



# Portable Station

## Considerations

'Operating Somewhere Else'

Gary J Takis, K7GJT - NNN0GJT  
CCARC Ham Basics – 17 November 2012

[K7GJT@arrl.net](mailto:K7GJT@arrl.net)

# Portable Station Considerations

- Portable station considerations will be presented to include equipment capabilities, power alternatives, VHF/UHF and HF antenna options, shelters, equipment and personal support kits and more will be covered.

# Subjects to cover

- What is Portable?
- Decisions to make
- Options to consider
- Sample Kits
  - Loose Components
  - “Turn Key”



# Subjects to cover

- Power Options
- Antenna Options
- Accessory Options
- Support Options

# What is Portable?

- Fixed > Mobile > **Portable**
- Portable is an amateur radio station that is designed to be moved from one place to another to be set up and operated in a temporary location
- Could be “mobile” or “containerized”

# Decisions to make

- Freq Bands
  - HF
  - VHF/UHF
- Capabilities
  - HF/SSB
  - VHF/UHF FM
  - Digital
    - Soundcard
    - TNC
    - APRS
- Does size matter?
- Power vs Weight
  - Radios
  - Power supplies
  - Antenna Tuners
- Tables/Chairs
- Administrative kit needs

# Options to Consider

- Packing Schema
  - Components – Flexible but more setup time
  - “Turn Key” – Minimum time to ‘on air’
- Transportation Issues
  - Vehicle
  - Commercial Airline
    - Carry on vs. Checked
  - Other

# Sample Kits (Components)



# Sample Kits (Turn Key)

Ron – WD4AHZ Florida



# Sample Kits (Turn Key)

**Jim - KC8PD/AAR5AI Ohio**



**Tim - KA4CKR Kansas**

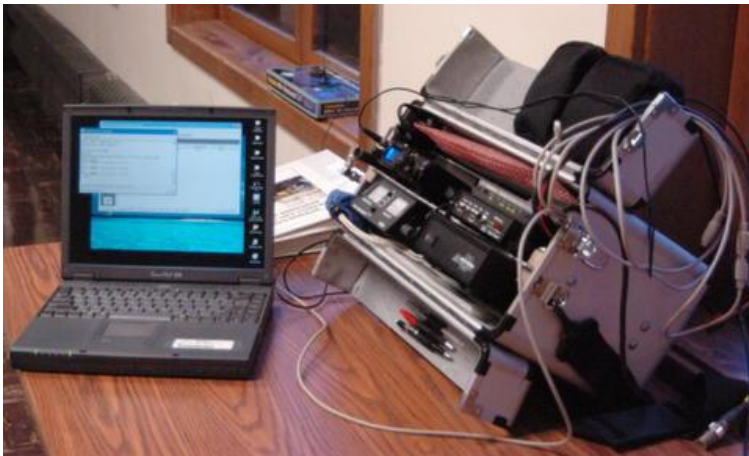
# Sample Kits (Turn Key)



Budd – N4WBJ

# Sample Kits (Turn Key)

Gary – K7GJT/NNN0GJT





# Sample Kits (Turn Key)

Jeff Smith



# Sample Kits (Turn Key)

Randy Walter – K7LNR



# Sample Kits (Turn Key)

**John Fletcher – KB7FNB – Built 2 kits for CCARES**



# Sample Kits (Turn Key)

Unknown owner



# Sample Kits (Turn Key)

Steve K4CJX/AAA9AC



# Sample Kits (Turn Key)

Jeff – N2HPO NY - SATERN ARLO



# Sample Kits (Turn Key)

John – AB9HH Wisconsin



# Sample Kits (Turn Key)

Gareth - GW4KJW



# Sample Kits (Turn Key)

Robert - KE4MCL Florida



# Sample Kits (Turn Key)

Terry – KB7IFR - NNN0LHA



# Sample Kits (Turn Key)



# Sample Kits (Turn Key)



# Sample Kits (Turn Key)



# Sample Kits (Turn Key)



# For More Information

## “Radio\_Jump\_Kits” Yahoo! Group

k7git · k7git.egroups@gmail.com | Group Owner - [Edit Membership](#)

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**Group Information**  
Members: 709  
Category: [Electronics](#)  
Founded: Oct 20, 2008  
Language: English

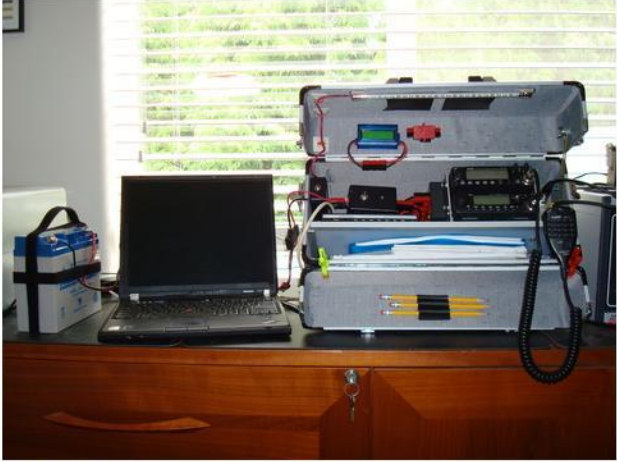
**Home**

Activity within 7 days: [3 New Members](#) - [3 New Messages](#)

**Description** [\(Edit\)](#)  
Thanks for checking this group out...

The purpose and focus of this group is to share ideas and results for the design and construction of Radio "Jump", "Flyaway", "Go" or "Radios2Go" kits. The specific title often goes with the group or agency they are supporting. The concept is the same, packaged radio and peripheral equipment ready to be moved into action.

The target audience of this group is anyone interested and/or proficient in the design, construction or use of these portable radio assets for Emcomm/ECOM purposes or just to make it handy to move the equipment around. Please keep posts relevant to the contents of equipment kits.



When I decided to build an equipment kit, I could not find a central location to see pictures of existing kits and learn from others on their successes and failures in building one. This group is an effort to create that central location.

I will be changing the picture to the right from time to time as pictures are shared by group members. This latest kit picture contribution shown on the right was provided by John, KM7LJ.

When applying for membership to this moderated group, please include your motivation to join and your FEMA, SHARES, MARS, ARES, RACES, SATERN or other callsigns associated with the equipment.

This is a companion group to the "Personal\_Go\_Kits" Yahoo group where life support and personal convenience items and packaging for readiness and use are discussed. It is also related to the "Emcomm-Standards-and-Training" group where Amateur Radio Emcomm Standards and the associated training is

# Power Options

- Connectors
- AC power
- Battery
- Generator
- Solar
- Wind
- Other

# PowerPole Flexibility

## Powerpole Power Distribution



# AC Power



**Linear Power Supply**



**Switching Power Supply**

# Battery Power



**AGM**



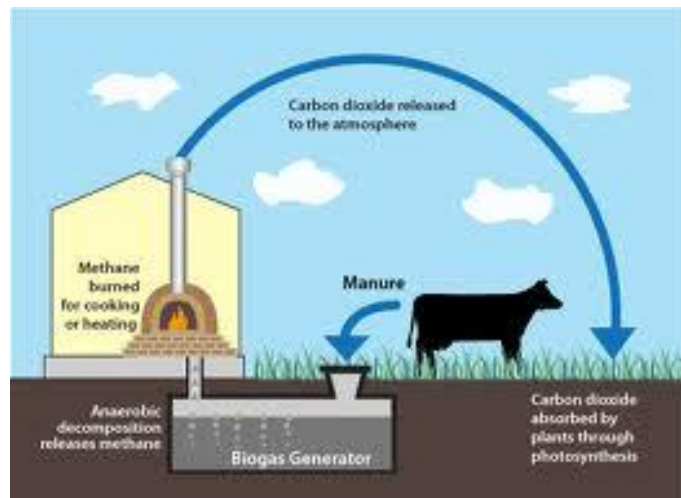
**Flooded**



# West Mountain Radio Solution



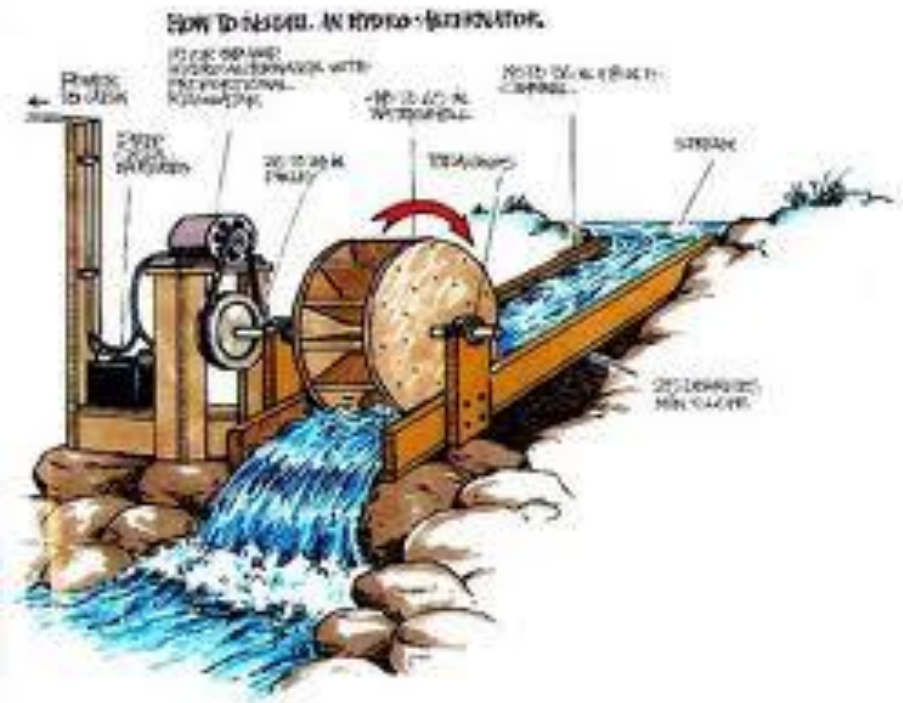
# Fueled Generator



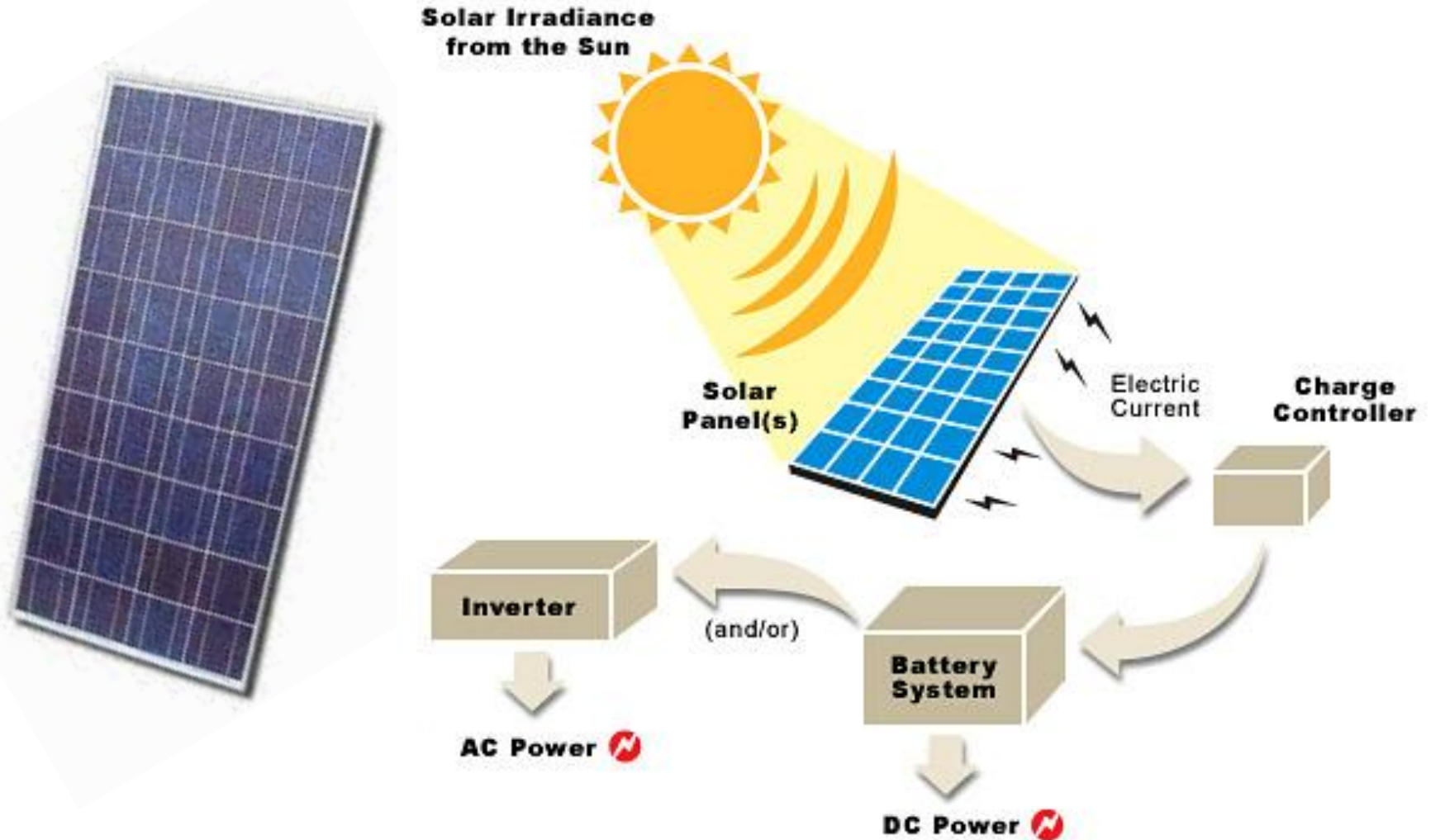
# Wind Generator



# Water Power Generator



# Solar Power



# Antenna Options

- Mounts
- UHF/VHF 144-220-440-900MHz
- HF 2-30MHz
- HSMM-Mesh 2-5GHz

# Antenna Mounts



# VHF/UHF Antennas



## MP-1 HF SuperAntenna

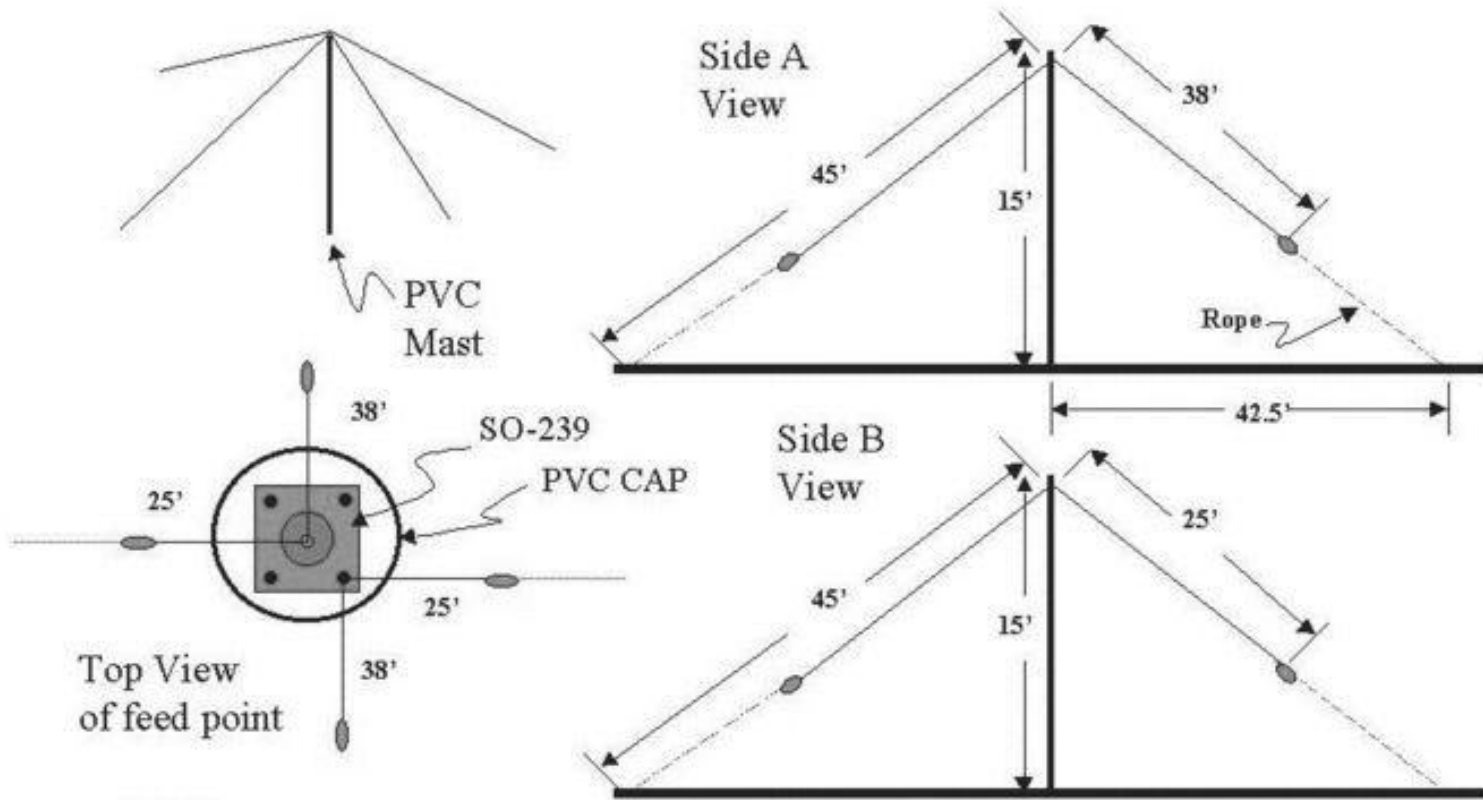


# Buddipole Antenna System



# Near Vertical Incident Skywave (NVIS) Antenna

NVIS Antenna Dimensions



1998/10/29

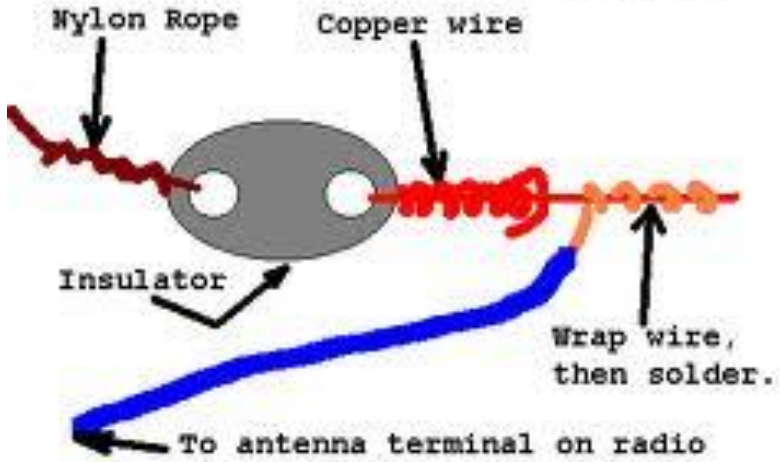
© Dr. Carl O. Jelinek N6VNO

NVIS ppt

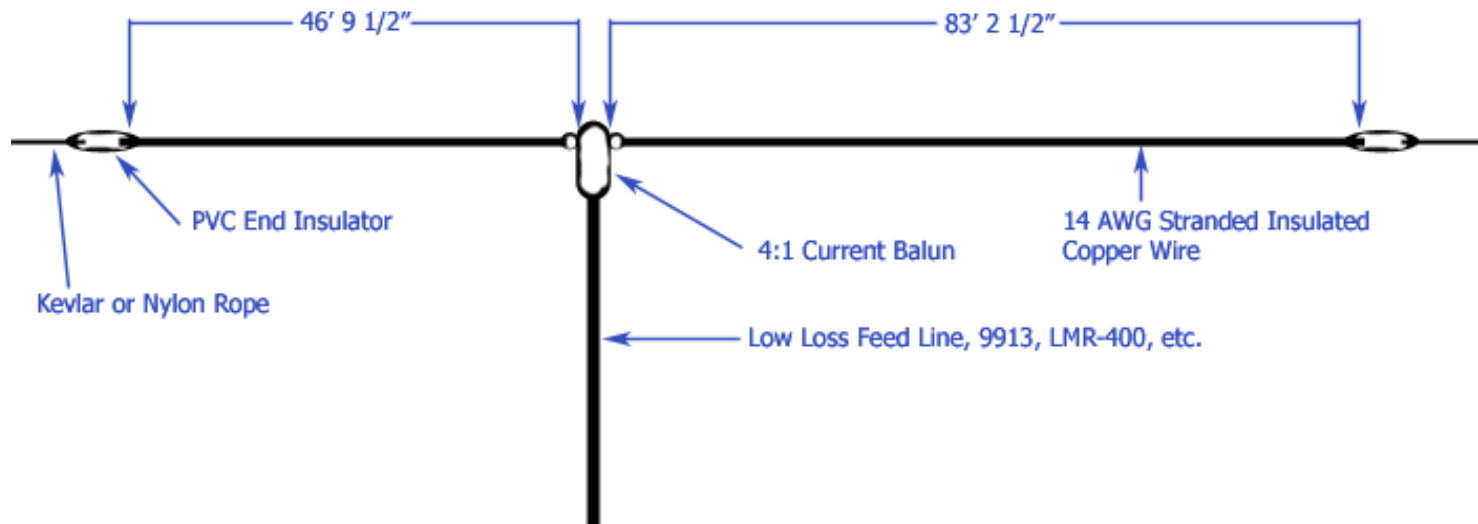
For Amateur 80M and 40M operation substitute 55.2' and 31'

# It's not too complex....

Figure 2



# Off-Center Fed (OCF) Dipole Antenna



Copyright 2008, AI4JI

# HSMM-Mesh Antennas



Circular, Rectangular or Flat Panel = 8-24Dbi



12 EI beam = 20Dbi  
16 EI beam = 24DBi



Verticals  
8 Dbi  
12 Dbi  
15 Dbi

# Accessory Options



nevada radio  
www.nevadaradio.com

# Dummy Load



# Support Kits

- Shelters
- Station Kits
  - Hardware backup
  - Hardware flexibility
- Personal kits
  - 12/24/72 & 96 Hour kits

# Shelters



# Station Kits



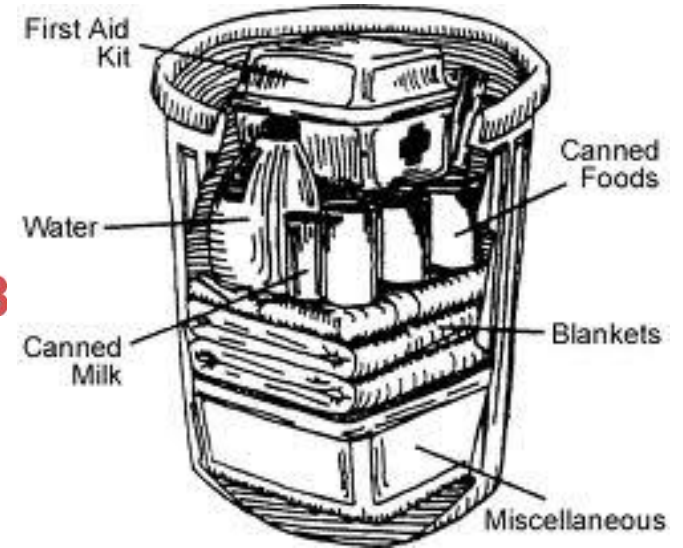
# Personal Kits

## 72-HOUR SURVIVAL KIT

DESIGN SKETCHING COMPETITION  
ID.SKETCHING.COM



FERNANDO A. ROBERT FREELANCE INDUSTRIAL + SOFT GOODS DESIGNER SAN FRANCISCO **3**




# The Important Stuff!



# For More Information

## “Personal Go Kits” Yahoo! Group

k7gjt · k7gjt.egroups@gmail.com | Group Owner · [Edit Membership](#)

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**Home**

Activity within 7 days: *(No Activity)*

**Description** [\(Edit, Add Photo\)](#)  
Thanks for checking this group out...

The purpose and focus of this group is to share ideas and results for the considerations and design of Personal "Go Kit" or "72-hour Kits. The specific title often goes with the group or agency they are supporting. The concept is the same, packaged personal supplies for your personal survival during time away from your home supporting Emcomm/ECOM operations. Please keep posts relevant to the contents of Personal support kits. Direct posts on radio and support equipment to the "Radio\_Jump\_Kits" group and posts on standards and training to the "Emcomm-Standards-and-Training" group.

When I decided to build a personal support kit, I could not find a central location to find lists of contents and see pictures of existing kits and learn from others on their successes and failures in building one. This group is an effort to create that central location.

When applying for membership to this moderated group, please include your motivation to join and your FEMA, SHARES, MARS, ARES, RACES, SATERN or other callsigns associated with the equipment.

This is a companion group to "Radio\_Jump\_Kits" where packaging for radio hardware, packaging and associated support items are discussed. It is also related to the "Emcomm-Standards-and-Training" group where Amateur Radio Emcomm Standards and the associated training is discussed.

**!!!IMPORTANT!!!**  
SUBMISSION OF YOUR AMATEUR CALL SIGN OR AGENCY OFFICIAL CAPACITY (OTHER THAN AMATEUR RADIO) IS MANDATORY FOR MEMBERSHIP. IF YOU DO NOT PROVIDE IT YOUR GROUP MEMBERSHIP WILL BE DELAYED.  
**!!!IMPORTANT!!!**

Thanks...

73  
Gary  
K7GJT/NNNoGJT WA

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**Group Information**  
Members: 249  
Category: Amateur and Ham Radio  
Founded: May 29, 2010  
Language: English



# Questions?

**Gary J Takis, K7GJT - NNN0GJT**

[K7GJT@arrl.net](mailto:K7GJT@arrl.net)