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BEARING STEELS

INTO THE 21ST CENTURY

JOSEPH J. C. HOO
WILLARD B. GREEN, JR.
EDITORS

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Bearing Steels: Into the 21st Century

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Foreword

This publication, *Bearing Steels: Into the 21st Century,* contains papers presented at the symposium of the same name, held on 19–21 November 1996 in New Orleans, Louisiana. The symposium was sponsored by ASTM Committee A-1 on Steel, Stainless Steel, and Related Alloys and its Subcommittee A01.28 on Bearing Steels. Joseph J. C. Hoo (symposium chairman) of General Bearing Corp. in West Nyack, NY and Willard B. Green, Jr. of the Torrington Co. in Torrington, CT are editors of the resulting publication.

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Overview

The anti-friction bearing industry is once again indebted to Joseph J. C. Hoo for his leadership in organizing and chairing an international symposium on Bearing Steels and related subjects. His efforts have brought together experts from around the world to present their work. This symposium, Joe's fifth, was entitled "Bearing Steels into the 21st Century", and was sponsored by the American Society for Testing and Materials Committee A01 and its subcommittee A01.28 on Bearing Steels. It was held in New Orleans, Louisiana, November 19-21, 1996. Special Technical Publications (STPs) for the four previous symposia have been published and are listed here for quick reference:

1974	STP 575	*Bearing Steels: The Rating of Nonmetallic Inclusions*
1981	STP 771	*Rolling Contact Fatigue Testing of Bearing Steels*
1986	STP 987	*Effect of Steel Manufacturing Processes on the Quality of Bearing Steels*
1991	STP 1195	*Creative Use of Bearing Steels*

The symposia titles and subject matter have been carefully chosen to follow the evolution of bearing and bearing steel technology over the last quarter century. It is certainly fitting that this symposium focused on where the industry is headed in the 21st century. The collection of work reported in these five STPs provides a unique focus on the international thinking in the bearing industry from the materials and materials processing point of view.

The symposium was organized in 9 separate categories, some sessions updating information previously presented, and some presenting brand new materials and processing to advance bearing technology . Subjects covered include steel cleanliness and measuring methods, bearing fatigue life, and advanced steel processing. Also covered are advances in both thru-hardening and carburizing heat treatments, progress in aerospace and corrosion resistant materials, and surface modifying processes, such as induction hardening and coating methods. Details of the sessions and the papers are covered in the index to this STP.

With each symposium, the international participation is increasing. 175 to 200 engineers and scientists from around the world attended this symposium, some coming to these gatherings for the first time. The organizers are grateful for the wide interest and participation. This book is a collection of 33 papers presented in New Orleans. It is the work of researchers from (alphabetically) Austria, Belgium, China, France, Germany, Greece, Japan, Netherlands, Russia, Sweden, UK, and USA. Some of these countries participated for the first time in an ASTM sponsored event. They represented 10 bearing companies, 15 steel producing companies, 8 universities and research institutes, and 4 miscellaneous bearing users.

We are sure that the work contained in this and previous STPs has advanced that world's knowledge of those simple, yet complicated, devices known as anti-friction bearings, be they ball, roller, or needle. We also hope that some of these papers will form the foundation for future research to further advance our industry. While we have come a long way in the past 25 years, we do not know all the answers yet. The challenge of the future is, of course, to make bearings that last longer, are smaller, more corrosion resistant, and more cost effective. The researchers of the future have work to do. We hope that ASTM symposia will continue to provide forums to report advances toward these goals.

Joe Hoo, because of his international stature, has been successful in bringing together world leaders in bearing technology to present their research. We hope that the spirit of sharing information continues as the world gets smaller, and probably more competitive. On behalf of the ASTM Subcommittee A01.28 on Bearing Steels, and the world bearing industry - thanks, Joe.

Willard B. Green, Jr.
Chief Materials Engineer
The Torrington Company
Torrington, CT 06790
Chairman, A01.28, Bearing Steels

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