

Evidence of this includes the fact that since this book was published in 1987, five more nations have acceded to the treaty and one previous member was accorded consultative party status (Headland, 1988). Given the interest in this continent, there is a need for additional scholarship that addresses the political and developmental aspects of the Antarctic. This book, along with the companion volume mentioned above, answers this need. The book is highly recommended for anyone with an interest in the development or preservation of the frozen continent.

REFERENCES

- HEADLAND, R.K. 1988. Signatory governments of the Antarctic Treaty. *Polar Record* 24(148):64.
 TRIGGS, G., ed. 1987. *The Antarctic Treaty Regime: Law, Environment and Resources*. Cambridge: Cambridge University Press. 238 p.

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DETECTION AND CLASSIFICATION OF ICE. By EDWARD O. LEWIS, BRIAN W. CURRIE and SIMON HAYKIN. Letchworth, Hertfordshire, England: Research Studies Press Ltd.; New York: John Wiley & Sons Inc., 1987. 325 p., maps, figs., illus., index, bib. Hardbound. US\$77.95.

This is a very informative book reporting the results of four experiments aimed at evaluating ice detection and potential for classification of a number of surface-based marine radar systems. Offshore drilling platforms in the Beaufort Sea and off Canada's east coast make extensive use of marine radar as a tool for ice detection and tracking and use airborne radar systems for ice detection and classification; during such times as aircraft systems are not available (e.g., bad weather, cost considerations) surface-based marine radar is the only tool available for use in monitoring of the ice surrounding the drilling platform. The book demonstrates that marine radar systems exist that, when properly configured, can be used for both ice detection and ice classification. Ice classification is an item of major importance that would greatly enhance the utility of marine radars; this would expand the "[yes/no] [X° at Y kms]" response to the query "Is there ice?" to include that most vital piece of information — the type of ice! The threat posed to a drilling platform by a floe of one-metre-thick first-year ice is minuscule when compared with that from a multi-year ice floe or an iceberg. A marine radar that could allow for differentiation of these targets would be of great value to both drilling and navigation operations in the ice-congested waters.

The book is unique in that it offers technical information to people who may require it (e.g., design engineers or people responsible for system selection) as well as to operators who end up actually using the apparatus. The book should be required reading in offshore installations operating in ice-covered waters. The language and presentation are such that most people can easily grasp the fundamentals and the details as they impact their particular operation (e.g., drillship, or caisson or navigating vessel).

The chapters preceding the discussion of the ice/radar experiments present two very valuable sections: one on the nature and structure of sea ice and glacier ice (Chapter 3), and the other on the theory of radar (Chapter 4). The section on ice structure in Chapter 3 very efficiently concludes with an extended discussion of the variations in dielectric loss rates between different ice types (e.g., an iceberg and a multi-year ice floe) that result in their having different radar signatures. The depolarization of radar signals is identified as a key aspect of ice-type differentiation. Though both of these chapters contain some complex

physical and mathematical concepts, they are written with sufficient clarity (and apparent concern for readers from the "soft" sciences) that the fundamentals are easily grasped. We found it rather refreshing to read a scientific book that begins at the beginning, rather than somewhere in the middle.

The authors of *Detection and Classification of Ice* concentrate on radar performance in ice-covered waters, although there was one experiment in open waters with X-band radar. The sea state and weather were relatively stable during the open water experiment, and it would be interesting to see the results of similar experiments carried out in adverse conditions with moving targets (the targets in the ice-covered water experiments were stationary). Although the authors achieved their objectives by demonstrating an ability to detect multi-year ice floes, icebergs and "berg bits" (in ideal conditions), the problem of detecting growlers has not been resolved. The authors do suggest, however, that the use of a coherent system may aid in the detection of smaller targets in open water conditions.

The authors of the book recommend the use of an S-band radar for detection of large targets and a dual-polarized (HH and HV) X-band radar for detection of multi-year floes and glacier ice targets. They also provide configuration data that would enhance the detection capabilities of existing X-band radar systems.

This book is a valuable resource for people who may be defining or developing system requirements for operations in ice-infested waters. It offers practical and useful suggestions on alternatives and trade-offs for various options. The book is also of use to people who operate the equipment or are in responsible positions (e.g., a vessel master) to appreciate the limitations and usefulness of X-band vs. S-band, X-polarization, and antenna height configurations. The book would also be of interest to students in electrical engineering or remote sensing.

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NORTHWEST TERRITORIES POSTAL CANCELLATIONS 1907-1986. By KEVIN O'REILLY. Toronto: The Unitrade Press, 1987. viii + 230 p., maps, facsimiles, etc. No price indicated.

The first impression a philatelist will likely derive from this book is probably highly misleading. The collector of postage stamps, air companies' mail stickers, or first-day flight covers with their colourful cachets will search in vain for these desiderata. Rather, this book restricts itself to reproducing the postal markings with which postmasters franked regular and registered mail and parcels originating in the Territories. The main sources for these were the Post Office Department's proof books at the National Postal Museum and the department's records in the Public Archives, both in Ottawa, supplemented by many covers from mail posted in the N.W.T. The postmarks identified, depicted and described prove surprisingly varied. They represent the outputs of some 92 official Canadian post offices and 9 United States Army post offices whose A.P.O. numbers on cancellations indicate they were used during the course of U.S. Cold War and Second World War military operations in the N.W.T.

The author has carefully researched the history of each office — when it was opened, closed, reopened, when and where it was relocat-