

# Wireless Communications for Vic-Maui

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15 January 2012

# Introduction

- ▶ Equipment
- ▶ Installation
- ▶ Interference
- ▶ Operation
- ▶ Roll Call
- ▶ Appendices

# Equipment: HF-SSB Radio

- ▶ Marine HF-SSB Radio
- ▶ HF Antenna
- ▶ Automatic Antenna Tuner
- ▶ Data Modem
- ▶ Laptop Computer & Software



# Installation

- ▶ Power wiring
- ▶ RF ground
- ▶ Antenna and connections;  
automatic tuner
- ▶ MMSI, DSC
- ▶ Data modem, laptop & software
- ▶ Services



- ▶ See Farallon white paper at  
<http://www.farallon.us/webstore/Pcup%20SSB.pdf>

# Operation

- ▶ Station License, Call Sign, Identifier
- ▶ Operator License
- ▶ Equipment User Manuals
- ▶ Quick Reference cards



- ▶ Charged Batteries
- ▶ Practice

## WeatherFax schedules

Chart	Valid	Transmit time	
		UTC	Ship's Time
96hr 500mb/sfc/wnd/wv	0000	20:33 - 21:03	11:33 - 12:03
48hr 500mb/sfc/wnd/wv	0000	08:28 - 08:58	23:28 - 23:58
48hr 500mb/sfc/wnd/wv	1200	19:53 - 20:23	10:53 - 11:23
24hr sfc/wnd/wv	0000	08:08 - 08:18	23:08 - 23:18
24hr sfc/wnd/wv	1200	19:33 - 19:43	10:33 - 10:43
sfc analysis NE NW	0000	03:20 - 03:45	18:20 - 18:45
sfc analysis NE NW	0600	09:19 - 09:32	00:19 - 00:32
sfc analysis NE NW	1200	15:20 - 15:33	06:20 - 06:33
sfc analysis NE NW	1800	21:24 - 21:37	12:24 - 12:37
500mb anal	0000	03:45 - 03:45	18:45 - 18:45
500mb anal	1200	15:45 - 15:45	06:45 - 06:45
sea state	0000	03:10 - 03:10	18:10 - 18:10
sea state	1200	15:00 - 15:00	06:00 - 06:00

# Interference

- ▶ Installation practices
- ▶ Wiring, standing rigging
- ▶ Electrical and electronic devices
- ▶ Frequency & equipment changes
- ▶ Testing
- ▶ When Operating



# Roll Call

- ▶ Vic-Maui “Communications Plan”
- ▶ Daily roll call via HF-SSB
  - exchange position reports and conditions
- ▶ Coordinated by the Communications Vessel
- ▶ Primary, Alternate Frequencies
- ▶ Info relayed by CV to/from RC;  
boat positions posted to the race website
- ▶ Fishing Fleets
- ▶ Equipment failure – alternative methods

# Equipment: Satphones

- ▶ Inmarsat, Iridium, Globalstar

- ▶ Data kit



- ▶ Laptop Computer & Software

- ▶ External Antenna

- ▶ Comparison to HF-SSB



# Appendices

- ▶ Weather Products and Schedules
  - Weather Broadcast (voice) Schedules
  - Weather Warnings
  - Weather Fax Schedules
  - Weather Model (GRIB) Schedule
- ▶ Emergency Communications
- ▶ Courses
- ▶ Sources
- ▶ Glossary

*Much of the information in these appendices is subject to error or becoming dated over time; it is essential to check and update information yourself before relying on it.*

# Conclusion

- ▶ Equipment
- ▶ Installation
- ▶ Interference
- ▶ Operation
- ▶ Roll Call
- ▶ Appendices

# Weather Broadcast Schedules

## US Coast Guard Station – "NMC" – Point Reyes, CA

Channel	Freq. (kHz)	Times	(UTC)		
424	4426	0430	1030		
816	8764	0430	1030	1630	2230
1205	13089	0430	1030	1630	2230
1625	17314			1630	2230

## US Coast Guard Station – "NMO" – Honolulu, HI

Channel	Freq. (kHz)	Times	(UTC)		
601	6501		0600	1200	
816	8764	0005	0600	1200	1800
1205	13089	0005			1800

# Pacific Area High Seas Warnings

- ▶ Broadcast on time signal station WWV (Fort Collins, CO) at 9 minutes past the hour.  
WWV transmits with a male voice on 2.5, 5, 10 and 15 mHz; or phone +1.303.499.7111
- ▶ Also broadcast on WWVH (Kekaha, HI) at 48–51 minutes past the hour.  
WWVH transmits with a female voice on 2.5, 5, 10 and 15 mHz; or phone +1.808.335.4363
- ▶ Time of day and location will affect which of these stations you can hear.
- ▶ This information is also available at <http://nws.noaa.gov/om/marine/www.htm>

# Weather Fax Schedules

Pt. Reyes, CA, NMC

North and Tropical East Pacific

<http://weather.noaa.gov/pub/fax/hfreyes.txt>

Honolulu, HI, NMO

Central, Southeast and North Pacific

<http://weather.noaa.gov/pub/fax/hfhi.txt>

Kodiak, AK, NOJ

Alaska, North and Northeast Pacific

<http://weather.noaa.gov/pub/fax/hfak.txt>

# Weather Model (GRIB) Schedule

- ▶ US NOAA/NCEP "GFS" global model
- ▶ Run every 6 hours (nominally 0z, 6z, 12, 18z)
- ▶ Data available for download within 5 hours
- ▶ Parameters: surface pressure, wind, other
- ▶ Data every 3 hrs to day 7, at 0.5 degrees then every 12 hrs to day 16, at 2.5 degrees
- ▶ File size is critical to downloading when accessing GRIB files via SSB

# Emergency Communications

- ▶ The Canadian or US Coast Guard should be contacted for emergencies. These authorities may be contacted or alerted by any available means including VHF radio, HF-SSB radio, satellite telephone and EPIRB.
- ▶ After initiating emergency communications with the Coast Guard, a boat should make all reasonable efforts, including continued participation in Roll Call, to keep the Race Committee and other boats informed of its situation.

# Emergency Communications

## Radio Communications

### Canadian Coast Guard

- ▶ VHF channel 16
- ▶ MF 2182 kHz

### US Coast Guard

- ▶ VHF channel 16
- ▶ MF 2182 kHz
- ▶ NMC (Pt. Reyes, CA) monitors HF 4125, 6215, 8291, 12290 kHz (24 hours)
- ▶ NMO (Honolulu, HI) monitors HF 6215, 8291 kHz (24 hours), HF 4125 (0600–1800Z) and HF 12290 (1800–0600Z)

## SatPhone Communications

### Canadian Coast Guard

- ▶ RCC Victoria emergency phone +1.800.567.5111, +1.250.363.2333

### US Coast Guard

- ▶ Pacific SAR Coordinator emergency phone +1.510.437.3700
- ▶ RCC Alameda (California, Eastern Pacific Ocean) emergency phone +1.510.437.3700
- ▶ RCC Seattle (Washington and Oregon) emergency phone +1.206.220.7001
- ▶ RCC Honolulu (Hawaii, Central Pacific Ocean) emergency phone +1.800.552.6458, +1.808.842.2600

# Courses

## Marine SSB & Amateur Radio

- ▶ Blue Water Cruising Association  
Instructor: Ron Kolody  
[www.bluewatercruising.org](http://www.bluewatercruising.org)
- ▶ North Shore Amateur Radio Club  
[www.nsarc.ca](http://www.nsarc.ca)

## Radio Operator License (Maritime)

- ▶ Canadian Power and Sail Squadron  
[www.cps-ecp.ca](http://www.cps-ecp.ca)

# Sources

## Equipment & Installation

- ▶ Victoria  
Victoria Marine Electric  
[www.ael.ca](http://www.ael.ca)
- ▶ Vancouver  
First Yacht Services  
[www.firstyachts.com](http://www.firstyachts.com)
- ▶ San Francisco  
Farallon Electronics  
[www.yachtwire.com](http://www.yachtwire.com)

## Software & Services

- ▶ SailMail, GetFax & SailDocs  
[www.sailmail.com](http://www.sailmail.com),  
[www.saildocs.com](http://www.saildocs.com)
- ▶ OCENS  
[www.ocens.com](http://www.ocens.com)

# Glossary

CV	Communications Vessel
DSC	Digital Selective Calling
GRIB	Gridded Binary (weather data file)
EPIRB	Emergency Position Indicating Radio Beacon
HF	High Frequency
kHz	kiloHertz (radio frequency)
mHz	megaHertz (radio frequency)
MMSI	Maritime Mobile Service Identity, 9 digit number
RC	Race Committee
RCC	Rescue Coordination Center (Coast Guard)
RF	Radio Frequency
SSB	Single Sideband (radio mode)
UTC	Universal Coordinated Time (Greenwich, Zulu)
VHF	Very High Frequency