

Guide to Literature on Non-destructive Testing

By P S R K AYYAVARI SASTRI

[Non-destructive testing is being used to an ever-increasing extent by industry in general and it is of particular interest to the welding industry. The list compiled of books, standards, periodicals and institutions relating to non-destructive testing is expected to be of guidance to all who are concerned directly or indirectly with the use of NDT techniques.

This comprehensive list was compiled for Indian Welding Journal by Mr. Sastri, Librarian at the Central Library of Bharat Heavy Electricals, Tiruchirapalli-14.

The list of books gives particulars such as name of author, publisher, title of book, place and year of publication and number of pages.—Editor,]

BOOKS

American Society for Metals—Ohio

Nondestructive Testing for Management, ASM, Ohio, 1963, 68p.

American Society for Nondestructive Testing—Evanston.

Class Room Training (Reference Texts) Hand-books CT-6-2 to 6, ASNT, Evanston.

CT-6-2 Liquid Penetrant Testing (128p.)

CT-6-3 Magnetic Particle Testing (142p.)

CT-6-4 Ultrasonic Testing (207p.)

CT-6-5 Eddy Current Testing (201p.)

CT-6-6 Radiographic Testing (225p.)

Infrared Testing—Transactions of the Infrared and Thermal Session 1967 Fall Conference held in Cleveland, ASNT, Evanston, 1968.

Proceedings of the Second Symposium on the Nondestructive Testing of wood held in 1965 at Washington State University, ASNT, Evanston, 1966, 543p.

Proceedings of the 1966 Symposium on the Non-destructive Testing of Welds held at the Illinois Institute of Technology Research Institute, ASNT, Evanston, 1967, 261p.

Proceedings of the 1967 Symposium on the Non-destructive Testing of Welds held at the Illinois Institute of Technology Research Institute, ASNT, Evanston, 1967, 425p.

Proceedings of the 1968 Symposium on the Non-destructive Testing of Welds and Materials Joining

held in Los Angeles, ASNT, Evanston, 1968, 740p.

Programmed Instruction (Self Study) Handbooks P1-4, ASNT, Evanston, 1968.

PI-4-1 Introduction to Nondestructive Testing (277p.)

PI-4-2 Liquid Penetrant Testing (276p.)

PI-4-3 Magnetic Particle Testing (410p.)

PI-4-4 Ultrasonic Testing (3 Vols. 903p.)

PI-4-5 Eddy Current Testing (2 Vols. 503p.)

PI-4-6 Radiographic Testing (5 Vols. 1363p.)

Recommended Practice No. SNT-TC-IA-Guidelines for the Qualification and Certification of Non-destructive Testing Personnel, Supplements 1-5, ASNT, Evanston, 1968.

Supplement :

A—Radiographic Testing Method (48p.)

B—Magnetic Particle Method (84p.)

C—Ultrasonic Testing Method (44p.)

D—Liquid Penetrant Method (76p.)

E—Eddy Current Method (56p.)

American Society for Testing and Materials—Philadelphia.

Magnetic Particle Testing, Reference Photographs—E125 adjunct, ASTM, Philadelphia, 1956, 42p.

Radiographic Standards for Steel Castings, Industrial—E71 Adjunct, ASTM, Philadelphia, 62 Radiographs.

Recent Developments in Nondestructive Testing of Missiles and Rockets (STP 350), ASTM, Philadelphia 1963, 120p.

Reference Radiographs for Appearances of Radiographic Images as Certain Parameters are changed—E242 Adjunct, ASTM, Philadelphia, 49p.

Reference Radiographs for Heavy-Walled (2 to 4½ in.) Steel Castings—E186 Adjunct, ASTM, Philadelphia, 120 Radiographs.

Reference Radiographs for Heavy-Walled (4½ to 12 in.) Steel Castings—E280 Adjunct, ASTM, Philadelphia, 74 Radiographs.

Reference Radiographs for High Strength Copper-Base and Nickel-Copper Alloy Castings—E272 Adjunct, ASTM, Philadelphia, 45 Radiographs.

Reference Radiographs for Inspection of Aluminium and Magnesium Castings, Series II-E 155 Adjunct, ASTM, Philadelphia, 25 Radiographs.

Reference Radiographs for Investment Steel Castings for Aerospace Applications—E192 Adjunct, ASTM, Philadelphia, 16 Radiographs.

Reference Radiographs for Steel Welds—E99 Adjunct, ASTM, Philadelphia, 35 Radiographs.

Reference Radiographs for Tin Bronze Castings—E310 Adjunct, ASTM, Philadelphia, 22 Radiographs.

Symposium on Applied Radiation and Radioisotopes Test Methods (STP 268), ASTM Philadelphia, 1959.

Symposium on Nondestructive Testing, (STP 213), ASTM, Philadelphia, 1956.

Symposium on the Role of Nondestructive Testing in the Economics of Production (STP 112), ASTM, Philadelphia, 1950, 164p.

Symposium on Ultrasonic Testing (STP No. 101), ASTM, Philadelphia, 1949.

American Society of Mechanical Engineers—New York.

1968 ASME Boiler and Pressure Vessel Code, Sections I—IX, ASME, NY, 1968.

Andrews, Alan

ABC's of Ultrasonics, Sams, Indianapolis, 1961, 96p.

Babikov, O.I.

Ultrasonics and Its Industrial Applications, Consultants Bureau, N.Y., 1960, 224p.

Banks, B. and Others

Ultrasonic Flaw Detection in Metals : Theory and Practice, Iliffe Books Limited, London, 1962, 256p.

Barnes, D.E. & Taylor, Denis

Radiation Hazards and Protection, Ed. 2, Newnes, London, 1967, 232p.

Berer, Harold

Neutron Radiography, ASNT, Evanston, 1965, 146p.

Bergmall, Ludwig

Ultrasonics, John Wiley, New York, 1938, 19p.

Betz, Carl E.

Principles of Magnetic Particle Testing, Magnaflux Corporation, Chicago, 1966, 528p.

Betz, Carl E.

Principles of Penetrants, Magnaflux Corporation, Chicago, 1963, 480p.

Blitz J.

Fundamentals of Ultrasonics Ed. 2, Butterworths, London, 1967, 230p.

INDIAN WELDING JOURNAL, JANUARY 1971

British National Committee on Nondestructive Testing—London.

Proceedings of the Fourth International Conference on Nondestructive Testing ; sponsored by the British National Committee on Nondestructive Testing and arranged by the Institution of Mechanical Engineers, held in London on 9-13th September, 1963, Butterworths, London, 1964, 356p.

British Steel Castings Research Association—Sheffield.

Recommended Procedure for Surface Flaw Detection of Steel Castings by Magnetic Particle Examination, BSCRA, Sheffield, 1966, 13p.

Recommended Procedure for the Ultrasonic Examination of Steel Castings, BSCRA, Sheffield, 1964, 49p.

Brown, Basil & Goodman, John E.

High-Intensity Ultrasonics Industrial Applications, Iliffe Books Limited, London, 1965.

Carlin, Benson

Ultrasonics, Ed. 2, McGraw-Hill, New York, 1960, 309p.

Castrol Industrial Ltd.—London.

Dyeing for Flaws : Dye Penetrant Inspection, Castrol Industrial Limited 1968, 6p.

Magnetic Methods of Nondestructive Testing, Castrol Industrial Limited, 1968, 16p.

Clark, George L.

Applied X-rays, Ed. 4, McGraw-Hill, New York, 1955, 843p.

Clauser, H.R.

Practical Radiography for Industry, Reinhold, New York, 1952.

Crawford, Alan E.

Ultrasonic Engineering—With particular reference to High Power Applications, Butterworths, London, 1955, 344p.

Crowther, J.A. (Ed.)

Handbook of Industrial Radiography, Arnold, London, 1945.

Doane, F.G. & Betz, C.E.

Principles of Magnaflux, Ed. 3, Magnaflux Corporation, Chicago, 1949, 388p.

Eastman Kodak Co.—Rochester

Radiography in Modern Industry, Ed. 2, EKC, Rochester, 1958, 140p.

Filipcinski, L. and others

Ultrasonic Methods of Testing Materials, Butterworth, London, 1966, 280p.

Fordham, P.

Nondestructive Techniques, Business Publications Limited, London, 1968, 153p.

Frederick, Julian, R.

Ultrasonic Engineering, John Wiley, New York, 1965, 379p.

Frocht, Max M.

Photoelasticity, John Wiley, New York, 1948, Two Volumes.

Goldman, Richard G.

Ultrasonic Technology, Reinhold, New York, 1962, 304p.

Goberman, G.L.

Ultrasonic Theory and Application, English University Press, London, 1968, 210p.

Great Britain—Ministry of Technology

The advantages and Limitations of Commonly used methods of Nondestructive Testing, HMSO, London, 1968, 20p.

Halmshaw, R.

Physics of Industrial Radiology, Iliffe Books Limited, London, 1966, 491p.

Hinsley, J.F.

Nondestructive Testing, McDonald and Evans, London, 1959.

Hogarth, C.A. & Blitz, (EDS.)

Techniques of Nondestructive Testing, Butterworths, London, 1963, 224p.

Houldcroft, P. T. and Others

Classified Radiographs for Defects in Aluminium Fusion Welds, Institute of Welding, London, 1966.

Hueter, Theodor F. & Bolt, Richard H.

Sonics : Teachings for the use of sound and ultrasound in Engineering and Science, John Wiley, 1955, 456p.

Institute of Welding—London

Memorandum on Nondestructive Methods for the Examination of Welds, Ed. 2, Institute of Welding, London.

Recommendations for the Standardisation of the Radiographic Examination of Welded Joints in

Mild Steel Pressure Vessels, Institute of Welding, London.

Ultrasonic Testing: The Memorandum of the Select Conference on the Ultrasonic Inspection of Welds Held at Hove 30 April—2 May 1963, Institute of Welding, London.

International Commission on Radiological Protection

Recommendations of the International Commission on Radiological Protection, Pergamon Press, Oxford, 1960.

International Institute of Welding—

Collection of Reference Radiographs of Welds in Aluminium and Aluminium Alloys, Teknisha Röntgencentralen AB, Stockholm, 1966, 51 Radiographs.

Collection of Reference Radiographs of Welds in Steel, Teknisha-Röntgencentralen AB, Stockholm, 1961, 86 Radiographs.

Handbook on Radiographic Apparatus and Techniques, IIW, 1961, 80p.

International Labour Office—Geneva

Manual of Industrial Radiation Protection, ILO, Geneva, 1964, Five Parts.

Iron and Steel Institute—London.

Nondestructive Examination in the Steel Industry, ISI, London, 1967, 194p.

Jenkins, R. & Vries J. L. De.

Practical X-ray Spectrometry, ASNT, Evanston, 1967, 182p.

John, D.H.O.

Radiographic Processing in Medicine and Industry, ASNT, Evanston, 1967, 292p.

Jones, R.

Nondestructive Testing of Concrete, Cambridge University Press, London, 1962, 101p.

Kohl, Jerome and Others.

Radioisotope Application for Engineering, Van Nostrand, New York, 1961, 562p.

Krautkramer, Josef & Krautkramer, Herbert.

Ultrasonic Testing of Materials, Ed. 2, translated from German by B. W. Zenzinger, Wells-Krantksamer Limited, Letchworth, 1969, 536p.

Lamble, J.H. (Ed.)

Principles and Practice of Nondestructive Testing, John Wiley, New York, 1963, 238p.

McGonnagle, Warren J.

Nondestructive Testing, Ed. 2, Gordon and Breach, New York, 1966, 457p.

McGowan, N.

The Nondestructive Testing of Forgings, The Drop Forging Research Association, Sheffield, 1966, 46p.

McMaster, Robert C. (Ed.)

Nondestructive Testing Handbook, Ronald Press, New York, 1963, Two Volumes.

Miller, Harold N.

Nondestructive High Potential Testing, Iliffe Books Limited, London, 1966, 148p.

Morgan, R. H. & Corrigan, K.E. (Eds.)

Handbook of Radiology, Yearbook Publishers, Inc., Chicago, 1955.

Pullin, V.E.

Engineering Radiography, George Bell and Sons Limited, London, 1934.

Raytheon Company—Wayland and Barnes Engineering Company—Stamford.

Current Infrared Papers, R. C., Wayland and BEC, Stamford, 1967.

Renken, C.J.

Theory and Some Applications of Pulsed Current Fields to the Problems of Nondestructive Testing, Iliffe Books Limited, London, 1968, 24p.

Rockley, J.C.

An Introduction to Industrial Radiology, Butterworths, London, 1964, 248p.

Rumyantsev, S.

Industrial Radiology—The Use of Radioactive Isotopes in Flaw Detection, Foreign Language Publishing House, Moscow, 276p.

Schall, W.E.

Nondestructive Testing, Machinery Publishing Co. Ltd., Brighton, 1968, 210p.

Schneeman, Justin G.

Industrial X-Ray Interpretation, Intex Publishing Co., Evanston, 1969, 263p.

St. John, A. & Isenburger, H.R.

Industrial Radiology, John Wiley, New York, 1942.

Stanford, E.G. & Fearson, J. H. (Eds.)

Progress in Nondestructive Testing, Macmillan, New York, 1961, Three Volumes.

Steel Castings Research and Trade Association—Sheffield.

Atlas on Some Steel Casting Flaws as shown by Nondestructive Testing, SCRTA, Sheffield, 1968, 36p.

Vigoureux, P.

Ultrasonics, Chapman & Hall, London, 1950, 163p.

Wiltshire, W.J. (Ed.)

A Further Handbook on Industrial Radiography, Arnold, London, 1957.

Zmeskal, Otto

Radiographic Inspection of Metals, Harper & Brothers, New York, 1943.

IMPORTANT STANDARDS AND SPECIFICATIONS RELATING TO NONDESTRUCTIVE TESTING

A. Indian Standards**I.S. : 1182—1967**

Recommended Practice for Radiographic Examination of Fusion Welded Butt Joints in Steel Plates.

I.S. : 2417—1963

Glossary of terms relating to ultrasonic testing.

I.S. : 2478—1963

Glossary of terms relating to industrial radiology.

I.S. : 2595—1963

Code of Practice for Radiographic Testing.

I.S. : 2598—1966

Safety Code for Industrial Radiographic Practice.

I.S. : 2953—1964

Glossary of terms used in Radiographic Inspection of Castings.

I.S. : 3415—1966

Glossary of terms used in Magnetic particle flow detection.

I.S. : 3657—1966

Radiographic Image Quality Indicators.

I.S. : 3658—1966

Code of Practice for Liquid Penetrant flow detection.

I.S. : 3664—1966

Code of Practice for Ultrasonic Testing by Pulse echo method.

I.S. : 3703—1966

Code of Practice for magnetic particle flow detection.

I.S. : 4225—1967

Recommended Practice for Ultrasonic Testing of steel plates.

I.S. : 4260—1967

Recommended Practice for Ultrasonic testing of welds in ferritic steel.

I.S. : 4853—1968

Recommended Practice for Radiographic Examination of Fusion Welded Circumferential Joints in Steel Pipes.

I.S. : 4901—1968

Code of Practice for Magnetic Particle Flow Detection of Steel Crank-Shaft Forgings.

I.S. : 4904—1968

Reference Block for calibration of ultrasonic flaw detectors.

B. British Standards

B.S. : 1500 : Part 1 : 1958

Fusion Welded Pressure vessels for General Purposes. Carbon and Low Alloy Steels.

B.S. : 2600—1962

General recommendations for the radiographic examination of fusion welded butt joints in steel.

B.S. : 2910—1965

General recommendations for the radiographic examination of fusion welded circumferential butt joints in steel pipes.

B.S. : 3636—1963

Methods for proving the gas tightness of vacuum or pressurized plant.

B.S. : 3683 : Part 1 : 1963

Glossary of Terms used in Non-destructive Testing.

Part 1 : Penetrant flow detection.

B.S. : 3683 : Part 2 : 1963

Glossary of Terms used in Non-destructive Testing.

Part 2 : Magnetic Particle Flaw Detection.

B.S. : 3683 : Part 3 : 1964

Glossary of Terms used in Non-destructive Testing.

Part 3 : Radiological flaw detection.

B.S. : 3683 : Part 4 : 1965

Glossary of Terms used in Nondestructive Testing.

Part 4 : Ultrasonic flaw detection.

B.S. : 3683 : Part 5 : 1965

Glossary of Terms used in Nondestructive Testing.

Part 5 : Eddy Current flaw detection.

B.S. : 3889 : Part 1A : 1965

Method for Nondestructive Testing of Pipes and Tubes.

Part 1A : Ultrasonic testing of ferrous pipes (excluding cast).

B.S. : 3889 : Part 2A : 1965

Methods for Nondestructive Testing of Pipes and Tubes.

Part 2A : eddy current Testing of ferrous Pipes and tubes.

B.S. : 3889 : Part 2B : 1966

Methods for Nondestructive Testing of Pipes and Tubes.

Part 2B : Eddy Current Testing of non-ferrous Tubes.

B.S. : 3889 : Part 3A : 1965

Methods for Nondestructive Testing of Pipes and Tubes.

Part 3A : Penetrant Testing of Ferrous Pipes and Tubes.

B.S. : 3889 : Part 4A : 1965

Methods for Nondestructive Testing of Pipes and Tubes.

Part 4A : Magnetic Particle Flaw Detection : Ferrous Pipes and tubes.

B.S. : 3923 : Part 1 : 1968

Methods for Ultrasonic Examination of Welds : Manual Examination of fusion welded butt joints in ferritic steels.

B.S. : 3923 : Part 2 : 1969

Methods for Ultrasonic Examination of Welds :

Part 2 : Automatic Examination of Welded Seams.

B.S. : 3923 : Part 3 : 1965

Methods for Ultrasonic Examination of Welds :

Part 3 : Manual Examination of Nozzle Welds.

B.S. : 3971 : 1966

Image Quality Indicators for Radiography and Recommendations for their use.

B.S. : 4080—1966

Methods for Nondestructive Testing of Steel Castings

B.S. : 4124 : Part 1 : 1967

Nondestructive Testing of Steel Forgings.

Part 1 : Ultrasonic flaw detection.

B.S. : 4124 : Part 2 : 1968

Nondestructive Testing of Steel Forgings :

Part 2 : Magnetic Particle Flaw Detection.

B.S. : 4124 : Part 3 : 1968

Nondestructive Testing of Steel Forgings :

Part 3 : Penetrant Flaw Detection.

B.S. : 4331 : Part 1 : 1968

Methods for Assessing the performance characteristics of ultrasonic flaw detection equipment :

Part 1 : Overall Performance.

B.S. : 4336 : Part 1A : 1968

Methods for Nondestructive Testing of Plate Material :

Part 1A : Ultrasonic Detection of laminar imperfections in ferrous wrought plate.

B.S. : 4408 : Part 1 : 1969

Recommendations for Nondestructive Testing of Methods of Test for Concrete.

Part 1 : Electromagnetic Cover Measuring Devices.

B.S. : 4408 : Part 2 : 1969

Recommendations for Nondestructive Testing Methods of Test for Concrete :

Part 2 : Strain Gauges for Concrete Investigators.

C. American Standards

USAS : Y 32.17—1962

Nondestructive Testing Symbols.

USAS : Z 54.1—1962

Safety Standard for Non-Medical X-Ray and Sealed Gamma-Ray Sources.

D. AWS Standards

AWS : A 2.2—1969

Nondestructive Testing Symbols.

E. ASTM Standards

ASTM : Part 31—1969

Physical and Mechanical Testing of Metals—Metallography, Non-destructive Testing, Fatigue, Effect of Temperature.

F. MSS Standards

MSS : SP—54—1960

Quality Standard for steel Castings—Radiographic Inspection Method.

G. German Standards

DIN : 54109 : Sheet 1 : 1964

Nondestructive Testing, Image Quality of X-ray and Gamma-ray Radiographs of Metallic Materials, Definitions, Wire Penetrameter.

DIN : 54109 : Sheet 1 : 1964

Image Quality of X-ray and Gamma-ray Radiographs of Metallic materials, Directions for formation of image quality classes.

DIN : 54111—1954

Directions for the Testing of Welded Joints between Metallic Materials by the use of X-rays and Gamma-rays.

DIN : 54112—1956

Non-Destructive Testing ; films, intensifying screens, plate holders for Rontgen and Gamma ray Photographs, sizes.

DIN : 54113—1956

Technical X-ray Installations and Plants up to 300 kv ; Radiation Protection Rules for Manufacture and Installation.

DIN : 54121—1956

Non-destructive Testing ; Magnetic Powder Testing, definitions and test signs.

H. Czech Standards**CSN : 01 50 10**

Radiographic Detection of Defects of Materials.

CSN : 01 50 15

Non-destructive Magnetic Particle Tests.

CSN : 05 11 15

Radiographic Inspection of Fusion Welded Joints.

CSN : 05 13 05

Classification of Weld Defects on Radiograms.

CSN : 01 13 09

Penetrameter for the Determination of Weld Defects on Radiographs.

CSN : 34 17 20

Radiographic Equipment and Its Working Place.

CSN : 34 17 30

Rules for Work Places with Radioactive Materials.

I. Russian Standards**GOST : 3242—1954**

Welds—Quality Control Methods.

GOST : 7512—1955

Welds—Methods of X-Ray and Gamma-Ray Testing.

PERIODICALS IN WHICH ARTICLES APPEAR REGULARLY ON NONDESTRUCTIVE TESTING

British Journal of Nondestructive Testing (Quarterly)
 Electronics (Fortnightly).
 Engineering Index (Annual).
 Experimental Machines (Monthly).
 Industrial Radiography (Monthly).
 Isotopes and Radiation Technology (Quarterly).
 Journal of Materials (Monthly).
 Journal of Non-destructive Inspection (Monthly)
 (Japanese).
 Material Prufung (Monthly) (German).

Materials Evaluation (Monthly) (Formerly Nondes-
tructive Testing)

Metals Engineering Quarterly (Quarterly).

Metal Progress (Monthly)

NDT INFO (Monthly).

Nondestructive Testing (Quarterly).

Phillips Technical Review (Monthly).

Power Engineering (Monthly).

Proceedings of the American Society for Testing
and Materials (Annual).

Quality Assurance (Monthly).

Quality Engineer (Bimonthly).

Radiology (Monthly)

Soviet Journal of Nondestructive Testing (Bimonthly).

Testing, Instruments and Controls (Monthly).

Ultrasonics (Quarterly).

Vigilance (Quarterly).

Welding in the World (Quarterly).

Welding Journal (Monthly)

SOCIETIES CONNECTED WITH NONDESTRUC- TIVE TESTING

1. American Society for Nondestructive Testing,
914, Chicago Avenue,
EVANSTON, ILLINOIS 60202,
United States.
2. American Society for Testing and Materials,
1916, Race Street,
PHILADELPHIA Pa. 19103,
United States.
3. American Society of Mechanical Engineers,
335, East 47th Street,
NEW YORK, N.Y. 10017,
United States.
4. Nondestructive Testing Information Analysis Centre,
Army Materials and Mechanics Research Centre,
WATERTOWN, MASS.
United States.
5. Non-Destructive Testing Society of Great Britain,
Chalkwell Park House,
700, London Road,
WESTCLIFF-ON-SEA, ESSEX,
United Kingdom.