WORLD CATALOG OF OIL SPILL RESPONSE PRODUCTS

2008

A COMPLETE LISTING OF

- BOOMS
- SKIMMERS
- SORBENTS
- PUMPS
- OIL/WATER SEPARATORS
- BEACH CLEANERS
- DISPERSANT APPLICATION EQUIPMENT
- TEMPORARY STORAGE DEVICES

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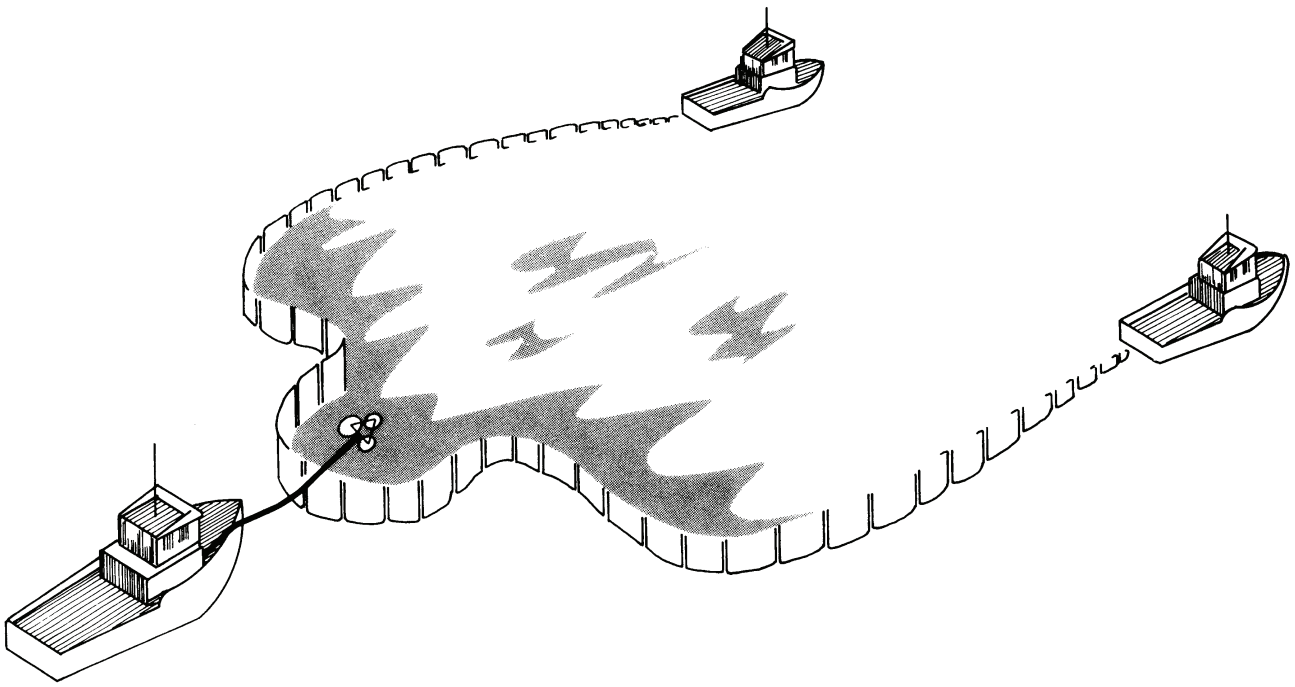
2008

WORLD CATALOG

OF

OIL SPILL RESPONSE PRODUCTS

NINTH EDITION



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PREFACE

The World Catalog has now been in general use worldwide for more than twenty years. We have users throughout the United States, Canada, Europe, the Middle East, the Far East, and South America. The goal of this project has been to provide comprehensive information on oil spill response products in a single reference. The first edition of the Catalog in 1986 had 348 pages covering just booms and skimmers. Since that time the Catalog has been expanded to include sorbents, oil/water separators, pumps, beach cleaners, dispersant application equipment, and storage devices. Although recent editions have had as much as 1,000 pages, this new edition, although still complete, is somewhat smaller because of contraction in the industry.

As before, we welcome any comments that will help us to make the Catalog better in the future. Please let us know if there are data that should be included or data that should be omitted. Although data sheets have changed somewhat from the early editions, we have now established a format that has remained essentially the same for several editions. We are trying to make the data entries as descriptive as possible and arrange data sheets so that information is easy to find. To facilitate its use in a database format, we have taken pains to standardize data sheet entries so that computer searches come up with the desired results.

The World Catalog began as a cottage industry in 1986 and continued to be run that way through the 4th edition. The owner and editor did all the work on the first editions and later was helped by two part time assistants. With the expanding size of the 4th edition, it became clear that a new method of operation would be needed, and a joint venture was formed between the original editor and publisher, Robert Schulze, and ECO Inc, headed by Virgil Keith, a former U.S. Coast Guard officer and practising naval architect. With the retirement of these two individuals in 2004, SL Ross Environmental Research took over production of the Catalog. We plan on maintaining the high standards that Bob has set in making the World Catalog the essential reference that it is. For this edition we will be publishing the Catalog in its usual hard-copy form and, for the first time, in a digital CD-version as well. We also plan to develop a web-based version to complement the Catalog with supplementary and archival information. Every indication is that interest in the Catalog remains high, as we have retained the usual support of suppliers for advertising and data listings. We hope to continue publishing on a biennial or triennial basis as long as this support continues.

The World Catalog is proud to provide an important service to the environmental community. Producing a complete reference covering all available oil spill response products is a complex and expensive task. In order for the information in the Catalog to be current, all data must be collected and assembled in a relatively short period of time. All of the work on a single edition of the Catalog is completed in a period of about six months. This is a tremendous task, but one that we feel is necessary to be sure that each new edition is completely up to date when it is published.

ACKNOWLEDGEMENTS

We gratefully acknowledge the enormous contributions to the World Catalog by Bob Schulze, who started the Catalog in 1986 and was the driving force behind it since that time. While we have thoroughly updated the equipment listings, the structure of the data remains and is the result of Bob's knowledge and years of experience in classifying and reporting on equipment specifications and performance. We have also updated and revised much of the text sections that lead each chapter, but again, a significant portion of the material is a result of Bob's work through the years on the Catalog.

We are also grateful to the support of our advertisers and listing companies, without whom the World Catalog would not be possible.

INTRODUCTION

The 9th edition of the World Catalog includes many changes in the text that precedes the data listings in each chapter, but very few changes in the way in that data are recorded. As in recent editions, data reporting follows the format and definitions of American Society for Testing and Materials (ASTM) Standards as much as possible. Several new Standards have been approved or modified since the previous edition and these are referred to where appropriate.

Perhaps the biggest changes that have occurred since the last edition of the Catalog have been in the oil spill response industry. Manufacturing and procurement of response equipment peaked in the early 1990's. Since then there has been a retrenchment in both manufacturing and procurement, and some manufacturers have withdrawn their oil spill response products from the market entirely. Others have cut back and offer fewer products. Finally, there has also been consolidation, with several companies combining to provide a broader range of services.

Here are some important things to look for in the new edition.

Containment Boom

Boom Types: We are continuing to use Fire Resistant, Tidal Seal, and Permanent as standard boom definitions. The latter is designed for long-term deployment in the water, and has also attracted interest as a useful product for port security. The term Fireproof has been dropped because many products are unusable after one burning operation. All three types are listed in the indices of special-purpose booms.

Boom Connectors: What was termed the Quick (Z) connector is now referred to as the ASTM connector because now virtually all "Z" type connectors are made to the ASTM Standard. An additional ASTM connector, the ASTM Slide Connector is also referred to.

This edition has updated summaries of recent research and development, including research on fast-water containment, fire-resistant boom testing, experiments to refine knowledge on the towing forces on booms, heavy oil containment, and methods of measuring buoyancy-to-weight ratio. There is also a description of some recent equipment advances relating to boom retrieval and equipment for vessel pre-booming.

Skimmers

This section describes skimmer types, how they are used, and the level of performance that can be expected of each type. Skimmer definitions follow those contained in ASTM Standard F1178, which was itself adapted from the definitions in recent editions of the World Catalog. Note that the names of some skimmer types have changed to correspond to the ASTM definitions. Check this in Section 2 of the Skimmer Chapter.

Classifying skimmers according to their use in Calm Water, Protected Water, and Open Water has always been a difficult task since there are no exact rules as there are for containment booms. To help solve this problem, we have completed a very extensive review of how skimmers have been classified and how they should be classified. Although we have not developed precise rules that can exactly classify every device, we have developed tables that describe every skimmer type listed in the Catalog. We are not publishing the selection criteria, but they are available should manufacturers and interested users wish to discuss them.

Some recent developments in skimmers are summarized, including development of oil-in-ice skimmers, testing to optimize oleophilic surfaces, and ASTM work on developing a standard method of measuring a skimmer’s nameplate recovery rate.

Sorbents

Sorbents data sheets have remained the same as before, but we have added summaries of various sorbents tests. Environment Canada's Emergencies Engineering Division (EED) and the Marine Spill Response Corporation (MSRC) joined in a project to study the relationship between oil sorbent material and oil viscosity as they relate to oil pick-up ratios. Because of the significance of this material, we have included a set of tables summarizing these tests results. We have also established a standard for rating the test results. These tables list products as Good, Fair, or Poor according to their sorbency ratio being >10, 5-10, or <5. This should help the user choose products from among those tested.

Environment Canada has produced a database of sorbent performance and published it on the web. The database contains the testing parameters, performance data pertaining to each sorbent, and manufacturer or distributor contact information.

Separators

Chapter 4 contains a summary of the MSRC separator tests, which show a substantial improvement in separator technology as applied to oil spill response. A summary of the final report of U.S. Coast Guard tests of centrifugal separators is also included. Chapter 4 also refers to recent research on decanting of recovered oil spill fluids, discussed more thoroughly in Appendix D.

Pumps

ASTM Committee F-20 developed and approved a Standard for testing pumps for use in oil spill response operations, F1607. The pump data sheets follow the information contained in this Standard. Pumps data sheets also include listings of pumps that are particularly well suited to handling the highly viscous, emulsified product found at many spill sites.

There have been few pump tests that were specifically related to the issues involved in spill response. For that reason, we have retained the descriptions of significant pump tests that were performed in the late 1970's and the 1980's. We have also updated this with recent work on pumping viscous emulsions by Alaska Clean Seas, and with a summary of US Coast Guard work in the area of pumping highly viscous oils – up to 500,000 cSt – using a variety of flow-enhancement techniques.

Beach Cleaners

Chapter 6 contains a review of the main types of equipment that can be used to clean oiled shorelines. The emerging area of in situ treatments is also summarized. The Chapter also notes a number of good reference documents, some of which are available on the web.

Dispersant Application Equipment

Chapter 7 contains a good overview of how dispersants work, and describes the many factors that determine their effectiveness. A number of important field and laboratory experiments are summarized in this regard. Several options for dispersant effectiveness testing are also described, including meso-scale lab tests and full-scale testing at Ohmsett, which is a recently developed capability at that facility. Recent testing is summarized regarding on dispersant effectiveness in cold water conditions, with heavy oils, and in low seas states.

There is also a description of dispersant application equipment and techniques, and a discussion of the relative merits of airborne and vessel-based application systems.

Temporary Storage of Recovered Oil

This Chapter includes a summary of the criteria to be considered when selecting a storage device, and highlights the advantages and disadvantages of the main options. Some recent test results are also summarized.

Other developments in temporary storage technology include portable barges that are used by several spill response organization such as the Marine Spill Response Corporation (MSRC), Clean Seas in Carpinteria, California, and Alaska Clean Seas. Chapter 8 contains a description of these systems.

Appendix A - In-Situ Burning

This edition of the Catalog features a good overview of the science, technology, operational capabilities and limitations, and ecological consequences of in situ burning as a countermeasure for oil spills on water. An internationally recognized expert in the field, Ian Buist of SL Ross Environmental Research, wrote this chapter.

Appendix B - Forces on a Boom

Equations in earlier editions have been revised based on recent field and experimental work in this area. Simple to use formulae and graphs are provided.

Appendix C - Spill Encounter Rate

This provides a complete explanation of how to apply this concept to spill response problems. This Appendix has been revised and up-dated.

Appendix D – Decanting

This gives a thorough description of recent and ongoing research in this area, and has simple-to-use guidelines for decanting of oil spill fluids.

Appendix E – Unit Conversions

This is a list of unit conversions that we have found to be useful in the field of oil spill response.

Conclusion

Manufacturer response in reporting data for the Catalog continues to improve. We have done everything we can to make this Catalog is the most complete and accurate yet. We feel an increasing sense of duty to do this because we realize that it has become the most important primary reference for regulatory agencies in approving contingency plans and other necessary documents and applications. With this in mind, we continue to strive to make the data as accurate and complete as possible.

We greatly appreciate the support of Catalog users. The World Catalog is a highly specialized publication designed for a limited community. Our only revenue is from paid advertising and purchases of new books. As a result, the Catalog can only continue when supported its users. We hope that you will agree that this is an important reference for the spill response community, and one that deserves to continue to be published on a regular basis. Your feedback on any aspect of the World Catalog will be appreciated.

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Applied Fabrics International	Morris Skimmers	Skimmers
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Hyde Marine, Inc.	Lamor Corporation AB	Beach Cleaners Boom Skimmers Pumps Temporary Storage
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