

\$3.00

(membership includes monthly subscription)

The Digital

# Viking



## Twin Cities

PC USER GROUP

NEWSLETTER

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*TC/PC Exists to Facilitate and Encourage the Cooperative Exchange of PC Knowledge and Information Across All Levels of Experience*

**April 2020**

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## General Meeting Tuesday, April 14, 2020 7:00 PM

### A Virtual Meeting on Virtual Meetings

TCPC Panel Presentation

### Via Zoom

As the COVID-19 Pandemic keeps us isolated in our homes, we'll meet online, using the Facilities of Zoom, to discuss several online platforms that can allow us to meet in the cloud.

Meeting login instructions will be distributed to TCPC members along with the April Newsletter. We'll post those same instructions on the website, in the meeting event, shortly before the meeting starts.

We suggest that members download and install the Zoom Client for Meetings at their convenience BEFORE the meeting. There is no need to create an account with Zoom.

**Note: Saturday SIGs will be virtual meetings this month. Check [tcpc.com](http://tcpc.com) for links to connect.**

**No Tech Topics with Jack Ungerleider this month**

TC/PC is a Member of



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Application form inside back cover

# The Digital Viking

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## Advertising

Full page (7½ x 9½)	\$100.00
Two-thirds page (7½ x 6)	80.00
Half page (7½ x 4¾)	65.00
One-third page (7½ x 3)	50.00
Quarter page (3½ x 4¾)	40.00
Member Bus. Card (2 x 3½)	10.00

Multiple insertion discounts available.

Contact Sharon Walbran at: SQWalbran@yahoo.com

Deadline for ad placement is the 1<sup>st</sup> of the month prior to publication. All rates are per issue and for digital or camera-ready ads. Typesetting and other services are extra and must be requested in advance of submission deadlines.

Payment must accompany order unless other arrangements are made in advance. Place make checks payable to: Twin Cities PC User Group

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Meets once or twice per year. All members welcome to attend.

Visit [www.tpc.com](http://www.tpc.com) for meeting details.

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## TC/PC Member Benefits

Product previews  
and demonstrations

Special Interest Groups  
Monthly Newsletter

Discounts on products  
and services

Contests and prizes

## Business Member Benefits

All of the above PLUS:

FREE ½ page ad on  
payment of each renewal

20% discount on all ads  
Placed in the *Digital  
Viking* Newsletter

Up to 5 newsletters mailed to  
your site  
(only a nominal cost for each  
additional 5 mailed)

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Editor Sharon Walbran

## A Recent Scam Experience

By Jeff Wilkinson, President, Sun City Summerlin Computer Club, NV

December 2019 issue, The Gigabyte Gazette

[www.scscclub.com](http://www.scscclub.com), Clearmeadows11 (at) gmail.com

Recently I received the "Social Security" scam call, the recorded message informing me that I should call an 800 number because my account was about to be suspended. I decided to play along and see what the suspected scam pitch was; since I was 99.99% sure that Social Security doesn't call you.


I called the 800 number, exclaimed my surprise that there was a problem and breathlessly asked what the problem was. The responder, "Officer Ronald Smith" explained, in an almost unintelligible accent, that he was a senior investigator and I should get a pencil and paper and write down his name and badge number, which he proceeded to give me. He then went on to outline the "problem" which included seven bank accounts opened under my social security number. He said the accounts had been used for money laundering and an investigation was underway with an arrest warrant about to be issued. In addition, there were multiple credit cards also under my social security number which had been linked to illegal activity.

"Officer Smith" then asked if these were my accounts. Upon my answering No, he explained he needed to know how many bank accounts and their approximate balance and how many credit cards I had and their credit limits. I responded with fictitious information of course. He advised me that this conversation was being recorded and I was repeatedly told to listen to his instructions very carefully. When I told him in a frightened, exasperated voice that the accounts he described were not mine, he wanted the local police department phone number so he could call to see if we could clarify some additional information. I gave him a fake phone number and he put me on hold; he came back a short time later and said that the number I gave him was incorrect!

"Officer Smith" then told me I could get the number from the yellow pages or Google and said he would wait while I looked it up. When I asked why *he* didn't have it, he exclaimed he did but was not allowed to give it to me. I looked up the number in the city I had claimed to live in and gave it to him; he again put me on hold and returned a couple of minutes later. He said he had a senior investigator on his other line, and she would be calling me. I was to put him on hold when she called. Then my phone rang! The call was from the number I had provided which was the number of the Palo Alto, CA police department! "Officer Smith" told me to put him on hold and to add the new caller to the conversation.

Throughout this entire 22-minute ordeal he had not yet asked for any money or access to my computer. I was tempted to continue the charade, but the language barrier became intolerable along with the level of minutia, so I ended the calls. Almost immediately my phone began ringing from an unknown 800 number, over and over until I blocked the number. I believe the ploy was to obtain my information such as date of birth, address and social security number so they could steal my identity.

Although I didn't get far enough to determine the full scam, I was very surprised that they added so much credibility by calling me back and "spoofing" (faking the Caller ID) of the actual police department number I had provided and they had checked!! As we know, spoofing a phone number occurs often on junk and scam calls. This specific trick could cause a reluctant mark to falsely think they were maybe being too cautious. The scammer may attempt to retrieve your date of birth, name, address and partial social security number by asking throughout the conversation for you to verify the information. With those items, it is possible to initiate a change of address and phone number with Social Security and then redirect your direct deposit to a different bank.

Having repaired two cases of scammers gaining access to computers that week, one which was able to gain bank information and withdraw a four-figure sum of money from a retiree, I was interested in experiencing the actual pitch. It can't be stressed enough that allowing remote access to your computer from random phone calls, emails or web page screens is to be avoided. Also do not release any personal information to unknown callers no matter how official they attempt to sound, with so much information available in the public domain many times only a small amount of additional information is needed to initiate an identity theft. 

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## **Cable or Air? – What's your choice?**

**By Phil Sorrentino, Contributing Writer, The Computer Club**

**December 2019, [www.sccccomputerclub.org](http://www.sccccomputerclub.org)**

**Philsorr (at) yahoo.com**

Most TVs default to Cable, so if you get your TV programming via a cable company like Spectrum or Frontier, you don't have to answer this question. But if you want to get "broadcast TV," you will have to select "air" when given the choice. (Your specific television may use the term "broadcast" or over the air (OTA) instead of "air".)

Way back in the 30's/40's when Television was being developed, the inventors had to establish the bandwidth for a broadcast television channel. Based on the video and audio information needed to be packed into the signal, the decision was made to allocate 6 MHz to a broadcast channel. So every television broadcast channel signal was designed to take up 6 MHz of bandwidth. Remember, that was in the prehistoric days of Analog television signals. We are now in the digital television age, as evidenced by the many nice slim, large screen TVs around us. If you'll remember, this transition took place way back in 2009, June 12, 2009, to be exact. That was the day our old Television sets could no longer bring us entertainment and information unless we acquired an analog to digital converter box.


The government even gave us the opportunity to purchase two of these devices for \$35 each, in advance of the transition, so we could make the transition and not miss a single television show. (I only had one TV at the time, so I only purchased one of these devices, and believe it or not, I still have it. I used it for a while until I stepped into the digital television age. Anybody still need a converter box?)

Now we have digital television, but we still have the 6 MHz television channel bandwidth. The bandwidth of a signal is related to the modulation scheme used to create the modulated signal. The modulated signal must fit within the bandwidth allocated, otherwise, the Federal Communications Commission (FCC) will be very unhappy. (First, just a quick technical explanation. Modulation is the process of putting a signal (video or audio) on a carrier frequency signal. The carrier frequency signal (think WCTQ is on 96.3 MHz) is the frequency used to carry the signal from the transmitting antenna to the receiving antenna. Then at the receiving television set, the modulated signal is demodulated to recover the original signal. End of explanation.) So when the transition to digital was being explored, in the latter days of the last millennium and the early days of this millennium, the broadcast industry and the cable TV industry had to decide what type of modulation scheme to use with the new digital television signals. (By the way, here's a nearly useless piece of trivia, the analog television modulation scheme was called Vestigial Sideband modulation.) When TV was invented there was only one industry, that was the broadcast industry, but now there two ways of getting television signals to customers, over the air, and over the cable. Due to the differences in transmitting signals over the air and transmitting signals over a cable, the two industries decided on two different modulation schemes. Here are two other pieces of trivia. The Over the air signal is modulated using an Eight Level Vestigial Sideband (8VSB) modulation technique and the cable signal is modulated using a Quadrature Amplitude Modulation (QAM) technique.

The meaning of each of these is not germane to this discussion except for the fact that they are different. And it is that fact that forces the television manufacturer to include both types of de-modulators on the television. So, all digital televisions are capable of using either signal. Most, if not all, are defaulted to use the cable signal, probably because nowadays most people receive their television from a cable TV provider rather than over the air. So, if you are a cord-cutter, you will have to go into the settings of your TV and find the location where "Air" or "Cable" is chosen. Once you have made the "Air" choice, you will have to let the TV scan for all of the channels in your area. Once scanned, your TV will be set up for your local, over the air, television channels. (A cord cutter is someone who has decided to stop receiving their television entertainment from their cable provider, which means they no longer get cable channels. They receive over the air television channels using an antenna, and they stream entertainment from such providers as Netflix, Amazon Prime, and Hulu, over their internet connection. Streaming services require a subscription, and there are some streaming providers that include cable channels.)

Now we still have a 6 MHz broadcast channel but, because we have digital modulation schemes which are more efficient than the older analog modulation schemes, the television stations can now fit more channels into the 6 MHz bandwidth. That means that where we may have had one analog channel, say channel 8, we now have multiple digital sub-channels, maybe 8.1, 8.2, and 8.3. In fact, WEDU, the local educational channel has six sub-channels, 3.1, 3.2, 3.3, 3.4, 3.5, and 3.6, all transmitted within the basic 6 MHz bandwidth (isn't digital wonderful). Typically the base sub-channel, the .1 channel is a High Definition (HD) channel, and the other sub-channels are Standard

Definition (SD) channels. (High or Standard Definition refers to the quality or resolution of the picture displayed on the television screen. HD is referred to as 1080p or sometimes 720p, while SD is referred to as 480p. (The number is the number of horizontal lines used to create the picture and the “p” indicates a progressive scan, as opposed to an interlaced scan that was used for analog TV.) SD is about the same quality as the old analog TV picture. HD channels will also typically provide 5.1 audio, but that's entirely another story.)

So it turns out that the original decision to allocate 6 MHz for a television channel seems to have been a pretty good design decision. Or, at least the designers of the digital television equipment have been very clever in using the allocated bandwidth to their and our advantage. 

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## **CD Players – Where did they go? What about all my music CDs?**

**Author: Phil Sorrentino, Contributing Writer, The Computer Club, Florida  
November 2019, [www.sccccomputerclub.org](http://www.sccccomputerclub.org) / [Philsorr \(at\) yahoo.com](mailto:Philsorr@yahoo.com)**

CD players used to be all around us, well, at least they could be found in our computers and our automobiles, but not so anymore. In the age of streaming Netflix videos and Delivery of Software Applications by downloads, CD players have lost their significance. But if you feel you must have a CD player on your computer, you can add an external CD player. These types of devices will usually read and write CDs and DVDs. They are fairly inexpensive, around \$30, and they connect to the computer using USB. (As always, the more USB ports on your computer, the better.)

In our automobiles, many domestic and foreign car models that used to have CD players as part of their infotainment center have eliminated the CD player. In its place, they have included a USB port, and they have included an MP3 player in the infotainment electronics. The MP3 player, in conjunction with the USB port, allows the entertainment center to play MP3 music from a flash memory device plugged into the USB port. That's all well and good, but how do you get your music on to a flash memory device? Fortunately, there is a simple answer – Windows Media Player (WMP). But before we look into how to use WMP, let's take a quick look at recorded music and a brief history thereof. Recorded music began with Thomas Edison, who invented the phonograph in 1877. Initially, the music was stored on metal cylinders. The cylinders were replaced by disks, tape and finally CDs. The disks evolved from 78s to 45s and finally the 33&1/3 albums. Tapes developed from Reel-to-reel to 8 Track and finally the very popular tape cassettes. All of these were developed to record “analog” music and was the way we recorded and played back music until around the late 1980s.


During the 1980s, even before the release of the iPod, research was being done to develop methods of compressing digital music. (The iPod would eventually replace the Walkman, a device that almost every music lover owned.) The outcome of the research was the .mp3 music file specification that allowed music files to be created that would be small enough to fit into the amount of memory that could be put into a portable device, in those days.

Large memory devices were not as available then, as they are now, so the size of a music file was very important. (By the way, there are other music file types, but .mp3 has become the de facto music standard.) The .mp3 file type is considered a lossy compressed file, meaning that there is some quality degradation in the resulting music. The amount of “loss” is established when the original uncompressed file is compressed. This is accomplished by the use of a “Quality” setting. The quality is indicated in “Kilobits per second” (kbps). A setting of 128 kbps is termed “near-CD” quality, which gives you a file size of about one-tenth the size of the original file, and sound quality that is quite impressive. A file that produces a higher quality will be larger, but I’d be surprised if those of us over 65 could tell the difference, so the near-CD quality is probably more than adequate.

The .mp3 file specification allows us to create music files that we can use on our devices but it is the .wav file that creates a music file that is an exact reproduction of the originally recorded music; this is what you find on music CDs. The .wav file contains all of the musical quality of the original performance. The .wav file contains the digital results of the analog music signal being sampled at a rate so as to include all frequencies that can be heard by the human ear. This sampling results in a digital representation of the original music. To be technical, this is called a linear pulse-code modulation format. When played on a CD player, the stream of digital information produces music exactly as it was originally performed. But these .wav files are fairly large; most music selections will create files in the 30 to 40 Mbytes range.

So now that we know about .wav and .mp3 file types, we can get back to Windows Media Player. WMP is a component of Windows 10, so everyone has a copy of WMP which is currently at version 12. WMP not only plays CDs and music files, but it is capable of “ripping” the tunes from a standard CD. (“Ripping”, though it sounds horrible, it is perfectly legal.) When you start WMP you will not have controls for ripping if there isn’t a CD in the CD tray (you will see “No disk” under the Tools tab). Once you put a CD into the tray, the “Rip CD” and “Rip settings” controls will appear on the WMP toolbar.

Before you rip the CD, check that the settings are to your needs. Click the down-facing arrow next to “Rip settings” to check a few of these settings. First, select “Format” and then check the box next to “MP3” in the pop-up window. Next, select “Audio Quality” and check your selection (128 Kbps is probably fine and it will create the smallest files). Next, select “More Options” and it will open a window for making “Rip Music” adjustments. The first adjustment is where the ripped files will be stored. If you want to change the destination, click “Change” and in the pop-up window navigate to the location of your choice. Next, on the Options Window, click “File Name”. This is where you determine how the ripped music file will be named. Check the items that you want to be in the file name, like “Artist” and “Song title”, move the items up or down to get the right sequence. Next, choose the “Separator” like space or dash. The “Preview” shows the choices that have been made. (I typically name the files “Artist dash Song title”.) Click OK on the “File Name Options” window. The other two Rip settings, Format and Quality, have already been set up so now you’re good to go. Click “OK” in the Options window to get back to the main WMP window. Now all you have to do is click “Rip CD” and let ’er rip. When you originally put the CD into the tray, all tunes were selected. If you don’t want a particular tune ripped, uncheck the

box next to the tune's name. The "ripped status" will show how the process is proceeding. When all the tunes are ripped, you will find them in the location that you set up in the Rip settings. They will be in a folder with the name of the artist or CD. Using File Explorer, move the tunes to your permanent "Music" folder. From here, you can put them on a flash memory device for use in your car, or put them directly into any of your devices, like a tablet, a music player, your smartphone, or another computer. Now you're ready to take advantage of the music you previously purchased for a CD player on any of your other devices. 

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## Desktop vs. Laptop

**Author: Dan Douglas, President, Space Coast PCUG, Florida**

**December 2019 issue, The Space Coast Journal**

**[www.scpcug.org](http://www.scpcug.org), [datadan \(at\) msn.com](mailto:datadan@msn.com)**

At a recent learning center meeting, the topic of what was better to get, in my opinion, a desktop or a laptop?

We agreed to include various other devices in the category of 'laptop' - tablets, Chromebooks, netbooks, notebooks, etc. Let's take a look at the various factors that should influence your decision.

**Performance** – This used to be the biggest differentiator between laptop versus desktop decisions, but this is not true any longer. The modern CPU (Central Processing Unit) chip designs have greatly reduced the heat generated and thereby eliminated one of the biggest problems with portable devices; the need to cool down the CPU effectively in a limited space within the case. The latest Intel and AMD CPUs are available in basically the same speeds and formats across both desktop and laptop motherboards.

However, the smaller size of laptops does command a premium price over that of desktops due to higher manufacturing costs for the same performance, as a general rule. SSDs (Solid State Disks) are available for both and their performance will be similar in either PC.

**Storage Capacity** – This is the other major area that has dramatically changed. Desktops typically have had larger capacity hard drives for storage – a 3.5" width hard drive case is still the standard in desktops while laptops standardized on a 2.5" width form. Large capacity drives (1TB+) are cheaper and were only available in the desktop size until the last 2 years or so when SSDs became available at a competitive cost to traditional hard drives. When fitted into a desktop case, newer cases have drive bays sized for the 2.5" SSD case, while cheap brackets are available for fitting them into any 3.5" case opening.

The latest developments are to move away from both 2.5" and 3.5" sizes to a "stick" SSD. There are several sizes in use today; one of the most common is called m2. These SSDs clip into a slot directly on the motherboard, similar to how a memory



stick would This saves significant space that would otherwise be used by the storage drive in either a desktop or a laptop case.

Currently, only traditional 3.5" drives have very large capacities available (4TB+), but as time goes by, SSDs will become cheaper and a much better alternative. Check out my journal article earlier this year where I compared the two for full details. Display – This is an area where desktops can be a better value for the flexibility to connect to whatever size display you have. Whether it is a 4K UHD 75" panel or a 24" desk LCD panel, either will work on a desktop. Now, many laptops offer HDMI or other ports to connect to displays, but if the reason for the laptop is portability, then the size of the laptop screen is what you'll be using most of the time, typically 13" to 17". The larger the screen, the weight will also increase proportionally on a laptop.

Graphics – Without a doubt, desktops are better suited for gaming due to the flexibility to replace and upgrade the video card. Some laptops, such as those from Alienware, do offer several video card options to compete with the best desktop offerings, but these are limited and more costly. For non-gamers, the basic video in either laptops or desktops is sufficient 95% of the time.

In the December 2019 issue of Consumer Reports, there just happens to be an article about this very topic. They report that in a survey taken in 2009, about 72% of the households have a desktop versus the 52% reporting having a laptop. Jump forward to 2019 and the number is now reversed with more households reporting laptops than desktops in almost the same ratio – about 74% laptops and 52% desktops now. Check it out for their recommended models and other factors you may want to consider.

If you have suggestions for topics that you would like to explained, please let me know!

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see

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## Interdrone Conference

**Author: George Harding, Treasurer, Tucson Computer Society, AZ**

[www.aztcs.org](http://www.aztcs.org), [actuary110 \(at\) yahoo.com](mailto:actuary110@yahoo.com)

The Interdrone Conference, as you might guess, is about drones: how they are being used in industry, agriculture, first response, fire, police and more.



The Keynote speaker, Dan Ewell, FAA Deputy Administrator, said that there are now 1.4 million registered drones and 50,000 drone pilots that have passed Part 107 (which is required to fly drones other than for recreation).

Interestingly, drone use is now much less personal leisure and more commercial utility. Many of the sessions at this conference were oriented to first responders.

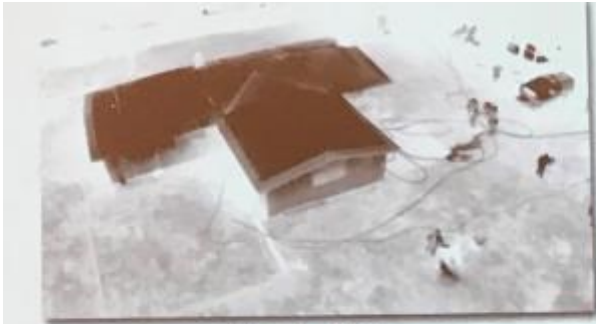
As the conference was occurring, a hurricane was wreaking havoc in North Carolina. Several of the panelists were from North Carolina and were dividing their time between sessions and communicating with the Governor! A few left the conference in order to be on the scene at the coast.

I was surprised by how many fire, police, and rescue organizations had formed their own drone teams, with a well-thought-out training plan and organized practice field exercises.

There were several panels put on by fire first responders, showing how they employ drones to do work that would be too dangerous for firefighters to attempt. One of the newest tools for fire groups is FLIR, an acronym for Forward Looking Infrared Radar. It can be used to identify hot spots that cannot be seen by our eyes.



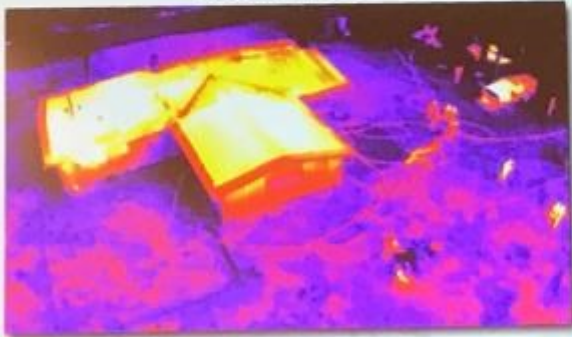
There are filters that can be used by a FLIR device to make the image more understandable: black hot, which makes the warm object black; white-hot, which makes the object white; ironbow, which makes the object golden. Each is useful in certain circumstances.



**Black-Hot**



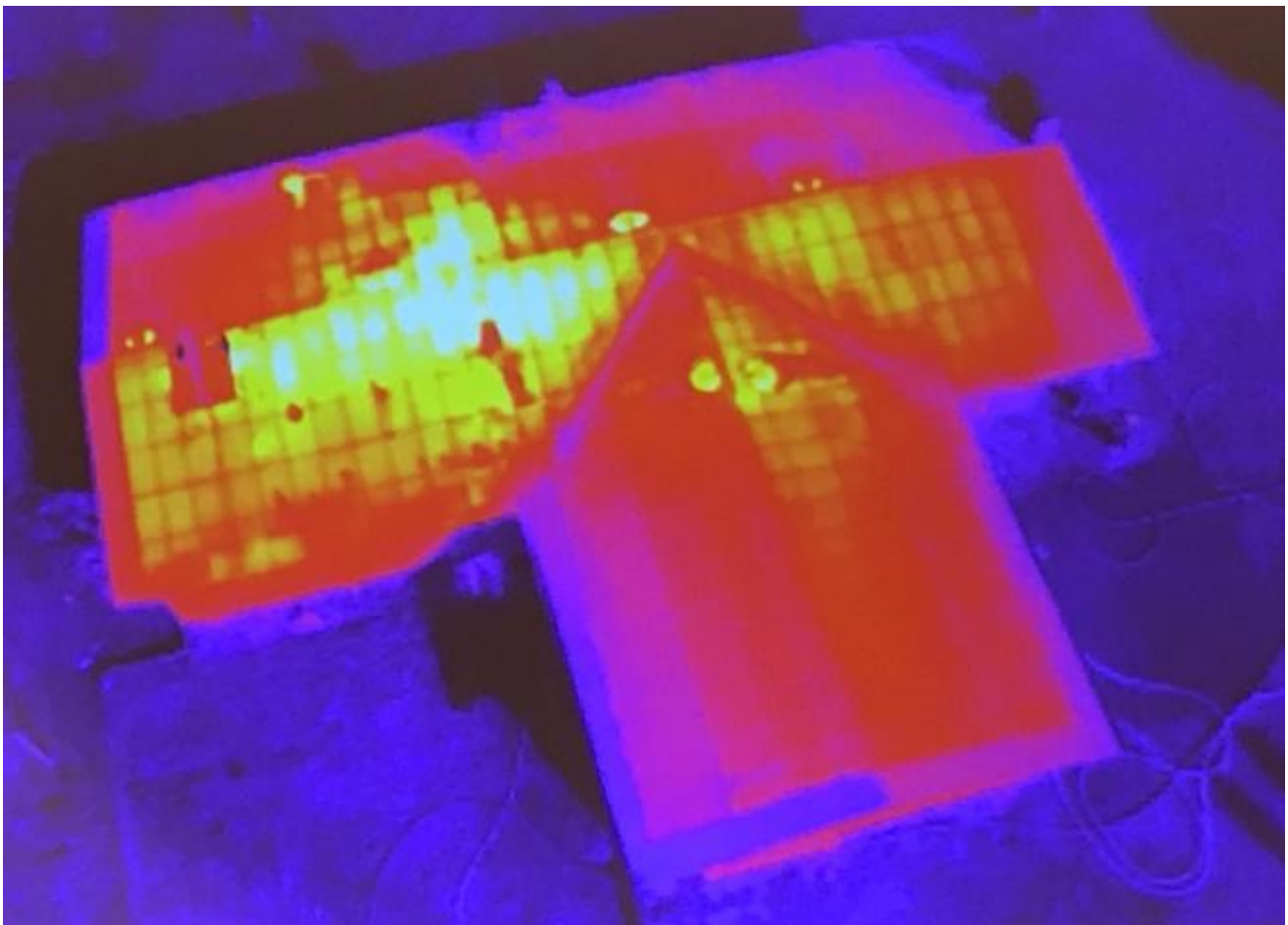
**White-Hot**



**Ironbow**



**Visible Light**



Some other applications of drones for first responders and others are landslide inspection, to see into areas that an inspector may not be able to go; storm damage assessment, to get a broader view of the affected area; crash scene reconstruction; package delivery to isolated persons, especially medicines.

One area of progress in eliminating dangerous situations is drone detection. Airports, especially, need the ability to identify drones that may impact commercial aircraft. There are several systems that can identify a drone, but few that can eliminate the physical threat.




One area that is very important to those who fly drones is insurance liability. I did not see any vendors of insurance coverage at this conference, which is surprising.

The TV and cinema industries continue to use drones to enhance their video coverage at relatively low cost. Drones give the ability to view a scene from a distance, without the use of expensive helicopters.

The drone industry will continue to expand to meet the many uses of these new devices.

Interdrone

[www.interdrone.com](http://www.interdrone.com)

Admission: various prices, depending on access. 

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# Special Interest Groups (SIGs)

w Work phone   h Home phone   c Cell phone  
\* Meets at an alternate location

Most SIGs will meet at Edina Executive Plaza, Conference Room #102, 5200 Willson Road, Edina, MN

Confirm with a SIG group if they meet elsewhere.  
For more info contact the SIG Leader(s) listed here.

Get SIG announcements!  
Link from [www.tpc.com](http://www.tpc.com)

## Board of Directors\*

All members are welcome! Check [www.tpc.com](http://www.tpc.com) for location.

Selected Saturday mornings

## Linux on Saturday

This is for the Linux newbie and those trying to come over from Microsoft to a different operating system.

Second Saturday @ 9 AM-Noon

Note: No Meetings June-August

Jack Ungerleider      612/418-3494 c  
jack@jacku.com

## Tech Topics

Technical presentation/discussion on various technical topics from the following areas:

- Web/Internet
- Mobile Devices and Apps
- Playing with Programming
- DIY (3D Printing, R-Pi, other hobby electronics, etc.)

Second Tuesday @ 6:00-7:00 PM

Every month

Right before the general meeting.

Jack Ungerleider      612/418-3494 c  
jack@jacku.com

## Microsoft Access

All levels. Presentations by expert developers within the group and by MS reps.

Third Saturday 9:00 AM—Noon

Note: No Meetings June-August

Steve Kuhlmeier      952/934-8492  
skuhlmeier@hotmail.com

## Microsoft Office

Addresses the use, integration, and nuances of the Microsoft Office applications.

Combined with Systems on Saturday

Third Saturday of the Month

9:00 AM—Noon

Note: No Meetings June-August

Steve Kuhlmeier      952/934-8492  
skuhlmeier@hotmail.com

## Directions to Summit Place for General Meetings:

Proceed to Eden Prairie Center Flying Cloud Drive . [Flying Cloud Drive runs along the West side of the Eden Prairie Center.] Once you have driven past Eden Prairie Center (on the left) along Flying Cloud Drive you will come to a stop light at Prairie Center Drive. The next intersection with a stop light and left turn lane is Fountain Place. Turn left at Fountain Place and go straight into the parking lot. Turn left again to the first covered entry way of Summit Place. There is plenty of parking in the large parking lot in front of the first Summit Place covered entry way. When you enter the door at the first covered entry way, ask to be directed to the Performance Room for the TC/PC meeting. For a map of more detailed directions and *info on Web SIG and Board meeting*, check the TC/PC website.

Directions to **Edina Executive Plaza** for **Systems on Saturday, Access, Word and Picture Perfect SIGs**: Take Highway 100 to the 50th Street/Vernon exit. [If you have come from the north, cross back over Highway 100 to the east side.] Take the first right and go past Perkins [The golf course will be on your left.] and continue on the east frontage road (Willson Road) to the next building—5200 . There is ample parking in the building's lot. Conference Room #102 is on 1st floor.

Help yourself by helping others!

Join the team & share your knowledge with others.

Contact TC/PC at [www.tpc.com](http://www.tpc.com)

Meetings start at 7:00 PM (9:00 AM on Saturday) unless otherwise noted. \*Meets at Edina Executive Plaza.

**April**

**May**

SUN	MON	TUES	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11 9am-Noon Linux on Saturday via Google Hangouts
12	13	14 Gen Mtg Virtual Meetings Via Zoom	15	16	17	18 9am-Noon Microsoft Office (including Access) via Zoom
19	20	21	22	23	24	25
26	27	28	29	30	1	2
3	4	5	6	7	8	9 9am-Noon Linux on Saturdays
10	11	12 General Mtg TBA	13	14	15	16 9am-Noon Microsoft Of- fice (including Access)
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

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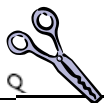
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As a member of TC/PC, the Twin Cities Personal Computer Group, one of the benefits is reading this monthly publication at [www.tcpc.com](http://www.tcpc.com).

As a member of TC/PC, you may attend any or all of the monthly Special Interest Group (SIG) meetings and be eligible for software drawings. The small membership fee also includes access to real-live people with answers via our helplines, discounts, and various other perks.

Does membership in this group sound like a good way to increase your computer knowledge?

It's easy to do! Simply fill in the form below and mail it to the address shown.  
(If you use the form in this issue, you will receive an extra month for joining now.)



<b>Here's the info for my TC/PC Membership:</b>	<b>I'm signing up for:</b>	<b>4/20</b>
Full name _____	<input type="radio"/> Individual/Family Membership (\$18)	
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Address _____	If an existing member your # _____	
City _____ State _____ Zip _____	<b>Make checks payable to:</b>	
<input type="radio"/> Home <input type="radio"/> Business <input type="radio"/> Change address: <input type="radio"/> Perm. <input type="radio"/> Temp. 'til _____	<b>Twin Cities PC User Group</b>	
Home phone _____ Work phone _____	<b>341 County Rd C2 W</b>	
Online address(es) _____	<b>Roseville, MN 55113</b>	
Where did you hear about TC/PC? _____	<u><a href="http://www.tcpc.com">http://www.tcpc.com</a></u>	
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	<input type="radio"/> Special Interest Groups: New User, Access, etc.	
	List here:	
<b>Administrative Use Only</b> Rec'd _____ Chk# _____		

**April 14, 2020**

**General Meeting**  
**A Virtual Meeting**  
**On Virtual Meetings**  
**Panel Discussion**

**Via Zoom**

**More info: [www.tcpc.com](http://www.tcpc.com)**



341 County Rd C2 W  
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