

A. New		U	U	N/A	NL	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	A. WORK UNIT
10. NO. OF PAGES*	PROGRAM ELEMENT	PROJECT NUMBER		TASK AREA NUMBER	WORK UNIT NUMBER		
13	63713N	M4206		02	233-237		
C. CONTRIBUTING							
11. TITLE (Precede with Security Classification Code)*							
(U) Saturation Diving with Compressed Air							
12. SCIENTIFIC AND TECHNOLOGICAL AREAS*							
005900 Environmental Biology; 012900 Physiology; 002400 Biochemistry							
13. START DATE		14. ESTIMATED COMPLETION DATE		15. FUNDING AGENCY		16. PERFORMANCE METHOD	
72 12		Cont.		DN		C. In-House	
17. CONTRACT/GRANT				18. RESOURCES ESTIMATE		19. PROFESSIONAL MAN YEARS	20. FUNDS (In thousands)
A. DATES, EFFECTIVE:				PRECEDING			
B. NUMBER: N/A				EXPIRATION:			
C. TYPE:				FISCAL YEAR		CURRENT	
D. KIND OF AWARD:				73		0.2	1.0
21. RESPONSIBLE DOD ORGANIZATION				22. PERFORMING ORGANIZATION			
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22. KEYWORDS (Precede EACH with Security Classification Code)							
(U) Air; (U) Saturation Diving							
23. TECHNICAL OBJECTIVE, 24. APPROACH, 25. PROGRESS (Furnish individual paragraphs identified by number. Precede text of each with Security Classification Code.)							
<p>23. (U) Objective: Shallow air saturation diving has received little attention while mixed gas saturation diving to great depths for extended periods has been developed as a feasible reality. Both the availability and the economics of compressed air warrant its study as a breathing media in shallow saturation diving. The objectives of this study are: (1) To determine the biomedical feasibility of shallow air saturation diving for long durations in model animal systems; (2) To implement human shallow air saturation diving, based on the knowledge gained from animal studies and (3) To explore the use of mixed nitrogen-oxygen breathing gas in dives from a saturated air base.</p> <p>24. (U) Approach: Experimental animal air dives will be carried out at simulated depths of 50, 60 and 70 feet of sea water for periods of up to 60 days duration. Extensive biomedical investigation and monitoring will be carried out to ascertain the health and well-being of the animals during and after the saturation dive(s). Detrimental pathological and/or biomedical changes in the test animals will be used to indicate depth/time profiles for safe human air saturation diving. Accompanied by appropriate biomedical monitoring and observation, human air saturation dives will then be carried out to explore the feasibility of compressed air breathing in saturation diving. Mixed nitrogen/oxygen breathing gases will be employed to investigate the limits of excursion dives from a saturated base.</p> <p>25. (U) Progress: New Project.</p>							

*Available to contractor upon originator's approval.