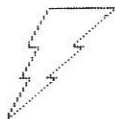


Mountain Spark Gaps



New Providence Amateur Radio Club
P.O. Box 813
New Providence, NJ 07974



July, 1986

Nets:

FM Phone	145.750 MHz	Sundays at 9:00 p.m. EDT	Bill King, W2LTJ
RTTY	145.750 MHz	Sundays at 8:00 p.m. EDT	John Sheetz, K2AGI
Westlink	145.750 MHz	Sundays at 7:30 p.m. EDT	Tom Brown, KA2UGQ
CW	28.150 MHz	Wednesdays 9:00 p.m. EDT	Floyd Harvey, KA2DDG

MEETING SCHEDULE FOR JULY

July 14: Surprise! Come to the meeting and find out!

July 28: Regular NPARC fourth-Monday meeting

NPARC meetings are held in the meeting room of the New Providence Memorial Library at 8:00 PM the second and fourth Mondays of each month unless otherwise noted.

ARRL NEW MEMBERS HELP NPARC

If you are joining the ARRL for the first time and you wish to thank the New Providence Amateur Radio Club for introducing you to the ARRL, include the four-digit club number:

---->> 0213 <<----

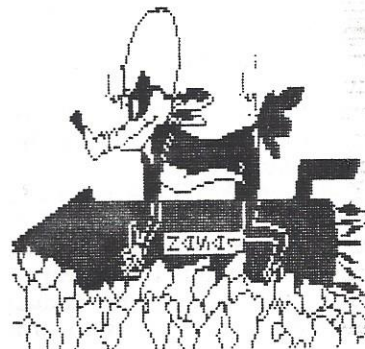
along with your membership application, The NPARC receives \$5.00 for each new membership application with the club number on it. If you would like an application, please contact John Sheetz, K2AGI at a NPARC club meeting.

SECOND K2SKV PICNIC SCHEDULED

Al Hirsch, K2SKV plans to hold another picnic on Saturday, August 9 (August 10 raindate). Bring your own hot dogs, hamburgers, or other food. Don't forget your bathing suit if you would like to go swimming in Al's pool. Contact Al at 469-6374 for more information.

--From K2SKV

RTTY PICTURE OF THE MONTH



FIELD DAY 1986 STATISTICS

944 total QSOs (3426 points)
425 Phone
407 CW
72 Novice
40 Packet

Last years point total was about 4400. The phone station was off by about 30% and the CW station was off by about 20% from last year.

--From W2GKF (Field Day Chairman 1986)

NPARC CALENDAR

JULY:

4: Independence Day
11: Skylab fell to earth in 1979
14: NPARC meeting
27: Atlantic telegraph cable completed 1866
28: NPARC fourth-Monday meeting
31: Ranger 7 landed on moon in 1964

AUGUST:

9: K2SKV pool party/picnic
10: K2SKV picnic raindate

Local radio buffs 'ham it up' during extended 'Field Day' drill

The following article was printed across the front page of the Berkeley Heights/New Providence PRESS, Volume 23 NO. 45, July 2, 1986:

By HUGH MULVANEY

AREA — Even at the age of 70, Abe Satz is considered a novice by his peers in the New Providence Amateur Radio Club.

The retired accountant from West Orange was struggling to send his first successful Morse code message last Saturday during "Field Day," the annual competition and drill for amateur radio operators nationwide.

Satz and three other men (all radio novices) were sitting in a tent erected near the baseball field at Governor Livingston Regional High School.

Other operators were working out of the two dugouts and a second tent set up on the edge of the forest that overlooks Interstate Route 78.

Call sign W2LTJ is otherwise known as Bill King, a retired EXXON engineer who has been a member of the club for 12 years.

The idea behind the annual competition, he said, is to pro-

mote the technical exchange of information. It also gives amateur operators around the country a chance to demonstrate skills that would be required in case of a national disaster.

King said the competition is "...always held on the last bad, rainy weekend in June."

After an overnight shower or two, however, the sky was beginning to clear and patches of blue could be seen through the low clouds.

"It's a high static day," King said.

All the equipment used during the competition must be mobile, said Al Hirsch, one of the charter members of the club. A Warren resident, he answers to the call sign K2SKV and has been a Bell Labs employee for 31 years.

For the competition, said Hirsch, the club's operators must move their equipment to a field location and operate for 24 hours without commercial power.

To emphasize his point, he indicated a 2.5-kilowatt generator

humming away beside home plate. Right next to it stood a silent 5KW backup generator.

In the visitor dugout, two men were trying to raise distant stations on a voice communications net. Hirsch said another goal of the exercise is to make contact with as many different stations as possible and to keep messages short and simple.

Only 30 minutes into the exercise, one Morse code group had raised stations in Missouri, Illinois, Florida, Kansas and Colorado.

Hirsch said participants nationwide and in Canada belong to the Amateur Radio Relay League, a group organized in 1965 that now has about 150,000 members.

There are some 300,000 licensed ham radio operators nationwide, Hirsch said, and he thought that most European operators would stay off the air for the weekend because of the traffic generated by "Field Day" in North America.

King said there are five levels of license granted by the Federal Communications Commission: novice, technician, general, advanced and expert and club members have spent many years working up to their present levels of expertise.

Bob Brown, whose handle is W2EME, was watching his son Tom operate in the home team dugout.

Tom, who is a sophomore at GL and answers to KA2UGQ, was sending and receiving data by "Packet" radio.

His rig consisted of a computer monitor or cathode ray tube, a computer about the side of a hardbound book and an even smaller transceiver.

The system is called packet because the data are sent in packets, or clusters, of information at a time.

Tom was communicating with another CRT on eastern Long Island and had already logged 104 competition points.

Back in the novice tent, Abe

Satz had just finished sending his message and was listening with the others for an acknowledgement.

Bob Brown stuck his head in

the tent.

"You did it. He gave you a 'Roger'," said Brown.

There were handshakes and smiles all around.



HAM RADIO "NOVICES" congratulate Abe Satz (left) on his successful sending of a Morse code message during the 24-hour "Field Day" Saturday and Sunday.

LIGHT BULBS! from net.ham-radio

From: grr@SEISMO.CSS.GOV
Newsgroups: net.ham-radio
Subject: lite bulbs [long but factual]

[I can't believe I keyed this much in! Comments and questions appreciated]

Since there has been lots of discussion on the net about light bulbs and their various features and attributes, I thought I would post this little summary...

First, the common incandescent bulb operates by electrically heating a metal (tungsten) filament to the point where it glows white hot. This means that a certain part of the power fed into the bulb is being radiated (black body radiation) as visible light and the remainder as infrared (heat) with traces of ultraviolet.

Increasing the operating temperature of the filament will shift more of the radiation into the visible range, but will decrease the life of the bulb, since at higher temperatures, the filament becomes weaker, and is more prone to evaporation and oxidation.

A light bulb fails when the filament breaks. Basically, the failure can be due to mechanical reasons - vibration, or thermal shock, or thermal - local heating of thin spot in the filament results in a loss of strength and the filament separates.

As a bulb ages the filament deteriorates. The metal evaporates from the filament surface, the surface oxidizes, and the micro-structure of the filament degrades. In short it becomes weak, thin and brittle. Also damage from mechanical shocks accumulates, and the filament may reach condition where part of it resonates at the power line frequency (singing).

Now, for look at the electrical behavior the the bulb. The tungsten filament has a positive temperature coefficient of resistance. This has both good and bad sides. The good side is that the output is tends to be self-regulating - as the filament temperature increase, the resistance increases, thus reducing the effect of line voltage on filament temperature. The bad side is that a cold filament has a low resistance, which causes a high startup current, which results both in thermal and mechanical shock.

Well, if you've gotten this far, you're wondering what this all has to do with the selection of bulbs in grocery store...

First, you can get longer bulb life by using bulb specified for 130V operation. True, the efficiency is lower, but most of the time, you don't need 10 zillion candle power coming out of you ceiling fixtures.

Second, you can get premium quality bulbs. These may contain gasses that retard evaporation and oxidation of the filament (argon, krypton) and may also take steps to improve the support and durability of the filament.

Third, you can use a dimmer, either the electronic or auto-transformer type to lower the voltage supplied to the bulbs. There a some secondary effects with these devices, but in general running the bulbs at a lower temperature is a win, especially when you can control it to suit your desires.

Finally, you can avoid incandescent bulbs - there are various screw-in fluorescent replacements that offer longer life, and higher efficiency than normal bulbs. The trick here is that they concentrate the output into the visible spectrum and not the infrared/heat part. You need to work out the cost/convenience factors for yourself, noting that there are from 700 to 8000 operating hours in a year, depending on application.

Now for the add-ins. There seem to be two flavors available - current limiters and diodes - ignore any 'micro chip' BS. In either case you must evaluate the cost/benefit of the devices, and also make some guess about their reliability.

The current limiters have potential, especially in situations where lights are turned on and off frequently like a bathroom. One question would be how much heat is generated by the device during continuous operation, since heat at the base of the bulb is bad news for both fixtures and bulbs.

The diode units lower the effective voltage that the bulb sees, since they block half the AC cycle. However, this may be too radical for your application, especially if you need to put in a 100 watt bulb where a 40 watt would have worked fine otherwise. Also, you can get diodes much cheaper at Radio Shack and wire them into your fixure...

Why can't the light bulb manufactures make better bulbs? Well, they would cost more to manufacture and they wouldn't sell as many. Also, since the American consumer is not known for paying for quality, cheaper initial prices are usually more important than overall costs.

How can you get 70 watts out of 60 watt bulb? Sounds unAmerican to me... Well, you're talking about equivalent light output here - much of the energy you put into the bulb is wasted as heat - don't touch that bulb. So if you improve the ratio of visible light to heat, by increasing the filament temperature, you can get the same amount of light for less electrical power.

Why do lights in cars last for years? Well, to get the right filament resistance for a given output, the high voltage bulbs require a long, thin coiled filament, whereas the 12 volt bulbs in your car have relatively short, fat filaments. These are obviously stronger mechanically, and do not deteriorate as fast. You can get low voltage bulbs in some areas, but the added costs of transformers and wiring would probably be prohibitive.

What's special about quartz-iodide bulbs? Well, these are generally low voltage bulbs, and get the benefits above, and also they contain a small amount of iodine and gasses that tend to clean evaporated metal off the bulb and dump it back on the filament and support structure. This lets them operate at a higher temperature and reduces losses due to darkening of the bulbs.

What other alternative are there? As mentioned previously, fluorescent bulbs are more efficient, since they convert ultraviolet radiation given off by ionized mercury vapor into visible light with phosphors on the inside of the tube. There are some human factors to consider, such as flickering and the color balance of the light output of the phosphors. There are 'natural' color versions available, but none of them do a very good job of simulating candlelight.

What about mercury vapor lights? Well, these avoid the filament problem altogether, by having an electric arc discharging through a metal vapor generate the light. This generally leads to a peculiarly colored output, bluish-green for mercury, orange for sodium and redish for calcium/strontium. Fine for a

parking lot, but a disaster over the dinner table.

What are: Black lights - either fluorescent bulbs without the phosphors and visible light blocking filters or photoflood bulbs with blocking filters, which run hot and don't last long. Grow-lites - again fluorescent bulbs with plant pleasing phosphors/filters rather than human factor phosphors. Heat lamps - incandescent bulbs operating at a low filament temperature to maximize infrared output vs visible light. Tanning lamps - generally filtered photoflood or vapor lamps designed to let some of the lower ultraviolet rays thru.

For more information check your library or perhaps your electric utility - they often have informative handouts. For some perspective, look at turn of the century electrical texts - wonderful things like self-feeding current limited carbon/metallic arc lamps for home or office. Things really are better than they once were...

--George Robbins - now working with, but no way officially representing Commodore, Engineering Department. Fone: 215-431-9255 (only by moonlite)

--From Usenet

COMPUTERESE PUZZLE

What is the next number in the following series:

3 6 9 12 15 18

Answer: 21 Easy enough, isn't it? Ok, what is the next number in this series:

3 5 6 9 10 12 17 18 20

(Answer in the August Mountain Spark Gaps)

--From K2AGI

NPARC CLASSIFIEDS

For sale by John Sheetz, K2AGI (464-5671):

5328 & 5329 Digital Switched Capacitor Filter chips (as described in the April 1986 QST)
\$5 each.

For sale by Bill King, W2LTJ (377-5653):

Midland 13-500 12-channel crystal controlled 2-meter FM transceiver. 1 or 15 watt output. Loaded with the following crystals: 16/76, 34/94, 295/895, 31/91, 385/985, 10/70, 63/03, 145.8 simplex, 146.52 simplex. Measures 2 1/2" x 6 1/4" x 9". Comes with microphone.

Poly-comm-six 6-meter AM transceiver with separate VFO. Takes 12v DC or 120v AC. Measures 5" x 11" x 11".

Brown Impedance bridge which measures C, L, and R. 1pf to 11uf, built-in 1 kHz oscillator, internal and external generators, D and Q ranges.

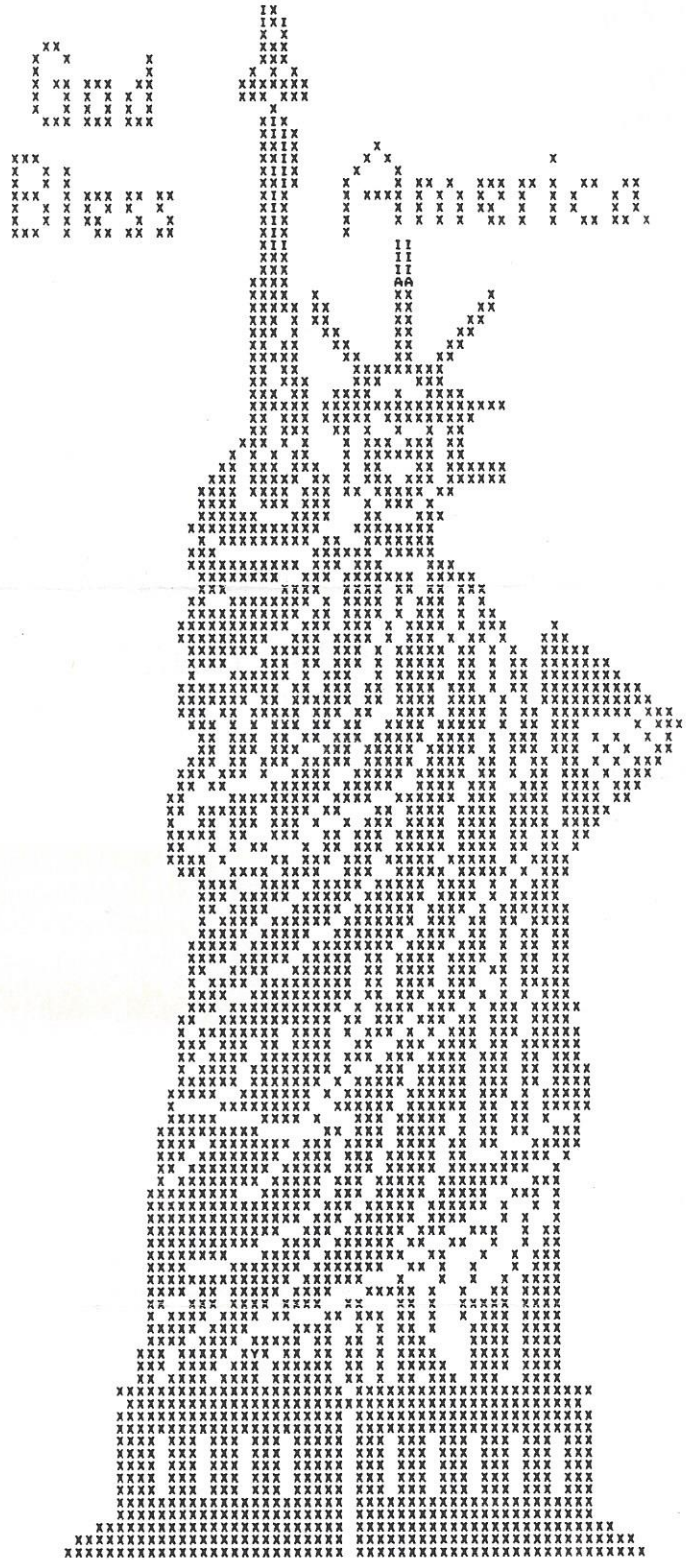
Contact Bill for more info on any of these items.

HAMFEST WATCH

July 6 (Sunday): 7th Annual Wilkes-Barre, PA Hamfest/Computerfest - 8 AM @ ICE-A-RAMA, Coal Street, Wilkes-Barre, PA. Admission \$3. FCC exams. Many programs including ATV, Packet, Gunnplexers. Talk-in on 146.61, 146.52, and 53.61. More info: K3SAE-KB3GB @ (717) 388-6863.

July 12 (Saturday): Mt. Beacon Hamfest - 8 AM to 3 PM at Arlington Senior High School, Poughkeepsie/Lagrange, NY. Admission \$3, Table \$6 (tailgating \$4). Talk-in on 146.37 (+600) and 146.52 (simplex). More info: Julius Jones, W2IHY @ (914) 889-4933.

July 19 (Saturday): Sussex County ARC Hamfest - 8 AM @ Sussex County Fairgrounds, Plains Rd. off route 206, Augusta, NJ. Sellers \$7 (\$5 tailgate). Buyers \$3. Talk-in on 147.90 (-600), 146.52 (simplex), and 224.50 (simplex). More info: Don Stickle, K2OX @ (201) 663-0677.



"STANDING PROUD"

ORIGINATED FOR THE 1991 RTTY ART CONTEST, BY MONTY, W97REA
RELAYED BY HAL, K7JBM, SEATTLE, WA.

The
New Providence
Amateur Radio Club