

N 9 3 - 1 6 8 0 8

**LONG-DURATION ISOLATION AND CONFINEMENT:
HUMAN FACTORS ISSUES AND
RESEARCH REQUIREMENTS**

**Jack Stuster, Ph.D.
Senior Scientist**

**ANACAPA SCIENCES, INC.
Santa Barbara, California**

NASA/NSF

ANTARCTIC BIOMEDICAL SCIENCE WORKING GROUP

**Washington, D.C.
11-12 October 1990**

ANACAPA SCIENCES, INC.

Rank	Analogue	Score
1	Skylab 4	86.81
2	Sealab II	70.95
3	Tektite I	69.40
4	Tektite II	66.89
5	Submarines	63.46
6	South Pole Station	59.35
7	Saturation Divers	57.12
8	Long Distance Yacht Racing	56.66
9	Commercial Fishing Vessels	54.10
10	Coastal Research Vessels	53.45
11	Ra Expedition	52.99
12	Supertankers	49.21
13	Offshore Oil Platforms	41.52

ANACAPA SCIENCES, INC.

HABITABILITY ISSUES WITH DESIGN IMPLICATIONS

Sleep

Clothing

Exercise

Medical Support

Food Preparation

Habitat Aesthetics

Group Interaction

Outside Communications

Recreational Opportunities

Privacy and Personal Space

Scheduling and Workload Assessment

Onboard Training and Task Preparation

**HABITAT PROJECTS THAT HAVE INCORPORATED
DESIGN RECOMMENDATIONS
BASED ON ANACAPA ANALOGUE STUDIES AND
HUMAN FACTORS EVALUATIONS**

Space Station Freedom

Monobaric Underwater Habitats for North Sea Oil Production

Command and Control Centers for National Security Personnel

US Navy Long-Endurance Airships

US Air Force Rail Garrison Alert Trains

European Space Station

European Interplanetary Spacecraft

ANACAPA SCIENCES, INC.

A FEW RESEARCH REQUIREMENTS THAT COULD BE SATISFIED BY BEHAVIORAL STUDIES CONDUCTED AT ANTARCTIC RESEARCH STATIONS

Research is required to...

- Develop techniques for routinely (and unobtrusively) monitoring mental health, & providing psychological support.**
- Evaluate the applicability of the results of small group dynamics research to the crews of spacecraft.**
- Develop personnel selection procedures based on interpersonal skills, in addition to technical competence.**
- Define leadership responsibilities and identify required personal qualities and capabilities.**
- Define the most appropriate organizational structure.**
- Establish a cross-training plan to permit the effective use of personnel, and for contingency purposes.**
- Identify the appropriate equipment and motivational framework(s) to encourage regular physical exercise.**
- Develop procedures and equipment for handling critical incidents, like fatalities among crew personnel.**
- Establish policies regarding outside communications, including "negative personal news."**
- Identify appropriate recreation and relaxation equipment/materials/programs and policies.**
- Develop meaningful tasks to occupy crew during interplanetary transits.**
- Explore the advantages and disadvantages of various forms of meal preparation.**
- Support the development of training programs to sensitize crew personnel to problems of isolated & confined living.**

1.0 Introduction

The purpose of this report is to provide a comprehensive overview of the current state of the market for digital marketing services, with a focus on the impact of artificial intelligence (AI) and data analytics.

This report is intended for a wide range of stakeholders, including marketing executives, business owners, and industry analysts, who are interested in understanding the latest trends and opportunities in the digital marketing landscape.

The report is structured as follows: Section 2 provides a detailed analysis of the digital marketing market, including key players and emerging trends. Section 3 explores the role of AI and data analytics in digital marketing, and Section 4 discusses the challenges and opportunities associated with these technologies.

Section 5 concludes the report with key findings and recommendations for businesses looking to leverage digital marketing effectively in the coming years.

This report is based on extensive research and analysis of industry data, expert insights, and emerging trends. It provides a clear and concise overview of the digital marketing landscape, and is a valuable resource for anyone looking to stay ahead of the competition in this rapidly evolving market.

The information presented in this report is for informational purposes only and is not intended to constitute a financial or investment recommendation. Readers should consult with their financial advisor for more information.

The author would like to thank the following individuals for their contributions to this report: [Name], [Name], and [Name].

Contact: [Email], [Phone], [Address]

Copyright © 2023. All rights reserved.

This report is a confidential document and is intended solely for the use of the individual or entity to whom it is addressed. If you have received this report in error, please notify the sender immediately by email at [Email].

This report is for informational purposes only and is not intended to constitute a financial or investment recommendation. Readers should consult with their financial advisor for more information.

The information presented in this report is for informational purposes only and is not intended to constitute a financial or investment recommendation. Readers should consult with their financial advisor for more information.

The information presented in this report is for informational purposes only and is not intended to constitute a financial or investment recommendation. Readers should consult with their financial advisor for more information.

The information presented in this report is for informational purposes only and is not intended to constitute a financial or investment recommendation. Readers should consult with their financial advisor for more information.

The information presented in this report is for informational purposes only and is not intended to constitute a financial or investment recommendation. Readers should consult with their financial advisor for more information.

The information presented in this report is for informational purposes only and is not intended to constitute a financial or investment recommendation. Readers should consult with their financial advisor for more information.

The information presented in this report is for informational purposes only and is not intended to constitute a financial or investment recommendation. Readers should consult with their financial advisor for more information.