

HOT STRIP MILL OPERATIONS, Volume VII

ROLLED in SCALE

ABOUT the AUTHOR

The author was born in 1927 in Duluth, Minnesota, USA as the 4th child in a family of 15 children. After serving in the Army in World War II with the help of the GI Education Bill and working in the steel mill in Duluth as a laborer and clerk, he graduated as a Mechanical Engineer from the University of Minnesota in 1951. Shortly thereafter he went to work for US Steel at Fairless Works in Pennsylvania.

His career as an engineer began in Industrial Engineering working in the Cold Rolling Mills, Open Hearth, Blast Furnaces, and eventually in the Hot Rolling Division. Later he became an Operating Practice Engineer in the Hot Rolling Division. Major accomplishments at this time were the discovery of the cause of "Secondary Rebound Rolled in Scale" in the hot strip mill, and successfully designing a new roll cooling system to minimize Build Up (Ridges) on light gage strip. During the next 13 years he held various operating and maintenance positions as General Foreman and Superintendent of the 80" Hot Strip Mill, 45" Slab Mill, 40"-30"-21" Blooming and Billet Mill, and 10" Bar mill at various times. In 1973 he went to Youngstown Sheet & Tube (now Acelor-Mittal Steel) Indiana Harbor Works as Superintendent of the 84" Hot Strip Mill. Later assignments in Maintenance Engineering included extensive work upgrading the hot strip mill coilers. In 1979 he became Manager of Operations at Columbia Tool Steel, and in 1982 he started Hot Rolling Consultants, Ltd., which has been sold to two young engineers in England. He will continue to work as a Senior Consultant for the new company. As of the printing of this book, his career in the steel industry has spanned more than 58 years.

He has worked in over 107 hot strip mills, plate mills, bar mills, structural mills, pipe mills, copper, aluminum mills and cold strip mills throughout the world, with multiple assignments at many of these mills. These assignments varied from coiling, roll cooling, automatic gage control, descaling, rolled in scale, shape, strip profile, and every type of roll wear and roll breakage was encountered on these mills. On almost all the hot strip mills he encountered various types rolled in scale, different descaling systems and designs, and allowed the study of scale formation and rolled in scale to define more than 42 different types of rolled in scale. The biggest breakthrough was finding the cause of Primary Purple and Red Oxide rolled in scale in the late 1980's. This book is a condensation of all the observations and studies the author has made for more than 50 years on descaling systems and rolled in scale defects on hot rolling mills.

Mr. Blazevic is the author of over 45 technical papers on roll wear, descaling, rolled in scale, spray forces, coiling, shape, mechanical surface defects, automatic gage control, wedge shape, buildup (ridges), and other aspects of hot strip mill operations. 26 of these papers were about scale, descaling, and/or rolled in scale. He has 5 United States patents on coiling guiding systems, high tension rolling, scale growth control, and F1 mill entry system in the finishing mill. The series of books on **HOT STRIP MILL OPERATIONS** includes **Vol. I – 'Coiling'**, **Vol. II – 'Roll Cooling, Rolling Problems, and Shape'**, **Vol. III – 'Roll Wear'**, **Vol. IV – 'Build Up (Ridges), Quarter Line Buckles, Short Choppy Edge Waves, and Featheredgedes'**; **Vol. V – 'Scale'**, **Vol. VI – Descaling**, and now **Vol. VII – Rolled in Scale** is the third of three volumes on scale, descaling, and rolled in scale, which completes that series. In conjunction

