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An American National Standard

**(R) ENGINEERING DESIGN SERVICEABILITY GUIDELINES—
CONSTRUCTION AND INDUSTRIAL MACHINERY—
SERVICEABILITY DEFINITIONS—OFF-ROAD WORK MACHINES**

1. **Scope**—This SAE Information Report establishes a hierarchy of Product Effectiveness, defines Serviceability, Maintainability, Repairability, and Diagnostics, and relates them to Product Effectiveness. Effectiveness of this procedure depends on its use during early stages of design.

1.1 This document applies to machines defined in J1057 and categorized in J1116.

2. **References**

2.1 **Applicable Publications**—The following publications form a part of the specification to the extent specified herein. Unless otherwise indicated the latest revision of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

J1057 SEP88—Identification Terminology of Earthmoving Machines

J1116 JUN86—Categories of Off-Road Self-Propelled Work Machines

3. **Definitions**

3.1 **Serviceability**—A measure of the ease with which routine or periodic, as well as nonscheduled maintenance or repair actions, can be performed on a machine.

3.2 **Maintainability**—A measure of the ease with which routine or periodic preventive maintenance actions can be performed. These actions include items such as lubrications, refueling, adjustments, preventive maintenance, cleaning, and inspections.

3.3 **Repairability**—A measure of the ease with which a failed part, assembly, system, or machine can be restored to a state of operational readiness.

3.4 **Diagnostics**—A measure of the ease of isolating the cause and extent of a suspected malfunction. It is a function of such things as system design complexity and the requirements for the installation and use of test equipment.

Figure 1 shows the relationship of serviceability, maintainability, diagnostics, and repairability to product effectiveness.

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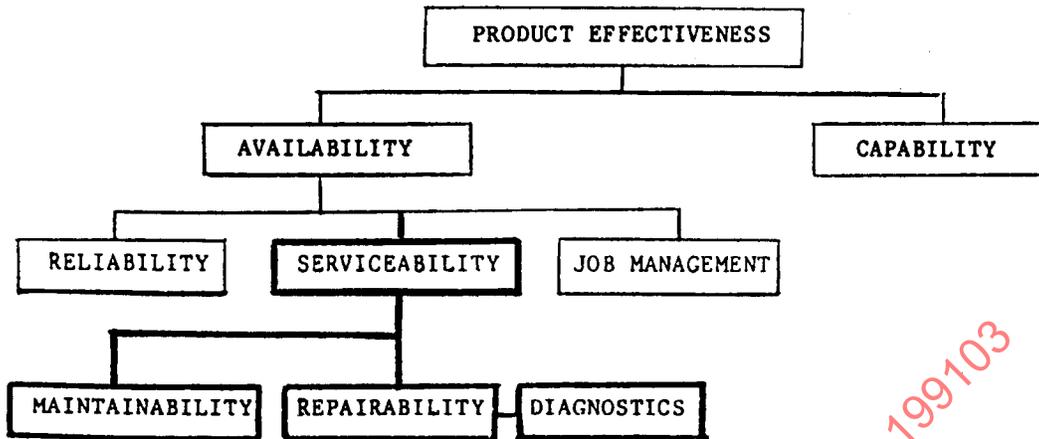


FIGURE 1—HIERARCHY OF PRODUCT EFFECTIVENESS

4. Notes

4.1 **Marginal Indicia**—The change bar (I) located in the left margin is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. An (R) symbol to the left of the document title indicates a complete revision of the report.

PREPARED BY THE SAE OFF-ROAD MACHINERY TECHNICAL COMMITTEE SC16—
SERVICEABILITY