

Race Communications

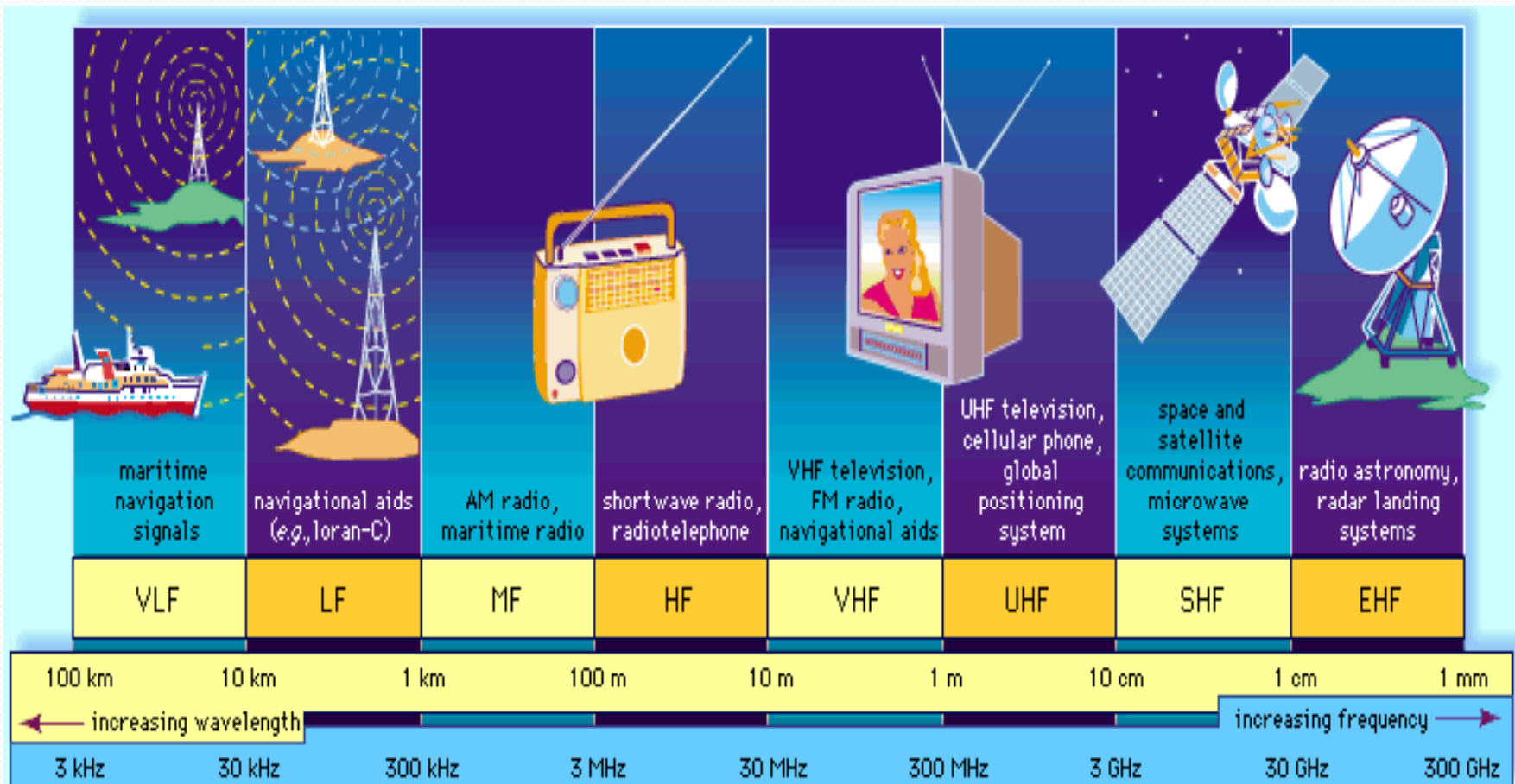


TRANSPACIFIC
YACHT CLUB

LA/Honolulu 2011
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<http://seatools.w6zl.com/transpac>

Electromagnetic Spectrum





The Electromagnetic Spectrum

• VLF	3 -30 Khz	Nav aids [old Omega]
• LF	30 Khz – 300 Khz	Nav aids [LORAN R.I.P.]
• MF	.3 – 3 Mhz	AM Broadcast, 2182
• HF	3 – 30 Mhz	Marine SSB, WeFAX
• VHF	30 – 300 Mhz	Marine VHF, AIS
• UHF	300 -3000 Mhz	Cell Phone, GPS
• SHF	3 Ghz – 30 Ghz	Satcom, Radar



What is the minimum I need?

- VHF
- EPIRB – Properly Registered !!
- Email capability
 - Satellite Phone or
 - Marine HF/Pactor



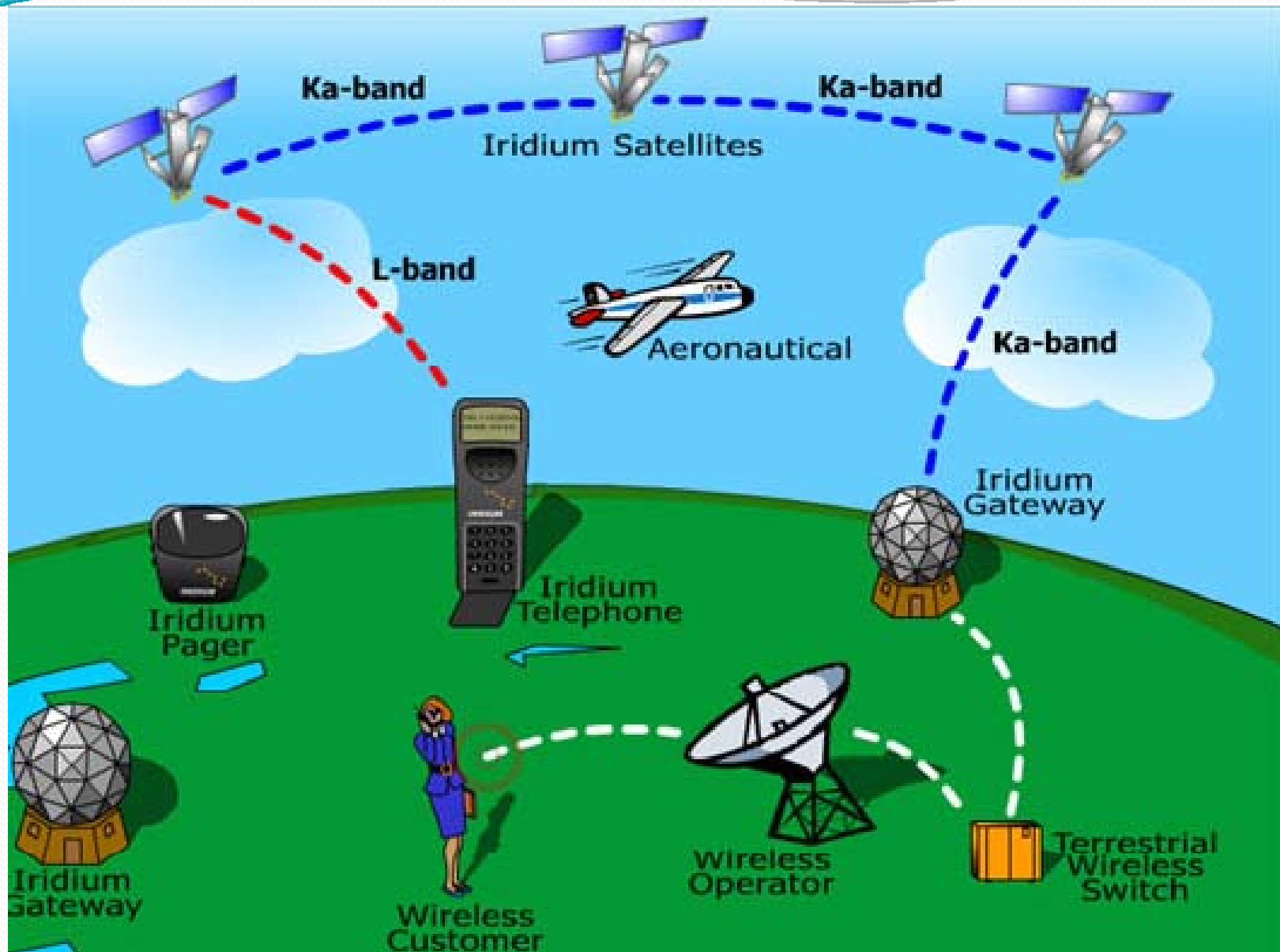


Satellite Options

- Iridium
- Inmarsat
 - FB150
 - IsatPhone
 - Sat C
- Globalstar
- Orbcomm

Satellite Options

Type	Cost	Coverage	Speed	Cost/MB
Iridium 9550, 9555	\$1600 or Rent	Worldwide	2.4 Kbs	\$100
Inmarsat FB150 KVH TracPhone	\$6000	Worldwide	150 Kbs	\$13
Inmarsat IsatPhone	\$640 + \$540 antenna	All Oceans	2.4 Kbs	??
Inmarsat C		All Oceans		\$10000 !!
Globalstar	\$500	Limited!!		



Iridium

- 66 Low Earth Orbit Satellites 1.6 Ghz
- Relays calls from one satellite to another, providing worldwide coverage.
- Incoming SMS messages are free
- 2.4 kb/s data rate
- ~ \$1.50/min.
- Older 9505A needs “data kit”
- Newest 9555 has USB modem built in
- Needs external antenna !



Iridium Antenna



Inmarsat FB150 / KVH TracPhone

- Fairly small antenna – basketball size
- Geostationary satellites
- Expensive ~ \$6000
- Relatively fast 150 kb/s
- Reliable [Can be shielded by carbon main]

TracPhone FB150
System Diagram



Inmarsat IsatPhone

- Brand New – unknown – Data Q1 - 2011
- Uses Inmarsat satellites, coverage should be good.
- External antenna?



Marine SSB / Pactor

- Icom, Furuno, SEA
- Icom M-700PRO, M-710, M-802
- Best to be professionally installed
- Antenna/ground system is critical
- ICOM M-802 S/N below 108290, may need factory mod.



Pactor



- Signaling method used over HF Radio to send data at 110 to 4800 baud.
- Pactor modem connects between HF SSB Radio and computer.
- Used for Sailmail, Winlink and other proprietary email systems.
- Pactor modem can also be used to decode HF Weather FAX broadcasts.




Sailmail

- Email provider run by the non-profit SailMail Association, first organized by Stan Honey.
- 18 stations around the world
- \$250 / yr.
- 90 minutes / wk. on Pactor, no limit on Sat. Phone
- 30 kB max attachment size
- Uses Airmail as email client
- www.sailmail.com



AirMail

- Client software used with the SailMail system.
- Runs on
Windows 95/98/NT/2000/ME/XP/Vista/Windows7
- Some have run it on Apple computers using emulation software
- Used to create/edit/retrieve/read messages



What email do I need to send/receive?

- Send daily position report
- Receive Fleet positions



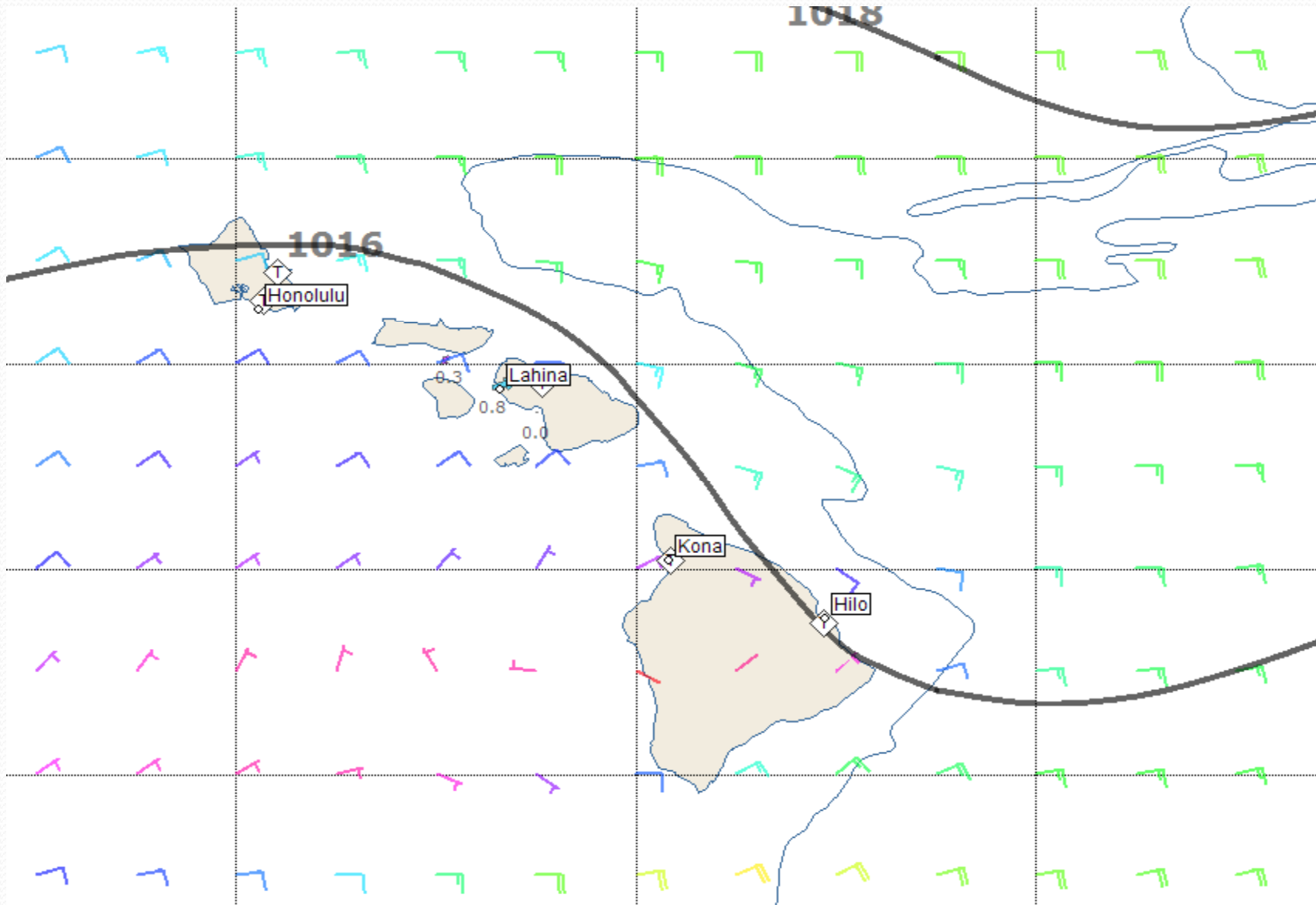
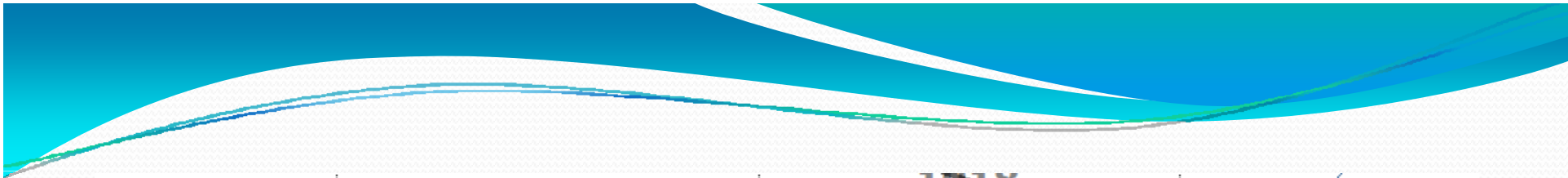
What other data might I want?

- Text weather forecasts
- GRIB files
- Weather FAX broadcasts from Pt. Reyes, Honolulu
 - Surface analysis / forecast
 - 500 mb charts



GRIB Files

- What is GRIB?
*GR*idded *B*inary
- Efficient way to receive wind/wave/pressure forecast information.
- Derived from meso-scale model of earth's atmosphere
- Has not been QC'd by humans.





Transpac Weather Seminar

- June 18th
- Presenters Stan Honey / Lee Chesneau
- More info soon! www.transpacrace.com

Thank You!

<http://seatools.w6zl.com/transpac>



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