

APPENDIX XVI

Comparison of On-Bottom Times for Different Deep Diving Submersibles

ALVIN	1500 dive average 1985-1995	4 hr 47 min
	dives >1500 m,	>2 hr
NAUTILE	200 dive average 1994	4 hr 8 min
CYANA	200 dive average 1994	5 hr
SHINKAI-2000	at 2000m 1994	4 hr
SHINKAI-6500	at 6000m 1994	4 hr
	at 6500m 1994	3 hr 30 min
	at 3000m 1994	5 hr

Comparison of Battery Characteristics & Cost Factors for Deep-Diving Submersibles

SPEC	ALVIN	NAUTILE	SHINKAI 6500
Type	Pb acid	Pb acid	AgZn
Capacity	37.4 kwh (80%)	38.4 kwh (80%)	86.4 kwh (80%?)
Cost/set	\$7,800	\$42,000	\$2,630,000
Dives/set	200	200	75
\$/dive	\$39	\$210	\$35,000
\$/kwh	\$208	\$1,141	\$30,440
Maint. Int.	60 dives	50 dives	30 dives

Variables Affecting *Alvin* Power and Bottom-Time

Long-Term Variables

1. Power Characteristics of Battery Type
2. Charging Equipment and Procedures
3. Changing Configuration and Number of Power Consumptive Operational Equipment and Science Equipment

Short-Term Variables

1. Science Mission Objectives
2. Lead-Observer Experience and Organization of Science Tasks
3. Piloting Style (e.g. throttle usage, trim control, mission planning, manipulator skill, fatigue, attitude)
4. Dive Depth
5. Type of Terrain
6. Lights (observation and video photography)
7. Sampling/Hydraulics Demand
8. Battery Condition
9. Service - Maintenance Procedures

This appendix contains two graphs depicting ALVIN bottom times. Copies of these graphs are available from the UNOLS Office.

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