

FUJIN Beiker 53

DESIGN BRIEF

Custom designed by Paul Bieker and team to be a lightweight performance cruising catamaran and built entirely in carbon fiber and foam by Gold Coast Yachts in St. Croix, The deck design is intended to be as clean and simple as possible. The deck layout is intended for offshore racing and medium to long distance cruising with an emphasis on weight reduction. This boat is a little different than a typical racer/cruiser. It has a level of interior accommodations and finish that makes it comfortable to cruise with four to six people. However it is light enough to race against stripped out racing boats. The interior is as simple as possible while still providing comfort, visual warmth, with a reasonable amount of stowage for cruising. Designed for racing and cruising for an experienced team from Seattle, the vessel will be based in the Caribbean.



SPECIFICATIONS

Length Overall (hull)	53.64 ft.
Length Design Waterline	52.99 ft.
Beam on Deck	26.25 ft.
Draft	9.84 ft. max, 1.31 ft. min.
Bridgedeck Clearance (to flat of deck)	2.87 ft. upright / 2.3 ft. heeled
Displacement (light ship)	13,225 lb.
Mast Height above water	75.5 ft.
Mast Length	67.59 ft.
Boom Length	24.28 ft.
Solent area	495.14 sq. ft.
Main area	1,151.74 sq. ft.
Spinnaker area	2,120 sq. ft. (approx)
Code 0 area	1,108.68 sq. ft.
Maximum Righting Moment	45,194.76 lb.
Diesel Fuel (2 tanks)	39.63 gal. per side; Total: 79.26 gal.
Potable Water (2 tanks)	66.04 gal. per side; Total: 132.08 gal.
Sewage (2 tanks)	21.13 gal. per side; Total: 42.26 gal.
Battery Capacity (Li-Fe)	(2) 26 Ah 12V engine

FEATURES

HULLS AND DECKS

Construction

Foremax T-700 C-12 Carbon unidirectional cloth with microweb film between laminates and some

woven cloth with M-80 Corecell and some M-100, M130 & M-200 higher densities all using Proset infusion epoxy using 114 resin and 212 slow and 213 extra slow hardeners. The infusion process is used for most all carbon cloth wet out. Some

foam cores are wet bagged into place using Proset 135 laminating resin and 229 slow and 237 extra slow hardeners. Most panel joint taping is wet bagged with biaxial carbon cloth. All structures and taping are post cured prior to final fairing and painting.

Exterior Finish

Dupont MS 600 polyurethane paint over Dupont Corlar epoxy primer--racing yacht finish. Interior finish is to be faired and painted with a semi-gloss Dupont MS 600 paint system. Select areas will be finished with a clear coat over the carbon.

Paint and Graphics

- 787474 Shell White hulls and super structure
- 786933EN Silver metallic effect hull topsides with Clear Coat
- 787474 Shell White tinted light grey – Nonskid using Fiberglass Hawaii particles.
- Two coats Nautix A4T.Speed Antifouling bottom paint – Color White
- Custom hull graphics, if any, TBD by Purchaser

DECK FITTINGS AND EQUIPMENT

Cleats

- 4 - 10" Attwood Neat Cleat, 316 ss deck cleats - aft deck cockpit corners, foredeck near the bow.
- 2 - Closed chocks laminated into the hull side panels aft with G10 core inserts and Wichard folding titanium padeyes outboard amidships for spring lines.

Lifelines

- Stanchions are C-Spar fiberglass tubes that mount on pultruded rods that are supported with gussets bonded in the hull.
- Upper and intermediate 10mm Spectra lifelines from bows to companionways P & S.
- 2 – SS handrails with composite stanchions at side deck steps P & S.
- 4 – Safety harness tether titanium padeyes installed in the cockpit near the companionways and steering stations.
- 2 - Titanium padeyes installed in the deck for jack lines port and starboard on foredeck.
- 2 – Titanium padeyes under wet deck nacelle for inverted safety jack lines.

Nets

- Bow nets are Sunrise Yacht Products Dyneema 1" Open Net, urethane coated 4 strand 3mm braid, with 7mm Dyneema braided border multi-hull netting. The bow netting is attached to the aft face of the forward beam, inboard hull and longeron with Dyneema line onto notched carbon tubes laminated to the structures with 5/16" aluminum rods.
- Triangular bow sprit nets are of the same design and are attached to the forward face of the forward beam and longeron.
- 2 - Lewmar Size Ocean Hatch 30
- 2 - Fuel tank Bomar access hatches

Windows/Doors/Hatches

- 6 - Custom Lewmar flush opening portlights in the ob. hull sides (staterooms) and salon
- 2 - Goyot 44C escape hatches in hulls inboard at companionways
- 2 - Lewmar size 44 hatches over double berths
- 2 - Lewmar size 70 hatches over aft end of forepeaks
- 2 - Lewmar size 10 hatches over shower space port and head stbd.
- 2 - Lewmar size 40 portlights in inboard hull sides of forepeaks
- 2 - Lewmar size 60 portlights in aft bulkhead of berths
- 2- GCY custom round inspection hatches for daggerboard trunk access
- 2 - GCY custom companionway carbon/foam sliding hatches with Delrin guides for interior hull access amidships
- 2 – GCY Composite engine deck hatches w/ gutter and overboard drains, hinged and dogged
- 2 – GCY custom pod storage access hatches hinged and dogged
- 2 – GCY custom wing deck hatches, hinged and dogged
- 4 – Fixed 10mm polycarbonate windows in forward side of salon
- 4 - Sash style drop polycarbonate windows in sides of salon
- 2 – GCY custom sliding salon entry doors with Delrin guides with lock and stops
- 2 - Fixed 6mm polycarbonate windows in sliding doors
- 2 - Fixed 6mm polycarbonate windows in salon aft bulkhead
- 5 - GCY custom interior cabin doors, 3 port, 2 stbd

CONTROLS

Spinnaker/Code 0 System; Multiple sheeting points are along the forward end of the aft beam. The sheets will cross sheet to deflector blocks mounted just forward of the aft beam above the inboard hull sides. The sheets then deflect up to the Harken power winches mounted aft of each companionway. There is one sheeting point inboard and one sheeting point outboard of the deflectors.

Board up/down; The board up and down lines are led from the upper end of the trunk to the Spinnaker/Code 0 winches port and stbd. Each of these lines has a Harken footblock for deflection and a Spinlock clutch.

Jib Lead System; A 2:1 self-tacking jib sheet with the 2:1 purchase between the car and the clew. The sheet is led forward to near the forestay and then aft to the jib sheet winch. A traveler line to control the sheeting angle is led to the port halyard winch.

Mainsheet; A 2:1 purchase with one end dead ended to a Harken hydraulic cylinder on the boom and the other end led to an additional 2:1 purchase inside of the boom and then led to the powered mainsheet winch. The cylinder is actuated by a Harken Custom hydraulic power unit. This power unit is in turn controlled by foot switches for sheeting on and off at each of the helm stations and at the winch pods. A mainsheet hydraulic dump valve is also activated by switches at both helm stations and at the winch pods. Additional switches at the central sheeting area are used to control jib Cunningham, Code 0 tack, main Cunningham and outhaul.

Halyards, reef lines, spinnaker tack line, jib sheet, jib traveler, and main sheet are led aft to the winch pods aft of the central house. These lines run in drained fabric troughs on the port and stbd. side of the central house below countertop level. Spinlock organizers and clutches are mounted between the aft face of the central house and the winches. Line bins are located below cutouts in the aft side of the winch pods.

Main halyard has a Spinlock XCS Jammer inside the mast with a trip line led aft to a cam cleat.

Main Cunningham is adjusted by a Harken hydraulic cylinder in the mast.

Mast rotation lines with a 4:1 purchase are led to rotating Harken cam cleats on the stbd side of the house at the steps

Misc.; Spinlock and Ronstan constrictor stoppers, Spinlock deck organizers and Harken and Equiplite blocks as required.

WINCHES

- 2 - Harken 46.2STP – Performa 2-speed manual traveler winches at track ends P & S
- 1 - Harken Performa 50.2 STP – 2-speed manual; self-tacking headsail sheet, port winch pod, inboard.
- 1 - Harken Performa 50.2 STEP – 2-speed electric; halyards, jib traveler, tack lines and furler, port winch pod, outboard.
- 1 - Harken Performa 50.2 STEP – 2-speed electric; main sheet and main reef lines, stbd winch pod, outboard.
- 2 - Harken Performa 60.3 STEP – 3-speed electric; Spin and Code 0 sheets, daggerboard controls, cabin tops fwd. of helm stations.

STEERING

- The steering system is a custom designed Jefa pushrod system constructed from thin walled aluminum tubing and draglinks. Detail design drawings are provided for all of the steering components.
- Rudders are 2 piece T-foil high aspect carbon rudders by C-Tech which are inserted into molded composite rudder cassette boxes which attach to the inboard transoms by titanium pintles. The rudders have fixed horizontal elevators but can be raised or lowered.
- A draglink with a tiller arm is connected to a Jefa linear direct drive with a B & G autopilot and two 900mm (35.43') carbon composite steering wheels.

DAGGERBOARDS

The C shape asymmetrical composite carbon daggerboards are by GW Composites. The daggerboard trunks have machined Delrin plastic bearings on the unloaded side of each board and large Acetal rollers on ss shafts with Orkot bearings on the loaded side, inboard. A line actuated board up/down system (lines led aft to the spinnaker sheet winches) is installed at each board trunk. The trunks have large custom circular hatches for access with screw knobs onto threaded studs.

LORIMA SPARS & RIGGING

- The rig is provided by the owner and installed by the yard. The rig consists of a

single spreader pre-preg carbon wing mast, boom, headstay beam and longeron beam built by Lorima. The mast is a tapered tube of approximately 450 x 225 mm section with a spherical SS ball foot bearing. Swept back spreaders are a tapered aero-section. A Harken mast track and ball bearing Battcar system is for the mainsail operation.

- The standing rigging is Southern Spars C-6 carbon fiber on the cap shrouds, forestay and diamond stays. The rig is tensioned by Spectra lashing loops on the shrouds and forestay.
- The Code 0 and A-sails are furled on a Karver continuous line furlers and the Solent is soft-hanked. The Solent and Code 0 have Karver halyard locks. The A-sails have a conventional Dyneema halyard and the Dyneema main halyard is a 2:1 purchase.

CHAINPLATES

Chain-plates are of integral carbon construction with a carbon tube and solid pin. They are designed so that they can be constructed on the bench and secondary bonded into the structure.

SAILS

The sails are provided by the owner. They are North 3DI mainsail with 2 reef points, a Solent jib, a Code 0, an asymmetrical spinnaker and a Dacron storm jib

GROUND MOORING AND TACKLE

- 4 – 50' - 3/4" nylon braided dock lines w/ eye splice
- 2 – 12" x 34" Taylor Bib B Fenders w/covers
- 2 - 36" x 24" Kinder Flat Fenders
- 1 - Low-profile Lewmar V5 windlass mounted on the wing deck near centerline above the chain locker with a bow roller the longeron just aft of the forward beam. A nylon bridle with SS chain hook is provided to help the yacht ride at anchor.
- 1 - Main anchor is a stainless steel Spade S120 55 lb with 100' of 3/8" stainless chain spliced to 200' of 5/8" 8 plait braided nylon.
- 1 - Secondary (racing) anchor is to be a 32 lb Fortress with 30' of 3/8" stainless chain and 200' of 5/8" 8 plait braided nylon.

ELECTRICAL

- All wiring is done in accordance with good marine practice and ABYC standards.
- C-Zone distributed power, de-centralized NEMA 2000 electrical system.
- 1 – Victron 2000 watt 115 VAC inverter/battery charger 24 vdc
- 1 – Victron Digital controller and 2 – Victron DC/DC converters, 24v/12v
- 6 - 115 VAC duplex outlets in the galley, navigation station, primary hull cabins and heads.
- 1 – 115 VAC, 30 amp shore connection inlet
- 2 - Paneltronics AC and DC electrical panels installed in nav station
- 5 – Power system controllers are installed throughout the vessel to control power zones or items remotely
- 1 – Guest 30 amp galvanic isolator
- 3 - DC outlets are at the nav station and the steering stations.
- 5 - Standard USB charging outlets are in the central salon and each stateroom.
- 4 - Solbian SP112QWS solar panels are installed on the main cabin roof aft for charging the house batteries located under settee.
- 4 - Solbian SP50-Q small solar panels on the main cabin roof forward for charging the starting batteries.
- 8 – Genasun MPPT Solar Boost Controllers
- 6 - Lunasea (red/white) 5.5" brushed nickel surface mount LED overhead lights are in the salon.
- 4 - Lunasea (red/white) 5.5" brushed nickel surface mount LED overhead lights are in each stateroom P & S.
- 2 – Lunasea directional chart/reading lights are in each stateroom P & S
- 1 - Lunasea directional chart/reading light at the stbd office desk
- 2 - Lunasea (red/white) 5.5" brushed nickel surface mount LED overhead lights in each forepeak cabin P & S.
- 2 - Lunasea LED (white) overhead lights in the machinery spaces
- 8 - LED (white) courtesy lights are mounted at the companionways, forward steps, aft seats and transoms
- 2 - LED lights in boom which light the cockpit table
- A Lopolight LED navigation light package is installed. This includes a stern light mounted on a pole near the stbd hull transom and

running lights mounted forward on lifeline stanchions. A LED masthead/anchor/strobe light is fitted at the mast head, and a combination steaming light and foredeck light is mounted on the front of the mast.

- The stbd stern light pole also has the B & G Radome on top.
- The port aft pole has the Sailor 150 Inmarsat dome for sat phone on top..
- A Vitrifrigo DW70BTX 24 vdc drawer style refrigerator and a DW70RFX 24 vdc drawer style freezer are on the stbd side of the galley. The condensers/compressors are located in the stbd winch pod compartment.
- Clarion CMD -7 stereo with 6 Bose Speakers.
- B & G Triton Electronic package with H5000 Hercules Base Pack
- 1 - B & G V50 VHF radio with a H50 wireless handset w/ mast head antenna
- 1 - B & G V90 VHF AIS RX System
- 3 - B & G Zeus2 Network touch 8 screens
- 4 - B&G Multifunction H5000 displays
- 1 - B & G 4G Broadband Radar
- 1 - B & G Wind wand and sensor
- 1 - B & G Rotary Rudder RRF-ACP for wing mast trimming
- 2 - Ritchie SS102 4" Flush mount high speed Compass at each helm station
- 3 - Dynaplate ground plates
- 2 - House bank batteries, Genasun 180AH 24 v Li-Ion
- 2 - Genasun 1Bank Lithium Control Packs
- 4 - K2 19 AH 12v Li-Ion High Energy batteries
- 2 - Engine start batteries, 26 AH 12v Braille iM34X Li-Ion batteries.
- Engine alternator cross charge system w/ Balmar MC-624 Programmable Regulators
- 1 - Isotherm hot water heater, 4.2 gal, 115 VAC

ACCOMMODATIONS

In general, cabinets have bamboo veneered faces with mahogany wood trim edges. Interior doors have a bamboo veneer face in bunk staterooms. Cabin countertops, shelves, tables and conduits have wood fiddles. All lockers are vented and fitted with SouthCo Omni door, cabinet and drawer latches. All bulkheads, longitudinal frames and stringers are fitted with limber holes to insure proper drainage. All cabin soles have Gore-Tex vents for pressure equalization in the bilge compartments.

Salon

A built in Vitrifrigo refrigerator and freezer is installed in the starboard galley counter. The stove is a Dickinson Caribbean 2 burner propane stove with oven fitted to port with the Scandvik 13" x 13" galley sink. The counter tops in the galley area are clear-coated Kevlar with carbon fiddles and trim. The galley cabinet and the locker fronts are wood veneered with edges protected in wood trim. Drawers and lockers are fitted in both cabinets as shown in the drawings except; one less drawer fwd port with top drawer 6" deep for silverware and add garbage in one middle door with 4" dump hole in counter. Faces above counters are veneered w/two openings to stbd, and two to port. A navigation area is provided at the forward end of the starboard counter-top, with the electrical panel and electronics mounted adjacent and a console mounted across the counter separating the nav area from the galley counter. The counters hang over the pod such that there is foot clearance.

The salon area is raised relative to the rest of the cabin in order to provide better visibility from the seated position. Storage and mechanical space is provided under the salon seats for batteries and hydraulic pumps. Additional stowage is under the settee floor thru a GCY custom flanged hatch 625mm x 750mm. The wood veneered composite setee table can be lowered to turn the salon into an additional queen-sized berth with the addition of a light weight filler panel and cushions. Upholstered 4" cushions are provided with zipper and/or Velcro closures and mildew-proof light fabric backing. The settee cushions are shaped and tailored for maximum sitting comfort.

A two-part light-weight carbon composite sliding door is fitted on the forward side of the aft salon bulkhead, having fixed 6mm polycarbonate windows. Custom rollers are fitted to the track system for easy motion. Removable stops are provided to prevent each door from moving past center line. Tracks are of sufficient depth to prevent nuisance water from entering the cabin when the doors are shut and will drain to the winch pods. Locking latches are installed on the doors. An easy to operate restraint is provided to hold each door in the open position.

There is a 4.7 gal. (17 lbs.) Trident composite propane tank mounted in the port winch pod and is fitted with drains overboard. Mounts for a spare tank are provided in the locker. The propane system is to be installed according to

ABYC standards with pressure gauges and solenoid valve. A CO sensor is mounted in the central salon. Provision is made for a .7 cu ft. 115VAC microwave oven in the galley.

Floors

Salon floor have a trim border of poplar wood with cork flooring tiles between.

Aft compartments

Aft compartments of the hulls aft of the aft beam are separated from the machinery spaces by watertight bulkheads. A drain plug is provided to allow these spaces to be drained into the machinery spaces. Water tight access hatches are provided so that components in these spaces can be accessed.

Port & Stbd head/shower compartments

Painted face on shower cabinets, wood trim on entire top edge. Port side has 3" over hanging counter with single 550mm door hinged outboard. Stbd side has door which includes radius and part of flat face approx 560mm x 550mm. Hinge is aft beyond radius. Fresh water pump & bilge suction w/overboard valve is located inside on shelf in each cabinet. Shower spigot and mixer is mounted on angled wing fairing baffle near main cross beam. Medicine and vital cosmetics shelves/cabinet is in wing fairing. Light weight doors close off these shower compartments from bunk compartments. All surfaces are painted. Painted non-skid sole. 2" gutter port, 4" gutter stbd for sumps (7 liters & 14 liters). Floors are angled aft to drain into gutters.

Master & Guest compartments

Veneer cabinet faces w/ three rounded rectangular openings against hull and trunk. All openings lined with mahogany wood perimeter. Top opening has drop down hinged door with mahogany wood trim along top edge. Triangular bunk stowage bins inboard and conduit box have matching wood veneer and matching edge trim. Solid wood bunk boards match the trim and the veneer. Cushions on water tank tops matches bunk cushions but thinner. Queen sized 5" custom fabric berth cushions P&S. Cork sole with 1-1/2" poplar wood perimeter trim set in from structural radius. Faces of doors in these compartments are veneered.

Starboard aft compartment

Wood veneer and trim on desk. Desk extends to aft bulkhead as a narrow shelf. Shelves above desk are painted with structural wood trim. Closet

is painted. Cork sole on floor with poplar perimeter trim.

Port aft head

Has painted cabinet w/wood trim top edge. Cabinet has access door which includes radius and 560 mm of face. Hinge is fwd, one shelf inside. Additional winch cover/ access box is central with cut-out/ stow at bottom and mirror on remainder of surface. Shelf fwd and aft of box with structural trim edge. Painted door face. Painted non-skid sole. Shelf at bottom of ladder on outboard topside on top of stringer.

Pipe berth compartments

Mesh fabric berth with removable carbon support tube. A lower quality interior finish with some areas painted clear at the owner's discretion. These spaces are used primarily for stowage; however each space has a folding pipe berth and ladder to allow it to be used for sleeping when necessary. The bulkheads are fitted with watertight access covers having tool-less dogs operating from the forepeak side, allowing escape from the forepeak compartment if the vessel is inverted. Suction and vent fittings in the crash bulkheads.

Outside

Bench seats by Sea Furniture for two people are located at each helm station. The seat bottom hinges up to form a leaning bolster. The seat tops over the lockers forward of the aft beam are weather-tight with gutters and have cushions for seat bottoms and backs. A two-part light-weight composite removable cockpit table finished in Kevlar is mounted on carbon tube legs forward of the aft seating area. The table stows in the wet locker below the deck. It is supported by a sub level plate that doubles as multiple cup holders. West Marine 12055471 deck chairs are provided that stow in wet locker.

- Entry to salon has a non-skid lift out plate with an exterior entry mat.
- Line bags at winch console with some drop holes.
- Folding fabric mesh seats with carbon tubes for two persons are behind helm station P&S and hinges against hull side.
- Custom sliding locking companionway hatches are for access to hulls. Companionway steps have a pair of carbon handrails to interior cabins.
- Socket in port stern for awning pole to match Radome pole on stbd.

MISCELLANEOUS

- Buckets, scrub brush, sponges, boat hook, toilet paper holders, fabric winch handle holders
- 2 - Removable carbon triangular dingy davits which socket & pin fasten to the aft beam are supplied with the boat. The davits have a 4:1 purchase with Ronstan Constrictor clutches
- 1 - HighfieldUL-30 RIB dingy to fit Davits
- 1 - Tohatsu 9.8 hp 4 stroke outboard
- Additional epoxy barrier coat to bottom of hulls
- Bow crash box to be supplemented with horizontal 6mm carbon plate at nose

SAFETY

- The vessel is equipped to abide by Cat 1 ISAF safety regulations for multihulls
- 8 - Taylortec Ault Type 1 PFD's w/retroreflective tape
- 2 - Taylortec Child's Type 1 PFD's w/retroreflective tape
- 6 - Red hand-held flares
- 6 - Orange smoke hand-held flares
- 6 - Parachute flares
- 1 - Orion signaling air horn
- 1 - Watertight orange container (flares, flashlights & whistles)
- 2 - Waterproof flashlights
- 3 - Kidde 466204 10lb ABC w/ custom fabric fire extinguisher holders
- 2 - Fire extinguisher ports in machinery space deck hatches
- - 406 CAT-1 Self-launching EPIRB
- 1 - Xintex Carbon monoxide "sniffer" in main house
- 1 - First Aid Kit
- 1 - Brass Signal Bell
- 1 - Ocean Safety ISO Ultralight 8-person life raft w/ Survival Pack in aft end of pod.
- 1 - Lifesling 3 MOB recovery system mounted on aft beam in hard case
- 1 - Switlik Man Overboard Lifebuoy, w/case includes horseshoe inflation device & pylon w/ auto light mounted on port aft inboard hull bulwark.

SEA TRIALS

- Seatrials will be conducted to confirm;
- Correct rpm is achieved for the engines
- Vibration and/or alignment is correct
- Steering is functional and that rudders go to stops
- Yanmar warranty sea-trial including rpm at graduated speeds, backpressure, exhaust gas temperature, oil pressure and cooling water flow.