

DAUPHIN ISLAND SEA LAB

SPECIAL REPORT



REPORT No. 88-001

ANNUAL REPORT 1986-1987

**Dauphin Island Sea Lab
Dauphin Island, Alabama 36528**

GENERAL

Personnel:

The departure of Mr. Fred Rees from Sea Lab Operations led to the appointment of Mr. Steve Jorgensen as Director of Operations. Mr. Jorgensen is a former Coast Guard officer and graduate of the Coast Guard Academy. His background and enthusiasm have made him effective and popular with the resident staff and visitors.

During the year, Dr. Robert Shipp announced his desire to give up the Academic Affairs post due to increasing demands on his time as Director of USA's Coastal Research and Development Institute. Dr. Judy Stout has assumed that responsibility.

Facilities:

The most significant development for the Sea Lab was the complete renovation of the former generator building. This building now houses an experimental wet laboratory with 4 water tables, 3 400-gallon circular tanks, 3 light/temperature-controlled labs and a closed, recirculating sea water system of 10,000 gallon capacity (Fig. 1). The Wet Lab was dedicated on Oct. 1, 1987 by Dr. Fred Whiddon, President of USA and first Chairman of the Board of MESC. The University of South Alabama provided over \$20,000 to the project while Auburn University donated the large holding tanks and Sea Lab Operations carried out the renovation.

The Sea Lab completed the required connection to the Dauphin Island Sewer System during the year.

Vessel Operations:

The A.E. Verrill became operational in the late Spring of 1986 and this reporting period constitutes her first full year of operation (Table

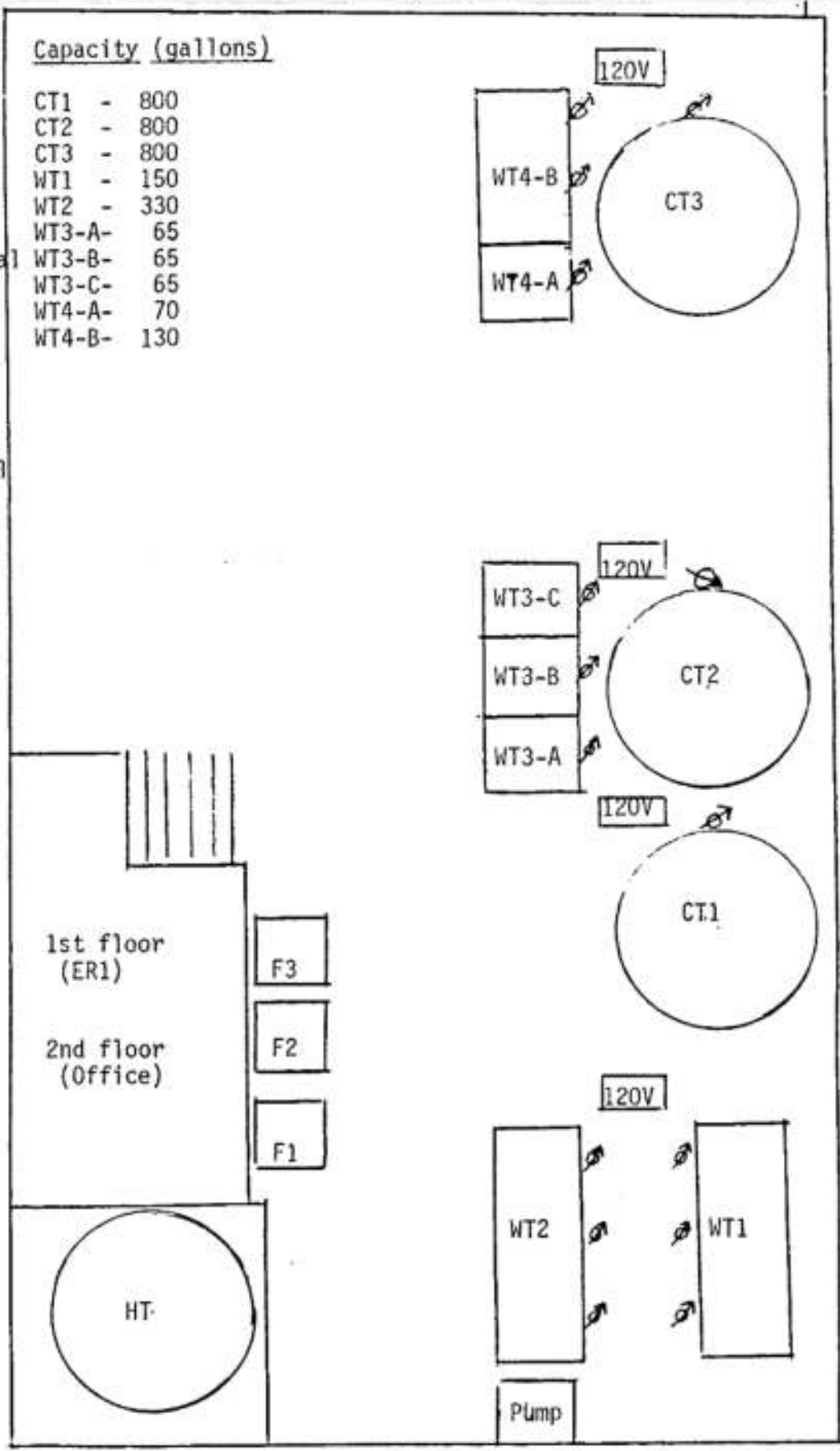
Figure 1.

ER2

- KEY**
- CT - Circular Tank
 - WT - Water Table
 - ER - Environmental Control Room
 - HT - Head Tank
 - F - Filter Tank
 - 120V - Electrical Outlet

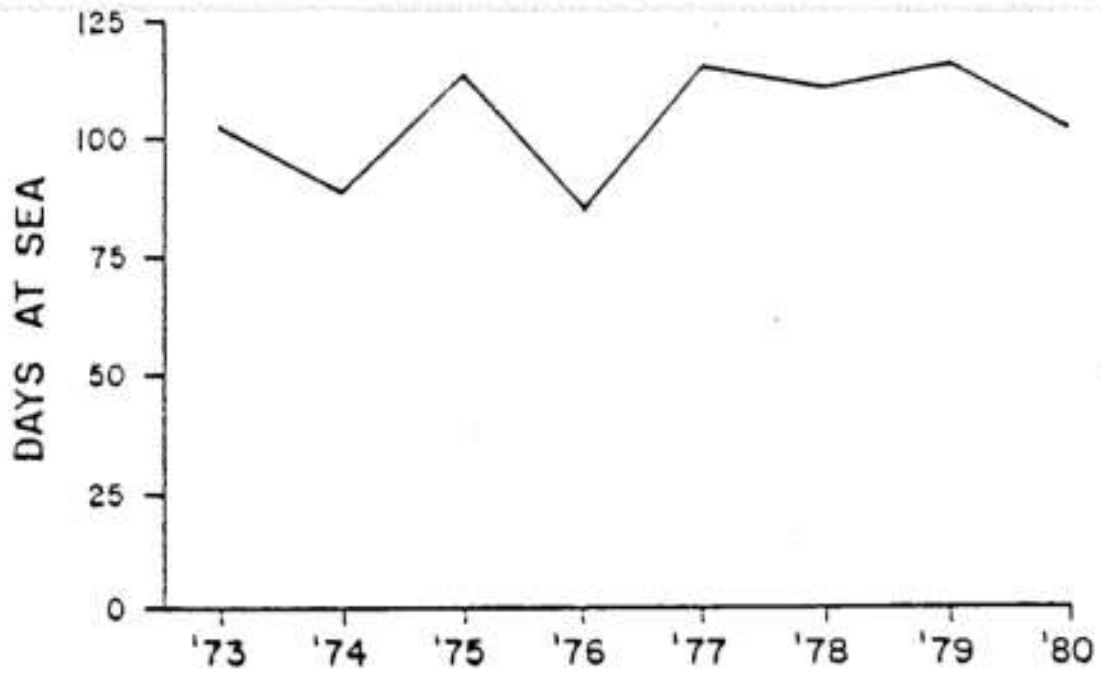
Capacity (gallons)

CT1	-	800
CT2	-	800
CT3	-	800
WT1	-	150
WT2	-	330
WT3-A	-	65
WT3-B	-	65
WT3-C	-	65
WT4-A	-	70
WT4-B	-	130

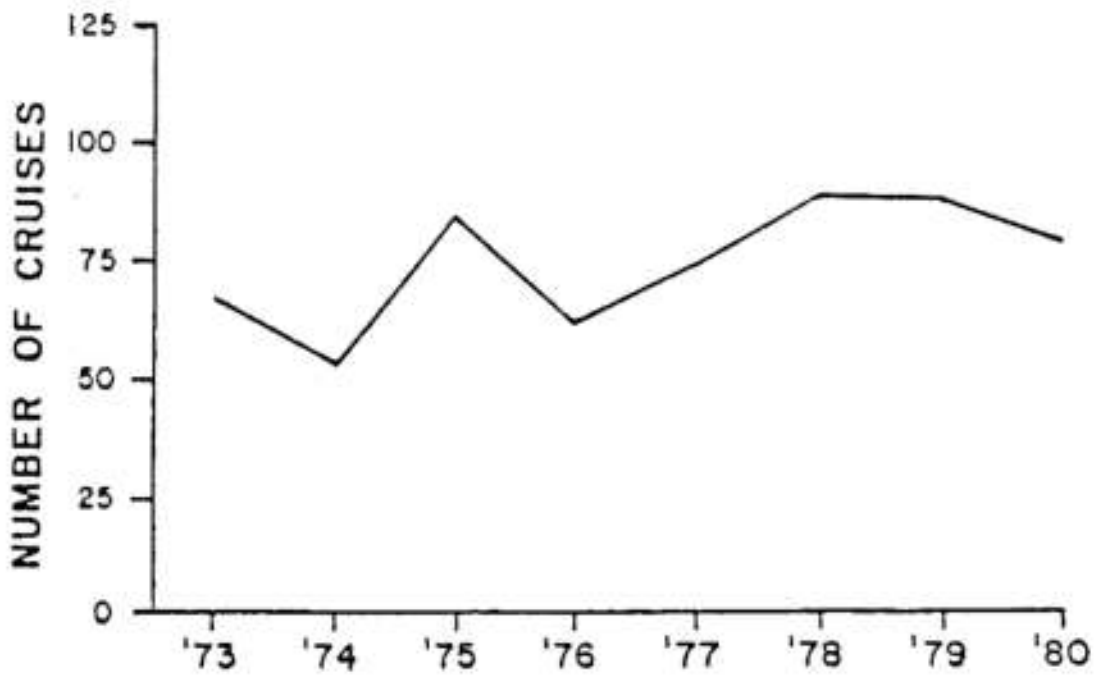


North

Figure 2.



R/V G.A. Rounsefell Days at Sea



R/V G.A. Rounsefell Number of Cruises

1). It is significant to note that the first year closely parallels the use pattern achieved by the R/V G. A. Rounsefell at her peak of operation (Fig. 2).

The high number of research cruises reflects the successful marketing of the vessel to outside agencies. MESC budgets roughly \$100,000 to vessel operations and the income associated with vessel activities, both extramurally funded MESC research and other agency use, was almost \$25,000 or 25% of the gross budget for all boats and exceeded our originally projected income by 388%.

The Deborah B remained dry docked all year and there appears to be little hope of returning her to service with state funding at its current level.

Library:

The library has continued to grow despite the budget constraints (Table 2). Computer capability has been extended to include the library while the principal area of tight budget impact is in binding. Binding has been deferred for two consecutive years and the usual losses of unbound material is indeed costly. This year only theses were bound.

Table 1.

VESSEL: A. E. Verrill
Utilization Breakdown

YEAR	1985-1986	1986-1987
Total days at sea	35	95
Total cruises	34	97
Educational cruises	24	52
MESC/DISL	23	35
Others:	1	17
Research Cruises	6	40
MESC/DISL	2	26
Others:	4	14
Miscellaneous Cruises	4	1
Cruise Length		
Day (0-8) hours	28	88
Extended Day (up to 24 hours)	5	7
Multi-day (24 or more)	1	2
Total number of participants	595	1643
Total Nautical miles	1455	3114
Man hours at sea	3737	8971
Man days at sea	156	374

Table 2. LIBRARY STATISTICS

	85/86	86/87
BOOKS:		
Total Books Accessioned	4247	4450
Books & Publications Processed	275	201
Books & Publications Purchased	99	90
Expenditures	\$3,560.00	\$ 3278.57
REPRINTS:		
MESC Reprints	6280	6600
Reprints Processed	273	520
INTERLIBRARY LOANS:		
ILL Requested	163	207
Expenditures	\$12,041.00	\$14,240.73
Memberships	\$402.00	\$348.50
Current Titles	522	583
EXCHANGE PUBLICATIONS:		
Institutions agreeing to an exchange	96	95
BACK ISSUES:		
# of Issues received	271	401
Expenditures	\$283.00	\$177.46
BINDING:		
# of Issues Bound	0	9
Expenditures	0	\$134.74
NTIS:		
# of Publications ordered	2	1
Expended from Deposit Account	\$32.00	\$21.95
MEMS:		
# New Acquisitions	0	0
Total Holdings	2000	2200
# of Requests		145
# of pages copied		820
Expenditures		\$150.00

Computer Facilities

Computer Facilities

The Lab operates two TeleVideo TS806/20 computer systems with seven work stations for data and word processing. New IBM compatible computers and peripherals have been purchased over the past couple of years to take advantage of new scientific and graphics/publishing software. The Lab also utilizes computing facilities at the University of South Alabama and the University of Florida at Gainesville.

Table 3. Computer Listing:

2 Televideo 806/20 hard disk units
7 Televideo work stations (800,802h,803,803h)
3 IBM compatible 80286 (AT)
1 IBM compatible 8088 (XT)
1 IBM compatible 8088 (PC)
1 IBM 3774 Remote Job Entry facility with card reader
1 IBM 3101 Remote Terminal
1 Logitech Bus Mouse
1 Graphics Tabletwith Digitizer
1 Hayes 300/1200 modem
3 Hayes 300 modem
2 Transtar letter quality printers
2 Epson FX100 dot matrix printers
2 Alps P2000 dot matrix printers
1 IBM ProPrinter
1 HP 7475 plotter
1 QMS PS-800 laser printer

Software:

WordStar
Word Perfect
Super Calc 4
dBase II
dBase III+
Enable
Abstat
Plotit
First Publisher
BMDP
Ecological Analysis PC
Crosstalk
Basic
Dgraph

INSTRUCTION

A. DISCOVERY HALL PROGRAM

The Discovery Hall marine science programs for K-12 have grown yearly. This year programs were delivered to 3591 students (Table 4). Ninety-one percent of which were from Alabama. It was unfortunate that we received more requests for programs than could be handled by Discovery's personnel. Approximately 50 teachers representing 1200 students were turned away. Discovery Hall received formal support from Governor Guy Hunt and the State School Board, through resolution No. I-2-E, in March 1987, that recognized the Discovery Hall Program as a entity of the state education system and recommended that teachers attending Discovery Hall workshops receive professional development credits for the participation. Due to the combined effort of the Governor's office, the state board and the demonstrated need, the legislature has funded one new position and two graduate assistantships for Discovery Hall in 1987-88.

The 1987 summer institute increased enrollment by 57% (Table 5.) and attracted students from 8 states other than Alabama.

Over the years Discovery Hall has had good media coverage from local and state newspapers and magazines. This year an article in Southern Living describing Discovery Hall resulted in hundreds of inquiries.

Ms. Jenny Cook (Discovery Hall instructor) and Dr. George Crozier wrote 8 curriculum resource units entitled "Coastal Concepts" for 7th and 8th grade teachers. This project funded by the Alabama Department of Economic and Community Affairs infuses coastal marine concepts through content material, laboratory, and field experiences into the teachers' existing plan of study. Teacher workshops have been scheduled for this year to instruct the teachers in the use of these units.

Director John Dindo and Ms. Cook traveled to the University of Rhode Island in August to attend the National Marine Education Association meetings. Three papers were delivered including the introduction of "Coastal Concepts". All were well received with request for copies of the new material from educators around the United States.

On and off-site teacher-inservice programs were conducted for 285 teachers throughout the state of Alabama and with increased personnel we expect to be able to increase off-site teacher workshops. Drs. Crozier, Shipp and Mr. Dindo also participated in 2 teacher workshops held as part of the Weeks Bay National Estuarine Research Reserve educational program.

B. Summer School:

Continuing the tradition of bringing in one out-of-state eminent instructor with outstanding credentials, Dr. Gareth Nelson taught the vertebrate biology course, is a world-class systematist who is chairman and curator of the Dept. of Ichthyology, American Museum of Natural History. The addition of scientists of this caliber do much to enhance the image of the Consortium and its academic program and provides a unique experience for students.

The 1987 summer school program may have been the largest in the nation. For the two sessions, 120 college students registered for 606 semester credit hours (Table 5) compared to 59 students and 378 credit hours in 1986. Thirty-nine percent of these hours were generated by three courses, Marine Biology (Crozier), Marine Invertebrates (Modlin) and Marine Vertebrates (Nelson). Coastal Ornithology (Holliman), Marine Technical Methods (Lanouette), Commercial Marine Fisheries (Wallace), Marine Botany (Stout), and Marine Ecology (Heck) contained a cumulative total of 32% of the hours. Dr. Crozier led the summer faculty with 96 hours taught.

Table 4. Summary of Discovery Hall utilization, October 1986 - September 1987

Day Programs for Elementary Schools	2136
High School In-State	1120
High School Out-of-State	314
College Programs In-State	470
College Out-of-State	32
Summer High School Program	44

Table 5. Summer School Credits

FIRST SESSION

Course	Credits Per Course	Credit Hours U. Graduate	Credit Hours Graduate
COASTAL CLIMATOLOGY	2	4	0
COAST GEOMORPHOLOGY	2	10	0
COASTAL ORNITHOLOGY	4	40	4
DISSERTATION RESEARCH	4	0	4
INTRODUCTION TO OCEANOGRAPHY	4	20	8
MARINE BIOLOGY	4	80	0
MARINE GEOLOGY	4	16	0
MARINE INVERTEBRATE ZOOLOGY	4	80	0
MARINE TECHNICAL METHODS 1	2	38	2
RESEARCH, SPECIAL TOPICS	1	9	0
SEMINAR	1	5	0
THESIS RESEARCH	3	0	6
TOTAL		300	24

SECOND SESSION

COASTAL ZONE MANAGEMENT	2	12	4
COMMERCIAL MARINE FISHERIES	2	38	0
MARINE BOTANY	4	40	20
MARINE ECOLOGY	4	40	32
MARINE VERTEBRATE ZOOLOGY	4	76	0
RESEARCH, SPECIAL TOPICS	2	12	0
SEMINAR	1	0	2
THESIS RESEARCH	3	0	6
TOTAL		218	64

YEAR	TOTAL
1987	518 U. GRADUATE 90 GRADUATE
1986	147 U. GRADUATE 49 GRADUATE
1985	212 U. GRADUATE 34 GRADUATE

The Summer colloquium series (Appendix I) was again successful. Dr. Shipp provided financial support for the series through the Coastal Research and Development Institute at USA.

C. Graduate Studies:

The Graduate Studies Program conducted at the Sea Lab is an academic service provided to the 9 MESC schools offering graduate degrees. Enrollment in the program is a function of the recruitment success and admissions of the membership. During the academic year (non-summer) MESC offers a curriculum of graduate courses on a two-year rotation. Courses are scheduled on an academic quarter basis. Registration is open to all graduate students.

Four graduate courses were offered at the Sea Lab during the 86/87 academic year, providing 34 student enrollments for a credit hour total of 180 quarter hours (Table 6.). This is one of the largest academic year programs conducted by the Consortium. Students from four schools were enrolled (AU, UAB, UAH, UAT, USA). Instructors were all resident faculty at the Sea Lab (Heck, Hopkins, Schroeder, Shipp, Stearns and Stout). Sea Lab faculty supervised an additional 21 hours of directed research and thesis research.

Support for graduate students residing at and/or doing research at the Sea Lab has been a major objective of the Consortium. MESC support to graduate programs of the member schools includes student stipends, modest supply funds, housing subsidies and logistical or in-kind support such as technical personnel assistance, vessel and vehicle time, laboratory and office space and computer facilities. Students become eligible for support by obtaining Graduate Research Status (GRS) at the Sea Lab. Performance

and progress in the student's academic and research programs is evaluated annually by the faculty to assure that support is being productively used.

Table 6. MESC Graduate Courses 1986-1987 Academic Year.

TERM	TITLE	ENROLLMENT
Fall '86	Estuarine Science	8
Winter '87	Benthic Community Structure	10
	Oceanology of the Gulf of Mexico	8
Spring '87	Field Marine Science	8

Twelve students (3 Ph.D. and 9 MS), from three schools maintained GRS in 86/87 (Table 7). Nine were full-time at the Sea Lab and 3 made part-time use of resources and facilities. Three additional Masters students were admitted and will be seeking GRS in 1987/88.

A total of \$44,028 in MESC support and \$24, 758 from other sources was allocated to support of graduate students at the Sea Lab (Tables 8, 9). These totals do not include faculty salaries or teaching material designated for the graduate student program. Non-MESC support includes, in-part, extramural support to resident principal investigators, so part may also be viewed as MESC-generated.

The graduate program has been strong for years, averaging 3-4 graduates per year since its inception. Enrollment appears to be on an upswing with continued growth anticipated. Several efforts are currently being made to enlarge the available faculty of this essentially state-wide department by more actively involving the campus based MESC faculty. It should be noted, however, that support capabilities of the Sea Lab and resident faculty are near saturation and expansion of the graduate program will require specific increases in funding and on-site faculty as well as facilities modifications.

Table 7. Summary of the Graduate Studies Program 1986-1987.

Students with Graduate Research Status

1. Abston, J. R.	MS/UAT/GEOL
2. Cook, J. V.	MS/USA/BIOL
3. Diogene, G.	MS/USA/BIOL
4. Dindo, J. J.	PH.D./UAB/BIOL
5. James, P. L.	MS/USA/BIOL
6. Matthews, T. R.	MS/UAT/MAR SCI
7. Nadeau, D. A.	MS/USA/BIOL
8. Owen, A. G.	MS/UAT/MAR SCI
9. Parker, S.	MS/UAT/GEOL
10. Shipp, L. P.	PH.D./UAT/BIOL
11. Valentine, J. F.	PH.D./UAT/BIOL
12. Wilson, D. M.	MS/UAT/MAR SCI

Students Applying for GRS

1. Kerwin, T.	MS/AU/ZOOL
2. Mitchell N.	MS/UAT/MAR SCI
3. Welsh, C.	MS/AU/ZOOL

