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SIGINT Implications of Military Oceanography

BY J. A. MEYER

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Expansion of oceanographic programs by many nations raises many new problems in COMINT and COMSEC.

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	l Security Act of 1959,		
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	Ana	appendix reviews	
the contribution of to	the wartime enigma problem.		
INTRODUCTION 25V2 an		§6 of the National Security Act of 1959,	
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	ecovered from ships and airc		
	ergence vehicles and appara off Palomares. Although de		
and recovery capability is	only marginally operational	at present the	
technology is being develop			
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	II cryptanalysis show that		
	ential to give a start on ma		
	problem had a long histor reminiscence by the notabl		13
work, but	in summarizing the pro		
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Although some of the	captures from tra	wiers and sub-	
	points out that:		
marines were accidental,	points out that:		
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marines were accidental,	es are not exclusive to the U.		÷
Deep submergence vehicl record of 36,000 feet is held	es are not exclusive to the U. by the French submersible	Archimede, and	×
Deep submergence vehicl record of 36,000 feet is held U. S. vehicles such as <i>Tries</i>	es are not exclusive to the U. by the French submersible <i>te I</i> are capable of working	Archimede, and at 30,000 feet.	a.
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tions in embryonic form. The deep submergence capability of Russia and China is not fully known.

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A few of the major SIGINT and COMSEC topics will be described in this paper.

Deep Submergence and Recovery.

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operating	in or near territorial waters of unfrie	and legal problems of endly nations have been		
brought i	nto prominence by the Palomares inci-	dent [5].		
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Warning Systems.

Anti-submarine warfare warning systems, to be effective, must report probable target detections by electrical or electromagnetic means, and this implies signals and communications. A problem of deep concern is that any nation which discovers a new physical method of propagating energy through the sea may be able to make the oceans transparent to detection systems, and thus change the strategic balance of weapons systems.

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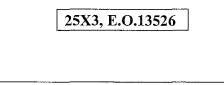
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16.	. A symposium on SIGINT implications of military oceanography			
	should be organized and held at NSA to review and forecast the			
	whole spectrum of problems and developments.			



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APPENDIX

Summary of Enigma

On the German Enigma problem, rare and unique events— —led to the solution of the system, and the changes. Sustaining events—

formed the kernel of the exploitation.

Polish cryptanalysts used the keys in 1937 to recover the wheels (p. 124). The in April 1940, was an enemy trawler which yielded stecker and grundstellung.

In Feb. 1941 the ______ captured keys for the complete month of Feb. 1941 (p. 135). Then keys for June and July 1941 were captured; though slow progress was being made by Banburismus (p. 139), the keys gave information not available from cryptanalytic recovery.

On 30 October 1942, the Wetterkurz-

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signalheft, complete with indicator tables, was captured in the Mediterranean from U-559 making the weather signals suddenly readable (p. 159). At the same time the Kurzsignalheft 41 and Kenngruppenheft were captured—without which B-Bar U-boat signals would have be unreadable (p. 163).

The wiring of new wheels introduced in July 1943 had previously been captured in North Africa so the wirings were broken the hard way.

The introduction of a new basket of wheels

for the U-boats would have stopped the reading of the traffic for some time. Even with a known machine, it took about 4 years under wartime pressures (1937–1941) to get the problem opened up.

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