Rural Training Center – Thailand (RTC-TH)

FOCUS

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

Alternative Power for an HT radio

RTC-TH Emergency Communications

This lesson is a collaborative effort with N7YLA

Mark (N7YLA) founded GERC (Glendora Emergency Response Communications) and strives to empower hams to be well-prepared and effective emergency communicators.

E-mail: hs0zhm@gmail.com

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.

E-mail: hs0zhm@gmail.com

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

E-mail: rtc2k5@gmail.com

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.

Back-up EmComm Radio System

At the very least, you need a transceiver, antenna, a power supply.
This is Mark's Baofeng UV 3R with a rubber duck antenna and the standard Li-ion battery pack.

Baofeng UV 3R Standard Power

Standard VAC / DC charger and standard
3.7V DC 1200 mAh Li-ion battery

Baofeng UV 3R Power Options

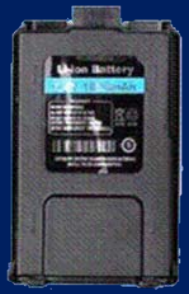
Spare 7.4V DC 3600 mAh Li-ion battery and
12V DC battery eliminator

Normal Operational Power Scenario

Depleted to charger

Normal charging using AC line power

Charged spare to radio



Recharged as spare

Optimum battery life is attained by completely discharging a battery before recharging it.

EmComm Operating Challenges

Lessons from past EmComm operations:

- Within 2 days, most batteries are dead
- There are never enough batteries available locally after a disaster strikes
- There never seems to be enough power available to run equipment
- Generators need fuel; there is never enough fuel in the disaster area
- EmComm volunteers must be self-sufficient in order to work effectively

Emergency Operational Power Scenario 1

Depleted to charger

Generator and gas to power the charger.

Charged spare to radio

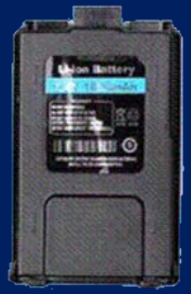
Recharged as spare

Optimum battery life is attained by completely discharging a battery before recharging it.

EmComm Emergency Communications RTC-Thailand Rural Training Center-Thailand

Emergency Operational Power Scenario 2

Remove Depleted battery



Save the spare battery. Keep it in reserve as it is more portable in case you have to move

If AC line power or a generator are not available, find and use 12V DC batteries.

12V DC battery eliminator

12V DC battery

Be sure you have the proper connectors. Use a meter to monitor battery / power levels

Mark's solar power option for the charger

The Solar Power Option Kit

The solar kit contains various adapters to charge cell phones, a USB cord, and an LED light attachment

The Solar Power Option Kit

The business half of the solar unit

Control panel, battery, and solar cell on back

Inside back cover

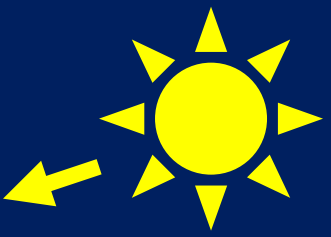
Outside back cover

Mark found one adapter fits the Baofeng UV 3R charger

The solar unit can power the charger

Emergency Operational Power Scenario 3

Depleted to charger



Mark can use his solar kit to supply the charger.

Charged spare to radio

Recharged as spare

Optimum battery life is attained by completely discharging a battery before recharging it.

Optimum Solar PV Panel Orientation

A 90° angle of incident for sunlight on the solar cell gives the best charging.

Optimum Time of Day to Charge

0600 - 0900
0-20% Poor

0900 - 1500
80-100% Best

1500 - 1800
0-2% Poor

Consider tilting the solar cell or using a reflector to increase the sunlight falling on the solar cell to boost charging at sunrise / sunset

Optimum Sky Conditions for Charging

Clear sunny days are best

0900 - 1500
90% Best

0900 - 1500
30% Normal

Be sure to keep the charger dry

0900 - 1500
0.5% Poor

Consider using a reflector to increase the sunlight falling on the solar cell to boost charging on cloudy days

Mark’s UV 3R Power Matrix

Original VAC / DC charger and Li-ion battery

Spare Li-ion battery

12V DC battery eliminator

12V DC solar PV kit and original VAC / DC charger

Mark’s UV 3R EmComm Radio

Mark has found a resilient and sustainable power supply system for his radio. Solar battery charging capability adds another level of power security to assure he can operate “when all else fails.”

Questions or Comments

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

You may contact us by e-mail:
hs0zhm@gmail.com

Please tell us how you heard about us and the lessons of interest to you.

For More Information about Other EmComm Lessons

Contact
Greg Lee
RTC-TH Co-founder
Author / Mentor

Via E-mail
hs0zhm@gmail.com

Via Skype video
conference call: rtc_th

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

Community-based Environmental Education for

The End

www.neighborhoodlink.com/org/rtcth

E-mail: hsØzhm@gmail.com