

ARSV Laurence M. Gould

Principal Features and Technical Information

Over-The-Side Handling Equipment		
Cranes		
Main Crane	13.5 ton	60 ft reach
Aft Knuckle Crane	3.5 ton	20 ft reach
Forward Auxiliary Crane	1/2 ton	
A-frames		
Stern A-frame	10 metric tons	7.5 m clearance
Starboard A-frame	5 metric tons	
Baltic A-frame	5 metric tons	
Winches		
DUSH 5 Hydrographic Winch (Baltic Room)	10,000 m of 0.322 in. electro mechanical cable	
DUSH 4 Winch (2 Interchangeable Drums)	One drum carries 9,000 m of 1/4 in. wire	One drum carries 6,000 m of 0.322 in. conducting wire
DUSH 11 Winch (Interchangeable Drums)	One drum carries 7,300 m of 9/16 in. torque balanced mechanical wire	One drum carries 5,000 m of .680 in. coaxial cable
Deck Tugger Winch	3/8 in. mechanical wire	
Deck Utility Winch	1/4 in. mechanical wire	
Mooring Winch	Interchangeable between vessels	
Streamer Winch	Interchangeable between vessels	
Water-Column-Sampling Equipment		
Blake Trawl	5 ft	
Otter Trawls (2)	18 ft	30 ft
Isaac Kidd Midwater Trawl	1 m	
Flat Trawl	35 ft	
MOCNESS	1 m	10 m
Tucker Trawl, opening/closing	3 nets	
Optical Plankton Counter		

Conductivity Temperature Depth (CTD) Sensors		
Description:		
The Sea-Bird 911+ offers real-time operation via sea cable telemetry, includes a solid state memory module, and has a maximum depth of 6800 m. The CTD is mounted on a 24 bottle General Oceanics rosette. Five, 12, and 30L bottles available.		
Altimeter	Benthos	PSA-916
Altimeter	Datasonics	PSA-900D
Conductivity	Sea-Bird	4-02/O
Conductivity	Sea-Bird	4C (6800 m)
CTD Fish	Sea-Bird	SBE 9+
CTD Pressure Sensor	Paroscientific	410K-105
Dissolved Oxygen	Sea-Bird	SBE 43
CTD Pump	Sea-Bird	SBE 5
CTD Pump	Sea-Bird	5T
Fluorometer	Wet Labs	FLRTD
Fluorometer	Wet Labs	AFLT
PAR	Biospherical Instruments	QSP-200L4S
PAR	Biospherical Instruments	QSP-2300
Temperature	Sea-Bird	3-02/F
Temperature	Sea-Bird	3plus, 6800 m
Transmissometer	WET Labs	C-Star
XBT (auto launcher) / XCTD	Sippican MK-21	
Diving Equipment		
Dive Compressors (1 on board)	Bauer	Fills to 3000 psi
Dive Van (for storage/setup of dive equipment)	20' x 8' x 8.5'	
DAN (Divers Alert Network) Oxygen Kit		
Water Purification Equipment		
E-pure Four Holder System	Barnstead	Type I water quality (ultrapure), 2L/minute
Reverse Osmosis & De-ionized (DI) Water System	Aqua Solutions Aqua-1 Compact	Type II water quality (analytical grade DI)

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Uncontaminated Seawater System			
Description: The seawater system supplies uncontaminated seawater to the Aquarium Room, Wet Lab and Hydro Lab. Green strand piping, a non-metallic, chemically resistant material, has been used throughout the system to minimize algae and bacterial growth. It also maintains its structural integrity under low temperatures. Large diameter piping and a minimum of 90° turns helps to prevent the formation of frazil ice in the system. The seawater system is also equipped with a centrifugal ice-strainer/de-bubbler.			
Three Intakes			
Main	At Skeg		
Secondary	At Moon Pool	3 ft above keel	
Tertiary(used mainly for removing ice)	At Moon Pool	below water line	
Surface Seawater Sampling Equipment			
Fluorometer	Wet Labs	FLRTD	
Micro Thermosalinograph	Sea-Bird	45	
Transmissometer	WET Labs	C-Star 25 cm	
pCO ₂ Equilibration System	Lamont-Doherty Earth Observatory		
Aquaria and Deck Incubators			
Aquaria	6 Fiberglass	1000L Xactic Tanks	
Deck Incubator	3 Plexiglas	UV Transparent	
Bottom-Sampling Equipment			
Dredges			
Deep-Sea Rock Dredge	Scripps Institute of Oceanography		
Small Chain Dredge, Rock Dredge	Kahl Scientific		
Large Chain Dredge, Rock Dredge	Kahl Scientific		
Coring Equipment			
Description: The vessel can be equipped with several coring devices for vertical sediment sampling.			
Box Corer	Ocean Instruments		
Jumbo Piston Corer	Woods Hole Oceanographic Institute		
Grab Sampler	Smith-MacIntyre		
Gravity Corer			
Kasten Corer			State University of New York/Ocean Instruments
Mega Corer			Mark I
Standard Piston Corer			Woods Hole Oceanographic Institute
Sonar Systems			
Acoustic Doppler Current Profiler (ADCP)	RD Industries	150 kHz Narrow Band VM-150	
3.5 kHz Sub-Bottom Profiler	Knudsen	320 B/R	
12 kHz bottom tracker	Knudsen	320 B/R	
38/120 kHz Towed Bio-Acoustic Sonar	HTI		
Chirp Sidescan Sonar / Sub-Bottom Profiler	Datasonics	SIS-1000, max. depth 2000m	
12 kHz Sonar Receiver	Raytheon PDR	for pinger tracking	
Pinger 12 kHz	OIS	6000 (6000 m)	
Thermal Graphics Recorder	EPC-1086	for pinger plotting	
Thermal Graphics Recorder	EPC-9802	for Knudsen plotting	
Meteorological Sensor Suite			
Humidity/Wet Temperature	RM Young	41372LC	
Anemometer	Gill	1390 Ultrasonic	
Barometer	RM Young	61201	
PIR (pyrgeometer)	Eppley	PIR	
PSP (pyranometer)	Eppley	PSP	
PAR Radiometer	Biospherical Instruments	QSR-240/P	
PUV (underwater)	Biospherical Instruments	PUV-/683500	
PUV (underwater)	Biospherical Instruments	PUV-2500	
GUV (mast)	Biospherical Instruments	GUV-2511	
Time and Navigation Instruments			
Attitude GPS	Ashtech	ADU2	
P-Code GPS	Trimble	Centurion	
GPS	Garmin	GA29	

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Communication Equipment		
The LMG is Global Maritime Distress Safety System (GMDSS) compliant. This means that there is automatic and complete redundancy for each mode of communication for ship to ship and ship to shore.		
Fleet 77	Sailor	Fleet 77+
Inmarsat-B	NERA Saturn-B HSD	
Inmarsat-C	Sailor	
VHF		
Sailor	RT146	Bridge to Bridge
Sailor	RT2048	Main
Sailor	RM2042	Watch Receiver
VHF H/H		
Sailor	SP300	
Sailor	T2130	
Computers and Networking		
Description: Support Windows, Macintosh and Linux operating systems. There are usually 6 to 8 computers available for general use in the E-Lab and in the 01Lounge.		
Network	100 LAN drops throughout the ship, including cabins	
E-mail		
Transmitted twice daily via satellite. User allotment of 25 KB per day to be used any time during the cruise		
Size Restrictions:	100 KB outgoing	75 KB incoming
Space Allocation		
Scientific Laboratory Spaces		
Wet Lab	425 sq. ft	
Hydro Lab	526 sq. ft	
Dry Lab	356 sq. ft	
Electronics/ Computer Lab	460 sq. ft	
Aquarium Room	270 sq. ft	

Environmental Room	48 sq. ft	
Microscope Room	25 sq. ft	
Science Workshop	380 sq. ft	
Changing (Mud) Room	58 sq. ft	
Baltic Room/Scientific Changing Room	427 sq. ft	
Exterior Main Deck		
Deck tie down points are located at 2 ft centers on the main deck		
Lower Deck		
Scientific Storage	Four 20 ft containers	
Science Vans		
Radioisotope Vans	2 vans	20' x 8' x 8'
Freezer Lab	2 vans	20' x 8' x 8'
Garage/Trace Metal Clean Lab	1 van	20' x 8' x 8'
Recreation / Leisure Spaces		
Lounge / Library	670 sq. ft	
Gymnasium	196 sq. ft	
Sauna / Jacuzzi	144 sq. ft	