

ARES District 4 Net Script

Feb. 01, 2018 Rev D (net date)

Script Rev 07-03-2017

Good Evening everyone and welcome to the South Texas District 4 ARES net. This is

Tom (name) K5BV (call)

ARES EC for ARANSAS and SAN PATRICIO COUNTIES

(position e.g. member, AEC, etc. & County)

I will be the Net Control Station for tonight's net. First, if there are any stations with priority or emergency traffic please call

K5BV (call) at this time. UN-KEY

Either say "nothing heard" or handle the traffic immediately.

All hams in all Counties are welcome to check in to this net. You do not need to be an ARES member to participate in this net.

The purpose of ARES, the Amateur Radio Emergency Service, is to furnish emergency communications via amateur radio when regular means of communications fail or become inadequate during an emergency situation. ARES is sponsored by the ARRL, and supported by area radio clubs and individual hams. The only qualifications for ARES are that you possess an amateur radio license and you have a desire to help others. For more information or off-net questions please contact one of the following by email

Mark Dist. 4 EC - - - - - ad5ca@arrl.net
Tom EC for Aransas & San Patricio County - - - - - k5bv@arrl.net
Bob Asst EC for Aransas County- - - - - kf5cfu@arrl.net
Jim EC for Live Oak County- - - - - w5im@arrl.net
Harley EC for Kelberg County - - - - - kg5ayd@arrl.net

The net is currently scheduled monthly for the First Thursday at 8 PM. This is subject to change. We are currently using the 146.820MHz repeater in Corpus Christi with a (-) MINUS offset and a 107.2 tone.

This net is being conducted for the purpose of providing training and information related to emergency communications; to serve as a forum for discussion; and to foster fellowship among Amateur Radio operators.

K5BV (give your call & UNKEY briefly)

Next, are there any operators who would like to make announcement or provide information related to EmComm? This is not general check-in. Please State your call now.

Tonight after Check-In **will be a discussion of battery charging and selecting a generator.**

If the frequency has been clear a second or two key the MIC and s-l-o-w-l-y give your FCC call sign using ITU phonetics spoken clearly and slowly and UNKEY. Stating your name as well will be appreciated. Writing calls down takes a moment so allow a couple of seconds. Keep checking in and calls will be reviewed for clarifications, errors and missed calls. Please check-in with **K5BV** (Call) now.

(note these actions)

- *read each call back,*
- *ask for corrections*
- *ask for additional check-ins*

We will have comments after the tonight's material.

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Before we go down the list for comments if there any late check-ins please provide you call now.

(again note these actions)

- *read each call back,*
- *ask for corrections*

We will now go down the list for comments.

- *go down list of check-ins*
- *now have presenter give their comments)*

Final call for check-ins. Additional stations for the net please check-in now with **K5BV** *(your call)*.

(again note these actions)

- *read each call back,*
- *ask for corrections*
- *ask for comments*

We had XX check-ins tonight. Thank you all for joining the ARES net tonight, and thanks to the repeater owners and mountaineers for the use of these fine repeaters. I am now closing the net and returning these repeaters back to normal amateur radio use. Stations may remain on frequency to make additional QSOs.

Next Month the Net will be March 1st subject to change.

Net Control **K5BV** *(your call)* Out.

FCC CALL

NAME

Date 02-01-2018

01 **K5BV**

 Tom (ENTER NET CONTROL)

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CHARGING BATTERIES

Based on material by Earl Pack – AE5PA
Training Item on the harriscountyares.org WEB Site

Battery reliability and useful life of a battery depends on the proper charging process.

Battery chargers are often given low priority but chargers are the guardians of the battery.

Cheap battery chargers may do more harm than good.

Take tonight's material as a starting point and do personal research.

Nickel Based Batteries

- A few years ago the common rechargeable battery was a Nickel Cadmium or NiCad battery. Today replacement cells for this equipment is a different chemistry called Nickel Metallic Hydride or NiMH.
- The battery should remain cool during charging. Some temperature rise is normal but if the battery temperature is above room temperature after a few hours, it indicates the charger is not working properly. This is particularly a concern with nickel-metal-hydride batteries because they cannot absorb overcharging.
- New, never used nickel-based batteries should have a trickle charge applied prior to use.
- Nickel-cadmium batteries have a memory effect. Memory effect is a condition that causes the battery to hold less charge each cycle. The battery gradually loses their maximum energy capacity if they are repeatedly partially discharged and then recharged. To correct this effect each battery must periodically be discharged and charged. This is best done using a feature in a quality charger.
- NiCad batteries self-discharge and if routinely "topped off" the total capacity is less and less.
- Nickel-metal-hydrides have a 50% higher self-discharge rate than the nickel-cadmium.
- Nickel-metal-hydride batteries are less prone to memory effect. They should be fully discharged and recharged once every 3 months.
- Nickel-metal-hydride battery chargers require more complex electronics than the nickel cadmium systems. Different fast and slow charge voltage levels and times are required.
- A nickel-metal-hydride charger may be used to charge nickel-cadmium batteries, but not the other way around.
- Do not leave nickel-based batteries in the charger after they are charged.
- It takes as long to recharge a nickel-based battery as it does to discharge it.

Lithium-Ion Batteries

- A Lithium battery does not have the memory problem like nickel-cadmium. They do not need discharging and charging cycles. Care must be taken not to overcharge because there is a risk of fire.
- A lithium battery run until dead may not recover.
- It takes two times longer to recharge a lithium battery as it does to discharge it.

Lead Acid or Wet Battery such as in our vehicles

- Must be stored in a charged state. A trickle (float) charge should be applied while storing.
- A stored wet lead-acid battery will corrode nearby metal and damage paper and wood.
- Charge right after using.
- Deep discharging because this may permanently damage the battery.
- Hydrogen and oxygen gases are released during the charge cycle and water may boil out with high charging rates.
- It takes about five times longer to recharge a lead acid battery as it does to discharge it.
- Do not exceed 20% of the amp hour (AH) capacity of the battery. Example for a 100 AH battery use a 20A or less charging rate.
- Many consumer automotive type battery chargers are bulk chargers and should be checked frequently until disconnected.

AGM – Deep Cycle Batteries

- Recharge right after use.
- A trickle (float) charge should be applied while storing.
- Use a Smart Charger with computer technology that performs 3 step-charging techniques.

The 3 steps are: Highest rate of charge is Bulk Charge typically to 80% or more,
 Absorption rate to 100% charge after Bulk Charge,
 Float rate of charging begins after Absorption cycle.

GEL Cell

- Use a Smart 3 step charger adjusted for or designed for a Gel Cell battery.
- Otherwise follow the rules for AGM Batteries

Summary

A good practice is to remove nickel and lithium batteries from devices such as HT's and GPS units when storing for even several days. Many HT's and GPS units keep a constant drain on the battery even when turned off.

If a device is not designed to allow removing the battery follow the manufacturers instructions for keeping charged.

SELECTING A GENERATOR

Based on material by Earl Pack – AE5PA
Training Item on the harriscountyares.org WEB Site

There are a variety of back-up power sources available for amateur radio stations to use during emergency communication situations such as: deep cycle batteries, solar panels, generator, etc. Of these a generator is likely the most versatile and longest lasting if properly maintained.

- KEEP SAFETY IN MIND AND DO NOT CUT CORNERS USING A GENERATOR.
- FUMES FROM GENERATORS ARE AS DEADLY AS THE ELECTRIC ENERGY.
- RUN GENERATORS OUTSIDE FAR AWAY FROM WINDOWS, DOORS, TENTS.
- FOLLOW PROPER GROUNDING PRACTICES AND USE GROUND FAULT PROTECTED ELECTRIC CORDS
- DO NOT REFUEL A RUNNING OR HOT GENERATOR

Permanent Installation

Permanent installation generators are designed to be located at a building such as a home, business or an EOC. These are powered by an internal combustion engine and are either fueled by diesel oil, natural gas, or propane.

Selection of the size, fuel type, preventative maintenance, spare parts, testing schedule all need to be researched in advance and is beyond the scope of tonight's ARES topic.

Trailer-mounted Generators

Generators large enough to run locations such as a small retail store, an office or emergency service agency are typically trailer mounted and are fueled by diesel oil. These tend to be rated at higher power and are quite expensive and likely out of the price range for most amateur radio emergency communicators. Most of us have encountered trailer-mounted generators after Hurricane Harvey.

A interesting quote from the former Texas Chief of Emergency Management, Jack Colley, "a trailer-mounted generator takes more than duct tape and a buck knife to hook it up. Be sure it comes with an electrician."

Keep Chief Colley's guidance in mind if we as hams are involved in requesting a trailer mounted generator to get an EOC up and running after a power failure.

I have seen holes knocked in masonry walls and electric utility wiring removed to safely connect building wiring to a trailer mounted diesel generator.

Portable Generators

Amateur radio emergency communicators frequently use a portable generator.

Portable generators have a capacity of between 1-18KW. Of course they become less portable as they get larger. This type of generator is fueled most often by gasoline and consume gasoline very quickly. A typical 5KW generator weighs 150 lbs. and includes an engine in the 9 HP range.

Some generators have electric start. If the starter battery is not charged good quality portable generators are easy to start with the manual pull starter.

Portable generators are typically open-frame so they are quite noisy and are not protected from the weather.

Inverter Portable Generators

Many smaller generators use an advanced alternator design and an inverter. This design provides a generator that is very quiet, small and lightweight compared to ordinary generators of the same capacity. The inverter type generator is ideal for amateur radio emergency and public service communications.

These generators are usually enclosed and have effective mufflers so they are fairly quiet. They are also fuel efficient.

A word of caution: you do get what you pay for when you purchase a generator. Purchase a well-known engine manufacturer product.

Preventive Maintenance

Once a new generator is fueled the first time a disciplined scheduled preventive maintenance cycle is required.

A generator that is kept fueled with gasoline or diesel needs to have:

- appropriate additives such as stabilizer in gasoline
- run every 4 to 6 weeks until thoroughly warmed up
- drain and replace the fuel before running every 3rd month

Follow generator instructions for storing that will include:

- removing all the fuel including draining the fuel tank, hoses and carburetor
- change or clean fuel, oil and air filters
- spray preserving oil into fuel tank, fuel lines, carburetor and cylinders
- inspect hoses annually and replace hoses when they are 4 years old

One Final Reminder BE SAFE

- FUMES FROM GENERATORS ARE DEADLY
- DO NOT REFUEL A RUNNING OR HOT GENERATOR
- PROPERLY GROUND THE GENERATOR AND USE GROUND FAULT PROTECTED CORDS