Introduction

The need for this symposium became evident during recent efforts to update ASTM Recommended Practices for Short-Time Elevated Temperature Tension Tests of Materials and for Conducting Creep and Time-for-Rupture Tension Tests of Materials (E 21 - 66T and E 139 - 66T, respectively). The Subcommittee on Test Methods of the ASTM-ASME-MPC Joint Committee on Effect of Temperature on the Properties of Metals found, in particular, that available information on alignment and pyrometry was insufficient to permit definition of exact effects on test results. This lack of factual information has necessitated some indefinite provisions in E 21 and E 139, while other requirements represent a compromise between opinions as to what is desired and what is attained readily in usual practice.

Although both are incomplete, an extensive cooperative creep testing program by AGARD (a NATO committee; see first paper by Coutsouradis and Faurschou) and an interlaboratory evaluation of pyrometric practices being conducted by the joint committee have developed preliminary results (see paper by J. L. Korns). Several other smaller studies also are under way to relate to questions being raised about elevated temperature testing procedures.

The symposium was organized with the hope of uncovering those data necessary to an evaluation of the effectiveness of existing standards and to make available some useful data that will supplement current standards while suitable revisions are undergoing the lengthy process of development and approval. I trust this publication will call attention to several problems that may be encountered in elevated temperature testing and will offer some guidance on the expected magnitude of their effects and possible ways to circumvent them.

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