

# Sensible Cruising Equipment Recommendations

Monohull  
Sold in  
2016

Dave/Sherry McCampbell  
[SVSoggypaws.com](http://SVSoggypaws.com)  
Nuku Hiva, French Polynesia



# Sensible Cruising Equipment Recommendations

Catamaran  
Acquired in  
2015



Dave/Sherry McCampbell  
[www.SVSoggypaws.com](http://www.SVSoggypaws.com)  
Davao Bay Philippines

- **About Us:**
  - **Mono and multi hull** cruisers (9 boats- 6 monos, 2 cats, tri)
  - Cruised 25 years both US coasts, Carib, Pacific & SE Asia
  - ‘Usually’ technically competent?
  - **Very cost conscious**
- **Opinions-** strictly ours; no financial ties to any sellers
- **~100 slides-** 65 now, rest at Sunday Roundtable
- **Questions-** short answers now, longer at SSCA Roundtables on Sunday at 0900

# Sensible Cruising Equipment

- **Equipment for serious blue water cruisers**
- **Cost efficient-** high price not necessarily best
- **Reliable Performance-** does well what it is made to do, extras?
- **Long service life-** robust, few problems
- **Repair-** by owner best, even if need help must carry spares
- **Company-** good reputation, warranty & customer service
- **Magazines-** CW, Sail, PS, etc not always best info source

# To Consider Before Buying

- **Research** expensive gear VERY CAREFULLY!
- Be a **suspicious** buyer, ask **hard** questions
- **Not everything** on the **internet** is true!
- **Believe** only what you can verify yourself
- **Eye test**, if doesn't look right it probably is not!
- **Advice:**
  - often only worth what you pay
  - beware \$ motivated sellers
  - Beware 'expert' forum trolls, yard & dock rats
- Always look at **independent** surveys and forums
- **Preponderance of positive evidence** before buying

# Revised Outline

- 0 Cruising Boats **SPaws Seminar**
- 7 Ground Tackle/Anchors **Spaws Seminar**
- 1 Electric/Alt Energy/Solar **CW**
- 2 Electronics
- 11 Security
- 8 Refrigeration
- 12 Miscellaneous/Gadgets **CW**
- -----
- 6 Sails/Rig **CW**
- 4 Communications
- 5 Self Steering
- 9 Fresh Water/Watermakers **CW, Spaws Seminar**
- 10 Dinghy/Deck **CW**
- 3 Navigation- Sherry **Spaws Seminar**

# 0 Monohull or Multihull?

## MONOHULLS

- Draft over 6' limiting**
- Can use A-pilot or W/Vane
- At sea on heel, some roll**
- Smoother motion at sea
- Less space, two levels**
- Can heavier load
- One big engine, more fuel**
- Less windage, more yaw
- Heavier safer, lighter faster
- Dinghy stowage issues
- Knockdown danger big seas**
- Good ventilation possible
- Best 43-48', designs fm 80s
- Relatively inexpensive >\$75K**

## MULTIHULLS

- 3-4' draft, more options**
- A-pilot only, elec. w/vane option
- Flat/5\* max at sea & anchor**
- Short choppy motion at sea
- 40% more space, one level**
- Overloading an issue
- Two engines, ½ fuel & backup**
- More windage but wider bridle
- 20% faster, similar tack angle**
- Better dinghy stowage
- Capsize danger, don't sink**
- Worse cockpit ventilation
- Best 40-47', designs from 90s
- Relatively expensive >\$200K**

**Monohulls-  
CSY 44 WT, very  
solid cruising boat,  
cutters, \$75-125K,  
many others**





# 0 Good Cruising Monohull Features

- **Good Reputation-** forums & owners
- **43-48' Length-** OA, bigger means comfort & LCC
- **Center Cockpit-** for all around visibility
- **Cutter Rig-** for strength, safety, flexibility
- **Draft max 6'-** more too limiting
- **Construction-** strong hull/deck, minimum wood
- **Liquid capacities-** 3 weeks water, 1000 nm range
- **Ground tackle-** strong roller trays, good design
- **Interior-** good sea & in port design, galley & storage
- **Navigation/work station-** full size, comfortable seat
- **Engine-** standup ER, 360 degrees engine access
- Our website Workshop, [CSYOwners.com](http://CSYOwners.com)

Catamarans  
St Francis 44 Mk II, well  
regarded cruising cat,  
others \$200K-up



[www.SVSoggyPaws.com/Presentations](http://www.SVSoggyPaws.com/Presentations)  
'Evaluating Modern Catamarans'

# 0 Good Cruising Cat Features

- **Good Reputation-** forums and owners
- **40-47' Length-** OA
- **Construction-** foam/balsa cored vs solid fglas
- **BDC-** reasonably high, 24-36"
- **LCC-** look carefully how calculated, more is better
- **Stability-** good static & dynamic, B/L ratio ~50%
- **Doubled Stays & Shrouds-** for rig security
- **Galley Down-** why, big navigation/work station up
- **One Helm-** visibility 360 degrees, better than two
- **Stub keels-** for beaching, not dagger boards
- **Ground tackle-** strong roller trays, good bridle fit
- See '**Evaluating Modern Cats**' our website

# Popular Cruising Boats

- **Monohulls**

- Peterson 44, 46
- CSY 44
- Pacific Seacraft 40, 44
- Westsail 42, 43
- Norseman 447
- LaFitte 44
- Valient 40, 42
- Baba/Panda 40
- Hallberg Rassey 40/9
- Tayana 42, 48

- **Catamarans**

- Fontaine Pajot 43, 44, 46
- Catana 44, 47, 50
- PDQ/Antares 42, 44
- Lagoon 44, 47, 50
- Leopard 43, 46
- Crowther 50
- Nautitech 47
- Manta 42
- Privilege 44, 46
- Dolphin 46
- Voyage 45
- St Francis/Knysna 44, 48, 50

# 7 Ground Tackle Basics

- **Primary anchor** – size for 60 kt squalls!
- **Sizing**- Boat length ft + weight klbs = approx Delta anchor weight; 44'+40k= 84 lbs anchor
- **Modern Scoops best**- Spade, Rocna, Vulcan, Manson Supreme, Mantus, Ultra
- **Rode** – G4/HT HDG US chain, no weak links/shackles, full strength swivel
- **Windlass** - strong electric, horizontal, 12/1500 watt, Lofrans Tigres good option
- **Much more detail** in 'Modern Anchors & Ground Tackle' seminar on our website

# Before buying consider:

- ‘Cruisers can’t afford **cheap gear**, especially when it comes to ground tackle.’
- ‘No anchor is as good as its **company** claims or as bad as the **competition** claims’.
- ‘When it comes to anchors, **bigger and stronger** are always better, but better **design** is much better’.
- ‘**Luster** and higher cost does not necessarily mean you bought a better anchor’.
- ‘**Older anchors** are no better/worse than they have ever been, but modern technology has brought us better anchors.’
- ‘Regarding **rode**, more is better and chain is best’.

# Spare Truths

- ‘An electric windlass is not just a luxury, it is a necessity’.
- **Research**, research- comparison test results, construction, tip weight , forums, owner comments.
- Electric windlasses don’t care if you use a bigger anchor
- **Preponderance of evidence** and minimum negatives win the anchor battle.
- **Owners** sometimes lie about their anchors’.

# Basic Anchor Types

- **1G Hook** – Admiralty, Luke, Herreshoff, etc.
- **1G Rotating Fluke** - Danforth, West, Fortress
- **2G Plow** – **hinged**: CQR; **fixed**: Delta
- **2G Claw** – Bruce, Ray, Max
- **MG Scoop** – **w/o** roll bar: Spade, Ultra, Vulcan; **w/roll** bar: Bugel, Rocna, Manson Supreme, Mantus
- **Misc** –Bulwagga, Barnacle, Hydrobubble, etc, some out of business now
- **Copies- not** as primaries





**Third world modern  
generation anchor:**

- easy to stow
- strong, won't bend
- inexpensive
- available everywhere
- ? holding power

# Hook & Rotating Fluke Anchors



These are specialty anchors,  
NOT for use as PRIMARY





**Hinged Plow  
Convex fluke  
CQR 1935**

# 2<sup>nd</sup> Generation Primary Anchors

**Delta  
1984**

**Fixed Plow  
Convex fluke**



**Claw  
Bruce 1971**

# Modern Generation Scoop Anchors

**Scoop w/ roll bar  
Concave fluke**



**Rocna  
2004**

**Scoop w/o roll bar  
Concave fluke**



**Spade 1996**

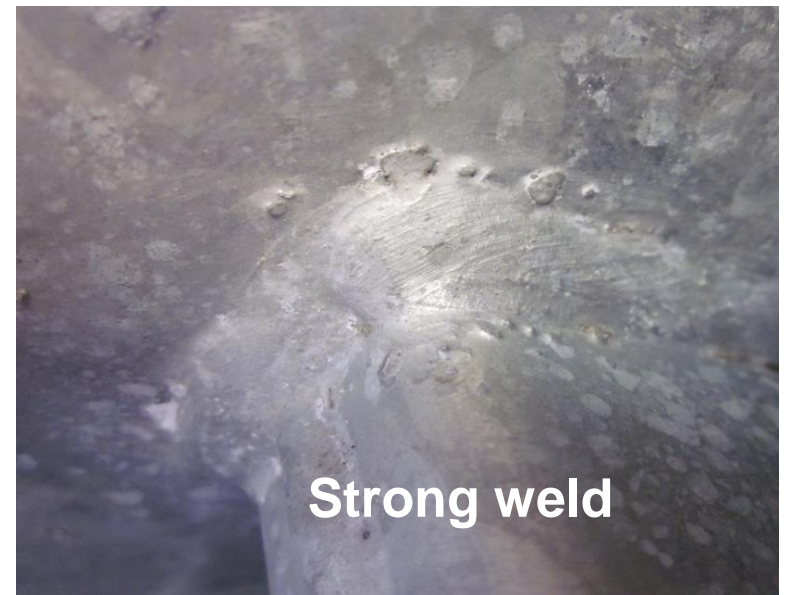
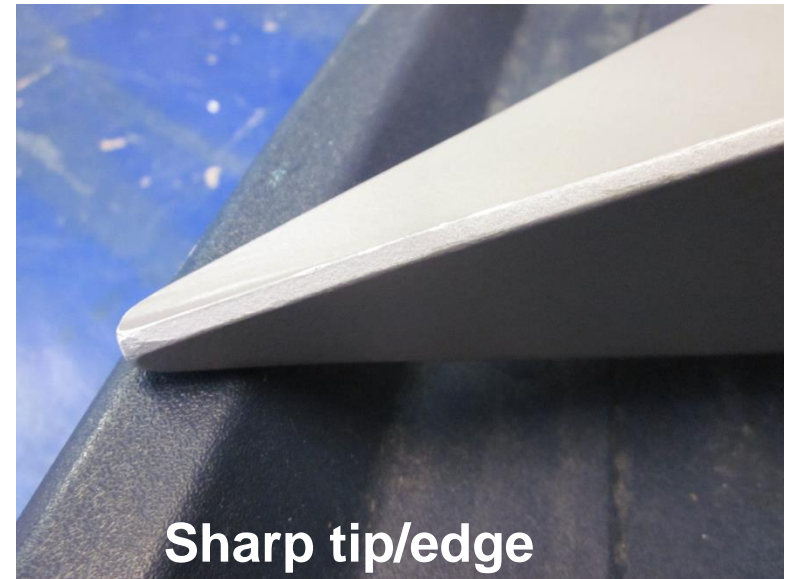
**Scoop w/  
roll bar  
Concave  
fluke**



**3 Pieces**

**Mantus 2012**

# Construction Details



# 2011 PBO Holding Force Tests

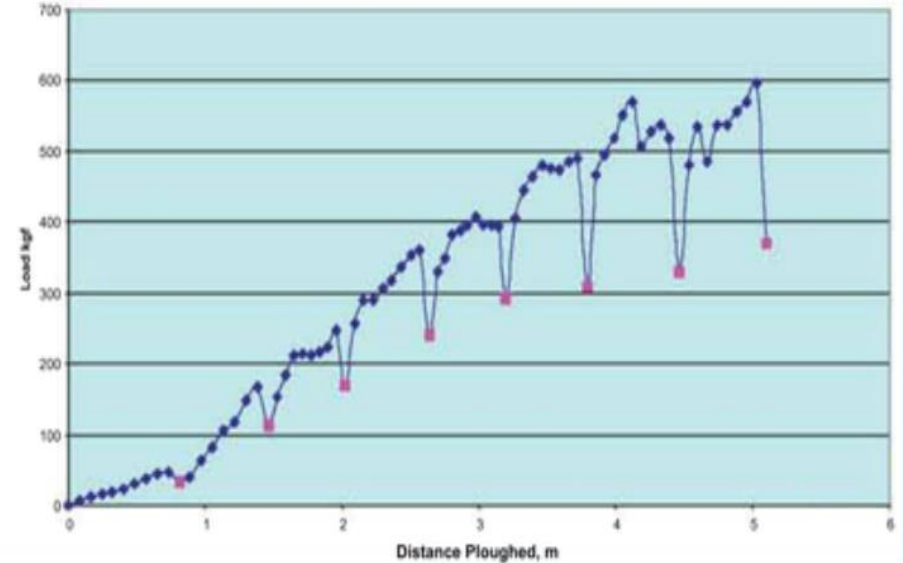
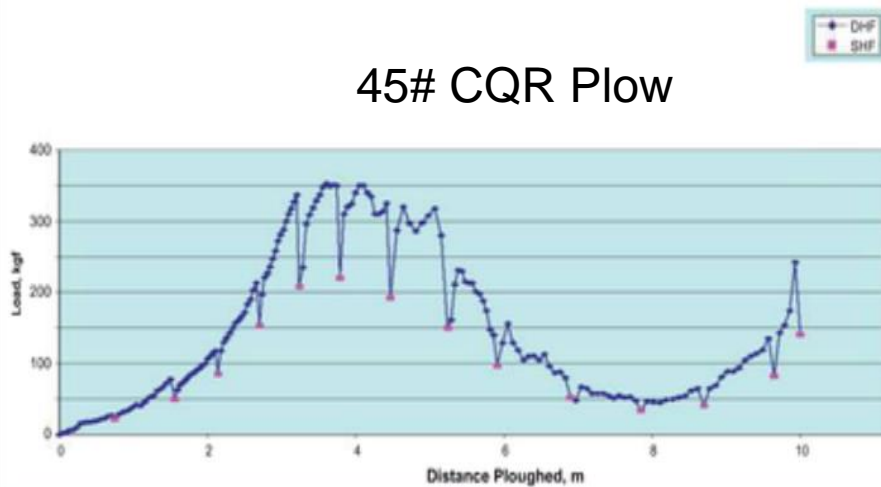
## CQR vs Rocna

Red- static holding force (SHF)  
Blue- dynamic holding force (DHF)

33# Rocna Scoop

45# CQR vs 33# Rocna

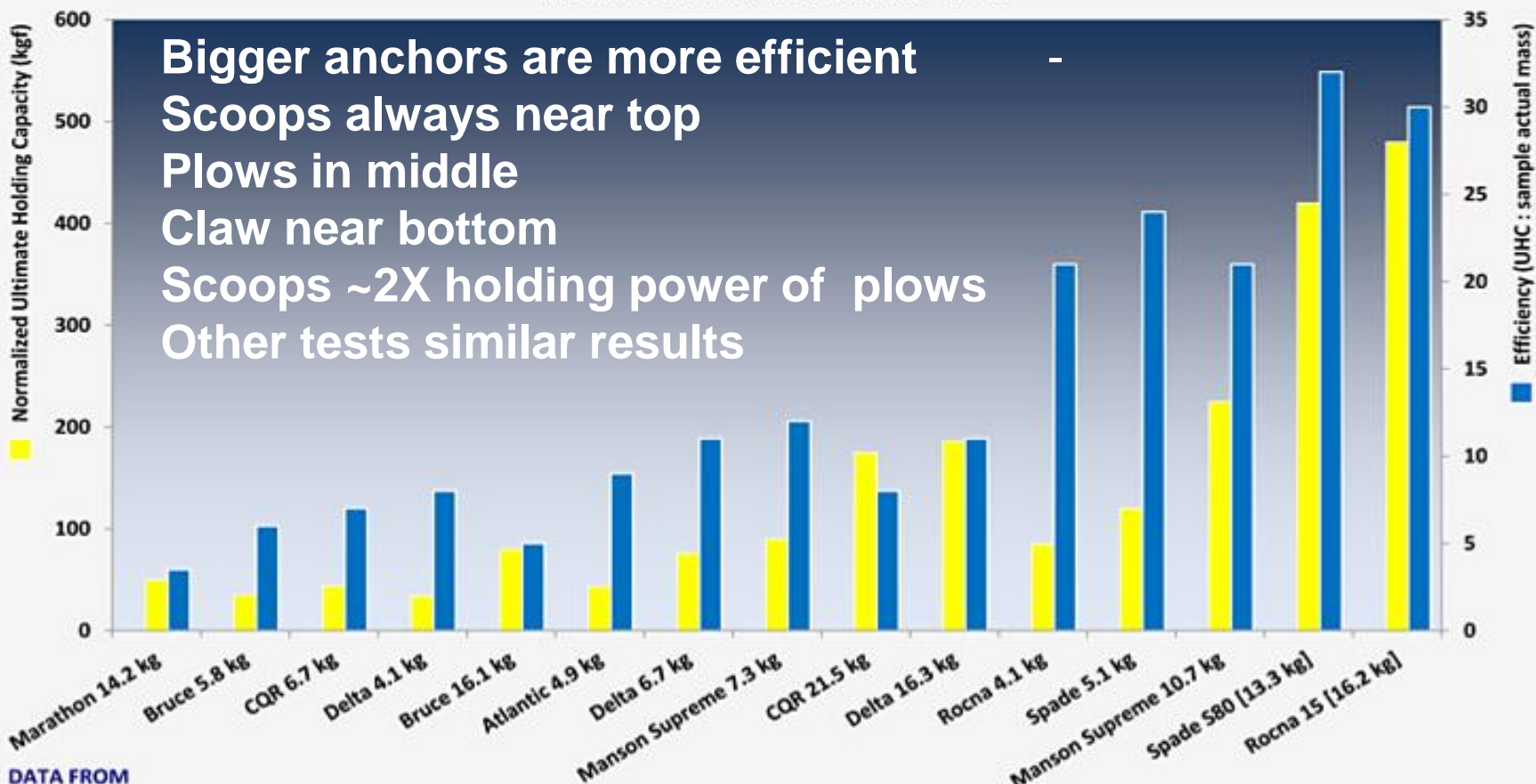
45# CQR Plow



Load graphs for CQR (left) and Rocna (right) anchors. The dipped points in pink track the SHF for each anchor: the 45 lb (~20 kg) CQR snakes and rolls unstably, never exceeding a normalized SHF of 175 kgf, while the smaller Rocna 15 (33 lb) sets and buries quickly as its SHF climbs inexorably toward a normalized SHF of about 480 kgf. Graphs © Practical Boat Owner 2011

# 2011 PBO Holding Test Results

HOLDING CAPACITIES & EFFICIENCIES



Bigger anchors are more efficient  
 Scoops always near top  
 Plows in middle  
 Claw near bottom  
 Scoops ~2X holding power of plows  
 Other tests similar results

DATA FROM

**Boat Owner**

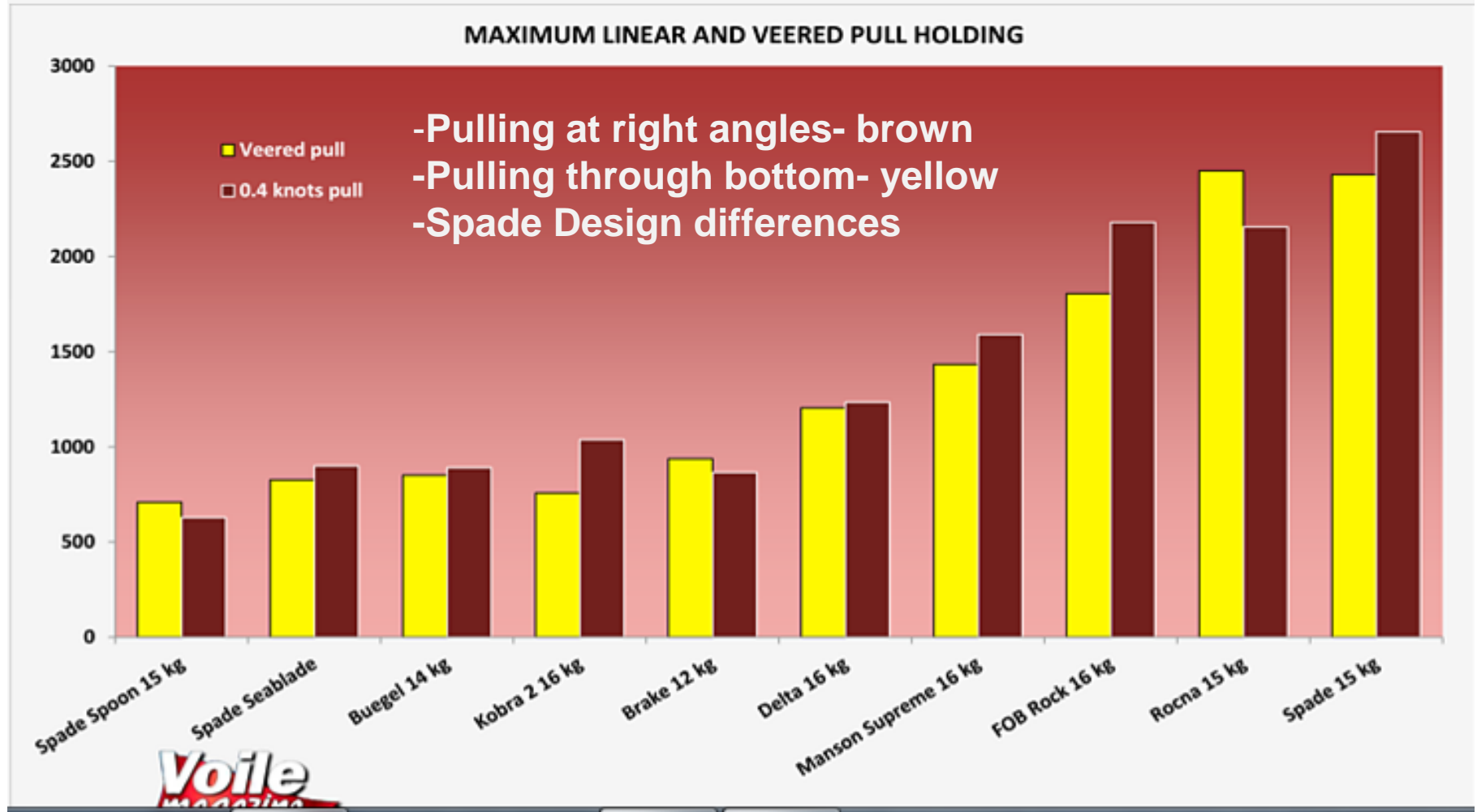
2011 COMPARISON TESTING

Normalized UHC (Ultimate Holding Capacity) and efficiency ratings data

"Anchors Aware! Anchors On Test" Professor John Knox *Practical Boat Owner* August 2011

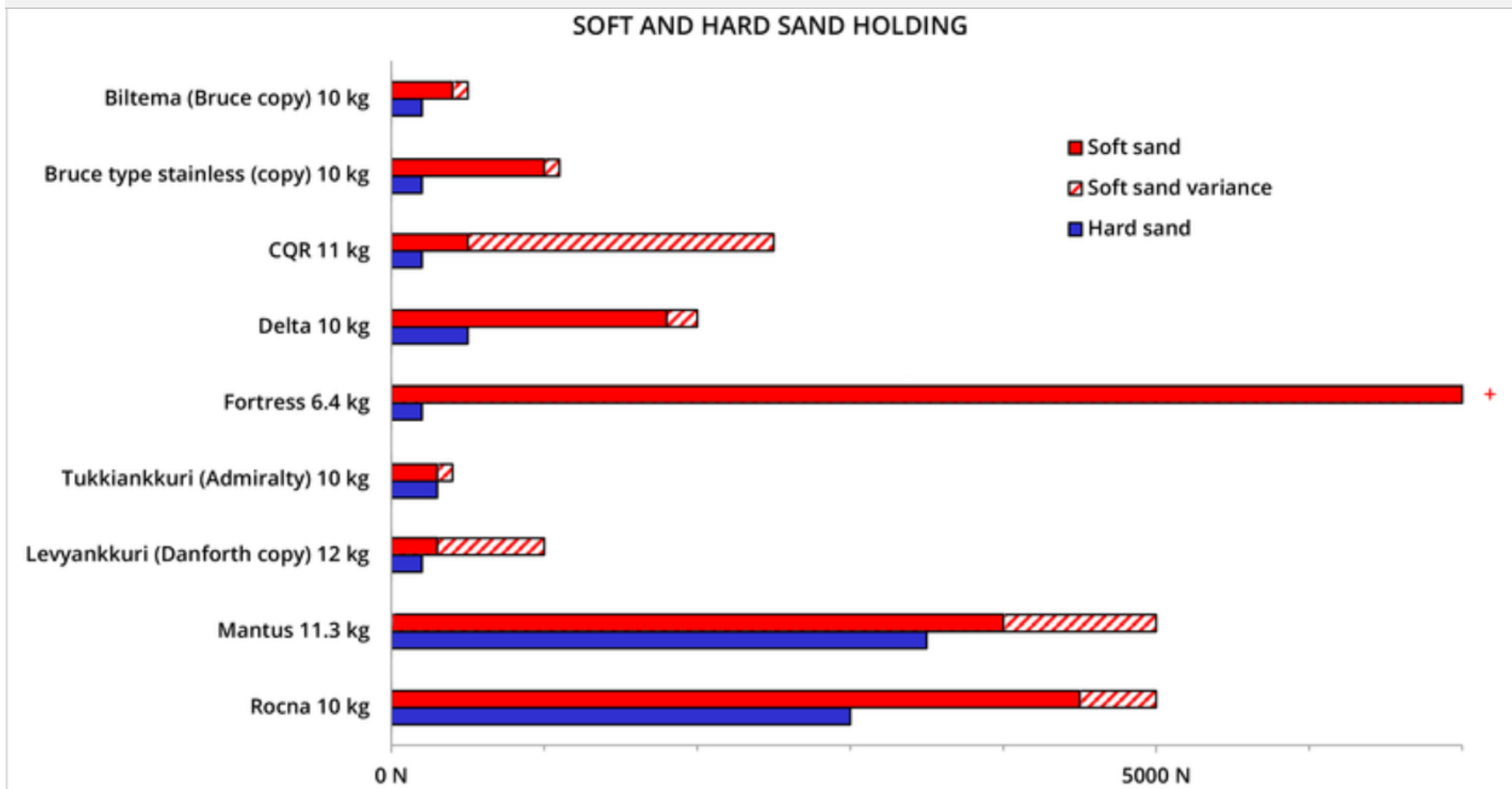
# 2012 Voile Pull Test Results

anchors.





# 2015 Kippari Sand Holding Tests



# My Anchor Type Ratings

Type	Hld	Rst	Drg	Str	La/St	Snd	Mud	Co/R	Grs	Tot
Hook	2	1	1	5	2	2	1	5	2	21
Fluke	4	2	3	2	3	4	5	1	3	27
Claw	3	5	3	5	4	3	2	4	3	32
Plow	4	4	3	4	4	4	2	3	3	31
Scoop	5	5	5	4	4	5	4	3	4	39
Scoop w/rbar	5	5	5	4	3	5	4	3	3	37
<b>All characteristics have equal weight, not in real world!</b> <b>1 – worst 5 -- best</b>										

# Italian Kong Swivel

Why swivel?

Rotate big anchors for  
stowing on roller



**Completely disassemble,  
3/8" 316 SS, SWL 6600#,  
available from West, ~\$300**

# Mantus Swivel

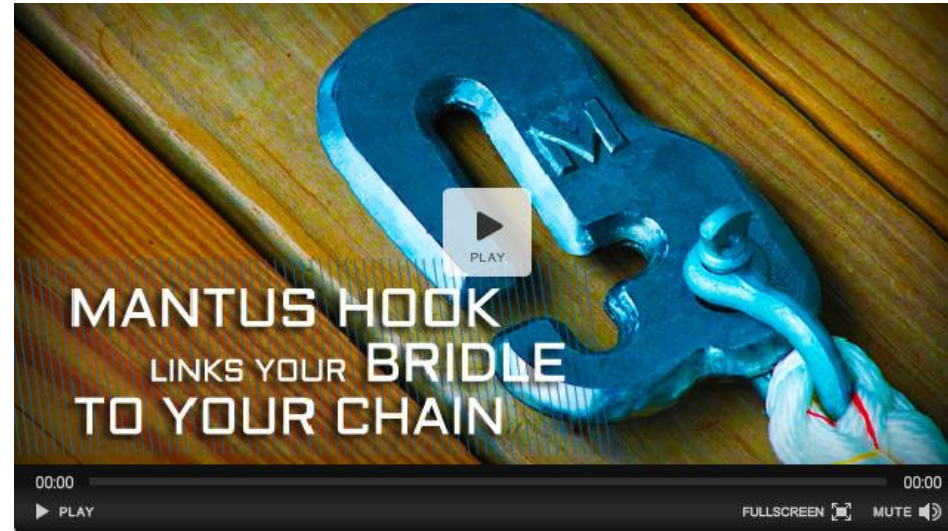
Gallery

3/8" 316 SS, oval  
duplex SS pin, SWL  
7000#, West \$125



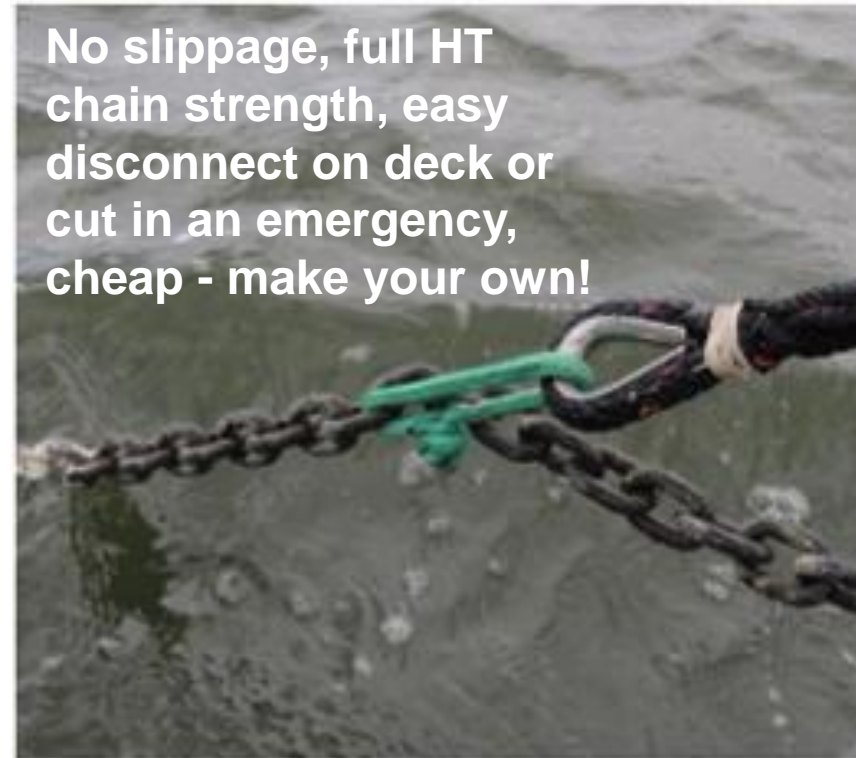
# Mantus Chain Hook

- Many options
- Mantus well executed design
- Full strength for G4 chain
- New plastic gate
- Galvanized or 316L SS
- 3/8" SS ~ \$70



# Soft Shackle Chain Connector

Courtesy Evans Starzinger, SV Hawk



Evans Starzinger says super strong, minimal chafe, several year life

# 1 Electric Charging Basics

- **Problems:** (tropics cruising)
  - Use 100 ahrs, recharge need 115 ahrs, +15%
  - 3<sup>rd</sup> world marinas **voltage spikes**
  - Voltage compatibility 240-120v, brown outs
  - **Galvanic corrosion** from bad shore AC
- **Wind:**
  - **Effective <25% time**, only good for partial charge
  - Need 15-25 kts wind for meaningful output
  - Can **shade solar**, relatively expensive, noise, maintenance
- **Water:**
  - Only good **underway**, normally 10% of time
- **Engine/genset/shore-**
  - **Long run time** for full charge
  - **expensive, fuel, noise, heat, maintenance**
- **Solar:** best option!
  - **Effective 98% of time in tropics**

# 1 Solar

- **Solar Advantages-**
  - **effective 98% days** in tropics
  - **use at** anchor, dock, underway
  - relatively inexpensive ~\$1-2/watt
  - **LLA equalize capable**
- **Mounting-**
  - **no shading**, orient fore/aft
  - monohull- aft on arch or stern rails
  - cat- well aft on cockpit top or davits
- **Panels-**
  - **24v not 12v** nominal
  - **Buy 150% daily use-** daily use ~150 ahrs, make 225 ahrs
  - SPaws mono = 650 w, cat = 800 w
- **Rotate F/A** can add +~25%
- **MPPT** regulators +~20%, bulk only
- **Morningstar**, Outback, Midnight Solar regs, 60a, abt \$5-600 ea
- **Bottom Line-** solar best option by far!





# 1 Generator

- If have adequate solar use for **backup/emergency**
- **Honda Eu 2000 AC/DC**
- Also **Generac IQ2000** and **Yamaha EF2400**
- **Continuous 1600w/13.6a AC**
- **~6 hours on 1 gal gas**, gas available everywhere, diesel?
- Small, defuel and stow below
- ~45 lbs, ~\$900
- **Progressive Dynamics PD-9270** charger, 13a AC in = 70a DC out, RV internet ~\$250



**PD9270 – 70 Amp RV C**



# Sterling Pro Charge 60

- **Global** input power: 90-260 volts, 40-90 hz, 900w in = 60a output
- **3 step** charging plus **equalization**
- **12 battery charge curves** incl Lion & custom
- Charge up to **3 banks** at once
- 3 output meters incl amps & volts
- **Non ferrous metals** incl case
- Lightweight and compact
- **Battery temp sensor**
- **60 amp output w/ Honda eu 2000 gen**
- 60 amp model ~\$450



# 1 Batteries

- **AGM & Gel – better**
  - 2X cost LLA, but **NO maintenance**
  - Charging issues with Gels
  - Our **Sonnenschein Gels** now **10 years old**, rest at 12.9v!



- **Lithium- best**
  - **LiFePo4** safest lithium
  - Much less weight and size
  - **Capacity**- only 50% others needed
  - May need **expensive BMS**
  - **Study carefully, expensive**

- **Liquid lead acid - good**
  - **Work-** monthly watering, **MUST equalize** ~3 mos
  - 6v L16 better than GCs
  - Life- Rolls, Trojan, Excide, varied cycle life
  - **Heat a killer**

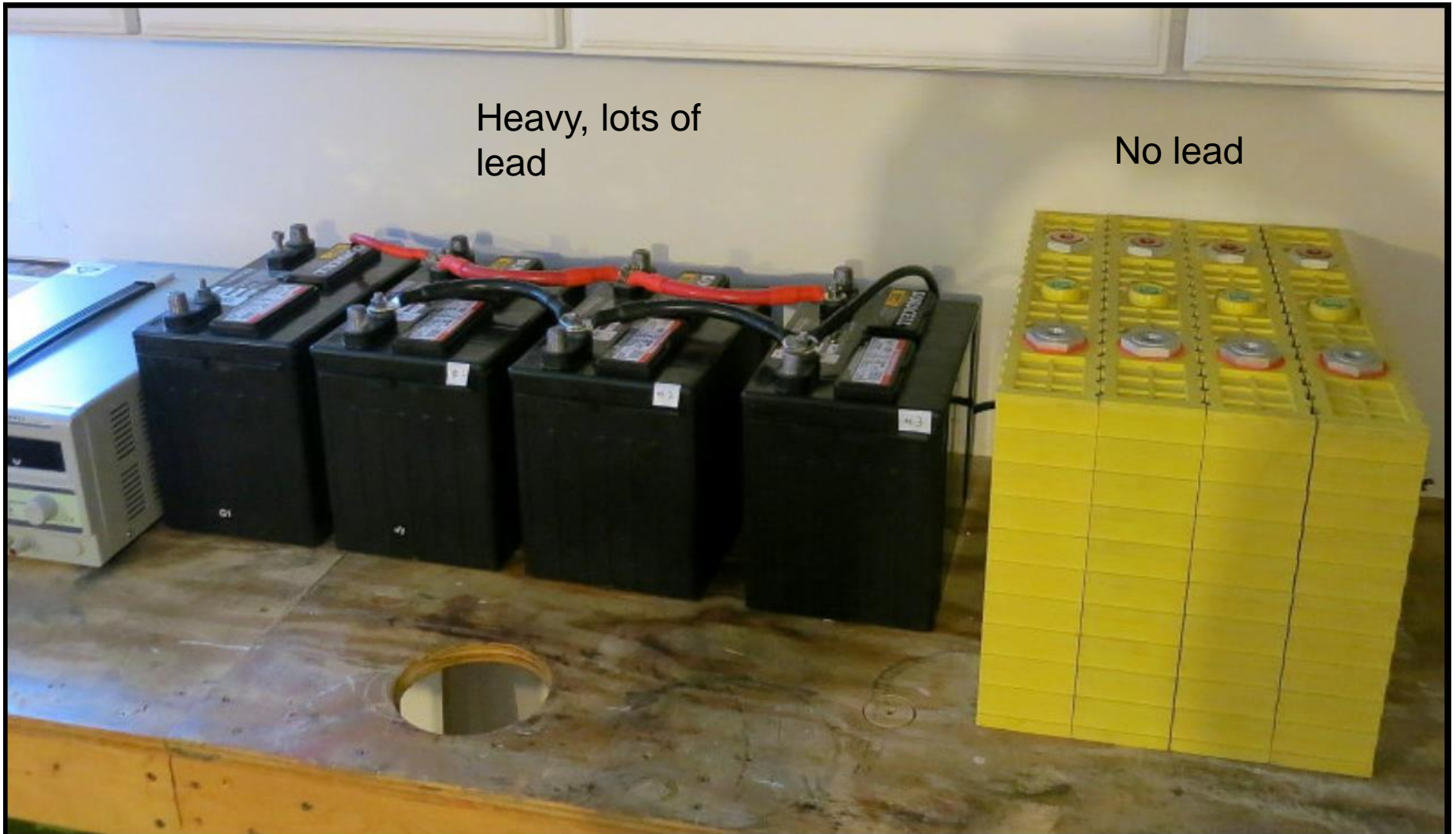
# Comparison **LiFePO<sub>4</sub>** vs LLA

- **Weight-** LFP 1/3 vs LLA
- **Discharge/Capacity-** LLA 50%, LFP 90%
- **Cycle Life-** LFP >3x LLA
- **Voltage-** LFP high despite discharge %
- **Service Life-** total ahrs LFP up to 5x LLA
- **Full Charge-** LFP holds one year
- **Cost/Ahr-** LFP considerably less vs LLA
- **Regulation-** LFP needs BMS + regulator
- Some variance in specs
- **Research VERY carefully**

# LiFePO4 vs Lead Acid

Heavy, lots of  
lead

No lead



# 2 Electronics Basics

- **Minimize integrated systems** if you have only one display
- **Backups-** must have for critical units
- **Lightning-** protect w/ disconnects, Faraday cage (microwave/oven), debatable
- **Backups-** store in 'metal in' anti static bags
- **Protect-** from salt air when not using, especially computers
- **Alkaline batts-** don't leave inside units
- **Theft-** high on thieves' Xmas lists, protect and hide critical items

# 2 Depth Sounder



- **Fishfinder** MUCH better than digital depth sounder
- Much more info, less cost
- **See bottom profile** for best anchoring spot/type
- **Mount transducer inside** solid fiberglass hull on blob of 3M Marine Silicone or lay in wet bilge
- Mount display at helm
- **Depth** capability ~300'
- **Cost** color- \$89 and up, Hummingbird great!

# 2 AIS

- **Best collision avoidance device**
  - See ship name, range, bearing, CPA, etc
- **VHF based**, active or passive units, splitter
  - Range: A~30 nm, B~8nm
- Display options-  
computer, VHF, cplotter
- **Vesper Marine** active stand alone unit w/  
display ~\$800
  - Receiver <\$200, VHF?
- **Some countries now require active AIS!**





## 2 Radar

- **Range-** 16 nm adequate, 24 nm better
- **Use for-** weather & ship avoidance, navigation
- **Mounting-** on arch or pole vs on mast, 10 vs 16 nm range, easier install/repair
- **Display-** visible both from cockpit and below
- Furuno, Raymarine good quality
- Color better than B&W



# 2 Cell Phones & Wifi

- **Cell Phones**
  - Buy **OPENED 4 band GSM** phone for global coverage
  - For N/S/C Americas 2 band OK
  - Smart phones useful
  - Use **host country SIM cards** for local calls
  - **Skype** good overseas
- **Wifi Internet**
  - Available everywhere
  - Need external antenna
  - **Most now secured**
- **Options-** See Dave Skolnick presentations, SPaws website/ Electronics



# 2 Rechargeable Batteries

- **Problems:**
  - Eveready/Duracel/Rayovac/etc alkalines leak, ruin eqpt
  - Old NiMH & NiCad have short charge life & memory issues
- **Modern NiMH** - 2+ year storage life at near full charge, ~1500 charges
- Best are **Sanyo Eneloop**- 2000 mAh AA, 750 mAh AAA
- Best **smart chargers:**
  - Good Sony BCG-34HRE, \$30
  - Best** La Crosse Tech BC-1000, \$40



LA CROSSE  
TECHNOLOGY



# 2 Inverters



- **Large marine units**  
expensive & inefficient with small loads
- **Small loads-** use 4-500 watt continuous units, more efficient with computers, small elec, most elec tools
- **Large loads-**
  - Infrequent- larger inverter for microwave or vacuum
  - Long duration use Honda gen
- **Harbor Freight-**
  - 400/800 watt w/ USB port ~\$25
  - 2000w ~\$150.
- **Pure sine wave** better but more expensive

# 2 Transformers



**Ebay 3000w \$115 US**

- **Problem-** how to convert overseas 240v to US 120v
- Buy 240v to 120v **transformer**, use local shore power
- **Available-** ebay or any overseas big city
- **Cost-** \$40 up depending on watts

# 2 Corrosion Block or X

- **Problem-** salt spray corrodes electronics
- **Prevents corrosion** in electronics, especially **circuit boards**
- Like **conformal coating**
- **Uses-** HF/VHF radios, inverters, TVs, etc
- **Plastic** hand sprayer better than metal can spray



# 11 Security Basics

- **Big problem** in 3<sup>rd</sup> world, Carib, C & S America
- **Targets** – US \$\$, 10-15HP outboard motor, cameras, computers, cell phones, jewelry
- **Defense in depth-** multiple options below
- **Avoid** problem areas
- **Anchor** in known safe anchorages w/ other boats
- **Lock** yourself in at night if threatened
- **ALWAYS lock up** boat when away
- **Boardings** mostly when owners away or at night
- **Ashore plans-** don't use VHF to make plans
- **Boat name-** don't put in sight on dinghy

# 11 Boat Defense

- **Hatch boards-** ½”Lexan
- **Hatch bars-** 1” SS
- **Locks-** HV eqpt on deck, strong SS Abus combo or round locks
- **Signage-** alarm/shock
- **Alarms-** motion in cockpit
- **UW Floating lines-** 200’ of ¼” polypro lines trailed aft while underway
- **Siren/ strobe** – for onboard emergencies, see next slide



**Flare gun-** be careful, dangerous in/on boat



# 11 Emergency Aboard

- **Loud siren** and bright **strobe**
- **Activate** for any emergency aboard
- **Scare** intruder off and alert nearby boats
- **Switch** above owners' bunk, 12v wired, multiple switches?
- **Amseco** - multiple models, ~\$60



**Best emergency/scare eqpt!**

# 11 Personal Defense

- **Guns** – too many problems overseas
- **Aboard** after dark
- **Ashore** travel in groups, avoid dark areas
- **Jewels/cash/CCards/cameras** minimize carried ashore
- **Pepper** & bear sprays
- **Tasers** & handcuffs
- **Tactical flash lite** stun gun, 48k volts, 250 lumen, ~\$60
- **Green laser**- powerful, ¼ nm temporarily blinding ~\$50-\$100



# 11 Dinghy Defense

- **Night-** always raise dinghy, lock to boat?
- **High davits-** min 6' off water
- **Chain** better than wire for lockup, 2 cuts
- **Boat name-** never print in sight on dinghy
- **Lock/wire** motor and gas tank to dinghy
- **Ashore-** lock dinghy to dock to if theft issue



# 8 Refrigeration Basics

- **Older cold plate** systems- very heavy, compressor leaks, lots maintenance, short high amp draw, wide box temp swings, **expensive**
- **Danfoss based evaporator plate** – automatic, spread amps over 24 hrs, variable speed, tighter box temp delta, minimum maintenance for 20+ years, relatively inexpensive
- **Box Insulation** – extruded polystyrene (blue/pink board) best at R6.5, freezer R30/5”, refig R20/3”
- **Door gasketing**- ribbed EPDM rubber
- **Read** Nigel Calder’s 3<sup>rd</sup> edition M&E Manual
- **Spares**- tools, soldering eqpt, gages and R134a

# 8 Refrig System

- Lots of options
- **Side load refrig**, separate **top open freezer** most convenient & efficient
- **Frigoboat w/ keel cooler**- best, most efficient system, Danfoss BD compressor, flat bent evap plate
- **Keel cooler**- saves ~20% over SW pump, ~40% over air heat exchange
- **SPaws 1**- two BD 50 systems, 11cf refrig & 3 cf frzr, total ~75 ahrs/day
- Each system ~\$2K



# Refrigeration Boxes



1/2" marine ply out & expanded PVC in



CSY 1/2" ply in, solid wood out freezer boxes

# 12 Miscellaneous

- Exterior raw water filter
- Winch Rite - electric powers all winches
- Battery powered tools- 20v lithium B&D
- Bilge alarm
- Refrig temp gage
- Refrig digital thermostat
- Wireless presentation mouse
- Solar garden deck lights
- Digital tachometer
- Electrolyte/coolant refractometer
- Laser temp meter
- Wireless windlass remote
- Hand held digital sonar
- Things I would not buy

More info:

SSCA Cruisers' Workshop  
[SVSoggypaws.com/Workshop](http://SVSoggypaws.com/Workshop)

# Exterior Raw Water Filter



- removable screen
- no grass/barnacles inside
- no basket strainer needed
- not for race boats



# WinchRite



- Purpose built to power sailboat winches
- **Best use** to raise heavy cat mainsail
- **Features-** reversible, 2 speed, water proof portable, 6.5 lbs
- **Battery-** Lithium ion rechargeable, long life
- Powered single winch \$2000!
- ~\$650 w/ SSCA discount

# Battery Powered Tools



- **Li Ion Battery-** 20v, powerful, rechargeable
- **Multiple tools** run off one motor handle and battery
- **No cords** to find and plug in
- All plastic cases
- Relatively inexpensive
- ~\$60 for drill, \$30 tools
- Many other options

# Bilge Alarm



- **Water heater** leak alarm
- Very **loud alarm siren**
- Plastic case
- Wired 18" long **sensor**
- Stick mount to bulkhead
- **Power-** button battery
- Hardware stores,  
Walmart ~\$10

# Refrig Temperature Gage



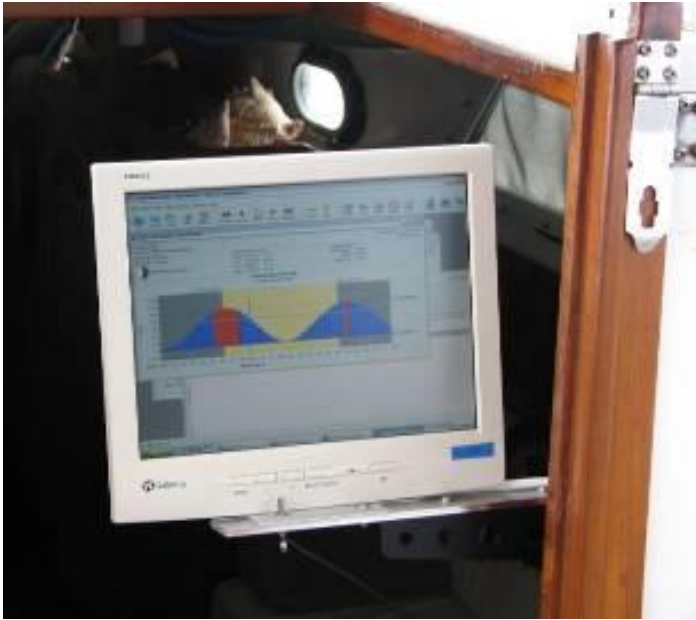
- **Wireless** temp display
- **Two sensors-** refrig & freezer temps
- Also, car engine rooms, indoor/outdoor, etc
- **Power-** rechargeable batteries
- AccuRite Mod 00782 Wireless Weather Thermometer
- Internet/Walmart for ~\$20

# Refrig Digital Thermostat & Temperature Controller



- **Same form factor & 12v wiring** as expensive marine version
- **Sensor** temp reading in large red numerals,
- **Same multiple** settings and set points
- Shenzhen Willhi Electronics, mod WH7016C (centigrade)
- **Works well** w/ Danfoss BD 35/50/80 compressors
- Internet for ~\$20

# Wireless Presentation Mouse



- **Problem-** how to view nav programs on computer at navigation station from helm
- **Display-** wired or wireless external computer screen
- **Control-** wireless presentation mouse controls computer
- New risky option- tablet with touch screen at helm
- **Keyspan** by Tripp Lite PR-US2 Presentation Remote
- About \$50 on internet

# Solar Garden Lights

- Use as deck/boarding auto night lights
- **Solar powered** by one AA NiCad batt
- Half mile range, some **10 hr life**
- **PVC T** snaps on w/ bottom cut out
- **NOT LEGAL** anchor light
- About \$3 ea from Home Depot, etc



# Digital Tachometer

- Use to **check engine tachometer**, outboard RPM, etc
- Mount silver tape on rotating equipment
- AA battery powered
- Neiko 20713A Digital Laser Tachometer
- Nice storage case
- About \$20 on internet



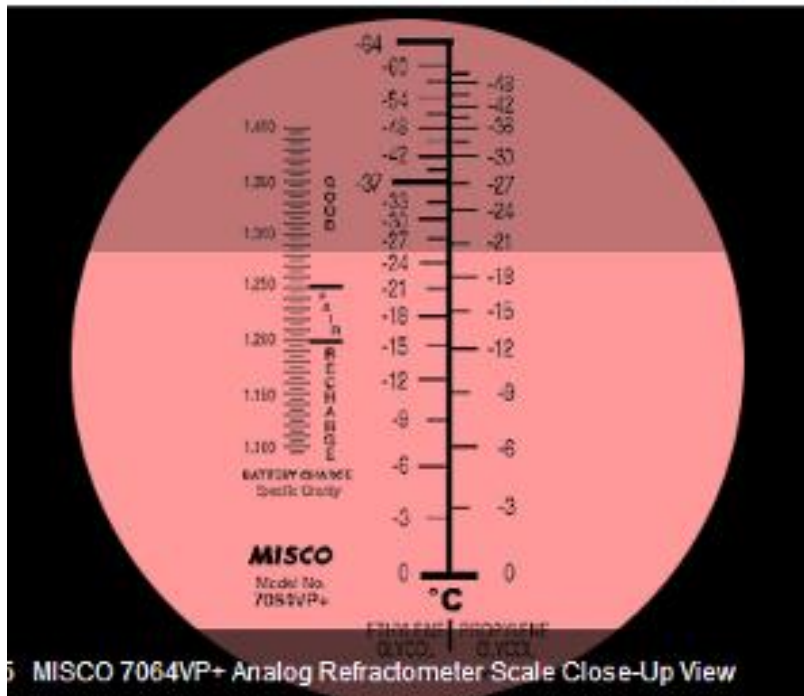


# Electrolyte/Coolant Refractometer



Image 2 / 5 MISCO 7064VP+ Traditional Analog Refractometer Celsius

- **Best** LLA battery specific gravity measure tool
- Measures battery specific gravity, engine coolant mix
- **Very precise** measure, .001 reading accuracy
- **One drop** from each batt cell
- Misco.com and others
- About \$160 on internet
- Other similar less expensive units?



5 MISCO 7064VP+ Analog Refractometer Scale Close-Up View

# Laser Temperature Meter



- **Use for** troubleshooting engine cylinders, transmission, electrical, AC & refrigeration problems
- Reads water surface temperature
- Point and shoot to read
- About \$40, multiple sources on internet, Harbor Freight

# 12 v Wireless Winch Remote



- **Wireless** control for any 12v windlass w/ solenoid
- **On/off & up/down**
- About 60' range
- Transmitter module to be **wired ONLY** to control side of solenoid
- Some (red unit) **rain proof**
- \$10-\$20 on ebay, spare?
- Marine version ~\$200, West Lewmar \$290
- **Google** 'Wireless Winch Remote Control Handset, 7.5-30VDC Rainproof Remote for Winches'

# Handheld Digital Sonar



- **Dinghy** for depth check
- Depth, temp, fish ID, backlit LCD display
- Robust high impact case
- 1000 watt power, 200' depth capability
- Uses four AA batteries
- Floats and can be used underwater to 200'
- Norcross Hawkeye HPX22
- Great company in Orlando
- About \$80, internet or West

# I Would Not Buy

- **Wind Generator**- too expensive for too few amps
- **Chart Plotter** - expensive, inaccurate overseas, computer navigation better option
- **Plow/Claw Anchors** - better MG Scoops available
- **Holding Plate Refrig Systems** - modern evaporator plate systems much better, less expensive
- **Hard Dingy** – RIB dryer & faster, better for divers
- **Diesel Generator** – heavy, expensive, repair problem
- **Marine Air Conditioning** – not needed, costly
- **Icom 802** – expensive, unreliable, early clipping issue
- **Spectra Watermaker** - expensive, proprietary parts

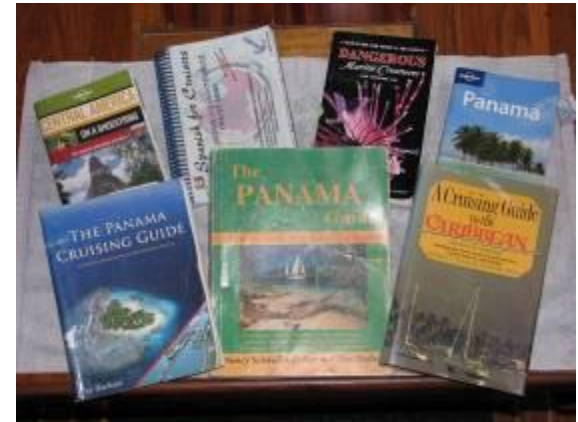


# The 2017 SSCA Gam Presentation Ended Here

But more to follow... (keep scrolling)

# 3 Navigation Basics (Sherry)

- **Use digitals** not charts & guide books
- **PRIMARY nav tool-** computer, not chart plotter or tablet
- **Backups-** multiple computers & GPS using digital charts
- **Android** better than Apple products
- **Overseas-** digital charts OK for planning & backup, not close in nav
- **Guide download** options:
  - guide books, SSCA Bulletins, websites/blogs, cruiser digital guides, Lonely Planets
  - Pacific/ SE Asia- Sherry's Compendiums from our website



**The Marquesas Compendium**  
A Compilation of Guidebook References and Cruising Reports



The Bay of Virginia, August 2010.  
Photo by Dave McCampbell of Soggy Paws

**IMPORTANT: USE ALL INFORMATION IN THIS DOCUMENT AT YOUR OWN RISK!!**

Rev F.1 - September 10, 2013

We welcome updates to this guide!  
(especially for places we have no cruiser information on)  
Email Soggy Paws at sherry-at-svoggy-paws-dot-com.  
You can also contact us on Sailmail at WDD1152  
The current home of the official copy of this document is  
<http://svoggy-paws.com/files/pacific>  
Check for an updated copy there.

# Google Earth vs Digital Charts

- **Full GPS accuracy worldwide**
- Exact google earth photo shows depth, shore lines, piers, etc
- Useable on computers & some chart plotters
- **Best** for close in navigation
- **Free, make your own** or trade w/ other cruisers
- US NOAA charts- free and accurate, US only
- Overseas- **unknown accuracy**
- Useable on computers and chart plotters
- **Best** for planning, nav aids, depth reference
- **Very expensive**



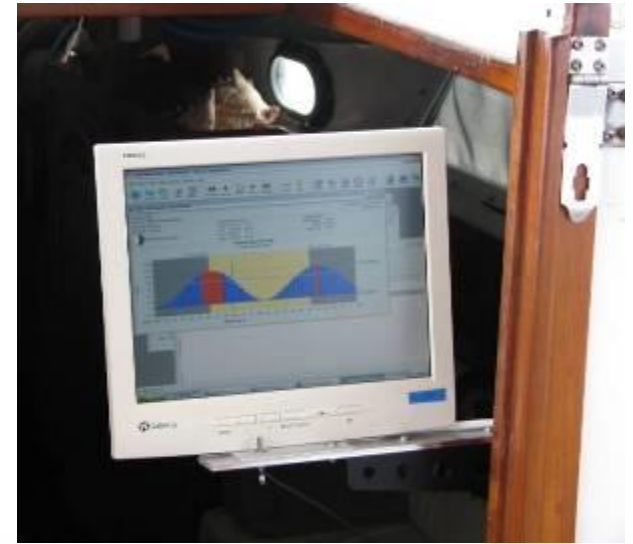
# 3 Navigation Systems

- **Two** independent systems
  - Computer primary
  - Multiple GPS backups
- **Nav station**-simple stripped computer
  - Route planning, weather
  - Log keeping
  - GoogleEarth close in navigation
  - Transfer track to helm
- **Helm**-GPS/Chartplotter
  - Follow track line at sea
  - Minimal amp draw
  - Portable for abandon ship & anti theft



# 3 Computer Navigation

- **Open CPN- FREE**, cruiser standard, useable computer, tablet, cell phone
- **Vector/Raster charts** – lots of global options, US NOAA **FREE**
- **Google Earth charts** – **FREE** make your own or use others', best 3<sup>rd</sup> world accuracy, **FREE** GE2CAP
- **Display options-** navigation station computer w/ cockpit monitor & wireless presentation mouse, tablet in cockpit in clear plastic
- **Planning programs-** Open CPN & others available using weather and polars
- See our website/Computers, Sherry's SSCA presentation



# 4 Communications Basics

- **Options** – HF, VHF, satellite, cell phone
- **Coastal US** VHF & cell adequate
- All useful for overseas cruising
- **HF vs Sat phone-** HF more useful on daily basis than Sat- daily nets, news, weather, info ahead, friends, warnings, email, etc
- **Ham** license very useful, but not essential
- **Sat** most useful for emergencies
- See [SVSoggypaws.com/files/HF](http://SVSoggypaws.com/files/HF)

# 4 HF Radios

Kenwood  
TS-50



Icom 706 Mk 2G

Icom 718



- **Radios** – small inexpensive digital Ham unit, 100-150 watts output
- **Great options:**
  - Kenwood TS50 \$500 100w used
  - Icom 706 MK2G \$600 100w used
  - Icom 718 \$700 100w new
  - Yaesu FT-100D/857D \$600u
  - Kenwood 480 HX 200w! \$1000n
  - Icom 802 150w \$2000!
- **Coupler/tuner** – best SGC-230, if not Icom radio ~\$.5K

# 4 HF Radios



Yaesu FT 100D



Kenwood 480HX

- **Antenna** – simple insulated long wire or backstay, cats normally use vertical whip
- **Ground plane** – best sea water via Dynaplate & thru hulls, see Gordon West article
- **Modem** – SCS PTC-3/4 Pactor for email & weather ~\$1K
- Sat phone option \$\$
- **See** Dave S SSU, Saildocs, our website/files

# 4 VHF Radio



- Need **three units** minimum
- **Helm**- one 25w so can drive and talk in harbors
- **Nav station**- one 25w below
- **Hheld**- minimum one 5w, second useful for life raft
- **Two antennas**- one mast top 25 nm, one on arch 15 nm
- **Gam** 6 db best rated antenna
- Weax alert and DSC useful
- **Command** mic option
- Lots good options for ~\$100-150



# VHF Hand Helds

- **Two** waterproof 5 watt
- Take them with you in dinghy/life raft
- **Not good cockpit comms** option
- Maximum battery life, scanning, floating
- **Power**- LiIon batts w/ charger, not AA/AAA batts
- Many options for ~\$100-150



# 4 Satellite Phones

- Iridium phone, Go hotspot box, both global coverage
- More reliable, easier, faster? digital comms than HF w/ Pactor
- Use for weather, email & short emergency calls
- Plans ~\$1.50 per minute, Go similar to cell plans
- New ~\$1.5K, used ~\$.6K, Go ~\$800 new
- SPaws refurbished Iridium 9505A
- Inmarsat and Globalstar options not global coverage





# 5 Self Steering Basics

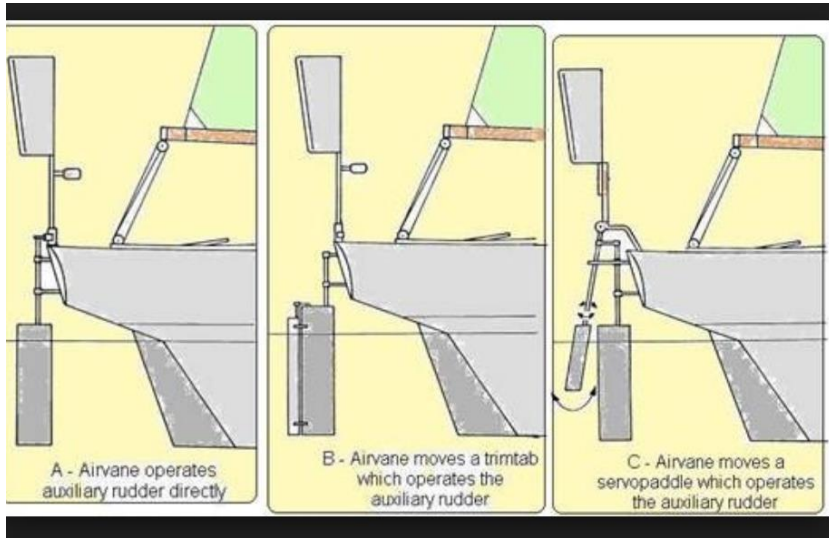
- VERY important **critical equipment**
- **Auto Pilot**-- steers compass course, can follow wind, can use lots of amps, mechanical & electronic boxes
- **Wind Vane** follows wind, if no wind does doesn't work, uses no amps, no electronics
- **Boat balance** important for both
- Need two bullet proof independent systems
- Tiller pilot w/ wind vane good option
- Carry all possible spares

# 5 Autopilot

- **CPT** – strong, basic wheel autopilot, now upgraded
- **Very reliable, low amp draw, cruiser repairable**
- No NMEA interface
- Below decks autopilots very expensive, can use lots of amps, can't see problems
- **CPT user repairable**, repair tips on SPaws website
- **New \$2000**, used way less!



# 5 Wind Vane



- Many choices
- **Servo pendulum** is strongest
- **Auxiliary rudder** acts as emergency rudder
- **Monitor-**
  - Strong, quality, servo pendulum
  - After 1999 all 316 SS & few changes
  - New ~\$4-5000, used ~\$2000

- **Auxiliary rudder** - Autohelm, Hydrovane, Sailomat, Windpilot
- **Servo pendulum** - Aries, Cape Horn, Fleming, Monitor, Sailomat, Windpilot
- **Trim tab** - Auto Steer, Sayes Rig

# 6 Rig/Sails Basics

- **Rig**- best modern options include cutter, sloop, ketch
- **Headsails** - both roller furling, quick reefing
- **Staysail**- almost always up, can quickly be storm jib
- **Cloth** – US made Dacron from North, Challenge, or Contender
- Best **quality** gives much longer life
- **Features** – cross cut Dacron, chafe protection, triple stitching, replaceable corner rings, best sun protection
- **Main** – full batten, loose foot, 3 deep reefs  
~25/50/75%, no trysail needed
- **Lite air** 5-12 kts– Code 0 & asymmetrical spinnaker
- No poles required for cats running downwind!
- **Specs**- see SPaws website Workshop/Rig Sails

# 6 Sail Rig

- **Cutter-** main & 2 headsails, best cruising rig
- **Flexible-** good up or down wind
- **Staysail-** roller reef for quick **storm jib**
- **SSail stay-** protects against rig failure
- **Better** than ketch up and down wind
- **Two headsails** down wind possible
- No extra rigging or windage aloft
- No **arch** obstruction

- Cutter rig preferred
- Two headsails
- Both on furlers
- No clubfoot booms
- Profurl, -Harken, Schafer all good

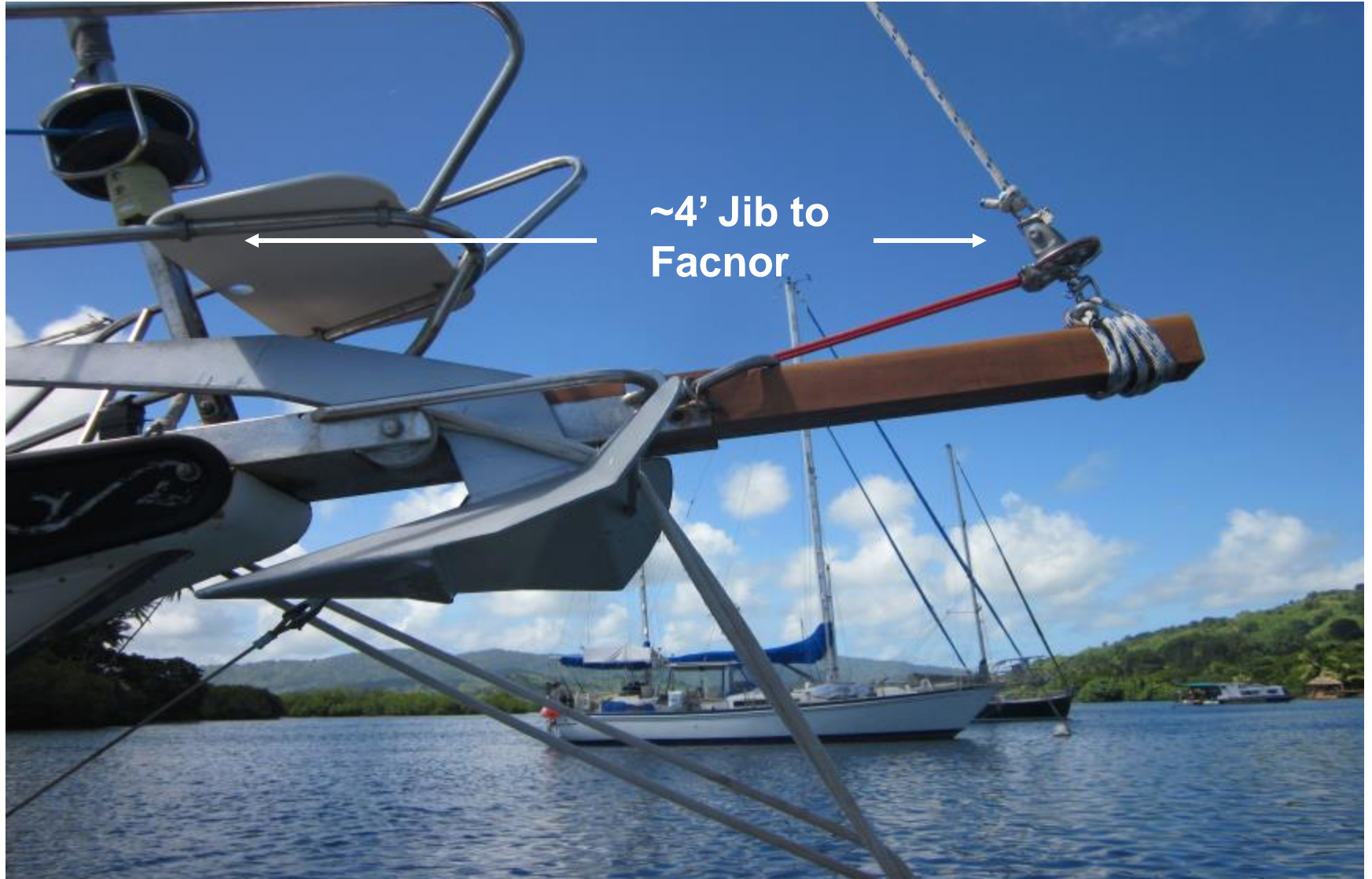


# 6 Code 0

- **Good ~5-12 kts app**
- **On endless furler-**  
can quickly furl
- **Up on furler entire passage**
- **Don't reef, furl at 12 kts**
- **Up, down & beam wind sail**
- Spaws 1- 3.5 oz  
Dacron, ~900 sf
- Spaws 2- ~700 sf



# Monohull Code 0 Prodder





# Catamaran Code 0 Prodder

**Sked 40 alum pipe**  
**Sked 40 PVC pipe over**  
**3 U bolts**  
**Guy to hulls**  
**Anchor roller tray connection**



# Catamaran Spinnaker

Barber  
hauler



# 6 Full Batten Mainsail

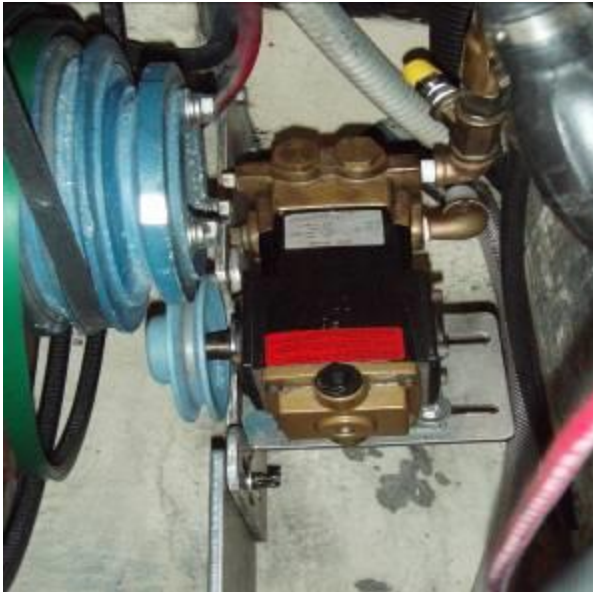


- Sail to mast attachment important, full batten loading
- Many options
- **Battcar System**- external track, Delrin bearing cars, high cost, Spaws 2
- **Tides Strong Track**-UHMW track, low friction sliding cars, ~10 year life  
**Bainbridge** Aquabatten receptacles w/ Awlslip slides, original internal track, Spaws 1

# 9 Fresh Water Basics

- **Daily use-** two crew 5-10 gpd FW, avg = 7 gpd
- **Tankage** goal ~150 gals, ~3 weeks
- **Multiple tanks** better than single tank
- **Rain collection** system- clean, efficient, permanent from top or deck
- **Watermakers** –
  - Buy BIG unit!
  - 40 GPH - DIY for \$3K, kit for \$6K, commercial units for \$10-\$12K, high end \$17K!
  - Don't buy small commercial units (low volume) or proprietary component units (price).
- **Multiple filters-** 3<sup>rd</sup> world- drinking water, house pump, deck fill

# 9 Watermakers



- **DIY unit for ~\$3 K**
  - Produces up to 42 GPH
  - Two 40" membranes
  - Commercial HP car wash Hypro 3 plunger pump
  - Main engine or ~2.5 HP AC motor driven
  - Complete details and parts list SSU or [SVSoggypaws.com/Workshop/Plumbing](http://SVSoggypaws.com/Workshop/Plumbing)
  - See Aug SSCA CW article

**HP pump over  
engine on shaft,  
rotates up and  
down for  
tensioning**

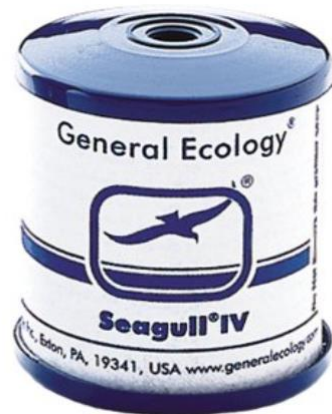


# 9 Fresh Water Collection



- **Sources:**
  - **Decks-** easy if possible, but decks must be CLEAN
  - **Hard top-** smaller surface, must rig opaque hose to fill
  - **Awning collectors-** suffer in high winds, must rig hose
- Install filter under each fill
- Filter on hose if from questionable dock source
- Taste or TDS meter
- Most rain water = distilled water

# 9 Fresh Water Filtration



- **Drinking water-**
  - Use SeaGull IV or equivalent
  - Separate spout
  - Filter life 3-4 years
  - Expensive ~\$700 but worth it
  - On SPaws 32 yrs!
- **Chlorine additive, 1.5 oz/ 50 gals fresh water**



# 10 Deck & Dinghy Basics

- **Utility arch:**
  - Very useful for davits, solar, radar, lights, antennas, etc
- **Swim platform** – MOB safety, swim boarding, at sea retrieval
- **Dinghy:**
  - RIB more comfort, drier, faster than hard dinghy
  - RIB more maintenance than hard
  - RIB best choice for divers
  - See Sep SSCA CW article
- **OB motors:** ~5 HP and ~15 HP, same make/tank, use flexibility, backups

# 10 Utility Arch

- Need utility arch for:
  - dinghy davits
  - solar
  - radar
  - nav/anchor lights
  - outboard davit
  - antennas
  - wind sensor
- Strongly built aluminum or SS
- Double bow design strongest



# 10 Swim Platform



- Use for:
  - boarding from dinghy
  - swim platform
  - work on dinghy
  - MOB boarding
  - At sea retrieval
- 1.5” aluminum pipe & Starboard good combo
- Height above w/l ~20” minimum
- Less than \$500

# 10 Dinghy

- Our choice: AB 10.5' VL 123 lb fglas RIB
  - Flat double floor
  - Expanded forward interior, seat
  - 17" hypalon pontoons, upturned bow
  - Great RIB hull design
- 5 HP will plane w/ one person & groceries
- 15 HP will plane w/ 2-3 divers and full gear
- Stowage:
  - In port- high davits aft
  - Underway- foredeck
- Defender ~\$4300, CW article



Catamaran storage-  
convenient, elevated  
in port and at sea



# 10 Outboard Motors



**Need Two-** backup and different uses

- **15 HP-** diving and long fast trips
- **~5 HP-** 75% time, short trips, planes single person
- **Mfg-** Tohatsu, Nissan, Mercury all same motors <15 HP, use same fuel tank
- Yamaha- Carib/Pacific wide
- **4 cycle** heavier, but more fuel efficient
- **Locks and handles**

# 10 Cockpit Enclosure

- **Dodger frame-** strong 1.5" alum pipe, covers fwd 3' only
- **Top-** removable 1/2" expanded PVC
- Engineered to leave up dodger TC force winds!
- **Sunbrella** extension covers rest of cockpit
- **Side/front enclosures-** Stratoglass Crystal Clear .040", all roll up
- **Covers-** Snap on sunbrella for all Stratoglass pieces





# The End

**Dave & Sherry McCampbell**  
**[SVSoggypaws.com/Presentations](http://SVSoggypaws.com/Presentations)**  
**Sensible Cruising Equipment Recommendations**

FL Keys, Boot Key  
Harbor 2002