

# Ham Radio Go-kits

WØNG

Ozaukee Radio Club – April 10, 2019

# Peter Chow - WØNG

- Licensed since 1995
  - no-code Technician, KE6SIO
  - upgraded to General & Amateur Extra in 2007, AF6DS – no more Morse code requirement
  - obtained vanity call in 2013, WØNG
- ARES member (Sunnyvale, Calif., ~8 years)
- Grew up in Milwaukee, Electrical Engineering degree from UW-Madison, 30+ years in Silicon Valley, moved back to be closer to the parents

last name is not Wong, but I am ...



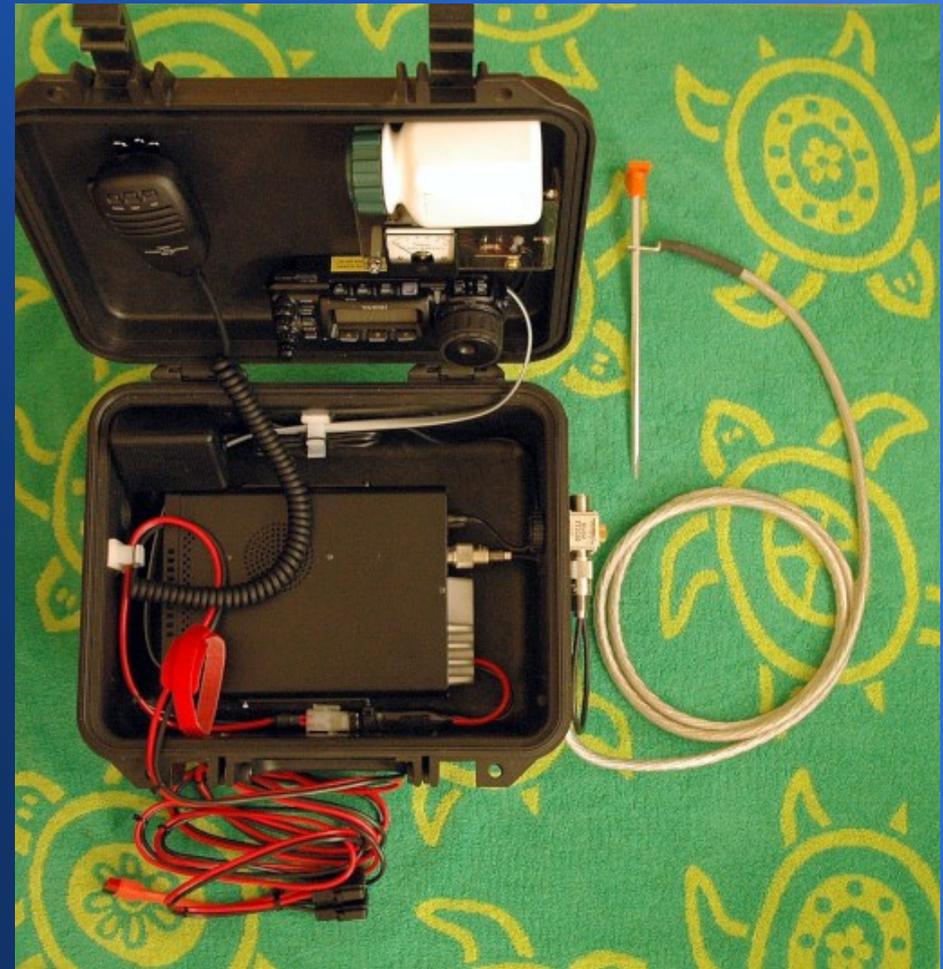
# Ham Go-kits: overview

- *Grab-and-Go* kit containing only ham radio gear
- We're not talking about survival *Bug-out Bags*
- Portability, storage & transport, self-contained  
→ Readiness (no scrambling to find things)
- Reduced setup time – esp. hooking things up
- *Open and Operate* philosophy
- Used for portable operations, Field Day, quick emergency deployments such as ARES

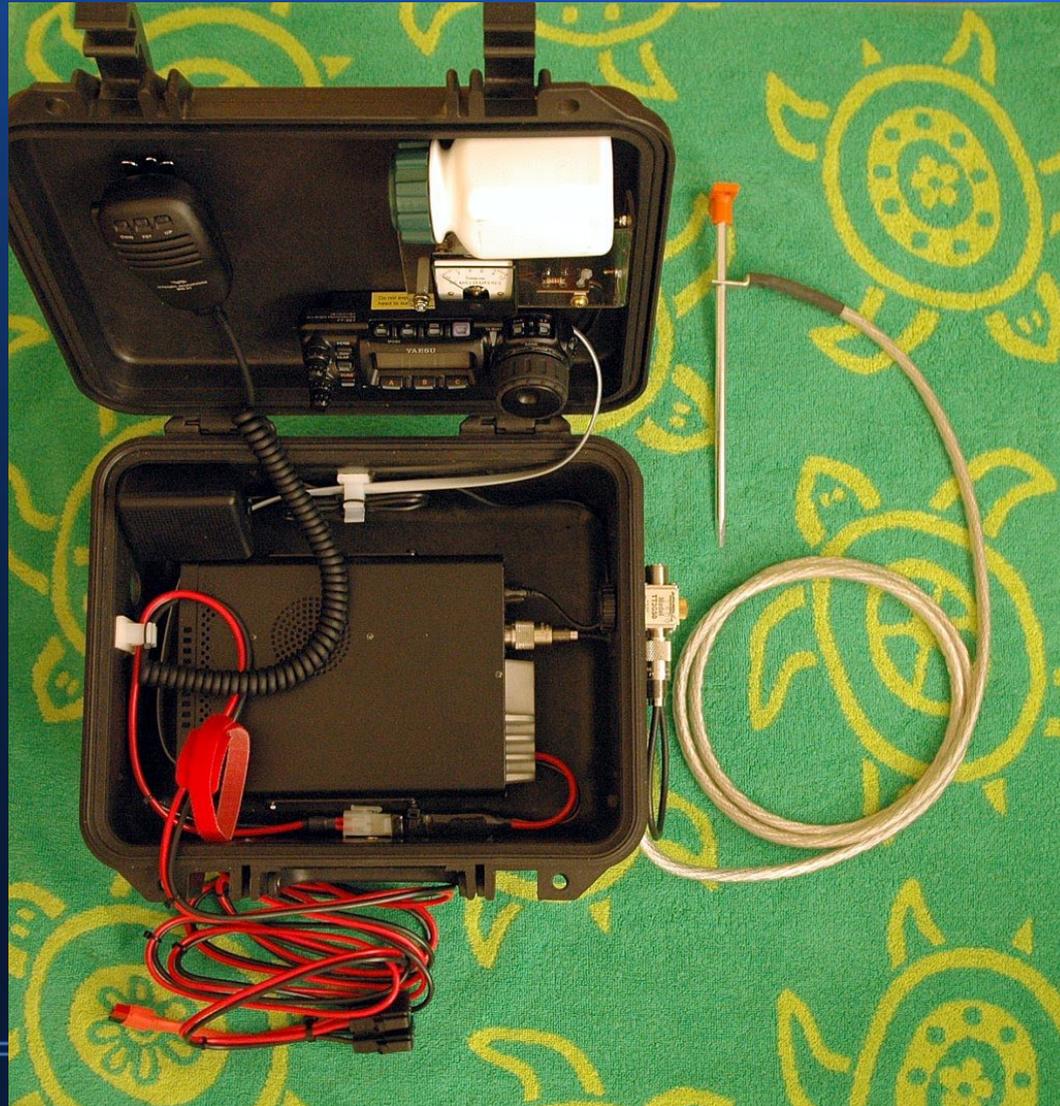
# Go-kit case usage

- A Go-kit using a hard case (usually plastic) can be configured mainly in two ways:
  - *with foam* (most common use): used for storage and transport of equipment, and the equipment needs be removed from the protective foam before operating [foam is pre-cut into removable cubes]
  - *without foam* (the ones I've assembled): the ham gear is mounted directly to the case – so the kits have minimal setup when opened

# Storage vs. Operational i.e. foam vs. no-foam, FT-857



# HF Go-kit: Yaesu FT-857



# HF Go-kit: Yaesu FT-857, closed

Pelican model 1400 – fits in a backpack. Can be an airplane carry-on item

Note: mounting screws on the case lid (see next slide)



# HF Go-kit: Yaesu FT-857, lid open

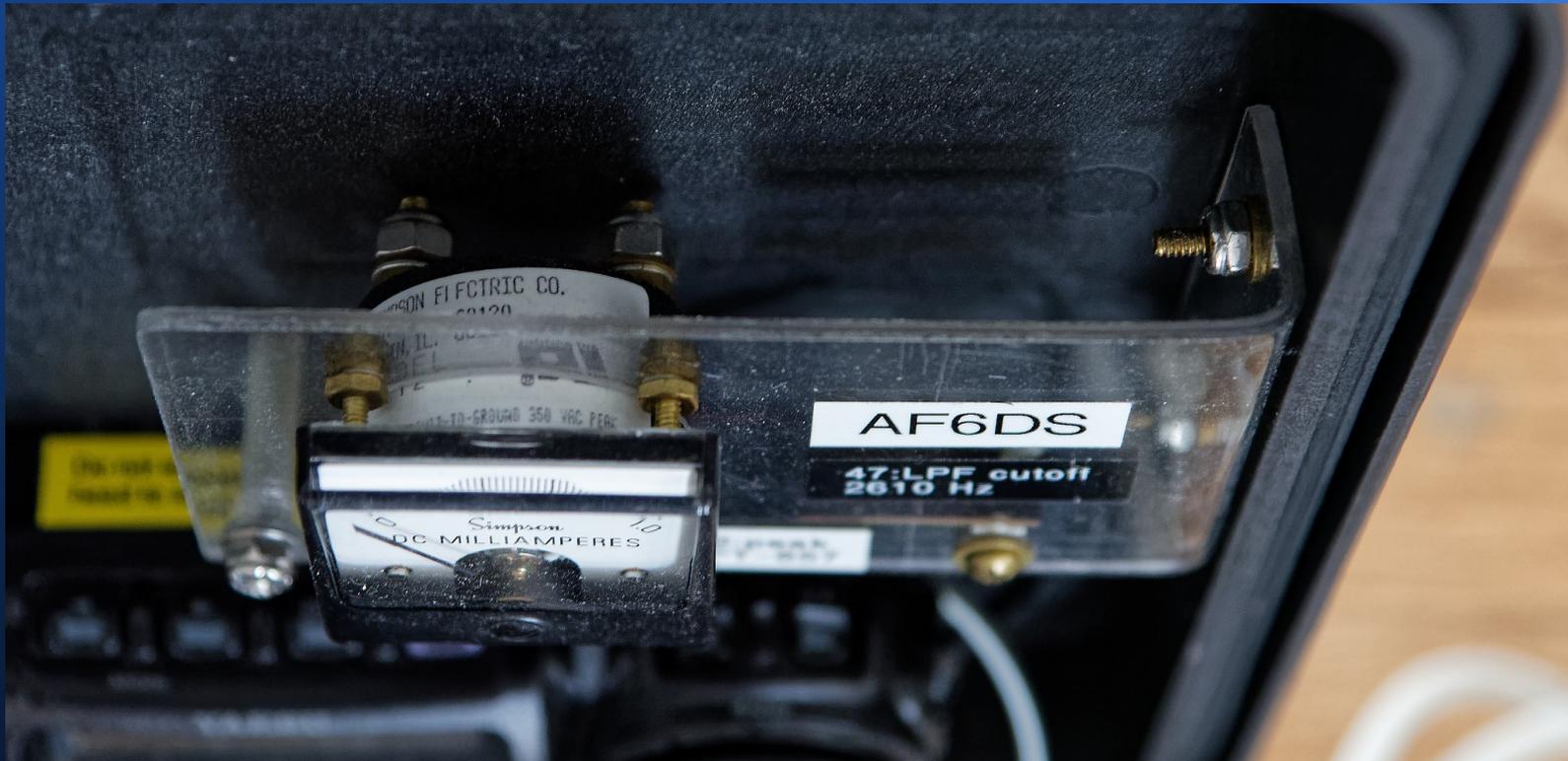


Velcro'ed pill bottle holds: fuses, etc.

External S/ SWR meter

Detachable control head

# FT-857 external meter mounting

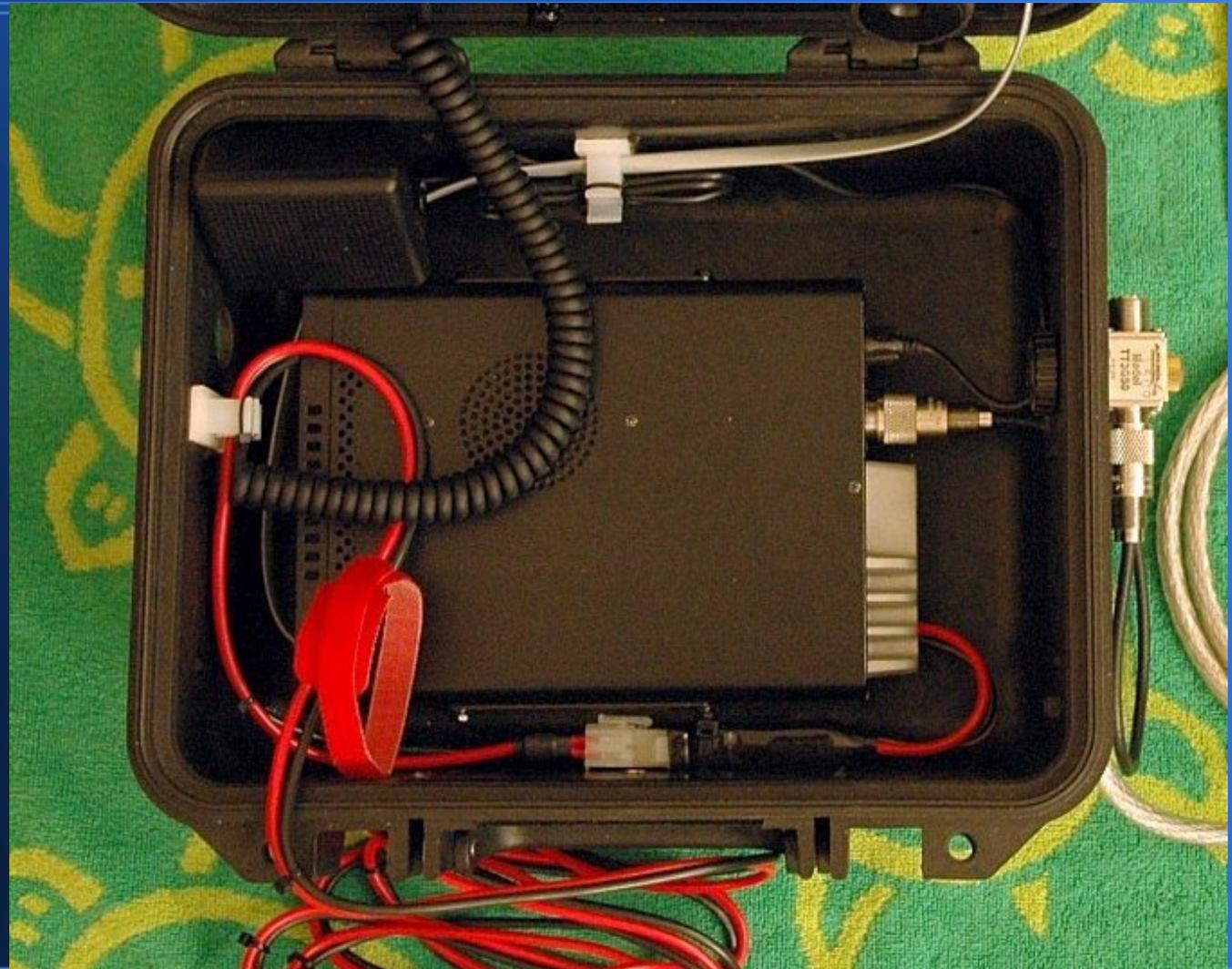


Bend plastic using vise & heat gun – use finger pressure to bend as the plastic gets softer

# HF Go-kit: Yaesu FT-857, base

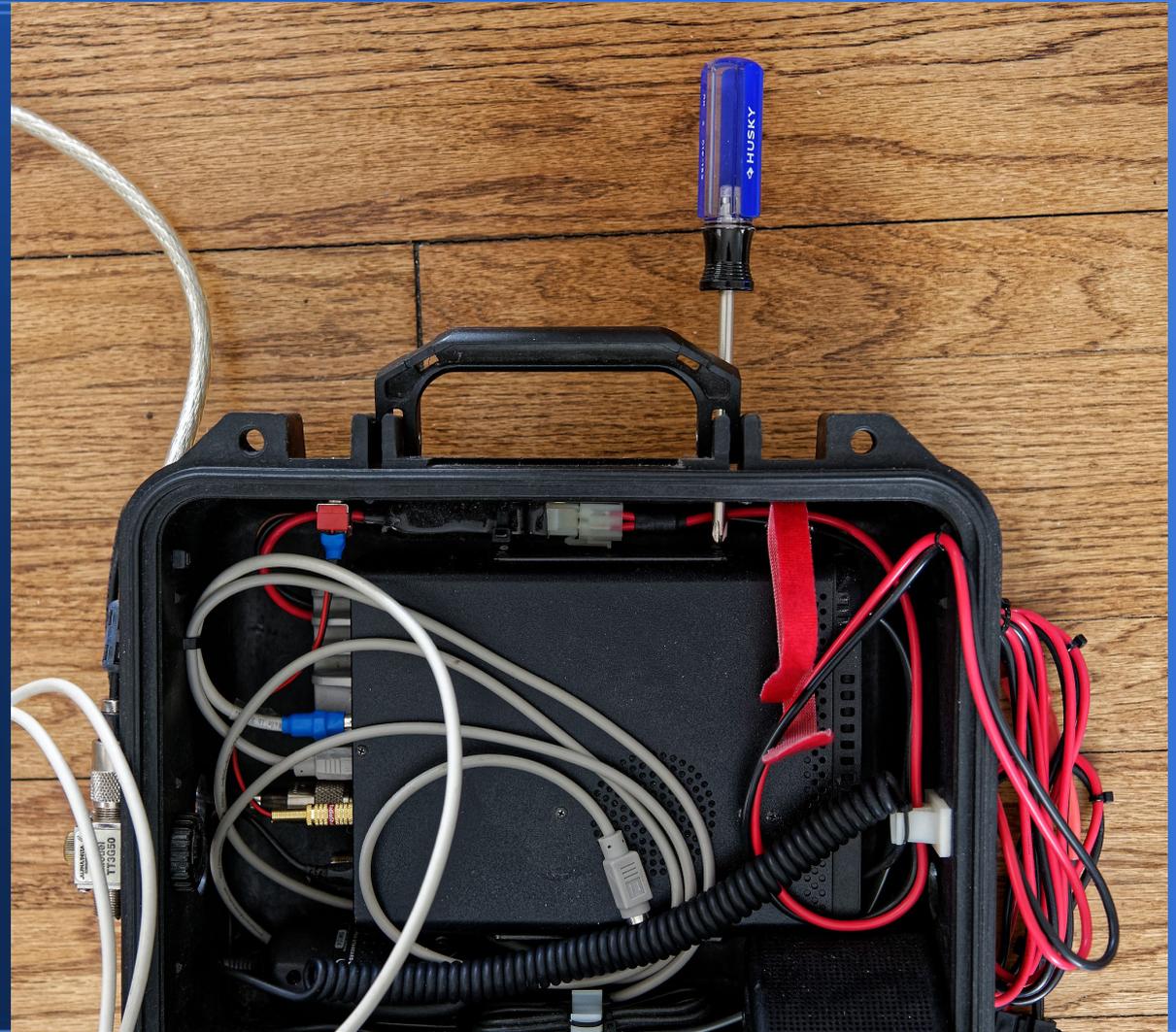
Transceiver is installed in the mobile bracket

An external speaker directs sound towards the operator



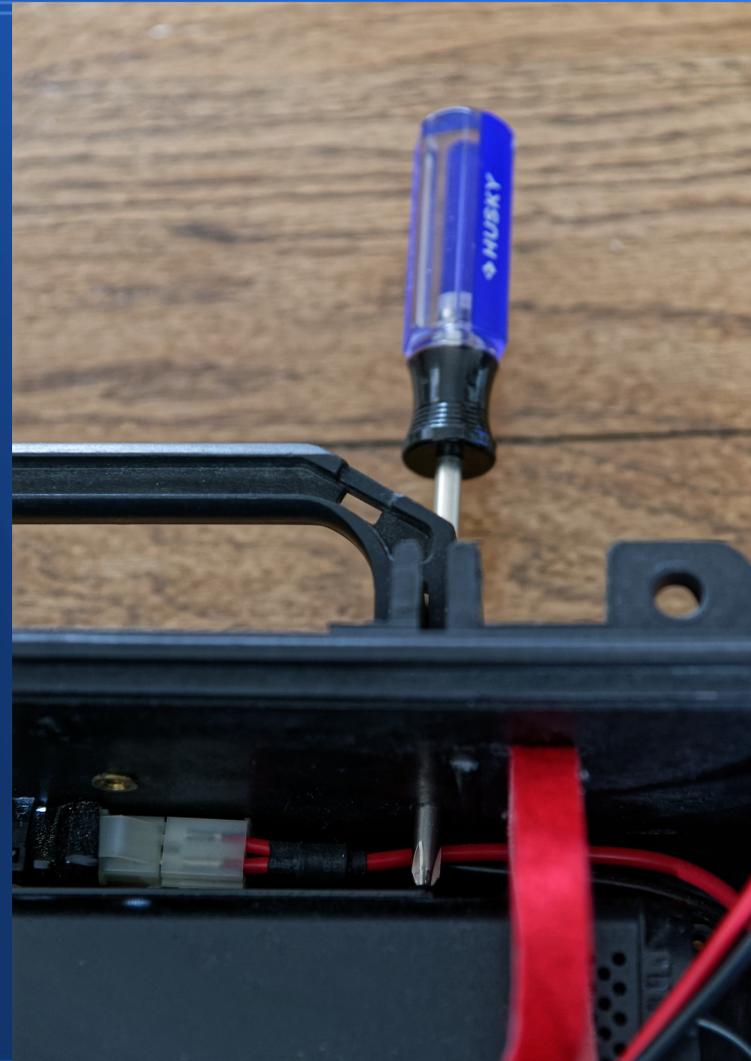
# Screwdriver access holes

Mounting a rig onto an already installed mobile bracket, where a short stubby screwdriver will not fit (... but maybe a small crescent wrench will)



# Screwdriver access holes (con't)

Use fingers or needle nose pliers to hold the screw, and then tighten with screwdriver



# HF Go-kit: Yaesu FT-857, SO-239

Drill 7/8”  
hole for  
passing  
PL-259  
& cable  
through  
for  
SO-239  
attach



# Mounting ham gear into cases

- Yikes! - drilling holes in (expensive?) cases
  - you must be willing to drill holes, no undoing
  - no longer water-proof or resistant
  - no foam means no protection from shock and vibration
- Carefully layout, measure, drill, and install gear
- Pack as much stuff into a case w/o damaging the gear when the lid is closed (e.g. taking a suitcase on a trip)

# Mounting considerations

- Layout: easy access to rig buttons, knobs, and display; direction of audio, microphone mount
  - Use the mobile mounting bracket supplied w/rig
- Non-rusting hardware: stainless steel or brass for nuts, bolts, washers; and plastic cable ties
  - use proper length bolts (not protrude out too far)
  - **Nylon insert nuts** – for hard to reach places
- Drill screwdriver access holes – e.g. mounting a rig onto an already installed mobile bracket

# Brands of cases

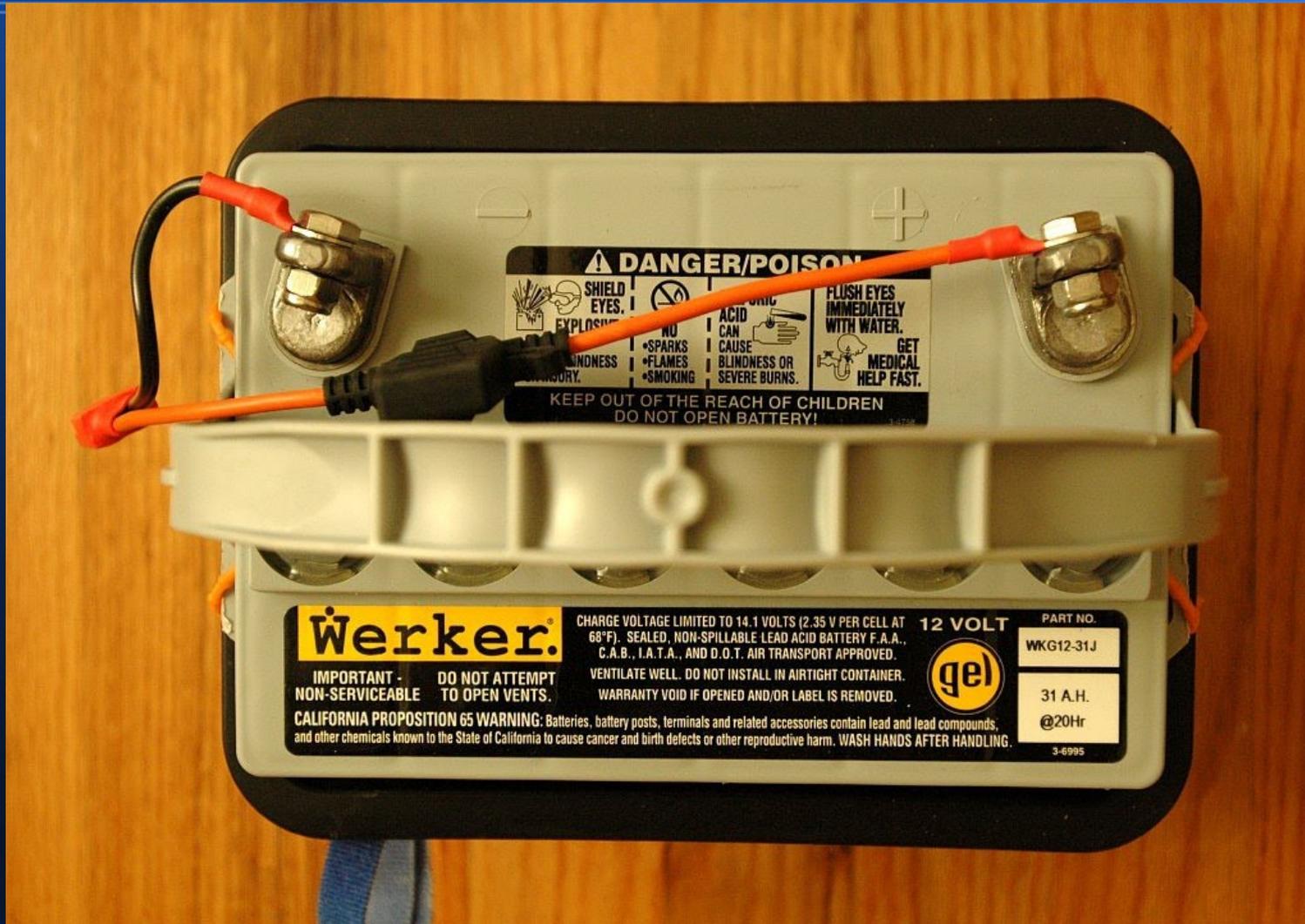
- Pelican
  - The Pelican Store, S Burrell St. in Milwaukee
- B&W International, Seahorse, et al.
- Apache (from Harbor Freight and Tools)
  - probably the least expensive of the bunch
- look on Craigslist, local hardware and sporting goods stores, flea markets and swap fests, note the shipping cost on eBay & Amazon

# Anderson Powerpole®

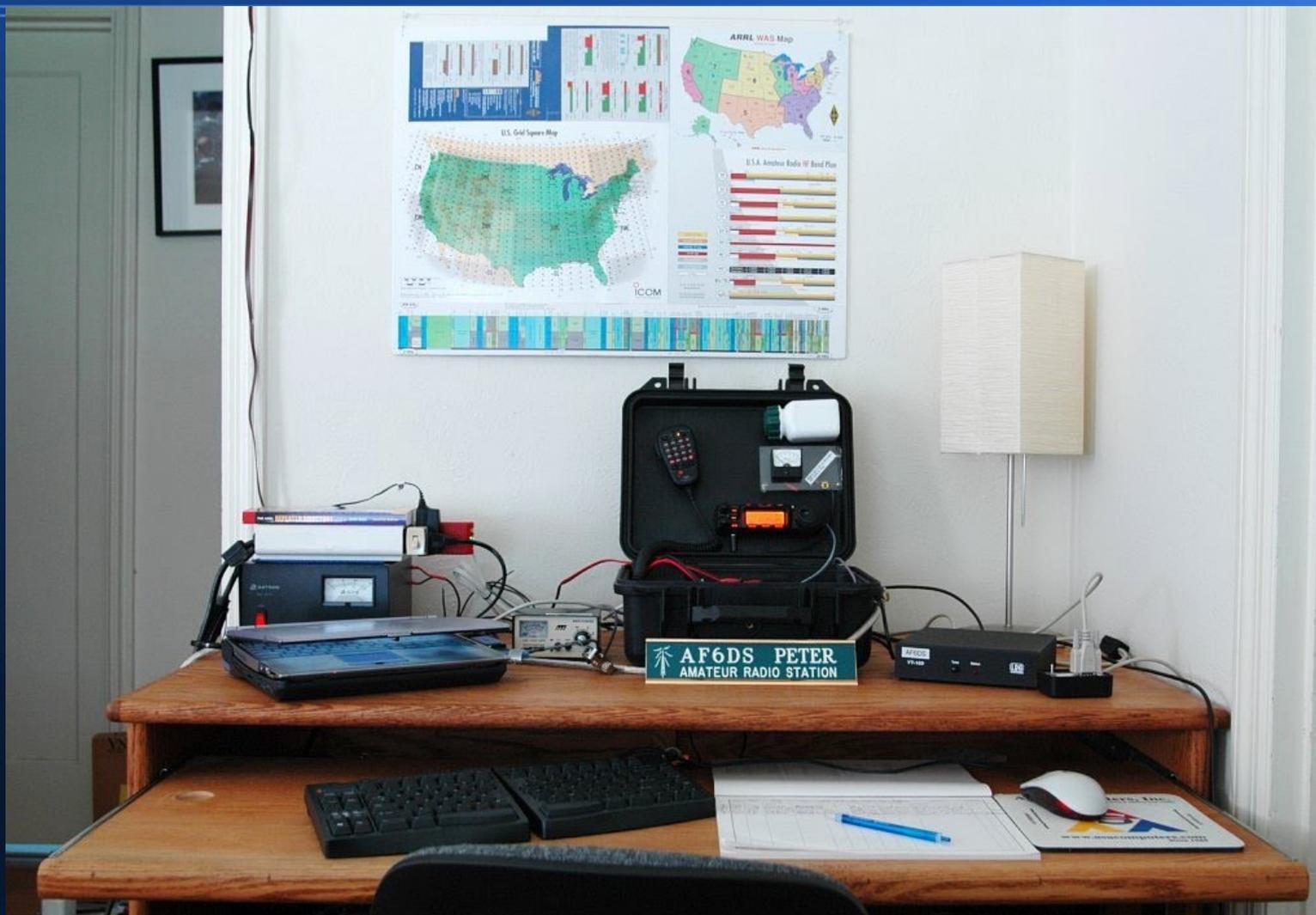


- A standardized 12VDC power connection for ham radio and ARES / RACES operation
  - **ARES / RACES connector configuration**
- Adapt the rig manufacturer's power connector to use the **Anderson Powerpole** type
- **RIGrunner** from **West Mountain Radio** (local)

# 12VDC Battery – Werker 31 AH



# FT-857 Go-kit in operation



# FT-857 Go-kit in operation (con't)



# HF tuner Go-kit: LDG YT-100, closed

B&W Outdoor  
Case Type 10



# HF tuner Go-kit: LDG YT-100, front



# HF tuner Go-kit: LDG YT-100, back



# VHF Go-kit: Yaesu FT-1500, closed

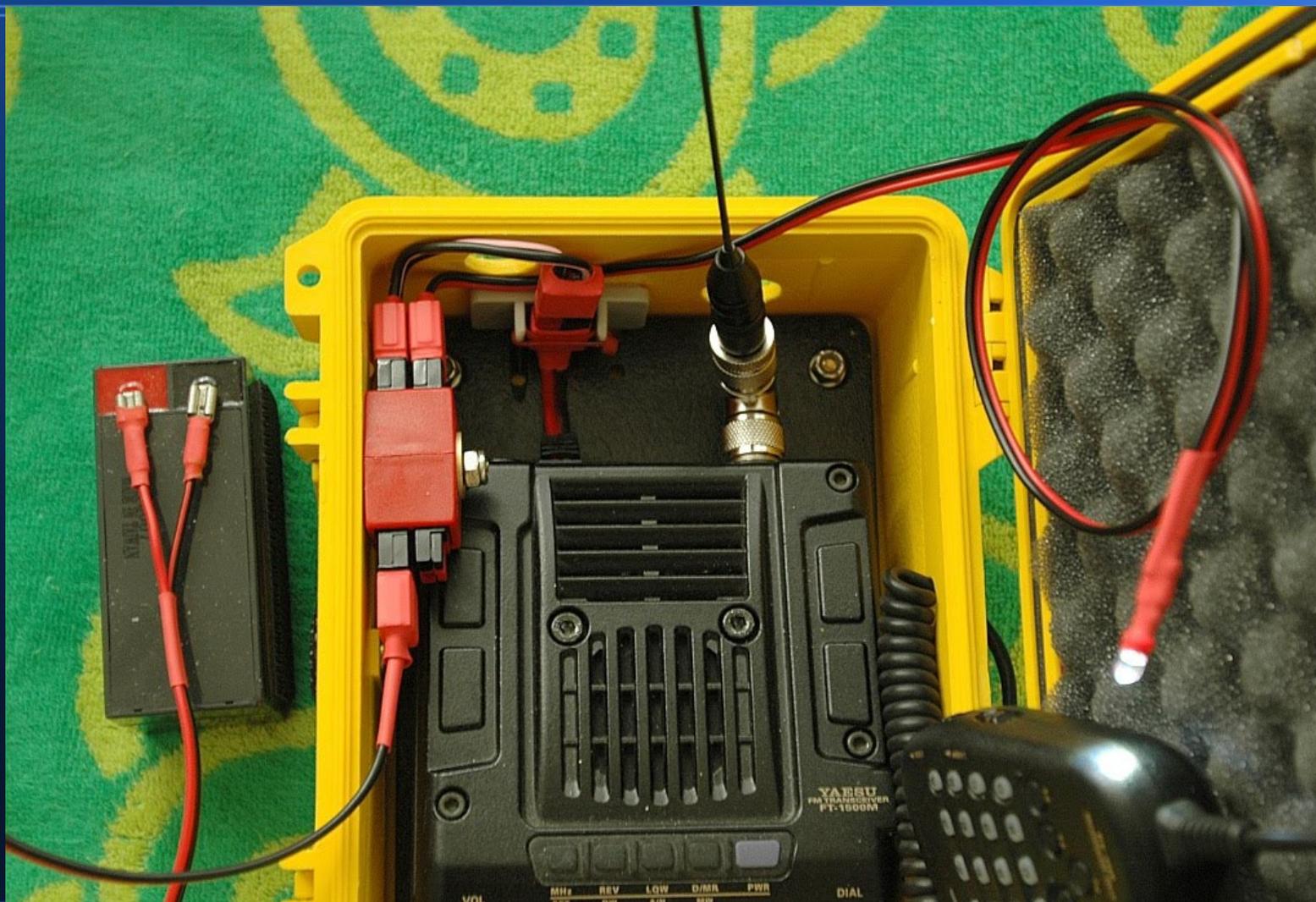
Pelican model 1150



# VHF Go-kit: Yaesu FT-1500, packed



# VHF Go-kit: Yaesu FT-1500, rear



# VHF Go-kit: Yaesu FT-1500, operate



The mobile rig is mounted with the front tilted up such that the display can be seen better

The rig is also mounted on a plastic sheet and that sheet is mounted onto the case with standoffs

# VHF Go-kit: Yaesu FT-1500, manual



# VHF Go-kit: Yaesu FT-1802, closed

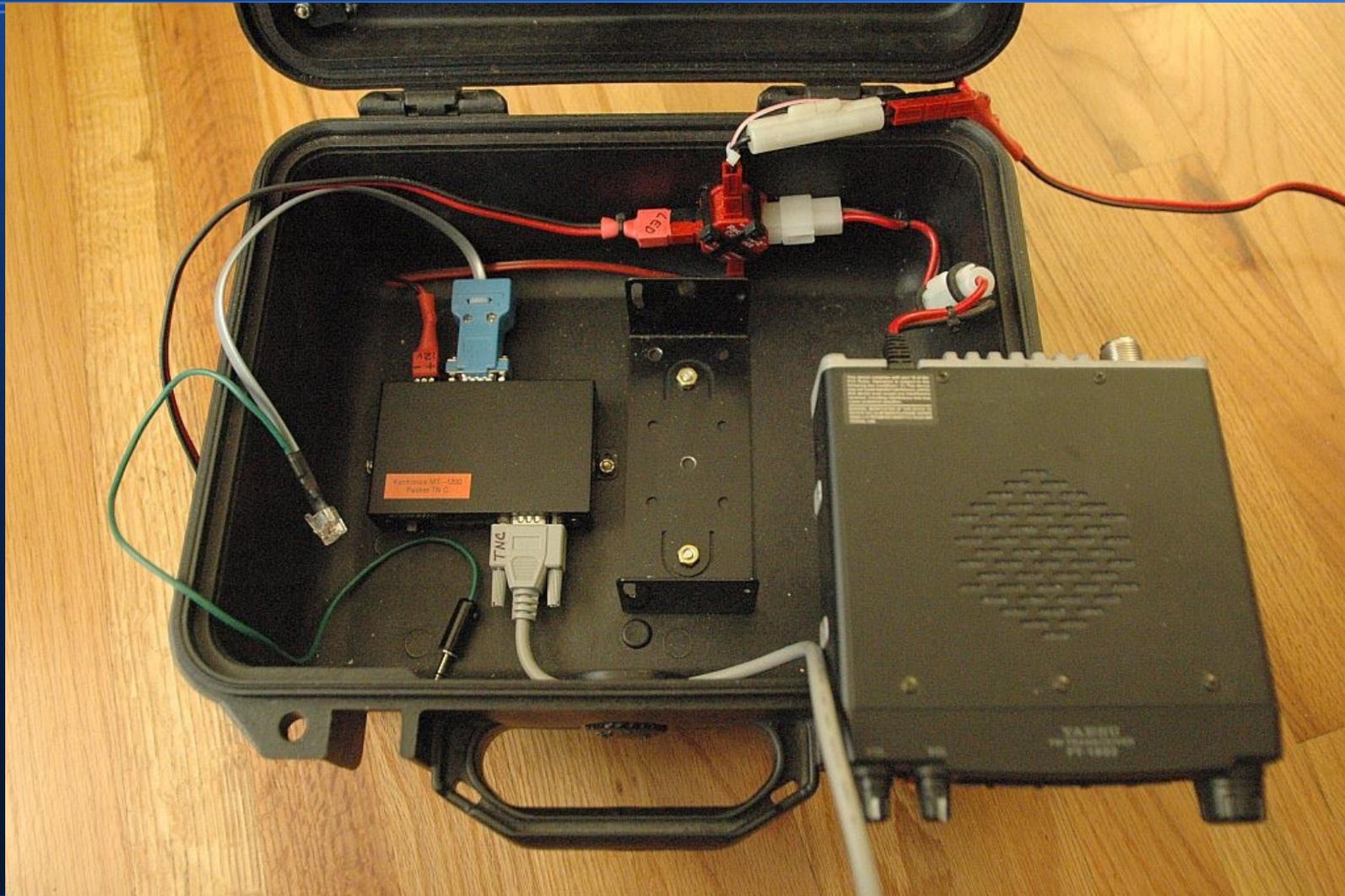
Pelican model  
1400



# VHF Go-kit: Yaesu FT-1802, packed



# VHF Go-kit: Yaesu FT-1802, TNC

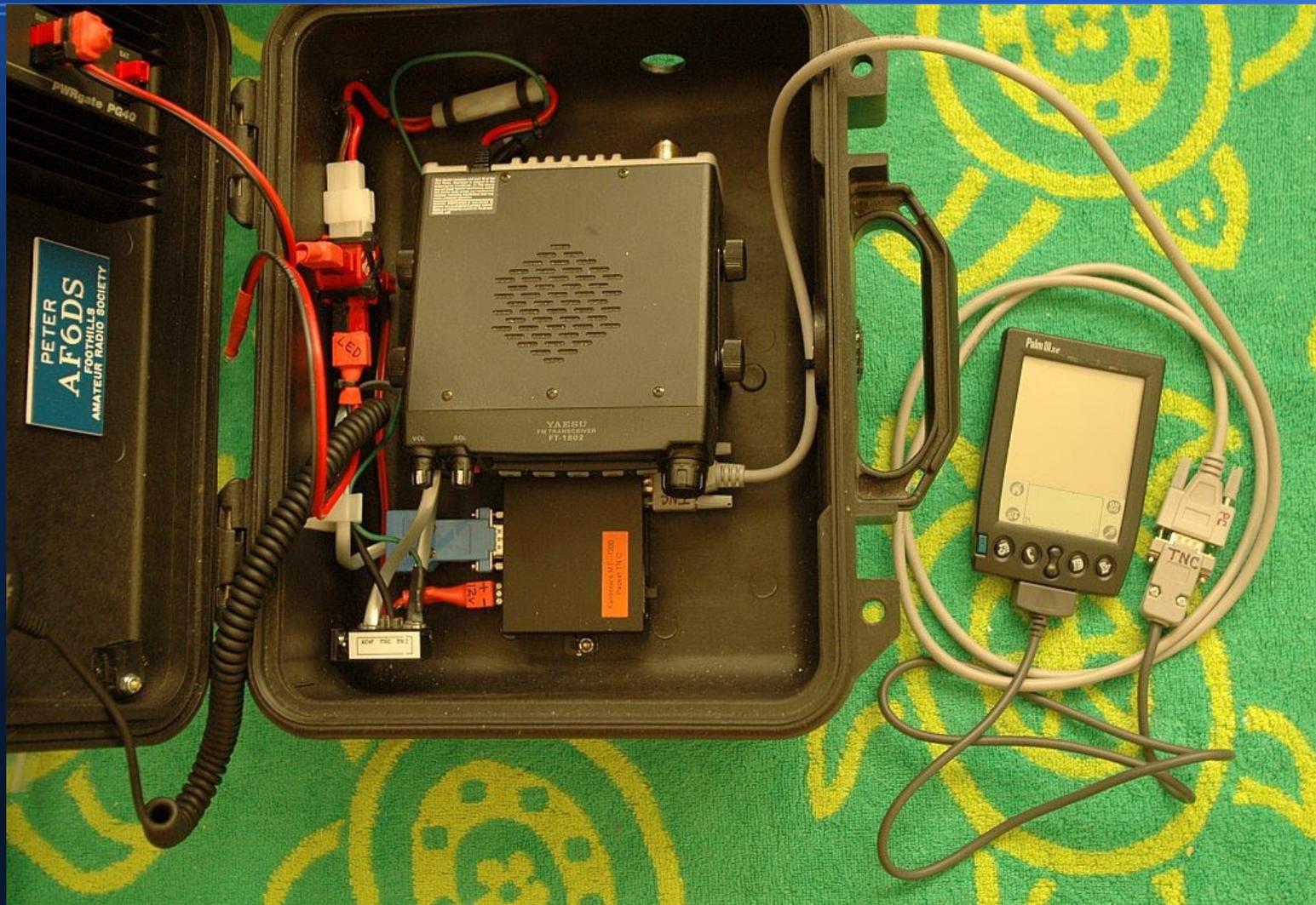


# VHF Go-kit: Yaesu FT-1802, open

Thumbscrews are used to secure the rig onto the mobile bracket



# VHF Go-kit: Yaesu FT-1802, PDA



# email / website

w0ng1@arri.net i.e. “wrong one”

www.pciaio.com

www.saresrg.org/photos

Thank you!

Questions?

# Propane Converted Portable Gasoline Generator

e.g. Honda EU2000i

# Generator with 20lb. propane tank



# Propane conversion advantages

- propane stores for a really long time – doesn't need to use a fuel stability product like **STA-BIL**
- dual purpose use: BBQ grill and generator
- no liquid spill mess
- readily available from U-Haul, hardware stores, your neighbors
- avoid long gas station lines in case of a disaster
- needs to be stored outside the home & garage

# Gas generator propane conversion

- tri-fuel conversion kits: *adds* propane & natural gas capability to an existing gasoline generator
- propane & natural gas molecules are larger than gasoline – therefore require a larger carburetor inlet
  - carburetor insert, or replacement, else drill larger inlet port
- demand regulator (zero governor, negative pressure) – from IMPCO Garretson, Century

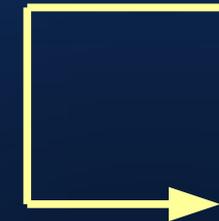
# Gas pressure: high / low / negative



high  
pressure



low  
pressure



low  
pressure



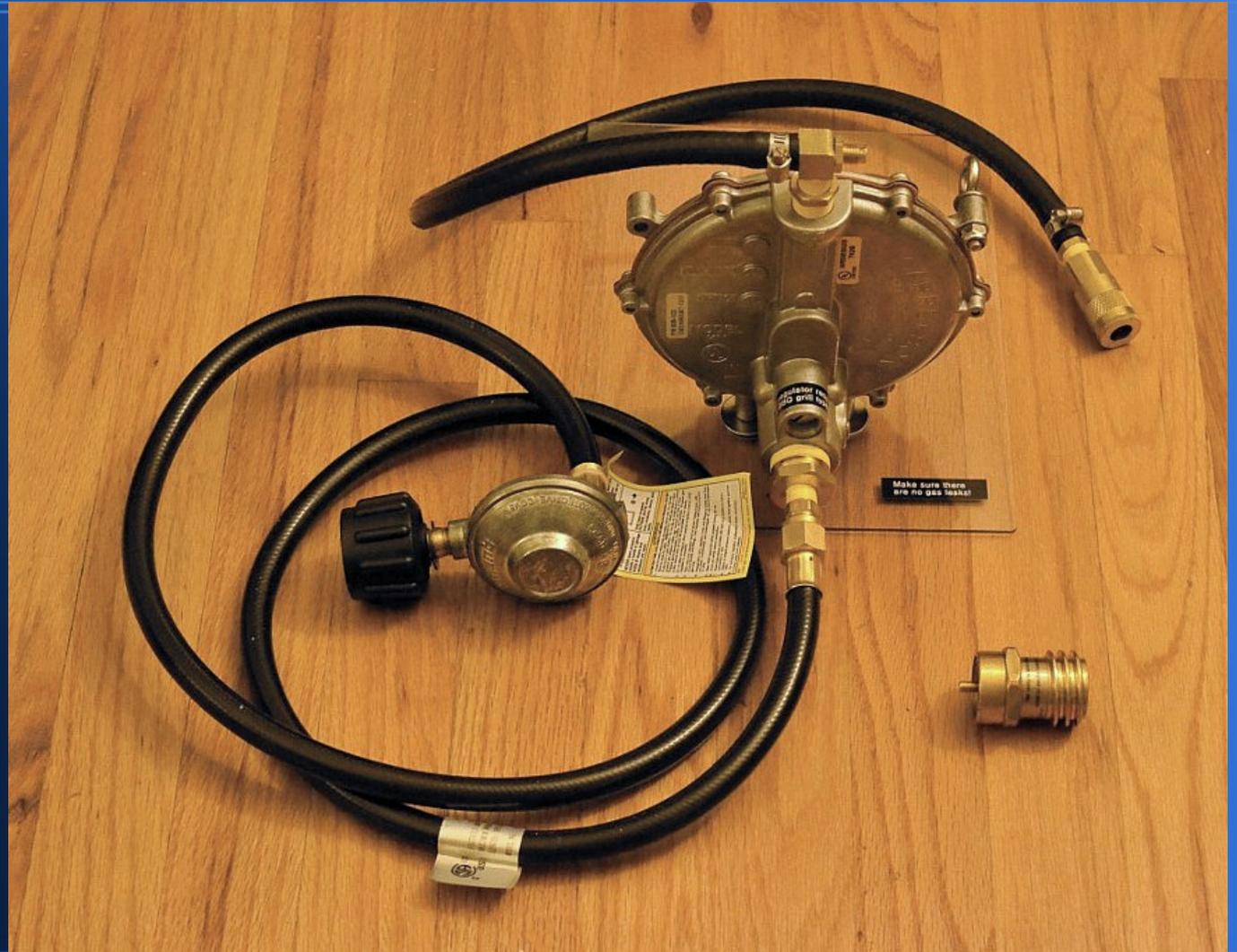
negative  
pressure  
(on  
demand)



# Regulator hose / fittings

From propane source to generator ...

Adapter for Coleman fuel cylinders



# Demand Regulator / Zero Governor IMPCO Garretson Model KN 039-122

Mounted  
vertically

Yellow  
Teflon tape  
for gas use

Adjust valve



# Propane conversion kits

Use a low-pressure kit for:

- regulated propane tank – 6 ounces of pressure
- natural gas – 4 ounces of pressure

<https://www.uscarburetion.com/>

<https://www.motorsnorkel.com/>

<https://www.propanecarbs.com/tri-fuel-kits.html>

<https://hutchmountain.com/>

# YouTube: Generator using propane

My operating videos:

<https://www.youtube.com/watch?v=bP4kUpf-yN4>

<https://www.youtube.com/watch?v=9UkVjcQ2w1Q>

Regulator theory:

[https://www.youtube.com/watch?v=CfM6D65MC\\_w](https://www.youtube.com/watch?v=CfM6D65MC_w)

<https://www.youtube.com/watch?v=B8BaJg-6HGU>

# Generator with 1lb. propane cylinder



# Energy comparison

[https://afdc.energy.gov/fuels/fuel\\_comparison\\_chart.pdf](https://afdc.energy.gov/fuels/fuel_comparison_chart.pdf)

Summary table:

	Gasoline / E10	Propane (LPG)	Compressed Natural Gas (CNG)	Liquefied Natural Gas (LNG)
Gasoline Gallon Energy Equivalent	97-100%	73%	100% @ 5.66 lbs. or 123.57 cu ft.	100% @ 5.38 lbs.
Energy Content (heating value) ~BTU/gal	120,000	87,000	21,000	22,000

# Emergency power preparedness

## *Surviving a Catastrophic Power Outage*

(National Infrastructure Advisory Council - NIAC,  
Dec. 2018)

## *Executive Order on Coordinating National Resilience to Electromagnetic Pulses*

(Whitehouse, March 26, 2019)

# EMP (ElectroMagnetic Pulse)

Put your ham gear into  
a metal trash can?  
(includes locking lid,  
from **Home Depot**)

otherwise, after EMP ...  
*“What we've got here is  
failure to communicate”*  
(**Cool Hand Luke**)



Thank You!

Questions?