

RV „SONNE“



Multi-purpose research vessel for non-living resources, world-wide operation.

Owner: RF Forschungsschiffahrt GmbH, Bremen
Flag: Germany
Port of registration: Bremen
Call sign: D F C G
Classification: GL + 100 A5 + MC AUT
Built: 1969, as stern-fishing trawler at Rickmers-Werft, Bremerhaven
Conversions: 1977, conversion into a research vessel at Schichau Unterweser AG, Bremerhaven and 1978 at Rickmers Werft, Bremerhaven. 1991 lengthening and modernization at Schichau-Seebeck-Werft, Bremerhaven
Basic dimensions: BRZ: 3557; NRZ: 1067; Displacement: 4952 t; Length o.a.: 97,61 m; Length p.p.: 89.66 m; Beam: 14.20 m; Draught (basic): max. 6.80 m; Depth main deck (bulkhead-deck): 9.30 m; Depth II. deck: 6.84 m; service speed: 12,0 kn
Personnel: nautical / technical crew: 25
 Scientists: 25
Propulsion: Diesel-electrical propulsion system
Main engine: 3 x MaK 8 M 282, power per 1600 kW at 1000 1/min
Propulsion: 2 x DMT-direct current motor, 1150 kW each, in tandem configuration on fixed-pitch propeller
Manoeuvring propulsion devices: Azimuth-bowthruster, 1115 kW; Becker high performance rudder
Generators: 3 x DMT-generators, 2000 kVA each, 660V, 50 Hz; 1 x port generator 810 kVA, 380 V, 50 Hz; 1 x emergency generator set 100 kVA, 380 V, 50 Hz
Ship's network: 380 V, 50 Hz by transformer

Stabilized network: 380/220 V, 50 Hz, 100kVA, 50 kW, galvanic separation from the shipboard electrical power supply system
Bunker capacity: 660 t gasoil; 43 t fresh water; fresh water production: RO-system, 3 x 8 t/day
Ballast water: 505 t
Max. cruise duration: 50 days at economic speed (10,0 kn)
Navigation: X- and S- band ARPA Radar; AIS; SVDR; VHF radio-direction finder; satellite navigation system with: DGPS (worldwide coverage) and several GPS receivers; 2 gyro- and 1 GPS-compasses, 2 autopilots, dynamic positioning (Kongsberg), course and rudder angle recorder, rate of turn indicator, doppler log, navigation system ECDIS with track plotter, printer, graphic-screens
Hydroacoustics: Bathymetric multi-beam-sonar system for shallow- and Deep water EM120 (Kongsberg Simrad), parametric NBS-deep sea and sediment survey sounder PARASOUND P70 (Atlas Hydrographic), roll, pitch and heave compensation, central trigger and blanking-electronic, ultra short base line tracking system POSIDONIA (IXSEA), 1 fixed installed 38kHz ADCP (RDI), navigation echo sounder
Scientific equipment: Scientific navigation, planning- and data logging system, computer network (tp and f/o Gigabit Ethernet), Hydrographic information and mapping system, towed Ocean floor observation system (color and b/w TV, digital photo, CTD Sensors) 2 deep-sea TV guided grabs, multi probe, rosette water sampler, thermosalinograph, pure seawater, demineralized water, copy machines
Geophysical equipment (for seismic): Airgun distribution station with: 2 x 14 connectors, 2 compressors for reflexion seismic (1 set for stand-by), 2 x 25 m³/min air intake, working pressure 150 bar, 1 x containerized topping up compressor from 150 to 210 bar, 2 x Airgun-rails (industry standard), 2 trigger relays, time or distance controlled



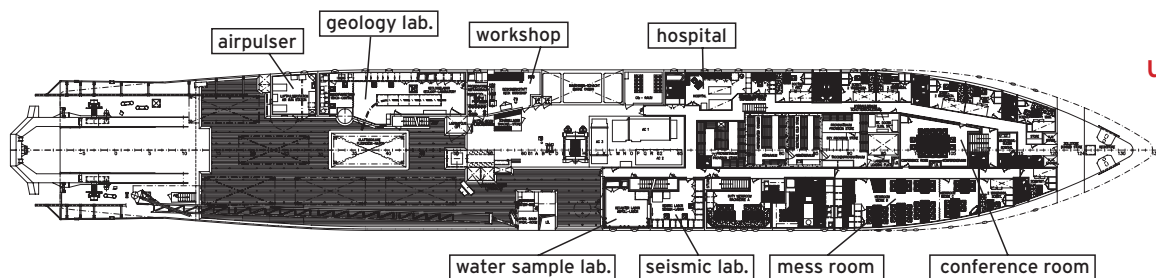
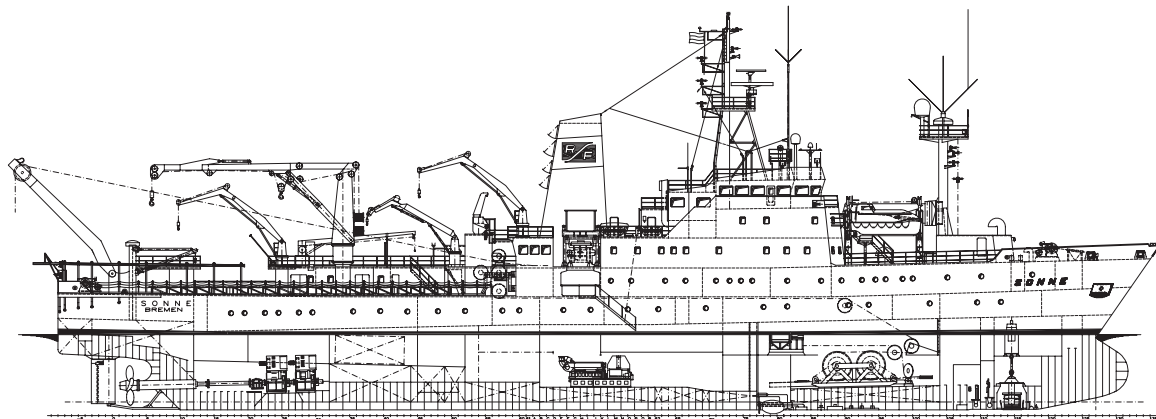
Lifting gear: 1 hydraulic A-frame at the stern SWL 100 kN, 125° slewable, on the working deck; 2 assistant cranes SWL 30 kN, 10 m range; 1 assistant crane SWL 30 kN, 8 m range; 1 central crane SWL 53/177 kN, 17/ 7 m range; 1 derrick SWL 50 kN; 1 jibboom up to max. 3 m, SWL 100 kN; 1 corer frame 24 m; magnetometer derrick SWL 5 kN; 1 side gallow SWL 40 kN; 1 goods lift with 3 stops in: hold, labs, working deck; 1 craneway for chain hoists installed in the geology laboratory; 1 provision crane 30 kN

Winches: 1 deep tow winch, electro-hydraulic with 2 storage winches for 8000 m rope or coax / FO cable each, diameter 18,2 mm, speed up to 1 m/sec max.; wave compensator; 1 geological winch for 8000 m rope (or coax cable), diameter 18,2 mm, speed up to 1m/sec; 1 hydrographic winch with 2 storage winches for 6000m coax cable 11 mm diameter each, control and measuring system (tension, length and velocity), 10 auxiliary winches to handle scientific instruments

Scientific rooms: 21 rooms of total 425 sqm

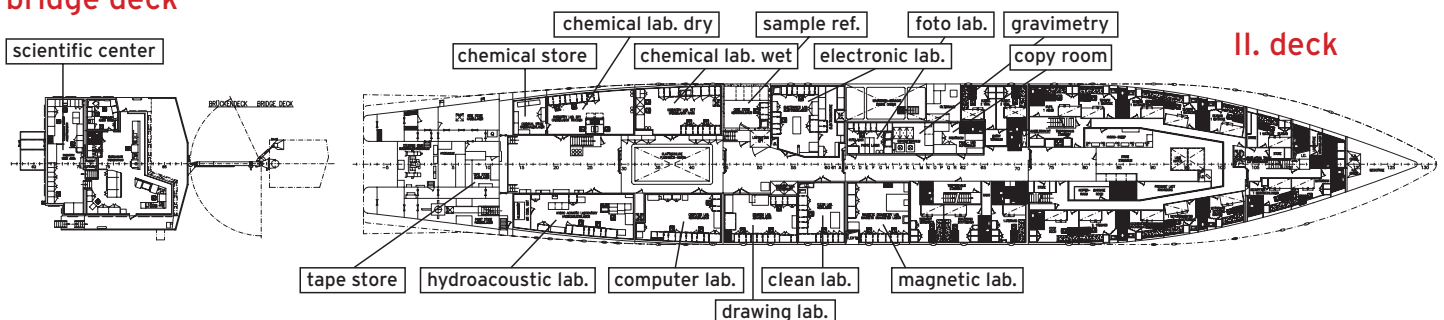
Bridge deck: Scientific working room bridge 26 sqm
Main deck: airgun station 14 sqm, geology laboratory with scientific operating winch and multiprobe 51 sqm, preparing room for samples 5 sqm, dekanter-laboratory 15 sqm, seismic laboratory 11 sqm, conference room 20 sqm
II. Deck: dry chemical laboratory 28 sqm, wet chemical laboratory 28 sqm, core cool store 15 sqm, electronic laboratory 24 sqm, photo laboratory 12 sqm, gravimeter room 11 sqm, copy room 9 sqm, hydroacoustic laboratory 32 sqm, chemical store 8 sqm, computer laboratory 28 sqm, clean lab 21-sqm, gravimetry/magnetic lab 28 sqm

Free Handling/ working-places: Forecastle deck: Container place 10 ft ISO, lab-container supply
Main deck: Free place 260 sqm, seven container places 20 ft ISO incl. lab-container supply
II. Deck: Free place 116 sqm for transport walks between laboratories
III. Deck: Accessible parking space for one 20 ft lab-and equipment containers ISO (8.5 ft H) incl. lab-container supply, stowage for scientific equipment 50 sqm



upper deck

bridge deck



II. deck

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