

BOOK REVIEW

Welding Metallurgy. By O. H. HENRY and G. E. CLAUSSEN. American Welding Society, New York. Obtainable from Machinery Publishing Co. Ltd., Brighton. In two volumes, 359 pp., 140 illus. 15s. 0d.

As a treatise it is extremely readable and has the advantage over some of keeping the reader's interest throughout its sometimes redundant pages. The implied suggestion in the introduction that it can be fully digested and understood by one without a metallurgical background, or, indeed, any knowledge of the art of welding, is an overstatement. As an instance of this, Parts 3 and 4 "Crystals" and "Equilibrium Diagrams" are thorny subjects to many engineers without a metallurgical foundation.

It is difficult to visualise a welding foreman deriving any benefit from reaching the stage where he can truthfully say he fully understands crystal formation and equilibrium diagrams. It could, indeed, land him in a maze of troubles and, in any case, as a welding engineer he has no control over them. The specialists "Electrode Manufacturers" supply the rods for the weld envisaged.

Once these chapters and parts are covered the book as a whole improves, and the second volume could be most useful without any knowledge of Volume I perhaps because in this volume the authors forget now and again that they are metallurgists.

There are several controversial points such as the advocating of multi-runs as opposed to large single runs. The authors are obviously protagonists of multi-running but it is a very controversial point. There seems little doubt that a submerged arc weld in a boiler drum or pressure vessel where metal is deposited in a groove up to one inch deep in one run is eminently satisfactory in every way.

The parts dealing with defects are extremely well done, as instance Part 3, Page 213 on Brittleness and Cracking; Shrinkage (perhaps a better word would be Contraction) on page 238; and Part 8, Pre-heating and Stress Relief.

Despite these minor criticisms, which are of themselves open to criticism, it deals with a difficult subject in an understandable and knowledgeable manner. It would be an invaluable addition to a welding engineer's library and would eliminate quite a number of shop troubles if it became a book of reference for a designing draughtsman on steel welding fabrications.—J.T.
