Parkersburg Amateur Radio Klub

SEPTEMBER 1994

Di-Dah-Dit

The Official Newsleter of the Parkersburg Amateur Radio Klub
P. O. Box 2112 Parkersburg, WV 26101

IARU TO WEIGH MORSE CODE REQUIREMENTS

The subject of the international Morse code requirement for amateur operation below 30 Mhz has been making the rounds again, particularity in E. Europe, fueled in part by an independent publication called Morsum Magnificant, edited by Geoff Arnold , G3GSR. The IARU has established an ad hoc committee on the Morse code, according to IARU President Richard L. Baldwin, W1RU, who wrote the following: In Article 32 of the Radio Regulations of the International Telecommunication Union appears Regulation 2735, which has a mandatory requirement for competency in Morse code operating be shown before a radio amateur is permitted to operate on the HF bands-- the "DX" bands below 30 Mhz.."

"There are some groups of radio amateurs who from time to time query the necessity for this mandatory Morse code requirement. On the other hand, many radio amateurs -- indeed possibly complete societies and even whole regions -- continue to support the continuance of this provision."

"As part of an ongoing review of the Amateur service, the Administrative Council of the International Amateur Radio Union (IARU AC) has established a 'CW Ad-Hoc Committee' to produce a report for consideration by the IARU AC at its meeting in Singapore in September 1994." The Committee comprises: Fred Johnson, ZL2AMJ, a director of IARU Region 3 as Chairman; Dr. John Allaway, G3FKM, Secretary IARU Region 1; and David Sumner, K1ZZ, from the IARU International Secretariat and the American Radio Relay League, as members. The Committee is thus drawn from the three IARU regions."

"It is expected that after consideration by the IARU AC, The Report of the Committee may be made available to the IARU Regional organizations for further study and comment."

HURRICANE SEASON

Here are some major Net and emergebcy frequencies (i Khz) of interest suring the fall hurricane season:

3815 Inter-Island 75 meter Net

7165 Antigua/Antilles Net

14275 Amareur Radio/Red Cross

14283 Caribus Net 14283 Health & welfare traffic

14303 Health & welfare traffic

14316 Maritime Mobile Net

14325 Hurricant Watch Net

14185 Caribbean Emergency

7115 Caribbean Maritime Mobile (1200z)

3808 Caribbean Waether (1030z)

21390 International Health & welfare

21400 Transatlantic Maritime Mob.

7268 Waterways Note-- NEVER transmit on thes Nets unless you are asked to do so by the net control.

Klub Officers for 1993-94

Parkersburg Amateur Radio Klub

President - Rory Hughes KB8MDN

1st. VP- Roy Maull N8YYS

2nd. VP- John McGuffey N8NBL

3rd. VP- Earl Hulce KB8HRG

Sec.- Tom Jones N8NMA

Tres.- Jane McGuffey N8MOW

NL Eds- Jerry KA8NJW

Russ N8FID

Prod/printing- Mary KB8BOA

Minutes of 12 September P.A. R. K. Meeting

The meeting was called to order at 7:31 PM by President Rory Hughes (KB8MDN) after the picnic dinner at City Park.

Introductions were made and there were 33 members and guests in attendance. The Secretary was not present to read the minutes of the previous meeting. The Treasurer's report was read and approved with the current balance of $2031.59.

Committee Reports:

Rory (KB8MDN) reported that chair rentals at the homecoming raised $211.00. We were short of last years total because of the rain on Sunday.

Bob (KB8EFB) reported the results of the work done by the nominating committee, with the following slate of officers for next year.

President, Roy (N8YYS);

1st Vice President, Ray (N8TWV);

2nd Vice President, John (N8NBL);

3rd Vice President, Earl (KB8HRG);

Secretary, Larry (N8TGI);

Treasurer, Jane (N8MOW);

Sergeant-at-arms, Bob (KB8EFB).

Larry (KF8NW) nominated Venus DeMilo for Sergeant-at-arms from the floor.

Earl (KB8HRG) reported that the old patch would not work as well as hoped directly wired to the controller. He requested to be authorized to buy a new CAT 300 patch and a surge protector. The motion was made by Bob (KB8EFB) to purchase this equipment and approved.

Further dicussion was made regarding the sale of the old patch equipment to help off-set the cost of this new equipment.

Earl also reported that he had approval of the owners of radio station (WMPB) to place a remote receiver on their tower on Summit Ridge.

It was also noted that Klub members would have first chance at purchasing the old equipment. Tim (WA8CRW) asked to be given the old cavaties from the 97 machine, and it was approved.

It was also suggested that the NOAA wx report be set up for access by code on the 97 machine, and Earl said he would look into doing that. Earl also thanked Russ (N8FID) and others for the help in changing the batteries at the 97 site.

Old Business:

Larry (KF8NW) reminded all that a testing session has been scheduled for October 29 at the Red Cross. He will be exercising a group of new VE's that will have just gotten their certificaton by that time.

New Business:

It was requested by the old timers with super sharp low range hearing that the sub-audible tone on the 97 machine be changed to a lower frequency. Earl said he would be able to work on that this coming weekend as a test.

Several suggestions were made as to the place for the Christmas party. The Washington and Vienna Community buildings were mentioned specifically, and it will be looked into and reported on at the next meeting. The date and time for the party were set as December 17 (Saturday) at 5:00 PM.

Roy (N8YYS) volunteered to set up the Novice/Technician Classes for next year. They will be run on a time schedule to end with testing being on the May National Testing Day.

Bob (KB8EFB) moved that the meeting be closed at 8:17 PM.

Roy S. Maull, N8YYS

Acting Secretary

SYMPATHY

Our deepest sympathy goes to Leo Pabst, WA8BMA, for the loss of his wife, Dorothy. She was a good friend to those of us who knew her.

Our deepest sympathy also goes to Tim Smith, KB8JWF, for the loss of his brother.

NOAA WEATHER RADIO

The Voice of the National Weather Service

NOAA weather radio is a service of the National Oceanic and Atmospheric Administration of the U.S. Department of Commerce. It provides continuous broadcasts of the latest weather information directly from National Weather offices. Taped weather messages are repeated every four to six minutes and are routinely revised every one to three hours, or more frequently if needed. Most of the stations operate 24 hours daily.

The broadcasts are tailored to weather information needs of people within the receiving area. For example, stations along the sea coasts and Great Lakes provide specialized weather information for boaters, fishers, and others engaged in marine activities, as well as general weather information.

During severe weather, National Weather Service forecasters can interrupt the the routine weather broadcasts and substitute special warning messages. The forecasters can also activate specially designed warning receivers. Such receivers either sound an alarm indicating that an emergency exists, alerting the listener to turn the receiver up to an audible volume; or, when operated in a muted mode, are automatically turned on so that the warning message is heard. " Warning alarm " receivers are especially valuable for schools, hospitals, public safety agencies, and news media offices.

Under a January 1975 White House policy statement, NOAA Weather Radio was designated the sole Government operated radio system to provide direct warnings into private homes for both natural disasters and nuclear attack. This capability is to supplement warnings by sirens and by commercial radio and TV.

NOAA Weather Radio broadcasts are made on one of seven high-band FM frequencies ranging from 162.40 to 162.55 megahertz (MHz). These frequencies are not found on the average home radio now in use. However, a number of radio manufacturers offer special weather radios to operate on these frequencies, with or without the emergency warning alarm. Also there are now many radios on the market which offer standard AM/FM frequencies plus the so-called " weather band " as an added feature.

NOAA Weather Radio broadcasts can usually be heard as far as 40 miles from the antenna site, sometimes more. The effective range depends on many factors, particularly the height of the broadcasing antenna, terrain, quality of the receiver, and type of receiving antenna.

As a general rule, listeners close to or perhaps beyond the 40 mile range should have a good quality receiver system if they expect reliable reception. Also, an outside antenna may be required in these fringe areas. If practicable, a receiver should be tried at its place of intended use before making a final purchase.

The National Weather Service operates about 400 stations. Approximately 90 percent of the Nation's population is within listening range of a NOAA Weather Radio broadcast.

If you have a question concerning NOAA Weather Radio or wish to receive a listing of NOAA Weather Radio receiver manufacturers, please contact your nearest National Weather Service Office. IIf you have other questions concerning NOAA weather radios or antennas, feel free to leave me E-mail on Exec-PC

A.J. Marhofke

What are these contests I sometimes hear, and how do I participate?

Dozens of contests are held each year, usually at weekends, and can provide useful operating experience. They typically last for 24 or 48 hrs, and are usually on SSB or CW only (the Russian CQ-Mir contest is on both modes at the same time). You can participate by making one QSO or several thousands.

In most contests you send a signal report (traditionally 59 or 599) followed by a number that is different for different contests - the most common one is a serial number (so you send 599 001 for your first QSO, then 599 002 etc). The exchange may, however, be your age (All Asian contests), your CQ or ITU zone (CQWW and IARU contests, respectively), your state (ARRL contests) or something else.

Read "Contest Corral" in QST for the rules for all major contests - the more serious contester may wish to subscribe to the National Contest Journal, or join the e-mail contest mailing group (write to Trey, WN4KKN, at garlough@tgv.com). Knowing the rules can prevent embarrassment - you will get a cool reception if you are a W or VE and call a W/VE in the ARRL contests, since they can only work non-W/VE stations.

Otherwise, QSOs made in contests are just as valid for DXCC (DX Century Club - more than 100 contacts), WAS (worked all states) and other awards as are 30-minute ragchews.

Although not strictly a contest, the annual Field Day provides very useful operating experience under less than optimal conditions and is highly recommended for new operators - check with your local club for their Field Day plans some weeks before the (late June) event.

KLUB / ARES Net
on 148.970
Tuesday"s at 9:00 PM

Parkersburg Amateur Radio Klub
P. O. Box 2112
Parkersburg, WV 26101

From: brian@ucsd.edu (Brian Kantor)
Newsgroups: rec.radio.amateur.misc
Subject: Re: Safety of auto battery for power?
Date: 3 Oct 1992 13:27:12 GMT
Organization: The Avant-Garde of the Now, Ltd.

[reposted from a few months ago. No, this does NOT belong in the FAQ]

I've been doing some research on lead-acid batteries with an eye towards using them to provide power for our ham radio repeater site.

Our site is difficult to get to, and the commercial AC mains power goes away at times. Everything in the site runs off a nominal 12 volts DC. During idle periods, the equipment may only draw a few amperes, but most of the transmitters can draw up to 10 to 15 amps each. A maximum drain of 100 amps isn't out of the question, although it would probably be only for a few minutes at a time. Some systems (such as the digital communications equipment) key on and off quite regularly, with perhaps as much as a 50% duty cycle, whilst others may not key for hours and then stay on for as long as an hour or two (voice repeaters during drivetime). We do not want there to be any interruption of power when the mains fail. We don't believe that most of the outages are of a duration that a generator will be necessary - a few hours is sufficient.

It is clear that a good solution to our problem is a bank of lead-acid batteries capable of supplying the peak current, floating across a supply that can recharge them and supply the standby and perhaps one or two transmitter's demand.

Ok, that's the problem. Here's what I've found.

Lead-Acid batteries commonly available today can be roughly grouped into three categories by construction and intended use:

1. Automotive starting
2. Traction
3. Stationary

Automotive starting batteries are formulated with thin pasted plates and are designed to supply high peak currents for brief periods of time whilst cranking an engine. They are not expected to be discharged to more than perhaps 75% of capacity and are expected to be recharged immediately after discharge. If used in deep-discharge or float service they will not last long. (I.e., the capacity of the battery will diminish fairly quickly. While it will still act as a battery, it will not be able to supply its rated capacity soon after being placed in the wrong kind of service.)

Traction batteries are made with thick pasted plates and have very rugged separators between the plates to make the battery more immune to physical shock and vibration, and to reduce the chance of failure due to dendritic growth during recharging. These batteries are sold for use in electric forklifts, golf carts, marine trolling motors, and RV power. They are designed to be discharged nearly fully each day, and

recharged each night. Because there is some tradeoff in battery life by using the pasted plate construction to keep the size and weight of the battery down, they are not used in applications where extremely long life is required. The commonly-available Deep Cycle Marine batteries are of this general type.

Stationary batteries are made with thick solid plates. They are designed to be used as standby power, supplying minimal power and kept in a state of nearly full charge until needed. They can take deep discharge. Because of the solid plate structure, they are bigger and heavier, but their lifetime is much longer. One source suggests that 10 years is not unusual. Some photovoltaic storage batteries (for solar-powered homes and such) are of this type.

The best battery for our application is the Stationary battery, but they are not commonly available. Much more readily obtained are the Marine/RV batteries, at about $50 apiece.

Charging and discharging these batteries is a big question. I posted a query to the net and received about a dozen replies, most of which contradicted each other in one or more points. However, there is some consistency in the information available in our library, and I'll try to summarize it below.

Note that all the voltages given below are for batteries at working temperature - typically 80F (27C).

DISCHARGE:

Batteries are rated at an Amp-Hour capacity at a specific rate. For traction type batteries, this is typically a five hour rate, so a fully-charged 100 Ah traction battery in good condition can supply 20 amps for 5 hours before it is exhausted. Stationary batteries are usually rated at a 10 hour rate, and automotive (if rated in Ah at all) are given for a 20 hour rate. The discharge curve is NOT linear; if you double the current drain, you will get less than half the time. Similarly, if you halve the drain, you will get more than twice the time.

Each type of battery has a specified voltage at which it is considered completely discharged. If discharge continues below this voltage, the battery life may be considerably shortened, and repeated abuse of this kind can result in a battery which cannot practically be recharged. Each battery manufacturer specifies this voltage; in general, the final voltage for the three general types of batteries are

automotive	1.75 v per cell
traction	1.70
stationary	1.85

Thus a typical 12 volt marine battery with 6 cells should not be discharged below about 10.2 volts.

Another way of looking at it is that no cell should be discharged more than about .3 v below its full-charge rest voltage.

A typical cell will show the following voltages:

fully charged, open circuit, at rest with no charge/discharge for at least 12 hours	2.12 v/cell
As soon as load is applied (internal v-drop)	2.00
fully discharged, under load	1.70
fully discharged, open circuit	1.99
beginning of charging	2.10
70% to 80% charge (gassing begins)	2.35
full charge	2.65

CHARGING:

Liquid-electrolyte lead-acid batteries can be recharged at any rate that exceeds internal and surface discharge rates, and which does not cause excessive gassing (liberation of oxygen, hydrogen, and steam).

In non-float service, there are several simple chargers.

A single-rate (constant-current) charger limits its charge rate to about 7% of the Ah capacity of the battery; for a 100 Ah battery, it would charge at a rate of 7 amperes. Since the battery will start at about 2.1 v per cell, and finish at about 2.7 v per cell, the charger must be able to vary its voltage over this range. For a "12 volt" battery with 6 cells, the charger will need to supply between 12.6 and 16 volts over the duration of the charge. Charging is complete when the battery reaches 2.65 to 2.7 volts per cell.

A simple taper charger is a constant-voltage source set to 2.8 volts per cell with a series ballast (typically a resistor, but a choke or the internal resistance of the supply can be used) that limits the output current to 7%C when the battery is started charging at 2.1 v/cell. Again, charging is complete when 2.7v/cell is reached.

Trickle-charging of a fully-charged battery can be done to keep it charged. This is done by supplying .5 to 1 mA per Ah capacity. Trickle charging should be discontinued when it has continued for at least 24 hours and the battery has reached 2.25 v/cell. Typically, trickle chargers are set to run perhaps once a week. Because of their thin plate construction, automotive-type batteries will deteriorate if trickle-charged for more than perhaps six months.

An interesting research result was that using pulsating rectified AC or superimposing a small AC current on pure DC charging current increased battery life by up to 30%. Apparently the mechanism is that is reduces gassing and leads to a more porous lower-resistance plate, and lessens

the tendency to form dendrites during charging.

In float service, where the battery is in parallel with the mains supply, the supply voltage must be set to 2.15 to 2.20 v/cell. This will charge the battery, and avoids excessive gassing, but does not serve to "freshen" the cells - there is not enough gassing activity to move electrolyte around and clear the beginning of deposits from the surfaces of the plates. It is recommended that batteries in float service occasionally (perhaps once a month) be charged to 2.65 v/cell to freshen and equalize the charges. In large installations, this is done by switching parts of the battery banks out of service in rotation. In smaller systems that can tolerate the voltage excursion, it can be done by simply boosting the output of the mains supply.

Charging inevitably leads to some water loss due to gassing; 100Ah of a gassing charge (2.4v or more per cell) will yield about 1.2 oz of water loss. Hydrocap Corp [975 NW 95th St, Miami Fla, (305)696-2504] makes a replacement filler cap that contains a catalytic material that recondenses emitted steam, and recombines the hydrogen and oxygen gasses into pure water that then dibbles back into the cell, greatly reducing the required maintenance. With the available flame arrestor option, they sound ideal for unattended battery systems, and should greatly reduce the danger of fire and explosion from liberated hydrogen. They're about $5-$10 per cell.

To read further:

Smith, George. Storage Batteries, including operation, charging, maintenance, and repair. ISBN 273 43448 9, TK2941.S57 1968

Aguf, I.A. and M.A. Dasoyan. The Lead Accumulator (translated from the Russian by S Sathyanarayana). Calcutta, 1968

Longrigg, Paul. Rapid charging of lead-acid batteries for electric vehicle propulsion and solar energy storage. DOE/NTIS 1981.

Aren't libraries wonderful?

- Brian