## SYMPOSIUM ON NON-DESTRUCTIVE TESTING

Presented at the
FIFTY-FIFTH ANNUAL MEETING
(FIFTIETH ANNIVERSARY MEETING)
AMERICAN SOCIETY FOR TESTING MATERIALS
New York, N. Y., June 26, 1952



ASTM Special Technical Publication No. 145
FIFTETH ANNIVERSARY PUBLICATION

Published by the AMERICAN SOCIETY FOR TESTING MATERIALS. 1916 Race St., Philadelphia 3, Pa.

## SYMPOSIUM ON NON-DESTRUCTIVE TESTING

Presented at the
FIFTY-FIFTH ANNUAL MEETING
(FIFTIETH ANNIVERSARY MEETING)
AMERICAN SOCIETY FOR TESTING MATERIALS
New York, N. Y. June 26, 1952



Reg. U. S. Pat. Off.

ASTM Special Technical Publication No. 145
FIFTIETH ANNIVERSARY PUBLICATION

Published by the AMERICAN SOCIETY FOR TESTING MATERIALS 1916 Race St., Philadelphia 3, Pa.

Copyright, 1953 by the American Society for Testing Materials

## **FOREWORD**

The papers in this Symposium on Non-Destructive Testing are those presented at the Fifty-fifth Annual Meeting of the Society, June 26, 1952, New York, N. Y.

Committee E-7 on Non-Destructive Testing sponsored this group of papers. John Smack, Sales Engineer, Sperry Products, Inc., Danbury, Conn., and D. T. O'Connor, Naval Ordnance Laboratory, U. S. Department of the Navy, White Oak, Silver Spring, Md., served as Co-chairmen of the Symposium Sessions.

Note.—The Society is not responsible, as a body, for the statements and opinions advanced in this publication.

## CONTENTS

	PAGE
Introduction—S. A. Wenk	1
Comparison Radiographs of Welds-Alexander Gobus and Noah A. Kahn	3
Fluoroscopy and Radiography with Iridium 192-C. Garrett, A. Morrison, and	
G. Rice	9
Weld Radiography: A Tentative Method for the Quantitative Evaluation of De-	
fects—Oscar Masi	
Critical Study of Techniques for the Testing of Materials by Ultrasonic Methods-	
Paul G. Bastien	
Comparison of Non-Destructive Tests on a Damaged Sternpost—A. de Sterke and	
H. den Hartog	43
Progress in the Field of Non-Destructive Testing Through the Use of Ultrasonics-	
W. C. Hitt	53
The Practical Application of Ultrasonic Non-Destructive Testing—Werner A. Felix	76
Non-Destructive Electronic Sorting of Metals for Physical Properties—Fritz Förster	89

THIS PUBLICATION is one of many issued by the American Society for Testing Materials In connection with its work of promoting knowledge of the properties of materials and developing standard specifications and tests for materials. Over the years the Society has published many technical symposiums, reports, and special books. These may consist of a series of technical papers, reports by the A.S.T.M. technical committees, or compilations of data developed in special Society groups with many organizations cooperating. A list of A.S.T.M. publications and information on the work of the Society will be furnished on request.