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STUDIES OF SMALL WHALES MOVEMENT PATTERNS USING
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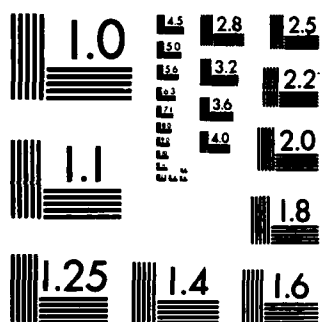
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STUDIES OF SMALL WHALES MOVEMENT PATTERNS
USING SATELLITE AND ACOUSTIC TOWED ARRAY TECHNOLOGY

FINAL REPORT

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OBJECTIVES

The primary objective of this study was to design and evaluate a Wood-Ivey Systems, PTT model 165 ARCOS satellite transmitter for housing in a package suitable for mounting on a small odontocete whale for study of its long-term movement patterns.

ABSTRACT

The transmitter purchased last year (Wood-Ivey Systems, PTT Model 165) has been received and designing has commenced on a compatible antenna system. Standard antennas available for use with this transmitter are too bulky for utilization in this unique program. A small turnstile antenna (see Attachment 1) has been proposed by our consulting engineer as an alternative to the standard antennas available. Final design is underway at this time.

The previously fabricated pilot whale saddles are being modified for use on a mid-size Killer Whale. Our present MFS permit allows for the collecting and tagging of Killer Whales in Southern Alaska. A mounting harness with time-delay release is being designed for use on a Killer Whale.

Liaison has been established with Sea World's Animal Care Department and initial planning for harness and transmitter testing has been approved. This will allow for laboratory testing of the system on a small Killer Whale under controlled conditions.

PLANS FOR THE FUTURE

Design of the transmitter and harness system should be completed by the end of 1984. Fabrication will be started during the first half of 1985 with dry and wet bench testing commencing around April 1985. Final testing will be completed by June with field experimentation occurring during July-August 1985.

Work beyond this reporting date will be accomplished without further cost to the contractor. Reports of the advances in this project will be documented in the appropriate literature.

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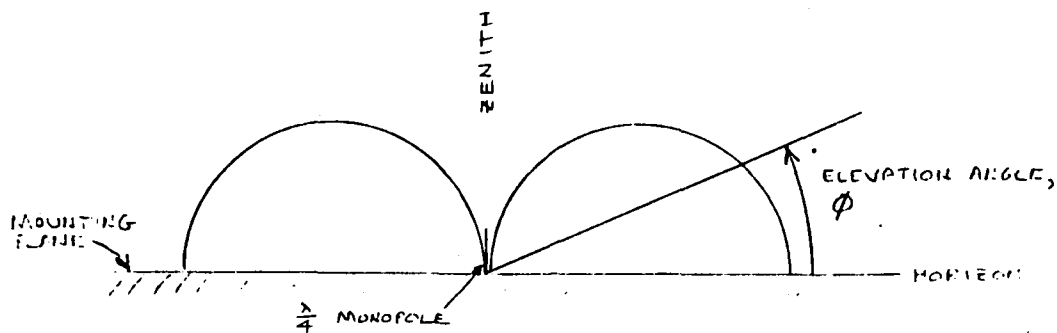


FIGURE 1
RELATIVE RADIATION PATTERN OF A QUARTER
WAVE MONOPOLE ABOVE A LARGE GROUND PLANE

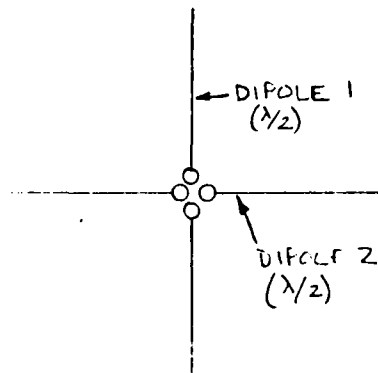
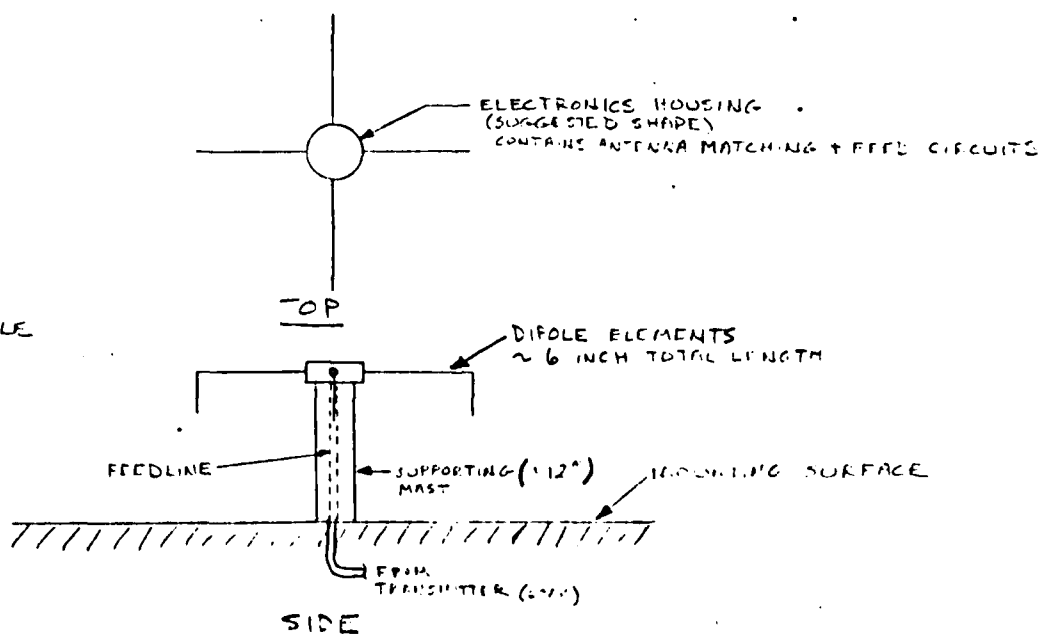


FIGURE 2
BASIC TURNSTILE ANTENNA
TOP VIEW

FIGURE 3
PRACTICAL TURNSTILE
ANTENNA



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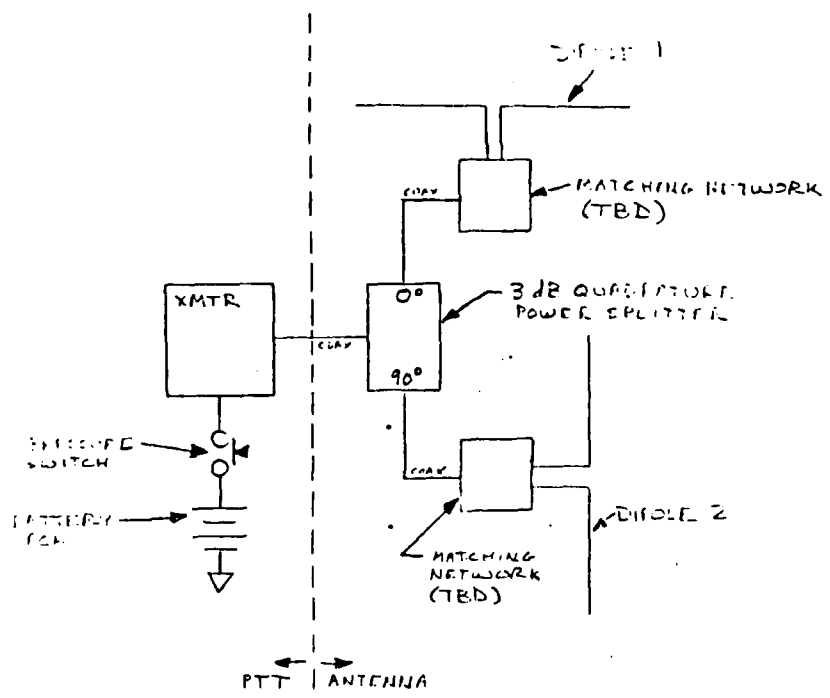


FIGURE 4
SYSTEM BLOCK DIAGRAM

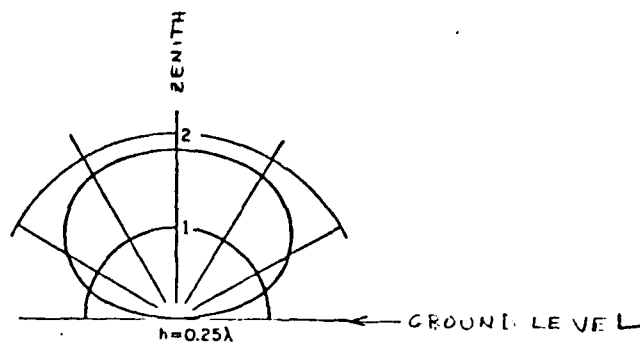


FIGURE 5
TURNSTILE ANTENNA
RADIATION PATTERN
(INTENSITY VS ELEVATION ANGLE)

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