EDWARD M. OGLEY MARINE SURVEYOR BOX 5038 ST. THOMAS, U.S.V.I. 00801

This is to certify that the undersigned did, at the request of Mr. Dieter Wendland, Homeport, St. Thomas, U.S.V.I. and on behalf of whom it may concern, survey without prejudice the,

Auxilliary Ketch "KLAUS STÖRTEBECKER"

in order to ascertain its design, structure, materials, workmanship, general condition and valuation.

The captioned vessel has been surveyed at various and frequent occasions, from the fabrication of major structural shapes, during its various stages of construction at Nordmeer Metals and Welding, St. Thomas to date. Mr. Dieter Wendland owner and various workmaen were in attendance throughout these many inspections.

CONSTRUCTION: Designed by McCurdy and Rhodes Inc., Cold Spring Harbor, N.Y., 11 January 1973. Builders, Nordmeer Metals and Welding, St. Thomas.

Principal dimensions, LOA 64'11". LWL 48', Beam 16'1½", Draft 9'0".

Materials are aluminium alloy, 5086-H36 structural plate, 5086-H111 structural shapes, 6061-T6 spars. Stainless steel type 316 and type 316L for all exterior applications, type 304 for hardware on spars and interior, type 304 or type 316 fastenings for all attachment to aluminium alloys.

Woods used are Burmese teak for rails, gratings and other exterior trim, 3/8" mahogany plywood for interior joiner work with mahogany trim.

There are six structural bulkheads, located at frame stations #2, #6, #10, #14, #18, #21, those on #6, #18 and #21 being watertight, #14 watertight to waterline.

Ballast is lead 24, 240 lbs cast in the fabricated keel.

Keel stem and horn timber are 5/8" flatbar.

Web frames are "T" sections ¼ x 4½" web with 3½" flange on 2' 10" centers throughout midbody, varying in spacing forward and aft.

Longitudinals are ¼" x 23/4" flat bar on 15" centers midbody, diminishing in spacing forward and aft.

Floors are ½" flatbar on 17" centers throughout ballast keel section, ¼" elsewhere.

Deck beams are "T" sections ¼" x 4" web with 3½" flange on web frame stations.

Two "T" section deck stringers ¼" x 4" web with 3½" flange run down centerline. Other deck stringers are ¼" x 3½" flat bar on 15" centers.

Bulkheads are 3/16" plating, except for ¼" at floor sections with "T" section 3/16" x 2" x 2" stiffeners on 13" centers.

Mast steps are of ofre and aft and athwartship sections, ½" flat bar set vertically, on keel through double bottoms for main on the horn timber for the mizzen.

Chain plates for main vertical shrounds are of 1 1/8" aluminium 6" wide extending downward about 4" with gussets of ½" aluminum about 14" wide at deck tapering down chain plates half inboard of plate half outboard. Other main chain plates are fabricated in a similar manner except they are 1" x 5" with 3/8" gussets. Mizzen chain plates are 5/8" x 4" with ¼" gussets.

Stem head is built up of 5/8" plate with ¼" plate each side welded together to a total 1 1/8" thickness.

Rudder stock is formed of an inner and outer set of half round shells lapped at 90 degrees to one another, "V" d out at the seam edges, welded and also plug welded, total dimension ½" wall thickness x 4½" diameter with a 5/8" x 4" flat bar welded in full length. Attachment for quadrant is drilled through flat bar as well as tubing.

Rudder tube is formed of an inner and outer set of half round shells, lapped at 90 degrees to one another, "V" d out at the seam edges, welded and also plug welded, totalwall thickness ½". Stuffing box mounts to top of tube and is located above water line.

Stern tube is aluminum pipe of ¼" wall thickness.

Shell plating is 3/8" keel section up toa point approximately 1' beyond center of tuck radius, elsewhere ¼".

Deck plating is 3/16" as are cockpit combings, well, seats, cabin trunk and hatch trunks.

Tanks are of ¼" plating and baffles.

Metalic Electrode Inert Gas (MIG) welding with 5356 weldign wire with inert gas is being used. Welding is being done by certified welders, certification information is attached.

SPARS: Main and mizzen mast fabricated by Famet Marine, Redwood City, Calif., are made of eliptical section extruded aluminium alloy tubing, type 6061-T6. Welded butt joints with internal collar 4" long each located at the positions of the spreaders in the main mast. Spreaders are of similiar aluminum alloy in air foil section with stainless steel end fittings. Mast tangs are type 304 stainless steel.

Main and mizzen booms are of cylindracal aluminum alloy tubing, type 6061-T6 with internal outhaul winches and arranged for slab reefing. Fore staysail boom is of eliptical aluminum alloy tubing type 6061-T6 with barient aluminum outhaul fitting.

Main gooseneck is swivel and sliding type with stainless steel track. Mizzen and fore staysail goosenecks are of the fixed type. Forestay sail gooseneck is mounted on welded stainless steel pedestal. All fittings are stainless steel or aluminum alloy.

Winches include a pair of Lenmar #35 two speed primary winches, a Barlow Pedistal winch #1 (coffee grinder), a pair of Barient #28 winches and miscellaneous Lenmar #30's and #40's.

STANDING RIGGING is 1 x 19 stainless steel with swaged fittings and turn-buckles by Nautech, main vertical shrouds are 5/8", uppers, lowers, forestay and back stay ½", intermediates 7/16". all mizzen wire 5/16".

Running rigging is ½" and 5/8" yacht braid.

All halyards except mizzen staysail halyard are internal, 7 x 19 ¼ and 5/16 with braided tails, except main and mizzen which are all wire, all spar electric wireing is internal.

SAILS: Club footed jib, yankee, main and mizzen all of 10 oz. dacron by Manfred Dietrich of St. Thomas, made 1978. Sail area is

MACHINERY: Main engine is GM 453, 140 HP diesel with fresh water cooling and and water cooled exhaust. Drive is through 2 to 1 reduction gears and 1½" Monel shaft to three bladed 24" x 22" bronze propeller. Controls are Morse.

Motor mounts are attached to ½" and ¼" built up motor bed intigral with framing, floors, longitudinals and bulkheading.

Fuel is carried in two welded aluminum tanks of 230 gallons total capacity located as double bottoms over keel, filling and venting outboard. Fuel lines are copper and stainless with flexable sections at machinery are fitted with shut off valves and there is dual filtration.

Steering is by means of wheel through chain sprocket and cables to quadrant. Emergency steering is provided for by tackeles carried aboard for attachment at mizzen chain plates.

ELECTRICAL AND ELECTRONIC: 12 volt D.C. system with four 210 AMP batteries mounted in fiberglass lined welded aluminum cases, fitted with vapor proof main cut off and selector switches. Circuits are fused. Wireing is of the two wire double plastic insulated type carried inside PVC conduits, (CA floating ground system)

Electronics include a Danforth apparent wind speed meter, IMS knot meter and log and will install VHF radio phone.

PLUMBING AND PIPING: Four Raritan saltwater pressure flush heads piped to setling tank where wastes are broken down and pumped to an above the water-line gravity discharge 300 gallon holding tank. Showers similarly discharged. Vents are located in mast.

All raw salt water lines are connected to a common sea chest fitted with removable strainer and above the waterline cover plate.

All through hull discharge lines are equipped with sea cocks.

Salt water lines piped forward and aft are for wash down and fire fighting.

Domestic fresh water system for sinks showers and galley sink is piped from three double bottom welded aluminum tanks, total capacity of 650 gallons.

All tanks and bulheads to be fitted with weled aluminum pipe nipples for hose connection with PVC piping, all connections made with double clamps each side of joint.

PUMPS: Three Rule 1750 electric bilge pumps located throughout hulls length. Bilge manifold system for servicing all compartments has 1" Jabasco clutch pump belted to main engine. Edson hand type bilge pump is cockpit mounted. Par electric pump is for fresh water system. Raritan centrifugal type electric pumps pumps salt water for sanitary system and fore and aft hydrant.

STOVES AND HEATERS: Shipmate three burner and oven kerosene stove (sheathed with asbestos).

REFRIGERATION: Built in ice box of approximately 30 cubic feet capacity with aluminum inner box and 4" of foam insulation, runs with compressor mounted on main engine and salt water cooled condencer.

INTERIOR ARRANGEMENT: Crews quarters with self contained head and shower, next are two doubles one each side with over and under berths and with head and shower attached, next are port and starboard doubles each with double bed and with head and shower attached, double bottom tanks beneath, next is main cabin saloon with dinette to port, galley to starboard, navigational space aft of galley, machinery space below saloon, cockpit aft with steering and lazarette below.

GROUND TACKLE: 100 lb. Danforth type anchor with 20' of ½" chain and 300' of 1" nylon, 70 lb. CQR with 15' of 7/16" chain and 300' of 3/4" nylon, 40 lb. Danforth with 15' of 3/8" chain and 200 ' of 5/8" nylon.

FIRE AND SAFETY EQUIPMENT: Four new 5lb. dry chemical extinguishers, salt water hydrant with hose fore and aft, fifteen life jackets, 8 person Beaufort automatically inflatable life raft, two horseshoe throwable, one ring buoy, flare gun with flares and bell.

SMALL BOATS: 13' Whaler (used but in good condition) with 35 HP Johnson outboard, sun fish.

EXTERIOR FINISH: All surfaces sand blasted, faired with epoxy microbaloons, primed with two part epoxy paint, topsides painted with 4 coats, bottom with six coats TRY LUX anti fouling specially compounded for aluminum hulls.

INTERIOR FINISH: Foamd with fire retardant foam insulation, paneled with plywood with teak and mahogany trim.

CONSTRUCTION SEQUENCE: Frames, longitudinals, inner keel, stem, horn timber, shell plating, outer keel structure and plating, skeg, all while in an inverted position and in their order noted. Hull is then turned over and cradled. Then rudder, stern tube, engine, beds, mast steps, lead poureed for keel, double bottom tanks fabricated, bulkheads installed, deck structure and deck plating, chain plates, deck house, cockpit, hatch trunks, machinery installation, installation of deck hardware, winches etc., installation of piping, wireing and equipment in the above order while hull exterior is being finished, finally fitting out spars and rigging while interior cabinetry and finishing is being done at the same time.

Vessel launched 30 December 1978.

REMARKS: Hull structure as seen internally throughout fabrication was found to be generally true to specifications, carefully crafted and excuted. Hull plating as seen at intervals was found to be fair, fitting to structure and being without distortion, requiring only minimum grinding, filling and surfacing. Welding appears to be of good quality.

Many fabricatons such as stem head, chain plates, mast steps and rudder assembly have been made up to greater than designed specifications.

Minor changes have been made in structure and rig, all having been submitted for approval of the designer. Copies of these correspondences are attached.

Vessel anticipates chartering in the U.S. and British Virgin Islands in the immediate future. It is also suited for ocean cruising.

ENCLOSURES: Photographs depicting stages of construction.

Set of scantlings (Pertinent drawings).

Information pertaining to welders certification.

Copies of pertinant correspondence with Naval Architect, Designer, re: various modifications.

Edward M. Ogley

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Marine Surveyor

1 January 1979

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On 10 January 1979 sea trial was held. Vessel proceded out through the ship channel to sea south of St. Thomas and sailed variously toward St. Croix, then up and down the coast of St. Thomas and returned to berth at Sub Base, St. Thomas. Vessel performed well under head sails and main, and was responsive to the helm.

Machinery was found to function well.

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11 January 1979