The LongPath

December 2022 — Volume 46 Issue 12 A North Alabama DX Club Publication

Contents:

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K8KI
N4NM
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From the President

By Bob De Pierre, K8KI

As we now approach Christmas and the end of the year, I have to look back on the year and say "That was a whole bunch better." The plague has now largely gone away (although I got a 2-day touch of it at the hamfest), we're closing in on the top of the solar cycle (and it shows), the Dxpeditions have finally begun again (and with some really good ones), and we're in contest season. What more could I want, other than those last 35 countries.

We have a very few items to discuss at the next meeting on Tuesday. We won't have a program, and we won't be on Zoom (the restaurant doesn't have the cameras and setup for it). The Amerigo Italian Restaurant (at 9020 Memorial Pkwy SW) is one of the best around. You'll really like it. (I sure hope we can get the required 25 people to attend). We have to install the new club officers:

Bruce Smith, AC4G, President

Mick Bell, N8AU, Vice President

Barry Barton, WA4HR, Secretary/ Treasurer

This month we'll vote for DXer of the Year. For the first time in three years, this one really means something. I'll distribute the ballots at the meeting.

As I end, I have to get up on my soapbox one more time. Dr Bendickson assembled a volunteer work party at the museum last Saturday. They accomplished a lot! That was a giant step toward really starting to look like a real museum. Displays are starting to move toward their final locations. For the first time, I might be able to see how it could open to the public in six months. There is still some construction remaining, but you can finally visualize it now. I've been working on the radio displays, and starting to understand the real scope of the work yet to be done. Yet volunteer work is the critical part that still remains. Very few of us have stepped in to help. The museum needs story tellers, writers, woodworkers, and even lifters. Please consider joining in to help.

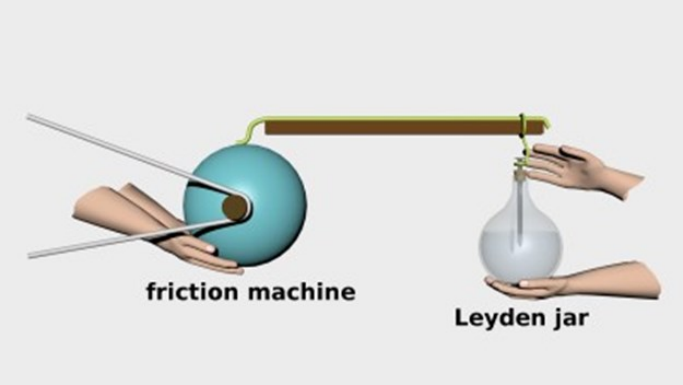
So, my four years as club president is finally at an end. I've enjoyed the experience and feel richer for it. There hasn't been a person in the club that I haven't totally enjoyed talking to. I am indeed happy to see a slate of excellent hams ready to take over, and will be happy to help whenever I can. I'm looking forward to seeing you at the Amerigo on Tuesday.

The Leyden Jar — The First Capacitor

By Bob De Pierre, K8KI

Did the history of modern electronics begin with the capacitor? Maybe. The resistor is the simplest of the three circuit components (besides the capacitor and inductor), but Ohm's Law wasn't published until 1827. The history of the capacitor – with the Leyden Jar - starts in 1745.

Back then people knew you could generate electricity using a friction machine. You rotated a globe at a few hundred RPM while you rubbed it with the palms of your hands. This generated electricity on the glass which could then be discharged.

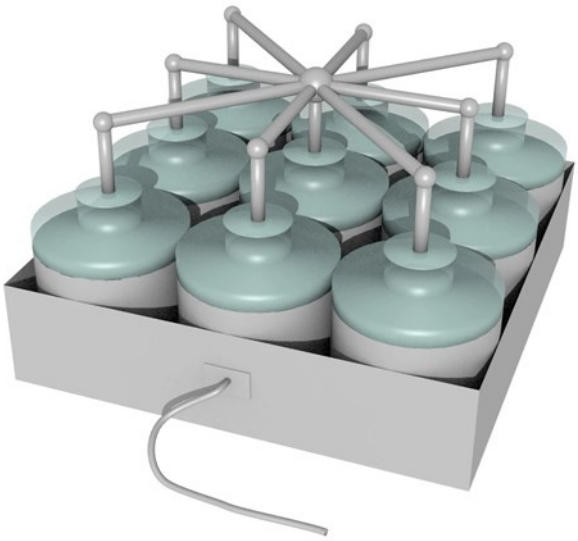


In 1745 Ewald Georg von Kleist in Pomerania, Germany tried to store electricity in alcohol thinking that he could lead the electricity along a wire from the friction machine to alcohol in a glass medicine bottle. Since electricity was considered a fluid it was a reasonable approach. He reasoned that the glass would act as an obstacle to the escape of the electrical "fluid" from the alcohol. The illustration above shows how he conducted his experiment: he stuck a nail through a cork and into the alcohol while holding the glass bottle in one hand. He wasn't aware at the time that both of his hands played an important part in the experiment. Von Kleist found that he would get a spark if he touched the wire, a more powerful spark than he'd normally get from the friction machine alone.

He communicated his discovery to a group of German scientists in late 1745. The news made its way to Leyden University in the Netherlands, but in a confused form. In 1746 Pieter van Musschenbroek and his student Andreas Cunaeus at Leyden University succeeded in conducting the same experiment but with water. Musschenbroek then informed the wider French scientific community of the experiment. Abbé Nollet, a French experimenter named the Leyden jar, and sold it as a special type of flask to scientifically curious, wealthy men.

Researchers at Leyden University then noticed that the experiment worked only if the glass container was held in your hand and not if it was supported by an insulating material.

Today we know that the alcohol or water in contact with the glass was acting as one plate of the capacitor and the hand was acting as the other while the glass was the dielectric. The high voltage source was the friction machine and the hand



The Leyden Jar — The First Capacitor (continued)

and body provided a ground.

Daniel Gralath, a physicist and the mayor of Danzig, Poland was the first to connect multiple jars in parallel to increase the quantity of stored charge. In the 1740s and 1750s Benjamin Franklin also experimented with Leyden jars and called this collection of multiple Leyden jars a battery, due to its similarity with a battery of cannons.

Franklin conducted many experiments with both water-filled and foil-lined Leyden jars. He concluded that the charge was stored on the glass and not in the volume of water. He did this by working with dissectible Leyden jars, ones where the outer and inner foils could be removed from the glass. This was later proven to be incorrect. Franklin worked with soda glass which is hygroscopic. As the foils were removed from the glass, charge was transferred via corona to moisture on the glass. When a jar of paraffin wax or baked glass is used instead, the charge remains on the metal plates. There is another weaker effect called dielectric absorption which involves the dipoles within the glass (dielectric) and allows capacitors to retain some of their charge after the plates are shorted. Franklin subsequently worked with flat glass plates with foil on either side.

It was around this same time that Franklin showed that electricity had just one charge carrier, though he considered it a 'subtle fluid (the discovery of the electron had to wait until the late 1800s). He found that a charged object either had an excess of this fluid or a deficiency. This disproved the idea of the two types of electricity (vitreous versus resinous electricity).

In 1776 Alessandro Volta was researching the relationship between charge and potential. The Leyden Jar happened to be a convenient device to make the measurements. He found the ratio of charge to voltage to be proportionally constant (C = coulombs/volts), and he defined that ratio as the value of capacitance, though it was not called that at the time. It was for this work that the unit of potential, the Volt, was named after him.

The term "capacitor" wasn't used until sometime in the 1920s. Previously they were called condensers and still are in some countries. The term 'condenser' was first coined by Volta in 1782, deriving it from the Italian condensatore, due to its ability to store a higher density of charge than an isolated conductor.

In the 1830s Michael Faraday conducted experiments which determined that the material in between the capacitor's plates had an effect on the quantity of charge on the capacitor's plates. He did these experiments with spherical capacitors, basically two concentric metal spheres in between which he could have placed air, glass, wax, shellac or other materials. Using a Coulomb's torsion-balance he effectively measured the charge on the capacitor when the gap between the spheres was filled with air. Keeping the potential difference constant, he then measured the charge when the gap was filled with other materials. He found that the charge was greater with the other materials than it was with air. He called it the specific capacity and it was for this work that the unit

Faraday's specific inductive capacity apparatus

The Leyden Jar — The First Capacitor (continued)

of capacitance was named the Farad.

The term 'dielectric' was first used in a letter from William Whewell to Faraday where he speculated that Faraday had coined the term di-magnetic in analogy to dielectric and that perhaps Faraday should have used diamagnetic, but that it wouldn't work as well for diaelectric, given that three vowels are together.

Leyden jars (capacitors made of flat glass plates with foil) remained in use for spark gap transmitters until the early 1900s. With the invention of wireless communications, capacitors began to take their modern form, mostly due to the need for lower size, cost, and inductance to work with higher frequencies. Smaller capacitors were made using flexible dielectric sheets, such as oiled paper, often rolled with foil on either side.

A DANGER with HIGHER OUTPUT Modern RIGS - EXPLOITED

By Bruce Smith, AC4G

For many months I have been enjoying my Yaesu FTDX101 MP transceiver (see Picture 1), especially since the 10m band has opened and there have been many DXpeditions making their mark for 2022 giving ham radio DXers the feel of what is to come with some of the major DX this winter season. I have already filled some of my band holes feeling exhilarated to have some new ones in my logbook from 10m through 160m. It is amazing the capability that manufacturers have recently designed into their line of modern HF transceivers. Most modern rigs are either fully or a hybrid of software designed radios (SDR). With solid state finals becoming abundantly available and tube finals on their way out, manufacturers have increased full power of modern HF transceivers to 200-Watts. However, there can be danger with this new capability even though the capability has its benefits. With all of this excitement, DX on the air, contesting QSO counts increasing, and desiring to work that "rare one", we can make mistakes which I will further explain.

Picture 1: AC4G's Yaesu FTDX101MP

The Yaesu FTDX101MP along with other modern HF transceivers have the capability to output power to 200-Watts from 160m down to 6m or at least come close to 200-Watts depending on your antenna and its efficiency. The only antenna tuner I have is built-in to the rig and seldom use it since almost all of my antennas resonate exactly where I use them. Therefore, I typically get maximum power out on most all amateur radio bands without any external antenna tuner. I say this to say that in a DX pileup or in a contest where one is giving it their all, they can make mistakes and need to make sure that 200-Watts is allowed. For example, on 60m, the maximum power allowed per FCC Part 95 rules is 100-Watts in reference to a dipole. For Yagi users, the output power is less. Do the calculations! For 30m, one cannot exceed 200-Watts; therefore, one can see that 200-Watts could be used to chase that rare, long distant DX. A Technician or General Class operator has band and output power limitations. However, this can lead to a tragedy if a ham operator gets caught up

A DANGER with HIGHER OUTPUT Modern RIGS - EXPLOITED (continued)

in the excitement like I did.

Steve, AG4W recently operated from Djibouti Africa as a team member with J28MD making many ham operators happy by giving them one or more new band slot QSOs. I had many band holes and wanted work them in as many band slots as possible from 10m through 160m. There are other Dxpeditions out there as well where I need to grab a few new bands/modes. The upcoming Bouvet Dxpedition is one that we all need to be chasing and may be worthy of a day of leave from work. To share the danger, I recently experienced with higher power modern transceivers, I must admit that I felt like a happy dummy. I was working J28MD on 30m using about 175-Watts to work a new one. I worked it, was happy, and decided to move to another band, since I had already worked J28MD on a couple new bands earlier without the need for extra power. Making an attempt at 12m left me unable to make the trip with 175-Watts, so I increased power to 195-Watts at the same time I powered up my HF amplifier to warm up just in case (Dang that minute and a half warm-up time). I kept calling J28MD on 12m CW. You see, I can do two things at once! Without any luck, knowing the band was going south, I decided in haste to output 1 Kilowatt (KW). In my haste, full of excitement, and wanting a new band, I hit the CW Key. I jumped back and thought I had been hit with a 22-caliber rifle with one "DIT" of the key, "BANG!!". The HF amplifier was dead, I was shocked, and checked to see if I was still alive. In an instant I hollered out "BIG DUMMY! You forgot to decrease the rig power and BLEW UP the Alpha 87A!" I knew my brain was not in gear during the exhilaration of trying to work a new one. I thought, "What was I going to do? I need these guys on several bands! What do I do now?"

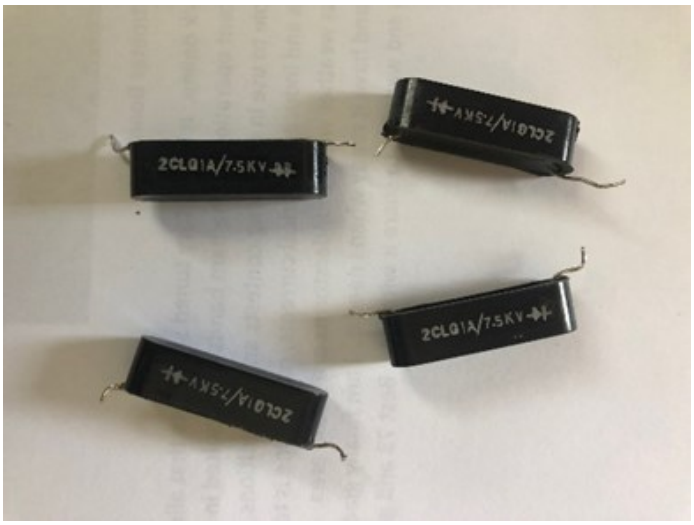
I immediately went into repair mode. I got my head together and quickly went through a safe checkout plan in my head before doing any other foolish things. First, I unplugged the HF amplifier. I grabbed my meter and checked the two external power line fuses at the rear of the amplifier. Both fuses were showing an open (see Picture 2 – 87A Fuses). I searched for two fuses. I finally found two fuses that I could use to see if the amp would power-up. The amp was still dead. I decided to call Dick Byrd, N4UQ, who has been good repairing the mistakes I have made in the past. He suggested that I check the internal ceramic fuse located just under the top cover. On the 87A, you can visually see the fuse through the perforated holes in the metal top. It was black! I decided to remove the amplifier from the rig and off of the desk to do further checkout. After getting to the ceramic fuse and putting an ohmmeter to it, it indeed did show "OPEN". I was in search of some fuses, some that I could never find, so I called Mr. Byrd who graciously sent me three fuses. After a couple days of shipping, I received the fuses and installed them. I next plugged in the amplifier into my 240 VAC outlet and turned "ON" the power switch. Nothing, but a faint light and the sound of a "Puff!" where the internal fuse blew again. To make a long story short, I knew there was more damage caused by excessive input power to the Alpha 87a HF amplifier, so I contacted Mr. Dick Byrd, N4UQ who agreed to repair my amplifier.

Picture 2: AC4G's Alpha 87A blown fuses – excessive input power

A DANGER with HIGHER OUTPUT Modern RIGS - EXPLOITED (continued)

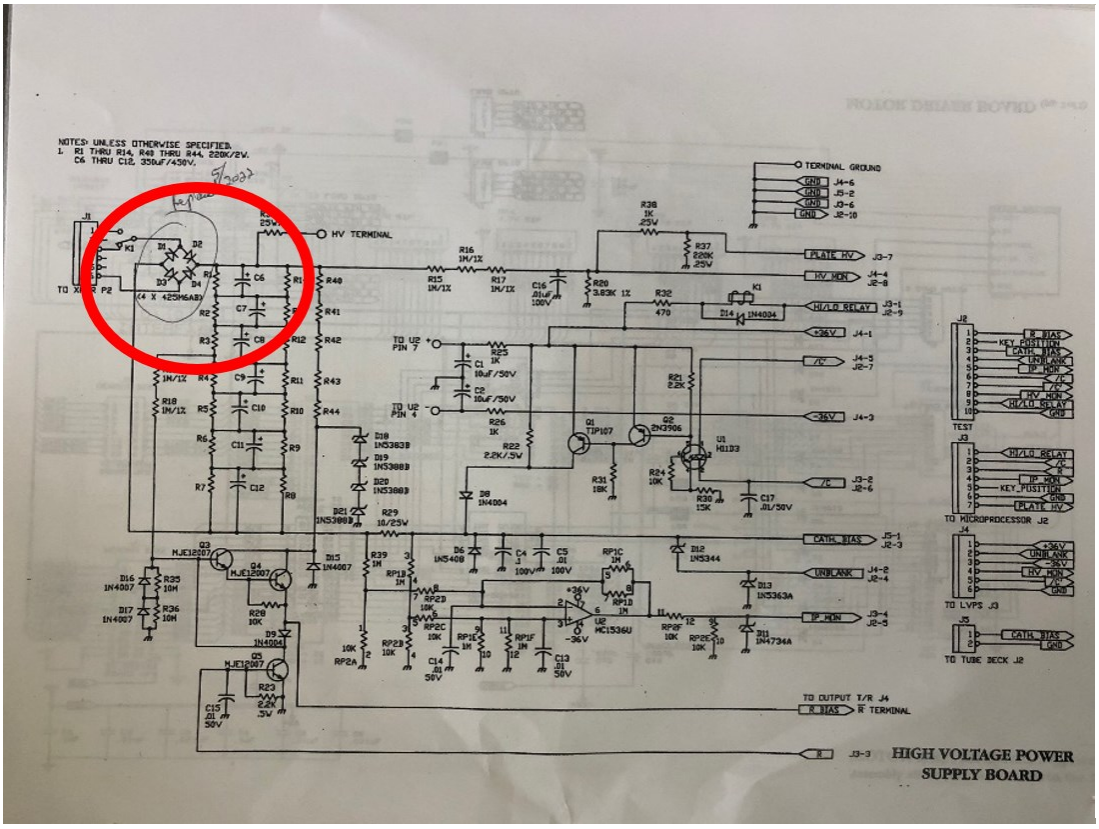
Mr. Byrd received the amplifier, found the issue and made the necessary repairs while also inspecting and checking out the rest of the amplifier. He contacted me a week later and said the other issue with the amplifier during my excessive power transmission into the amp, was with the 4 blown rectifiers on the power line board (see Picture 3). Picture 4 depicts the schematic of 87A High Voltage Board showing the location of the blown rectifiers.

During the J28MD Dxpedition, I was able to substitute another amplifier and make the necessary QSOs to fill my empty J2 band/mode holes, but I proceeded with lots of caution. Since this time, I have my 87A back in possession, installed, and operational once again. The amp worked flawlessly in the recent CQWW CW Contest where I ran



Picture 3: Alpha 87A blown rectifiers

the amp the entire time I was operational. I am also grateful for Mr. Byrd who was able to make repairs to my 87A due to my dreadful mistake of using excessive power into my HF amplifier. To reduce the risk of this happening again, I made myself a laminated message that sits at the base of my HF Transceiver that reads "DUMMY, MAKE SURE TO REDUCE RIG POWER!" I hope this will help me to eliminate any excessive power mistake in the future and my excitement to work a new one will be with caution if using my HF amplifier. Please learn from my mistake! This may save you a repair bill if you use a 200-Watt transceiver with an HF amplifier. Best 73 and Gud DX! Bruce/AC4G



Picture 4: 87A High Voltage Board showing blown rectifiers

When was the Resistor Invented?

By Bob De Pierre, K8KI

One might have thought that, since the resistor was the simplest of the three basic electronic components (the others are the capacitor and inductor), it would be easier to build and get into production. But such was not the case. All sorts of methods to build resistors were tried, but none were found reliable until around 1934, in the midst of the Great Depression. It was the carbon composition resistor that finally propelled electronic devices into production. And maybe the pentode tube helped a little too.

If you look inside any radio of the 1920s, you'll see a technology that could be made to work, but it was expensive, heavy, difficult to set up and use, and hardly ready for large scale production. One component totally absent was the resistor. Of course, we had rheostats and metallized resistors in those days. The rheostat was a variable resistor, but it was wire-wound and meant to dissipate heat. It was nothing like the potentiometer of today. The metallized (or grid-leak) resistor looked like a fuse and had to be mounted in a fuse holder.

Why Were Carbon Composition Resistor Introduced So Late in the Game?

The big difficulty was getting the component to meet multiple specifications at once: aging, temperature, voltage, and value. Prior to the carbon composition type, nothing came close. This type of resistor is made of a mixture of electrically-conducting carbon and a non-conducting binder material, like clay. The body of a carbon composition resistor is a mixture of carbon, most often in the form of graphene and a binder material. The more carbon that the mixture contains, the more conductive the resistor (and the lower its

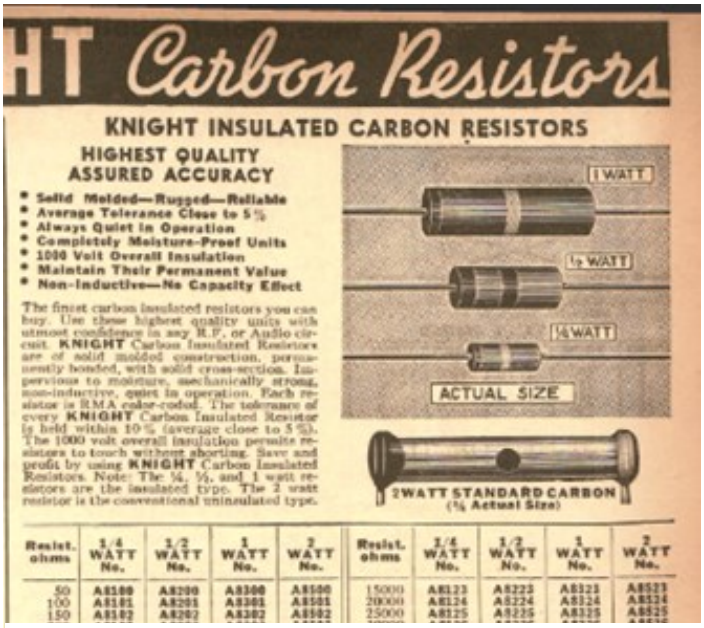
Figure 1: Left: metallized resistors from 1920s, Top Right: early carbon composition resistors (no color codes, around 1934), Bottom Right: carbon composition resistors (late 1930s).

When was the Resistor Invented? (continued)

resistance). Once extremely popular, carbon composition resistors have gradually lost market share due to issues with tolerance, noise, and aging as well as cost. Today's carbon film resistors meet much higher specifications.

Allied Radio was an early component and radio distributor. Their catalogs from 1929-1980 are now online and accurately depict when components and equipment became available.

Their 1929 catalog shows only rheostats and metallized resistors. The first "replacement" resistors are shown in 1933, but it wasn't until 1935 that a full complement of carbon resistors were offered for sale.



HT Carbon Resistors

KNIGHT INSULATED CARBON RESISTORS

HIGHEST QUALITY
ASSURED ACCURACY

- Solid Molded—Rugged—Reliable
- Average Tolerance Close to 5%
- Always Quiet in Operation
- Completely Moisture-Proof Units
- 1000 Volt Overall Insulation
- Maintain Their Permanent Value
- Non-Inductive—No Capacity Effect

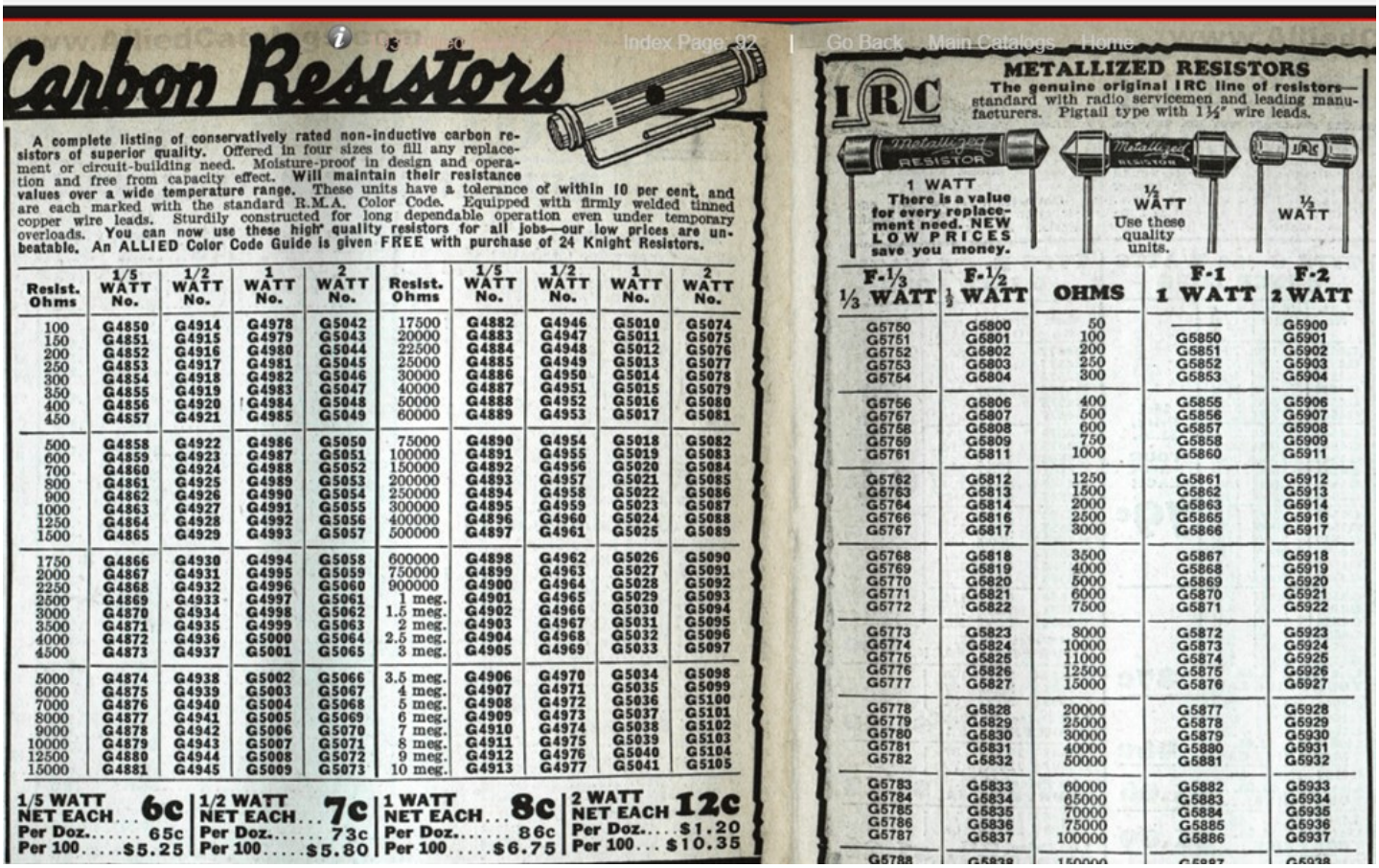
The finest carbon insulated resistors you can buy. Use these highest quality units with utmost confidence in any R.F. or Audio circuit. KNIGHT Carbon Insulated Resistors are of solid molded construction, permanently bonded, with solid cross-section. Impervious to moisture, mechanically strong, non-inductive, quiet in operation. Each resistor is RMA color-coded. The tolerance of every KNIGHT Carbon Insulated Resistor is held within 10% (average close to 5%). The 1000 volt overall insulation permits resistors to touch without shorting. Save and profit by using KNIGHT Carbon Insulated Resistors. Note: The ¼, ½, and 1 watt resistors are the insulated type. The 2 watt resistor is the conventional uninsulated type.

1 WATT
½ WATT
¼ WATT
ACTUAL SIZE

2 WATT STANDARD CARBON
(¼ Actual Size)

Resist. ohms	¼ WATT No.	½ WATT No.	1 WATT No.	2 WATT No.	Resist. ohms	¼ WATT No.	½ WATT No.	1 WATT No.	2 WATT No.
50	A8180	A8200	A8300	A8500	15000	A8123	A8223	A8323	A8523
100	A8181	A8201	A8301	A8501	20000	A8124	A8224	A8324	A8524
150	A8182	A8202	A8302	A8502	25000	A8125	A8225	A8325	A8525

Figure 3: Resistors sold in 1940. Note that you could buy them without the color codes, but the major demand was with units where you could readily observe the value.



Carbon Resistors

A complete listing of conservatively rated non-inductive carbon resistors of superior quality. Offered in four sizes to fill any replacement or circuit-building need. Moisture-proof in design and operation and free from capacity effect. Will maintain their resistance values over a wide temperature range. These units have a tolerance of within 10 per cent, and are each marked with the standard R.M.A. Color Code. Equipped with firmly welded tinned copper wire leads. Sturdily constructed for long dependable operation even under temporary overloads. You can now use these high quality resistors for all jobs—our low prices are unbeatable. An ALLIED Color Code Guide is given FREE with purchase of 24 Knight Resistors.

Resist. Ohms	1/5 WATT No.	1/2 WATT No.	1 WATT No.	2 WATT No.	Resist. Ohms	1/5 WATT No.	1/2 WATT No.	1 WATT No.	2 WATT No.
100	G4850	G4914	G4978	G5042	17500	G4882	G4946	G5010	G5074
150	G4851	G4915	G4979	G5043	20000	G4883	G4947	G5011	G5075
200	G4852	G4916	G4980	G5044	22500	G4884	G4948	G5012	G5076
250	G4853	G4917	G4981	G5045	25000	G4885	G4949	G5013	G5077
300	G4854	G4918	G4982	G5046	30000	G4886	G4950	G5014	G5078
350	G4855	G4919	G4983	G5047	40000	G4887	G4951	G5015	G5079
400	G4856	G4920	G4984	G5048	50000	G4888	G4952	G5016	G5080
450	G4857	G4921	G4985	G5049	60000	G4889	G4953	G5017	G5081
500	G4858	G4922	G4986	G5050	75000	G4890	G4954	G5018	G5082
600	G4859	G4923	G4987	G5051	100000	G4891	G4955	G5019	G5083
700	G4860	G4924	G4988	G5052	150000	G4892	G4956	G5020	G5084
800	G4861	G4925	G4989	G5053	200000	G4893	G4957	G5021	G5085
900	G4862	G4926	G4990	G5054	250000	G4894	G4958	G5022	G5086
1000	G4863	G4927	G4991	G5055	300000	G4895	G4959	G5023	G5087
1250	G4864	G4928	G4992	G5056	400000	G4896	G4960	G5024	G5088
1500	G4865	G4929	G4993	G5057	500000	G4897	G4961	G5025	G5089
1750	G4866	G4930	G4994	G5058	600000	G4898	G4962	G5026	G5090
2000	G4867	G4931	G4995	G5059	750000	G4899	G4963	G5027	G5091
2250	G4868	G4932	G4996	G5060	900000	G4900	G4964	G5028	G5092
2500	G4869	G4933	G4997	G5061	1 meg.	G4901	G4965	G5029	G5093
3000	G4870	G4934	G4998	G5062	1.5 meg.	G4902	G4966	G5030	G5094
3500	G4871	G4935	G4999	G5063	2 meg.	G4903	G4967	G5031	G5095
4000	G4872	G4936	G5000	G5064	2.5 meg.	G4904	G4968	G5032	G5096
4500	G4873	G4937	G5001	G5065	3 meg.	G4905	G4969	G5033	G5097
5000	G4874	G4938	G5002	G5066	3.5 meg.	G4906	G4970	G5034	G5098
6000	G4875	G4939	G5003	G5067	4 meg.	G4907	G4971	G5035	G5099
7000	G4876	G4940	G5004	G5068	5 meg.	G4908	G4972	G5036	G5100
8000	G4877	G4941	G5005	G5069	6 meg.	G4909	G4973	G5037	G5101
9000	G4878	G4942	G5006	G5070	7 meg.	G4910	G4974	G5038	G5102
10000	G4879	G4943	G5007	G5071	8 meg.	G4911	G4975	G5039	G5103
12500	G4880	G4944	G5008	G5072	9 meg.	G4912	G4976	G5040	G5104
15000	G4881	G4945	G5009	G5073	10 meg.	G4913	G4977	G5041	G5105

1/5 WATT NET EACH... 6c Per Doz.... 65c Per 100.....$5.25
1/2 WATT NET EACH... 7c Per Doz.... 73c Per 100.....$5.80
1 WATT NET EACH... 8c Per Doz.... 86c Per 100.....$6.75
2 WATT NET EACH 12c Per Doz....$1.20 Per 100...$10.35

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IRC METALLIZED RESISTORS

The genuine original IRC line of resistors—standard with radio servicemen and leading manufacturers. Pigtail type with 1½" wire leads.

1 WATT
There is a value for every replacement need. NEW LOW PRICES save you money.

½ WATT
Use these quality units.

¼ WATT

F-⅓ ⅓ WATT	F-½ ½ WATT	OHMS	F-1 1 WATT	F-2 2 WATT
G5750	G5800	50	—	G5900
G5751	G5801	100	G5850	G5901
G5752	G5802	200	G5851	G5902
G5753	G5803	250	G5852	G5903
G5754	G5804	300	G5853	G5904
G5756	G5806	400	G5855	G5906
G5757	G5807	500	G5856	G5907
G5758	G5808	600	G5857	G5908
G5759	G5809	750	G5858	G5909
G5761	G5811	1000	G5860	G5911
G5762	G5812	1250	G5861	G5912
G5763	G5813	1500	G5862	G5913
G5764	G5814	2000	G5863	G5914
G5766	G5816	2500	G5865	G5916
G5767	G5817	3000	G5866	G5917
G5768	G5818	3500	G5867	G5918
G5769	G5819	4000	G5868	G5919
G5770	G5820	5000	G5869	G5920
G5771	G5821	6000	G5870	G5921
G5772	G5822	7500	G5871	G5922
G5773	G5823	8000	G5872	G5923
G5774	G5824	10000	G5873	G5924
G5775	G5825	11000	G5874	G5925
G5776	G5826	12500	G5875	G5926
G5777	G5827	15000	G5876	G5927
G5778	G5828	20000	G5877	G5928
G5779	G5829	25000	G5878	G5929
G5780	G5830	30000	G5879	G5930
G5781	G5831	40000	G5880	G5931
G5782	G5832	50000	G5881	G5932
G5783	G5833	60000	G5882	G5933
G5784	G5834	65000	G5883	G5934
G5785	G5835	70000	G5884	G5935
G5786	G5836	75000	G5885	G5936
G5787	G5837	100000	G5886	G5937

Figure 2: Resistors sold from the 1933 Allied Radio catalog. Note that the value striping had not yet arrived. Metallized resistors had not yet died off.

When was the Resistor Invented? (continued)

American production of equipment quickly ramped up with the introduction of the carbon resistor. A smattering of All American Five radios appeared in the 1936 issue. These radios sold in the millions every year for the next 25 years.

When Did We Figure Out that Resistors Were Useful?

Georg Ohm (1789-1854) was a German physicist and mathematician. While researching the new electrochemical cell (the battery) he found there was a direct proportionality between the current (Amperes) and the potential (Volts). As the length of a wire across a battery was increased, the current correspondingly decreased, and the change was directly calculable. His book was published while Alessandro Volta and Jean-Marie Ampere were still alive. He presented these findings in his book of 1827, but it received a cold reception. Why? Part of his theory contradicted the holdings of "Action at a Distance," which described many of the forces found in nature, such as gravity. The forces caused by electromagnetic fields were neither understood nor accepted in those days, and weren't finally accepted until Maxwell's Equations were published in the 1860s. Ohm's Law is now defined as Resistance (Ohms) is equal to Potential (Volts) divided by Current (Amperes).

November Meeting Minutes

By Chris Reed, AI4U

- The North Alabama DX Club meeting was called to order at 6:30pm by Bob, K8KI.
- Bob, K8KI asked those in attendance who had worked DX and what band they had worked them.
- He also asked who was going to the Christmas Party on December 13 at 6pm. This year's Christmas party will be at Amerigo.
- Bob turned the meeting over to Mark Bendickson for a presentation on the museum. Mark made a request for help and volunteers to help complete exhibits and get the museum open.
- The election committee delivered their report on the proposed slate of officers for 2023:

  Bruce Smith, AC4G for President

  Mick Bell, N8AU for Vice-President

  Chris Reed, AI4U and Barry Barton, WA4HR will run for Secretary/Treasurer.

- The election was held and the results are:

  Bruce Smith, AC4G for President

  Mick Bell, N8AU for Vice President

  Barry Barton, WA4HR for Secretary/ Treasurer

  Bob De Pierre, K8KI Ex-officio Director

  Fred Kepner, K3FRK Director

- Meeting adjourned following the election at 730pm.

NO DECEMBER MEETING

NADXC Christmas Dinner:

Tuesday, December 13th, 2022

6:00PM

Amerigo Restaurant

9020 Memorial Pkwy SW

RSVP ASAP to Bob, K8KI

Upcoming DX Contests

By Chuck Lewis, N4NM

ARRL Ten Meter Contest, (SSB & CW), 10 meters only

Dec. 10, 0000Z to Dec. 11, 2359Z

Exchange: RS(T) plus State/Province; DX: RS(T) + Ser. #

See page 59, Dec. QST and www.arrl.org/10-meter

Russian 160 Meter Contest (CW/SSB) 160 meters only

Dec.16, 1800Z to 2200Z

Exchange: RS(T)+ Serial #; Russian Stns: RST + Oblast

See page 59, Dec. QST and www.topband.ru/rules.htm

OK DX RTTY Contest, (RTTY), 80 – 10 meters

Dec 17, 0000Z to Dec. 17, 2359Z

Exchange: RST plus CQ Zone

See page 59, Dec. QST and http:// okrtty.crk.cz/index.php?page=english

RAC Winter Contest (CW & PHONE), 160-2 meters

Dec 17, 0000Z to 2359Z

Exchange: RS(T) plus Serial No.; VEs send RS(T) plus Province

See page 59, Dec. QST and www.rac.ca/contesting

Croatian CW Contest, (CW), 160 – 10 meters

Dec. 17, 1400Z to Dec. 18 1400Z

Exchange: RST + SER. #

See page 59, Dec. QST and www.9acw.org/index.php/rules/english

Stew Perry Topband Distance Challenge, (CW), 160 meters

Dec. 17, 1500Z to Dec. 18, 1500Z

Exchange: 4 Char. Grid square

See page 59, Dec. QST and https:/www.kkn.net/stew/stew_rules.html

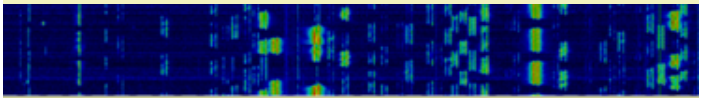
RAEM Contest (CW), 80-10 meters

Dec. 25, 0000Z to 1159Z

Exchange: Serial # plus Lat/Long, (e.g., 57N 85E)

See page 59, Dec. QST and https://raem.srr.ru/rules/

Upcoming DX Contests (continued)



DARC Christmas Contest, (CW & SSB), 75/80 & 40 meters

Dec. 26, 0830Z to 1059Z

Exchange: RS(T) [+DOK or special code for DL]

See page 59, Dec. QST or https://www.darc.de/der-club/referate/conteste/weihnachtswettbewerb/en/

OTHERS

Worldwide Sideband Activity Contest

0100Z-0159Z, Jan 3

EUCW 160m Contest

2000Z-2300Z, Jan 7 and 0400Z-0700Z, Jan 8

Dates & times often change or are misprinted in the journals; beware. See also: http://www.contestcalendar.com/contestcal.html

COMING UP SOON - Winter Field Day

January 28th & 29th

https://winterfieldday.com/

2022 NADXC Officers and Directors

President	Bob De Pierre, K8KI
Vice-President	Steve Molo, KI4KWR
Sec./Treasurer	Chris Reed, AI4U
Directors:	Bruce Smith, AC4G
	Fred Kepner, K3FRK
(Ex-Officio)	Steve Werner, AG4W

How to Join

Come to a club meeting or send in an application by mail (form on www.NADXC.org)

Monthly Meetings

Meetings are held at the Museum of Information Explosion at 6:30pm on the 2nd Tuesday of each month. Participants can also join the meeting virtually via Zoom.

This edition of The LongPath published by: Fred Kepner, K3FRK

DXpeditions in December 2022

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Start Date	EndDate	DXCCEntity	Call	QSL via	Comments
December					
2022 Dec01	2022 Dec09	Vanuatu	YJ0CA	VK2YUS	By VK2YUS fm Port Vila; 40-10m; SSB; verticals
2022 Dec03	2022 Dec14	Mauritius	3B8	Home Call	By F6HMQ as 3B8/F6HMQ and F6GWV as 3B8/F6GWV; 40-10m; SSB + digital; 500w; verticals
2022 Dec04	2022 Dec17	Maldives	8Q7BB	RX3APM	By RX3APM; 80-10m; vertical; QRV for ARRL 10m Contest
2022 Dec06	2022 Dec08	Gibraltar	ZB2	YL2GM	By YL2GM as ZB2/YL2GM; 6m; FT8
2022 Dec06	2022 Dec20	Solomon Is	H44SHD	HB9SHD	By HB9SHD; 40-6m; SSB FT8
2022 Dec08	2022 Dec12	Ceuta & Mellila	EA9	YL2GM	By YL2GM as EA9/YL2GM; HF
2022 Dec10	2022 Dec16	Bangladesh	S21DX	LoTW	By S21RC S21AM S21D S21TG S2ABK fm IOTA AS 140; HF; SSB FT8 (f/h); yagi, VDA, Beverages; amplifier; QSL via EB7DX
2022 Dec13	2022 Dec18	Laos	XW4KV	F4BKV	By F4BKV; 40 20 15 10m
2022 Dec13	2022 Dec22	Maldives	8Q7CA	LoTW	By R3CA fm Nalaguraidhoo I; 80-10m; CW SSB FT8; QSL via Club Log OQRS or R6CA
2022 Dec20	2022 Dec31	Crozet	FT8/c	LoTW	By F6CUK as TBA; 30 20 17m; QSL via Club Log OQRS or F6EXV Buro; see Web for direct options; operation to continue until Jan 26, 2023 (w/ a total of 3 weeks actual operating time within this window)
2022 Dec22	2023 Jan20	Senegal	6W	WA3DX Direct	By WA3DX as 6W1/WA3DX, 6W6/WA3DX, 6W9/WA3DX; mainly 20m, but also 40-10m; SSB FT8; spare time operation
2022 Dec23	2023 Jan03	Costa Rica	TI7	LoTW	By VE3BW as TI7/VE3BW fm Las Villas del Guayabo; 160-6m; CW SSB FT8; QSL via VE3BW or Club Log OQRS
2022 Dec29	2023 Jan05	Cayman Is	ZF2IT	LoTW	By VA3ITA fm Grand Cayman I; HF; 100w; vertical, dipole
2022 Dec29	2023 Jan05	Norfolk I	VK9MTO	ZL1MTO	By ZL1MTO; 20 10m; SSB FT8 FT4; dipole
2022 Dec29	2023 Mar15	Gabon	TR8CR	F8EN	By F8EN; 30-10m; CW
2023 January					
2023 Jan02	2023 Jan31	Montserrat	VP2MDX	LoTW	By W2APF; HF; CW SSB 10m_FM; 100w; operation to continue until March 31
2023 Jan03	2023 Jan21	Cape Verde Is	D44TWO	LoTW	By DF2WO fm IOTA AF-045 (HK85fa); HF + 6m; FT8, some SSB CW; QSL via M0OXO OQRS or DF2WO direct
2023 Jan06	2023 Jan21	Congo	TN8K	LoTW	By OK1BOA OK1FCJ OK1CRM OK1GK OK2ZA OK2ZC OK2ZI OK6DJ; 160-6m; SSB CW RTTY FT8 FT4 PSK; QSL via OK6DJ
2023 Jan12	2023 Jan24	Banaba Is	T33	TBA	By DF6FK as T33BB and DL2ZAD as T33BA; HF