

# Out-of-the-Shack Operating

With the Highly Versatile **Orange** Box (HVOB)



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# Background

- **The Problem:**
  - Forgetting to bring all the radio gear to Field Day and other events....again and again
- **The Requirements:**
  - Pack all the needed things in one place - so I don't forget it
  - Minimize the set-up time
  - Reduce equipment set-up failures
- **Optional Requirements – nice to have:**
  - Make it run on 12V or 120V easily for versatility
  - Have it easily operate as many modes as possible
  - Must make the kit so that it is transportable
  - Make it sturdy and light enough\*
  - But most of all....have fun!

# Field Day Packing List

## Radios

Icom 706 MKIIG

2M Mobile rig

## Audio

Heil Pro Headset

Heil Footswitch

## Power

Astron SS-30M 12v Power Supply

## CAT interface

Micro-Ham Micro Keyer

USB Cable

Line In Audio Cable

Line Out Audio Cable

## Tuner

LDG Z100 Autotuner

LDG Z100 Cables

LDG Z100 Coax Jumper

CW Paddle

Ground wire

## Computer

Laptop

Power Cord

Mouse

N3FJP logging software

APRS software

PSK31 software

## Antenna

Quick setup HF Vertical antenna

80M G5RV

2M rollup antenna

## Tools

Connectors

Coax

Rope

Power Strips



# What's Inside the HVOB?

- Astron 25A switching power supply
- Icom 706 MkIIG HF/VHF/UHF rig
- LDG Z-100 tuner with tune control to IC-706
- MicroHAM Micro-Keyer
- Older model 2M mobile rig
- Netbook computer
- CW paddle
- Anderson Power Pole style 5-in-1 junction
- Compact, gooseneck lighting
- 15' ground wire with alligator clip
- Fan for air equipment cooling
- Pen/paper
- Heil headset
- Foot switch



# Operating Functions

- Consider what functions the go-box will serve
  - ARES / public service
  - Contesting
  - VHF only
  - HF bands
  - DXPedition
  - Digital modes (PSK, etc)
  - Voice/CW keying





# The Case

- Hard plastic case
- 3/8" plywood rails
- 120V AC supply
- Central grounding point
- 3 F-F Coax connectors



## Dry Boxes - Sportsmen's Plus Utility Dry Boxes



6 in Forest green & SPUD7 in Orange



### SPUD 6 & 7

Designed for the sportsmen on the move, the SPUD6 features loads of storage room along with molded-in bungee hook receiver so you can strap it down tight to anything, from a fishing boat to an ATV.

The SPUD 7's spacious design offers a whopping 2,073 cubic inches of dry storage. It can carry items up to 14 inches tall. It is also the perfect height (15 inches) for dove and waterfowl blind hunting and as a chair when using MTM's predator shooting table. It also comes with a nylon shoulder strap for hands free carrying. Load one up for the range and then use it for a chair once you get there!

Both the SPUD6 & 7 offers several features including: Water resistant O-ring seal; top access lid compartment ; deep 2/3 length lift out tray; four Bungee hook receivers; large comfortable handle; thick sidewall construction; heavy-duty snapping latches; and double padlock tabs.

Stock #	Dimensions
SPUD-6-	18.5" x 13" x 10"
Color(s):	Wild Camo (09), Black (40)
SPUD-7-	18.5" x 13" x 15.25"
Color(s):	Wild Camo (09), Black (40), Orange (35)

<http://mtmcase-gard.com/products/camping/dry-boxes-spud6.html>

# The Guts of it All

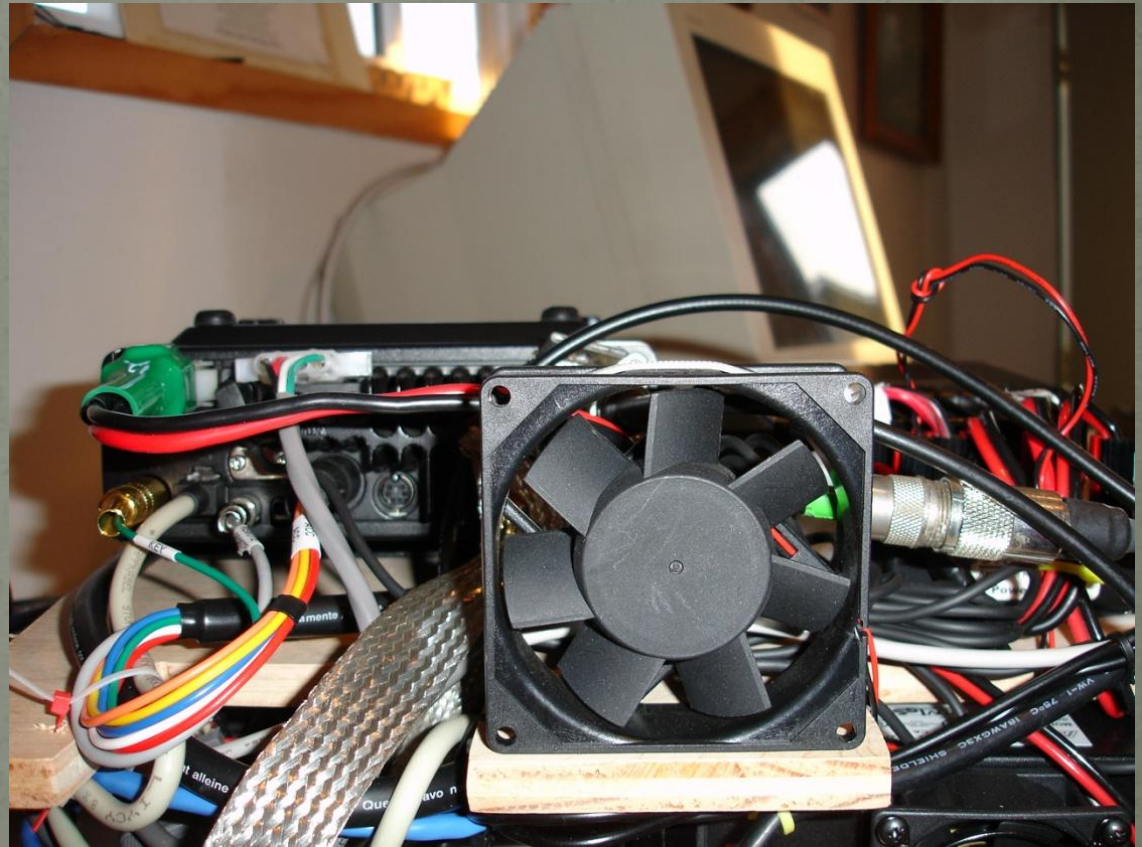
- Single shelf - 3/8" plywood on sliding rails
- Radios ergonomically mounted on bottom
- Lesser used accessories mounted on top
- Secured for transportability





# The Integration of It All

- Muffin fan to keep it cool
- Wired together, excess tied down
- Easily removed as a whole unit
- Grounding braid runs throughout
- 3 PL-259's are only tie to the box





# What is a Micro-Keyer?

- “Umbilical cord” between computer and radio
- One USB port controls up to 8 serial ports
- USB software router
- Compatible with all MS Windows based logging or control software
- Integrated computer control port for all radios
- Integrated KiEL WinKey™
- Hardware presets for various software programs
- Memory voice keying support
- \*Newer units have sound cards built in

RADIO Icom IC-706 MkII-G

3877.10 LSB

CAT:	COM4		closed	Set
2nd CAT:	none			
FSK:	COM6	<input checked="" type="checkbox"/> PTT	closed	Test
2nd FSK:	COM7	<input checked="" type="checkbox"/> PTT	closed	<input type="checkbox"/> invert <input type="checkbox"/> strict bps
CW:	none	DTR		Test
PTT:	COM4	RTS	closed	Test
2nd PTT:	none	RTS		
Foot Switch:	none	CTS		<input type="checkbox"/> invert
WinKey:	COM8		closed	Test Mon
Control:	none			Mon



# HVOB Uses

- Ideal for net control stations
- EMComm Shelter stations
- Anywhere where an HT may not have enough power
- Where non-traditional modes would be used
- Can be made into a portable APRS digipeater, packet node, etc.
- Contesting out of the shack (PA QSO, Field day)
- Casual operating while camping
- Sized for airplane overhead compartment restrictions





# Computer & Software

- Logging:
  - Ham Radio Deluxe
  - N3FJP Field Day
  - N1MM Contest program
  - EmComm Logging program
  - RMS Express for 2M packet
  - APRS UI-View
- USB Router
- EchoLink

The screenshot shows the N3FJP's Field Day Network Log 2.7 software interface. The window title is "N3FJP's Field Day Network Log 2.7" with the URL "www.n3fjp.com". The menu bar includes File, Options, Setup, Band, Mode, Graph, Map, Network, Operator, and Help. The interface is divided into several sections:

- Recent Contacts:** A table with columns: Rec#, Call, Class, Sec, Date, Time, Bnd, Mde, Opr. It is currently set to "All Bands" and "Last 20".
- Score Statistics:** A section on the right showing various statistics:
  - Total CW Contacts..... 0
  - Total Digital Contacts... 0
  - Total Phone Contacts... 0
  - Total QSO Points..... 0
  - QSOs / Hr (last 20 min) 0
  - QSOs / Hr (last 60 min) 0
- Sections Worked:** A section with a "On" checkbox and a grid of state abbreviations organized by section number (1-9).
  - Section 1: CT, RI, MA, VT, ME, WMA, NH
  - Section 2: NNY, NNJ, ENY, SNJ, NLI, WNY
  - Section 3: DE, MDC, EPA, WPA
  - Section 4: AL, SFL, GA, WCF, KY, TN, NC, VA, NFL, PR, SC, VI
  - Section 5: AR, NTX, LA, OK, MS, STX, NM, WTX
  - Section 6: EB, SDG, LAX, SF, ORG, SJV, SB, SV, SCV, PAC
  - Section 7: AZ, OR, EWA, UT, ID, WWA, MT, WY, NV, AK
  - Section 8: MI, WV, OH
  - Section 9: IL, WI, IN
- Possible Duplicates:** A section with an "On" checkbox and a list of call signs.
- Band and Mode:** At the bottom, there are buttons for Band (15), Mode (PH), NOVLR, 1A, and OR.
- Canada:** A section on the right showing Canadian provinces and territories: NL, GTA, MAR, MB, QC, SK, ONN, AB, ONE, BC, ONS, NT.

# What I NOW bring to Field Day

- Chair & Table
- HVOB
- Wire or portable vertical antenna
- 12V power source – if need be
- Setup is a snap:
  1. Setup table, chair
  2. Plug HVOB in to AC or 12V
  3. Plug USB into computer
  4. Setup and connect antenna
  5. Operate!





# Other Designs

- KR7RK has a website that shows his design of a Go-box using the same SPUD7 case here:  
<http://www.kr7rk.com/gobox.htm>



# Final Notes

- Can also be operated mobile, using IC-706 remote head feature and mobile/portable antenna
- Cigarette lighter can be used for lighting or charging cell phones, etc.
- Future improvements:
  - Be able to easily switch between 12V DC and 120V AC
  - Upgrade computer
  - Create a separate “battery in a box” for field day power
  - IC-7000 possible upgrade





# 73 de NoVLR

- Enjoying “homebrew” margaritas after a hard day of contesting



# Demonstration

- Power up HVOB
- 2M- get on the air fast
- Contesting – get on the air soon
  - Headset / Footswitch
  - Start USB router
  - Start N3FJP software
  - Tune radio
  - Optional DX spotting