Scott / KB8NUM, Bob / KC4TNC and Phil / AC4PL

Wedding Bells were ringing at the beginning of September for Art / W1CRO, congratulations and best wishes to the happy couple!

Congratulations to the Club for helping at the Prince William County Half Marathon on Sunday, September 29th. Wayne / N7QLK chaired this event and pulled together over 20 club members to be out on the course. I was at mile 1 and 12 and received many Thank You's from participants for being on the course. The runners/walkers do appreciate us being there. Great job everybody!

Jamboree on the Air (JOTA) is coming up on Saturday, October 19th. We will be working with the scouts for this event. Rob / W4FSK presented a program at the September meeting on this. We will be setting up at Camp Snyder in Haymarket; if you are available, please plan to stop by or monitor on your radio for calls from scouts operating from Camp Snyder.

The Manassas Christmas Parade will be on Saturday, December

**Continued on page 4**

7th, 2019. Ray / KM4EKR has volunteered to pull our the OVH club trailer in the parade, thanks Ray! If you would like to help decorate the trailer please let me know.

Happy Halloween for everyone! Continue to send news or other items to me via email at kg4tvm@hotmail.com or telephone: 703-257-3566. Also, if you do not see your name listed in the birthdays for the appropriate month, please let me know so we can get it corrected and then wish you a happy birthday!

73 Theresa KG4TVM



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## Minutes of the Ole Virginia Hams Amateur Radio Club Meeting held on Tuesday, September 17, 2019:

OVH President Byron / AK4XR called the meeting to order at 7:30 pm on September 17, 2019 in the training room at the Buckhall Volunteer Fire Department Station, Manassas.

After the Pledge of Allegiance, all present stated their names and call signs.

Rob / W4FSK presented on and described the upcoming Jamboree on the Air event which the OVH will be supporting on October 19th. There will be about 175 cub / boy scouts at Camp Snyder and we will be one of the official stations for them to stop at. Please volunteer by October 4th to get a “free” lunch at the event.

Ken / KE2N conducted a show and tell session on equipment to help with lightning protection. He showed some inexpensive optical fiber network connections. The fiber optic cable does not conduct electricity since it is non-metallic.

Membership report by Luther / WA3FMO: no new membership actions for this meeting. The W4OVH.net web site is again taking PAYPAL payments for club dues.

ARES report by Greg / KM4CCG: Upcoming events: a Public Communications Safety Day and ARES Demo, also a turkey trot event sponsored by the Marine Corps.

Repeater Report by Ken / KE2N: Novec is replacing its propane generator with a new diesel generator and we may have a brief outage while they do that.

Training Report by Mark / WA4KFZ: A possible “What Now” session will be scheduled soon. John / KG4NXT reported that Luther / WA3FMO will be running the VE session scheduled for October 26th.

Sunshine Report by Theresa / KG4TVM: Our participation in the Manassas Christmas Parade needs approval and also a member to haul the OVH trailer during the parade. The club’s participation was approved by motion. Ray / KM4EKR agreed to haul the trailer in the parade as he did last year.

IT Committee report by John / KG4NXT: Ken / KN4DD has been doing a great job as our new web administrator. There was a web committee meeting where there were decisions to 1) add PAYPAL back to dues renewals; 2) move the OVH Hamfest web site ( manassashamfest.org ) to Wordpress on the W4OVH.NET web server; and 3) use the web site database to replace the shared

**Cont'd on page 5**



spreadsheet when adding new members.

The upcoming Prince William Half Marathon: report by Wayne, N7QLK: The number of expected racers is now near 1,500. Wayne has about 20 volunteers already signed up but could use some more.

Byron / AK4XR, reported that the tarp was scuffing the corners of the OVH trailer. He threw out the idea of a carport type shelter for the trailer. Wayne / N4HCR, moved that Byron go forward and come back with a specific proposal. The motion passed.

Andy / KJ4MTP, reported on the last Mini Tri event of this season and also on the upcoming Serve Our Wounded Warriors event to be held on May 30, 2020; the club agreed to participate again.

The minutes of the August, 2019 meeting as reported in the September 2019 Newsletter were approved without amendment.

Treasurer report by Don / WA2SWX: Balances reported and treasurer's report was approved  
Jeff /WB6UIE reported on the polo shirt order.

Don /WA2SWX reported on the planning for the 2020 Hamfest: There will be a Joint Hamfest Exploratory Committee headed by Bob / K4HJF. Don has spoken with Manassas Park about getting a price for more space at the community center for next year; they will get back to Don soon.

The meeting was then adjourned.

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## **Reminders about some upcoming events / calendar dates:**

### **HAMFESTS:**

October 27, 2019 (Sunday) -Mason Dixon Hamfest, Upperco (near Westminster), Maryland. This hamfest is getting smaller each year! More info & details at: <https://k3pzn.net/hamfest>

### **HAM RADIO RELATED:**

October 12, 2019 (Saturday morning) 8:00 am - Yorkshire Restaurant, Manassas - the monthly OVH club breakfast get together.

October 19, 2019 (Saturday), 11:00 am - 5:30 pm, JOTA – Scout Jamboree on the Air event at (Boy Scout) Camp Snyder, 6100 Antioch Road, Haymarket, Virginia. Primary organizer / contact person for the OVH: John Heartney / KG4NXT, Tel: 703-789-6449. This is a major Boy Scout / Ham Radio event each year. OVH volunteers are solicited!

October 26, 2019 (Saturday), 8:00 am - 12:00 pm. OVH will be conducting VEC exams for all amateur radio license exams at the Main Conference Room, Manassas Public Works Building, 8500 Public Works Drive, Manassas, Virginia. Primary organizer / contact person: John Heartney / KG4NXT, Tel: 703-789-6449. Circulate this information and be sure to call ahead to be sure you are on the list if you plan to take a new or upgraded license exam. There is expected to be room for walk-ins who will be accommodated on a space available basis.

### **HAM RADIO OPERATING / CONTEST EVENTS:**

The ARRL has a Contest web page at its web site, but a much more comprehensive, up-to-date, and long range planning contesting calendar with links to the rules for the

**Cont'd on page 6**

various events is maintained at <http://www.hornucopia.com/contestcal> by WA7BNM. If you get the radio contesting bug or just want to find out what and how much is going on, that is a good place to look!

## PUBLIC SERVICE / ARES EVENTS

Check the online Calendar by David / KG4GIY at <http://pwcares.org> for the latest PWC ARES 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.

### 2019 - Prince William Half Marathon Event

On September 29, 2019 the Ole Virginia Hams again provided communications support for the 4th annual half-marathon event which also included a 10 mile and 5K race. Approximately 1500 runners participated, which gave the OVH's public service capability very visible to the community.

During the race, we kept track of the male and female race leader and also kept track of the tail end charlies. There were instances of a runner exhausted or down and we responded and called for transport or medical help which did arrive.

The members participating and their posts were:

Net Control: Wayne / N7QLK, Chick / KC1PIA and Erik / K4SOK.

Start/Finish-Wellington Road: Greg / KM4CCG

Post A: Jay / NQ4T, Luther / WA3FMO and Cat / KM4PBD at the NY Monument Loop.

Post B: John / KG4NXT, Duane / KK4BZ, and Byron / AK4XR at Deep Cut Parking Lot/Featherbed Land.

Post C: Al / KB4BHB and Don / WA2SWX at the Brawner Farm Loop / Pageland Lane.

Post 1: Theresa / KG4TVM at the Corner of Wellington Road and University Boulevard.

Post 2: Jeff / K9VEG at the Vicinity of University Boulevard overpass over I-66.

Post 3: Ray / KM4EKR at University Boulevard at the median break North of I-66 overpass

Post 4: Gene / KN4JMB & Mike, KM4EFG at the Intersection of Route 29 and University Boulevard.

Post 5: Mary / KK4GOW & Dick / KM\$UXE at the Intersection of Route 29 and Pageland Lane.

Post 6: Sandy / KM4JUS at the Route 29 Split midway between CP 5 and 7.

Post 7: Joe / KI4OHR & Baofang / KK4JFK btwn intersects of Rt. 29 w/ Featherbed Lane & NY Monument.

Post 8: Andy / KJ4MTP & David / W8DDS at Intersection of Route 29 and Sudley Rd (turnaround).

Wayne / N7QLK, was the chair for the fourth time this year and did an excellent job. About 25 percent of our total club members, some of which do not live in the immediate area, participated. At the end of the event, the race organizers profusely thanked Wayne for the OVH's help and asked us to come back again next year.



# VP's Corner

Jeff Fuller  
WB6UIE



Cooler temperatures of fall will soon be here and, along with them, the beginning of the holiday season. I'm sure your family, like mine, has some holiday traditions which have been passed down over the years. We carry them on, not necessarily for practical reasons, but as a means of bonding and connecting with past generations.

Learning to communicate using Morse code or CW is one such tradition in the amateur radio community. I'm happy to see several of our new hams accepting the challenge. Here are some interesting Morse factoids to encourage you in your studies.

*Q. Why do hams call it CW?*

A. CW stands for Continuous Wave, meaning a sine wave produced by an electronic oscillator. The first radio signals from spark transmitters were damped waves occupying lots of spectrum.

*Q. Was the original Morse code the same as the one in use today?*

A. No. The original code (right) included long dashes and spaces between character dits. That worked for telegraph sounders, but not so well on noisy HF circuits. So radio operators adopted the International Morse Code which is still in use today.

*Q. What do the terms "fist" and "swing" have to do with CW?*

A1. Please, no fighting in the shack. Fist refers to an individual operator's sending style, which is most evident when using a straight key. After working a Morse net for some time, you'll often be able to recognize fellow operators before you've heard their callsigns.

A2. Swing refers to a sending style usually associated with a mechanical speed key or bug. The bug makes dits automatically while the operator makes the dahs manually. In what is sometimes called "banana boat swing", the dahs are drawn out much longer than they would normally be at that sending speed.

*Q. What is a good source of on the air code practice?*

A. ARRL has a regular code practice schedule at speeds of 5 wpm and up. Here's a link: <http://www.arrl.org/code-transmissions>

Again, congratulations to those of you who've taken up the Morse challenge. And, when you greet our new members, try to recruit some of them into the fold. Tell them to think of it as the original texting.



The surplus J-38 straight key is an old friend.

A	. -	O	. . .
B	- . . .	P	. . . . .
C	. . . .	Q	. . - . .
D	- . . .	R	. . - . .
E	. . .	S	. . . .
F	. - . .	T	- . . .
G	- . . .	U	- . - . .
H	. . . .	V	. . . -
I	. . .	W	- - . . .
J	- . - .	X	. - . . .
K	- . - .	Y	- . - . .
L	- . - . (long dash)	Z	. . . . .
M	- - .		
N	- .		

The original Morse Code as used by landline telegraph operators.



A mechanical speed key or "bug".



## Lightning Is Bad News - My September 2, 2019 Experience --- Jay / NQ4T

As hams, we know lightning is our enemy. These big powerful bursts of static electricity can carry a lot of voltage, almost as much current, and is the absolute enemy for our antennas, our electrical supply, and the equipment connected to both. In most cases, many of us will never see a direct lightning strike; and I'm glad to say I'm still technically part of that club. But on the evening of September 2nd, 2019; I found out just how destructive an indirect lightning strike can be.

Thunder had been booming for quite a while and it was getting further and further away when it happened; a super bright flash, a loud boom, and a house that shook like an earthquake (actually, it shook more than the earthquake.) The power immediately went out and everyone wondered what happened. I went outside and saw the power lines shaking like crazy when I got a glimpse of what had happened. About 130 feet away from the corner of the house, a Poplar tree became the target lightning; at least half of it. At some point the tree had decided to split and send two very tall trunks up from it's base.



The upper 40 or 50 feet of this trunk that got hit was just gone; it was spread out in a radius of almost 200 feet. From little shards of wood to 30ft long chunks of tree; the instant vaporization of all the moisture in this tree literally created a bomb. The tree itself was almost split all the way through! In fact at the right angle you can see through it. Miraculously all of this managed to miss the house; despite the fact pieces landed just inches from crashing through an exterior wall and some even landed in the backyard; we're not clear if their path was over the roof or some other direction.



Needless to say, there were bits of tree in places and distances that make you wonder just what happened. However the damage wasn't just from exploded everywhere; some of our electronic equipment took some very strange damage.



To put your worries to rest;

no radio equipment was harmed in this strike. In fact, the HF antenna that's been hanging idly in the tree shows absolutely no signs of damage. It's still in the tree, it's twin-lead is still perfectly intact, the ends of it's disconnected feedline showed signs of arcing, and it was still receiving on my SDR just fine. It's been almost two weeks at this writing and I can only guess that my damage was in fact surge related; but this surge did not come from where you might expect. Had the surge gotten into my electrical system, I would have expected everything in the house to have gotten blown up. But while some of the damage was clear where the surge got in; some of it doesn't make any logical sense.

For starters, it seems most of my damage came in through my Ethernet network. In the shack; the Cat5E jack in the wall was missing and the network switch had literally blown it's cheap plastic case. The desktop computer

**Cont'd on page 9**



and laptop computer plugged in to that switch are no longer functional; in fact the laptop looks like it tried to blow it's keyboard completely off. Both ends of the Ethernet run to the shack were horribly burned. While an external hard drive did survive; it's switching power supply did not.

The GFCI outlet the laptop was plugged in to no longer functions and is covered with burn marks; but the vintage stereo amplifier that was plugged in to the same outlet only suffered a damaged AC plug. The laptop's power supply seems to have literally exploded; I found the insides lying on the floor having freed itself from both the AC and DC wires, and it's plastic housing nowhere in sight. While I'll admit to not having the laptop plugged in to a surge protector; the rest of my equipment in the shack was



and that surge protector clearly indicates it's protection is still good. Tearing it open, I found the usual Metal-Oxide Varistor protection setup; which was still completely intact.

Inside the house, the internet router for my Verizon FiOS had attempted to blow it's case apart and one of its Ethernet jacks was badly burned. Not only did it have to

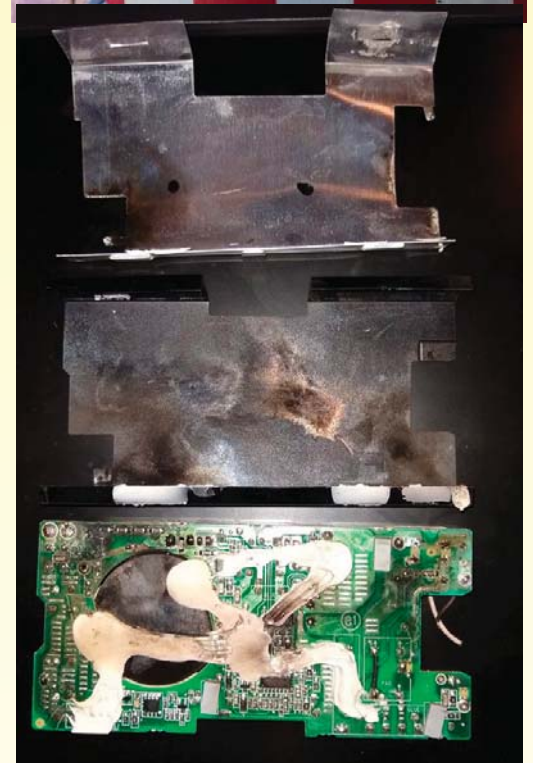
be replaced; but the outside unit that converts the fiber connection in to it's various copper ones (also called an Optical Network Terminal) also had to be replaced. On the second floor of the house, a laptop computer and another networking appliance also failed; which is strange because the rest of the networked devices survived, including a wireless access point and switch. I am leaning more toward the fact that while this wasn't a direct strike; the EM Field was enough to induce currents in outdoor wiring; or as someone told me, surge from the lightning could have tried to distribute itself in the ground itself.

The reason I think this is because of some of the more bizarre things that occurred. In addition to the main 200A breaker for the house triggering, any and all breakers to outside runs had popped; including the breakers for our well and septic system. One idea I was told was that in that brief moment my ground was no longer ground; everything tried to dump the surge back in to the grid, causing all those breakers to trip. Also of note is the fact that just about every other electrical appliance survived. Both the well and septic pumps are functioning, the AC/heat-pump is still functional, refrigerators, stoves, microwaves, even all of the televisions survived.

Since all of that stuff still works, and none of their surge protectors show damage; I don't think this came directly into the electrical system. In fact, I couldn't find any burn marks behind my electrical panel or in any of the wiring I was able to inspect.

Further evidence of this can be found from a few other pieces of damage we've discovered. Our security camera system; which was in fact connected to the same network switch as the one laptop in the house that failed; no longer functions. It's power supply too had blown apart; but most of the damage appears to have come from the output side of the supply. Outside, on the corner of the house closest to the strike; the siding shows burn marks from an obvious arc from the camera wiring. Not to each other mind you, but it looks like the power and video arced to the vinyl siding of the house. The outdoor security light mounted just next to the camera still works.

There was also an oddity where some devices not even connected to a supply got blown up. We have a number of small decorative LEDs mounted around the porch and walk-ways; low voltage (12V) wiring in the ground ran down



**Cont'd on page 10**

to the shack where it's power supply was mounted. While I had disconnected it's power supply years ago due to RFI; every single one of these LEDs are now completely black inside, some blew apart; and the wiring in some spots vaporized; literally blowing holes in the ground. The wires did get blown from the DC output of the supply; but the supply's AC side wasn't connected to anything. I see no evidence of a big flash coming from the power supply.

One of the more bizarre events was the grid that supports the drop-ceiling tiles in our basement became electrified; there are places between pieces that show burns; an exceptionally large gap next to a wall left an arc-flash on the wall itself. One of the in-ceiling fluorescent lights were also lost; with the inside of the fixture showing massive arcing through a bulb and it's light switch was burned and non-functional. Nothing else on that circuit is blown; so I don't think it was the light that energized the ceiling grid. Instead, I believe it was an unused electrical run to an outside outlet that was less than 20ft away from the strike zone that somehow got current in. The Romex where it enters the basement is burned and all three lines are severely pitted; not to mention that outlet got blown entirely out of it's outside enclosure. Again, this outlet wasn't connected to the house anymore; it's disconnected wire seemed to be close enough to the ceiling structure that the surge found its way.

At least...that's the theory I'm going with.

Overall, it could have been a lot worse than what it was; there could have been a fire, the house could have suffered structural damage from flying bits of tree, and we could have suffered a total loss of all electrical appliances. The overall damage was relatively minor.

It's been a very strange and slightly stressful experience. Granted within a few days, everything here was largely back to normal after Verizon restored our services and I found temporary replacements for some of my lost equipment; to me things look more and more like it was just proximity to the strike that did me in. But I'm not going to stand around all day and keep questioning what I could have done. Had my electrical panel blown up and every run in the house burnt; I probably would. But so much of the damage looks like it was just induced currents in wires that managed to do some damage on the "other side" of any surge protection I had; or found disconnected devices to find a way in. It does make me question and respect lightning a little more than I did before. But I don't think this was your "average" strike. You don't need to take a direct strike to take damage, you just need to be close enough to one.

Jay / NQ4T

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## Why Not Use Fiber Optic Cable and Components In Lieu Of Wired Networks To Minimize Network Damage From Lightning?

Ken / KE2N who has had to deal with a lot of lightning strikes and is familiar with fiber optic components lead an impromptu discussion and show-and-tell session during the September 2019 (9/17/2019) OVH meeting which addressed this topic. Ken's presentation was inspired by Jay's then very recent experience with lightning damage to his computer equipment and network which Jay / NQ4T has described above,

Ken passed around some representative fiber-optic devices that can be used (in pairs) to isolate parts of an otherwise wired local area network. This approach should largely prevent damage from conducted lightning surges (through wires or other good conductors) while providing the advantages of a "wired" gigabit connection over optical cable. Amazingly, as Ken pointed out, the cost for these types of fiber optic cables and fiber terminal equipment has dropped dramatically; it should now be considered in lieu of using wired networks, particularly where there is risk of lightning surge damage.

Two basic types of this equipment were described and handed around –

1. All-in-one media converters available from eBay/China at low cost
2. Switches and POE injectors that provide for a plug-in fiber optic SFP module.

**Cont'd on page 11**

Some specific examples of where this technology can provide protection from lightning surges:

Incoming service from the cable company (when the connection is coax – metallic rather than fiber)

Where the shack computer is grounded to the radio equipment and antenna system, a short fiber link can protect the rest of the home internet devices.

Links running outside the house to tower-mounted Ethernet-fed equipment

Links running outside the house to outbuildings such as detached garages, or sheds.

As noted above, the cost of this type of fiber equipment and cable has dropped dramatically in the last few years; pre-terminated optical cables are now readily available from multiple sources – again at reasonable costs. As an example of the drop in prices, take a quick look at the following eBay items (without specifically endorsing the vendor): <https://www.ebay.com/i/312608034852> or <https://www.ebay.com/i/113244280115>

The simple idea is that one may use a pair of these devices and a 3-foot jumper (SC connectors in this case) and for about \$20 one can have provided a complete isolation between your antenna-connected shack computer and your household LAN. These simple fiber optic devices have no set-up or configuration at all – it's just straight plug and play to connect them in and get them working. Ken does note, however, sometimes it may be necessary to reboot one or both units following a complete power failure / outage on your system.

Ken also emphasized that you should also plan to provide a dedicated 120/240 volt circuit for your shack AC power. Note that both of the units mentioned above are powered from the AC line; thus you should plan to power one of them from the shack side and the other from the house side, otherwise you defeat the isolation.

No reason not to try one of these out after the next nearby lightning strike (or before the next one)!

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### **Some Possibly Interesting or Useful Information**

1. The VP Corner this month (back on page 7 above) has a good discussion about CW and Morse Code, but one thing for newcomer hams to CW and the Morse Code to take cautious note of: the code table listed in that column this month is for the American Morse Code which was historically used only by landline railway telegraphers (not hams) in North America. While there are similarities between the American Morse Code and the International Morse Code which is used by hams, the two codes are quite different - so don't spend a lot of time memorizing or trying to learn the American Morse Code from the VP Corner table unless you want to qualify as a railway telegraph operator, a specialty that no longer exists.

2. The American Morse Code remained entrenched with local rail lines in North American Railway system through the mid-1950's. My father had an uncle who was the railway manager at the rail depot in Good Spring, Pennsylvania where my father had grown up. As young kids, my brother (N3KVV) and I would visit there; occasionally the telegraph would come very alive with loud clicking noises from another station up or down the line. Uncle Bill would go over to the telegraph set and send some clicks back, and then write down a short message. The messages I remember were usually from the depot at nearby Tremont, Pennsylvania and were sent to announce the arrival soon of a coal burning / steam freight locomotive. Agricultural supplies came in and anthracite coal was hauled out. Up into the 1940's, there had also been limited passenger service and Western Union telegrams could be originated and received at the depot. That depot station was abandoned in the 1960s; it no longer exists but the tracks are still in use.

3. The online Wikipedia encyclopedia has good information about the history of the American Morse Code, International Morse Code, and other non-standard codes. Check Wikipedia for "American Morse", "Morse Code", "Friedrich Clemens Gerke" and "Morse Code for Non-Latin Alphabets". Morse definitely gets the credit for coming up with the idea of an efficient run length coding scheme, but Gerke (who is relatively unknown) deserves massive credit too for greatly improving upon Morse's concept - in a way which was readily adaptable to radio communications when that came along in the very early 1900's.