Rural Training Center – Thailand (RTC-TH)

FOCUS

Community-based Environmental Education for the Self-sufficiency and Sustainability of Small Rural Family Farms

How to Assemble Battery Packs

RTC-TH Emergency Communications

This lesson is a collaborative effort with KE7FXM

Jim Wills is not a follower. He is a "doer". He is a living example of the motto "learning is a life long endeavor. He strives for self-sufficiency. He's accomplished this in getting his ham station off the grid.

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www.neighborhoodlink.com/rtc-th_Tech/pages

A part of the RTC-TH EmComm Program

The Rural Training Center-Thailand Emergency Communications program is a volunteer effort to provide emergency amateur radio communications for local community self-sufficiency and sustainability in times of need.

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The Rural Training Center-Thailand (RTC-TH)

is an all volunteer organization providing community-based environmental education for self-sufficiency and sustainability of small rural family farms

www.neighborhoodlink.com/org/rtcth

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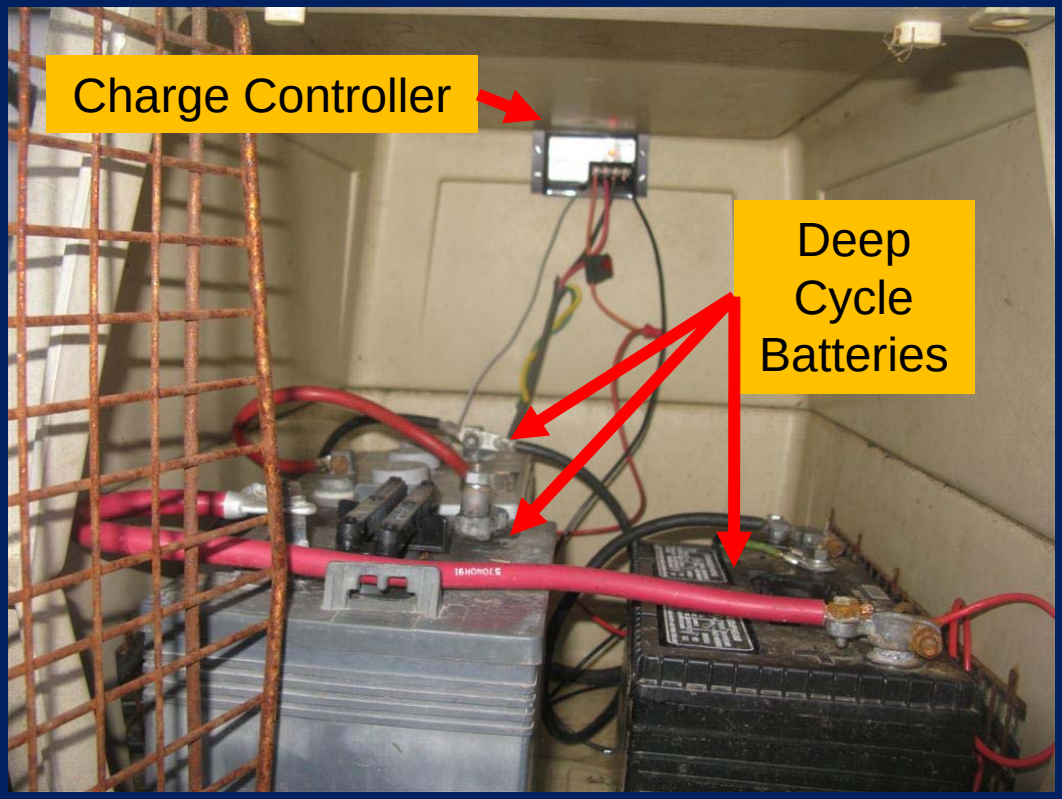
The Rural Training Center-Thailand was created to honor the life and memory of Mr. Tang Suttisan, a father, farmer and former custodian of Ban Na Fa Elementary School who appreciated and valued education.

Station Solar Photovoltaic Panels

The energy from the panels is stored in the battery bank (plastic dog houses in background).

Offsetting higher costs of new batteries



Jim got these used 12 VDC deep cycle batteries which cost a fraction of new batteries.

Local resources include a shop handling old batteries. From a pragmatic point of view, any functioning battery can be used to store the power from the solar panels. Deep cycle batteries are ideal, but even common auto batteries are usable.

KE7FXM got these batteries free

These 1.2 VDC, 10 amp single wet cell batteries were used for standby back up power. They have a 20-30 year life span and were replaced at about ½ their life span.

See RTC-TH EmComm lesson on Basic Battery Testing

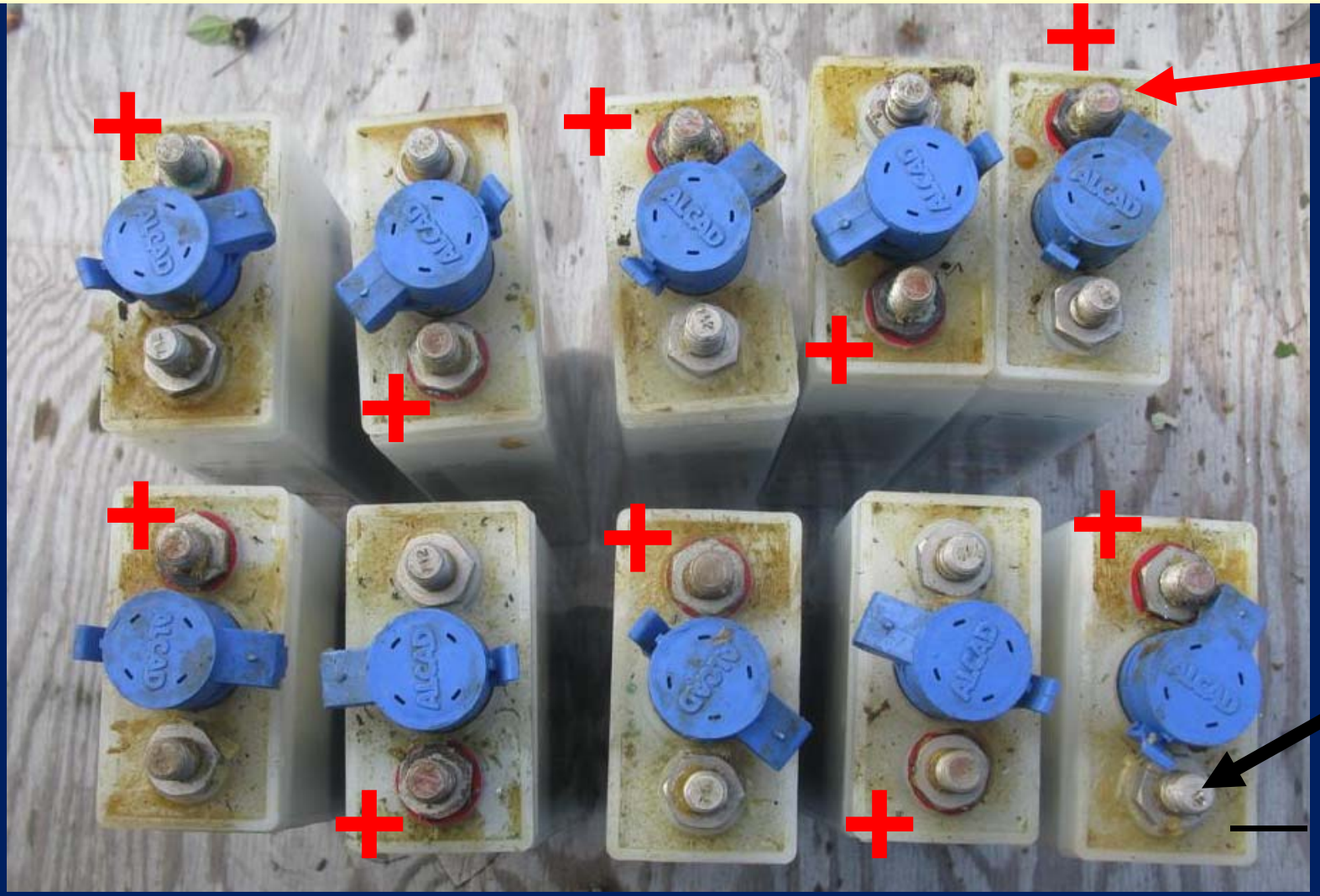
All batteries should have been tested

The weakest battery in the bank will limit the overall performance of the entire group. Group batteries of nearly equal voltage, specific gravity and amperage together.

See RTC-TH EmComm lesson on Basic Battery Testing

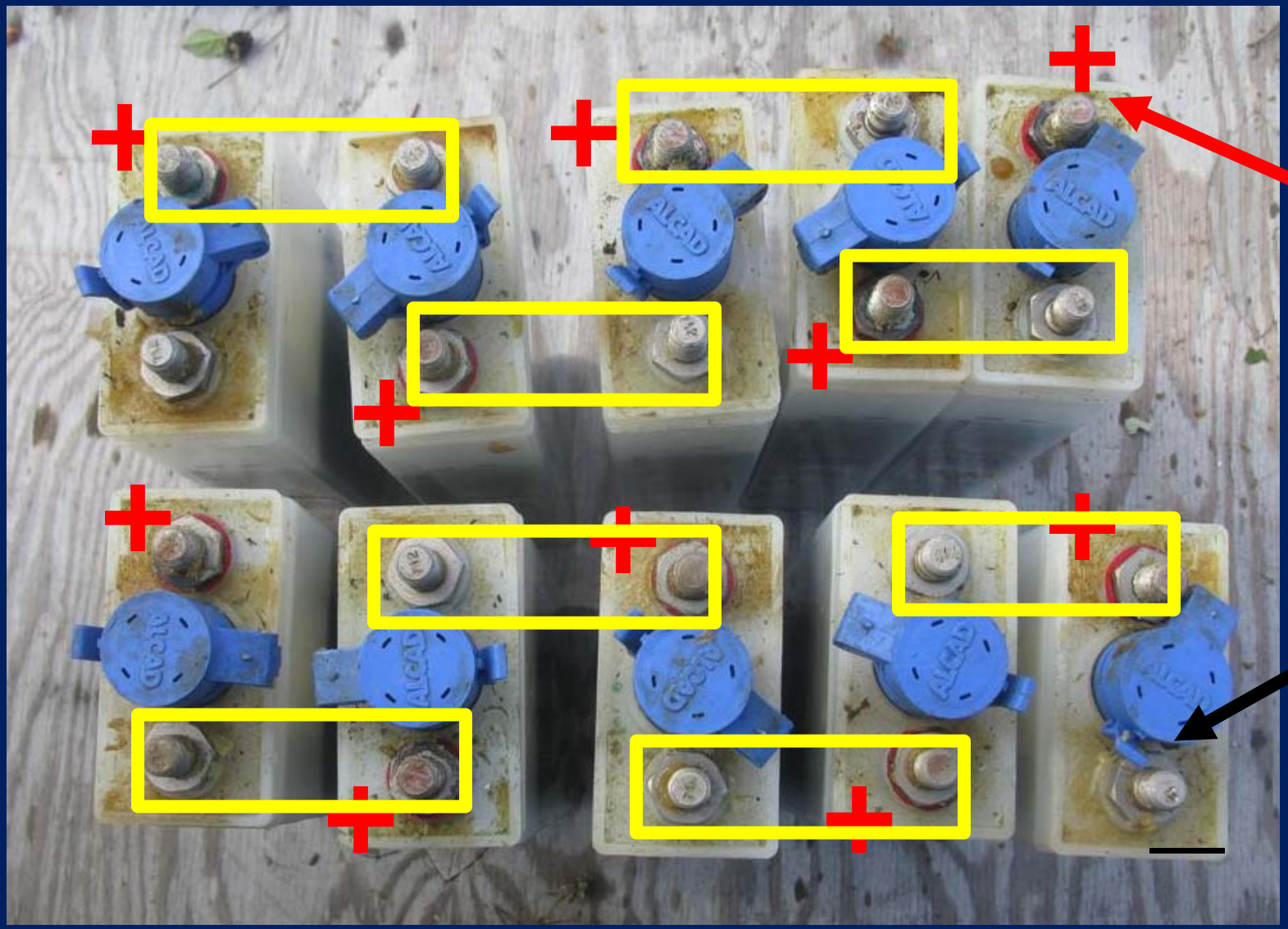
The batteries will be linked in series.

Consider where the main power cables will connect to the bank.

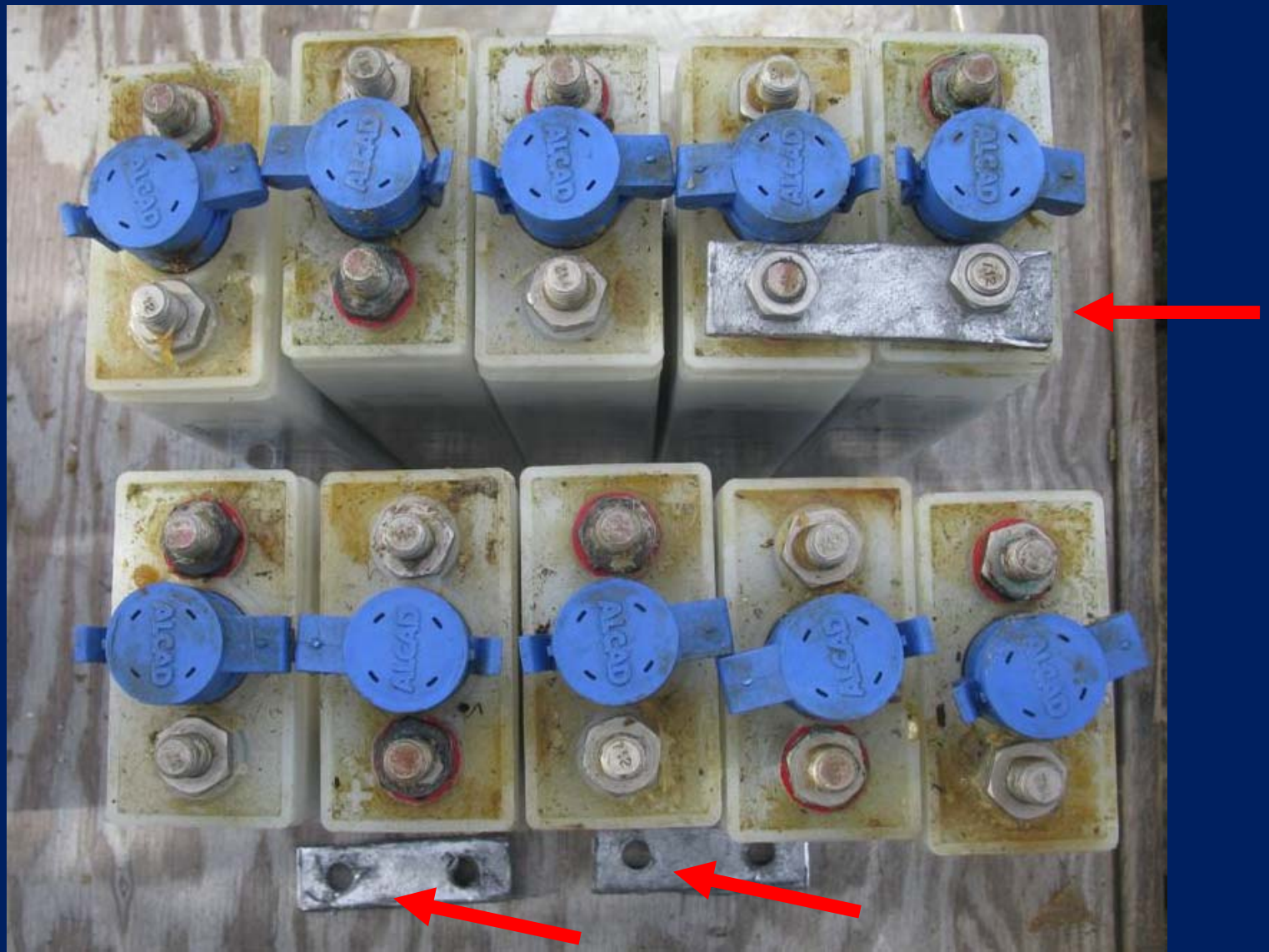


The batteries will be linked in series.

The remaining terminals are connected + to – (in series).

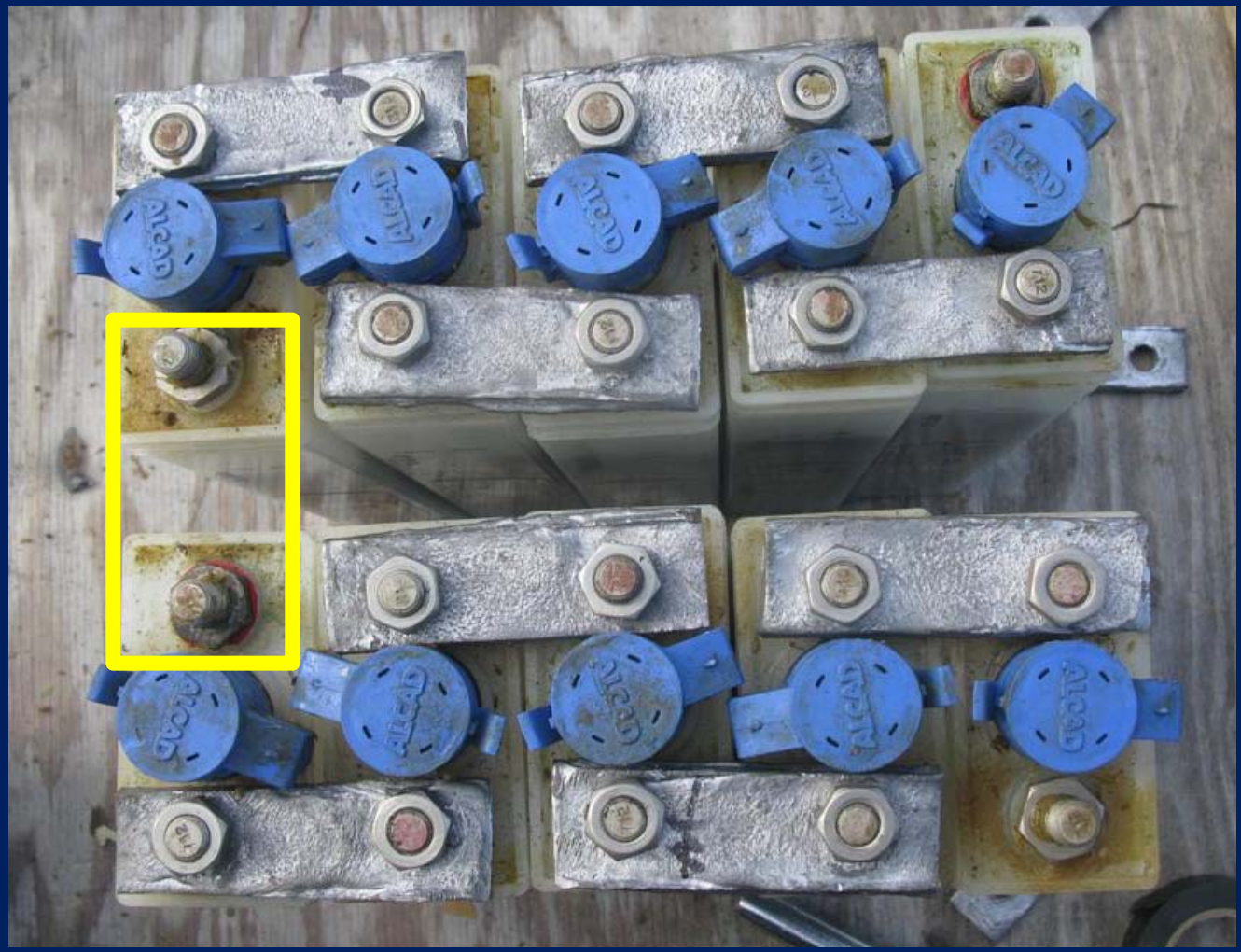


Lead bars connect the battery terminals.



This pack uses 10 batteries each 1.2 VDC

Two sets of 5 batteries have been linked in series. The final link (yellow box) hasn't been installed yet.



The battery pack is assembled.

Two sets of 5 batteries have been fully linked in series.

The completed battery pack is checked.

A wood board prevents shorts and stiffens the pack. The final check shows the battery pack is a 13.2 VDC.

The finished battery pack is added to the bank

The new battery pack meets its twin.

The new battery pack joins its twin in the station solar battery bank. It is connected in parallel in the battery bank. The total solar battery bank array consists of the equivalent of five 12 VDC batteries (3 wet lead acid 12 VDC deep cycle batteries and 2 wet cell NiCad battery packs).

The original battery bank and charge controller

Station 12 VDC Power Distribution Strip

Solar power meets all station needs so it is independent of standard 110 VAC line power.

Jim KE7FXM up and running on solar power

Questions or Comments

We are always trying to improve our lessons. Your comments and suggestions are welcomed.

You may contact us by e-mail:
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Please tell us how you heard about us and the lessons of interest to you.

For More Information about Other EmComm Lessons

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Lesson Archives: www.neighborhoodlink.com/RTC-TH_Tech/pages

Community-based Environmental Education for

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