ASTM INTERNATIONAL

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Standard Practice for
Equipment Management Process Maturity (EMPM) Model[1]

This standard is issued under the fixed designation E2452; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

INTRODUCTION

Life-cycle equipment management has a great impact on business operations of almost all entities. In fact, the success or failure on an entity may hinge on how effectively and efficiently an entity performs in the equipment management life-cycle. Entities that sustain high maturity levels will generally be more effective or competitive or both than entities with lower maturity levels in that these entities will more efficiently and effectively acquire what is needed, use and control equipment better, and dispose of equipment when no longer sufficiently suitable for operations.

1. Scope

1.1 This practice covers a process for the assessment and reporting of an entity's overall equipment management process maturity (EMPM).

1.2 The highest value is placed on continuous improvement as reflected in measured increases in maturity over time.

1.3 The EMPM model is designed to be applicable and appropriate for all equipment-holding entities, however, the EMPM may not be the only acceptable assessment model available.

1.4 It includes all aspects of equipment management.

1.5 In addition to applicability to equipment and equipment management as defined in this practice, this practice may in whole or in part be effectively applied to intangible property, real property, and material.

1.6 There is great variation across organizations regarding the internal departments that accomplish the various aspects of equipment management. Thus, all criteria are not applicable to all entities.

1.7 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.8 *This international standard was developed in accordance with internationally recognized principles on standard-* *ization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

E2131 Practice for Addressing and Reporting Losses of Tangible Property

E2132 Practice for Inventory Verification: Electronic and Physical Inventory of Assets

E2135 Terminology for Property and Asset Management

E2219 Practice for Valuation and Management of Moveable, Durable Property (Withdrawn 2009)[3]

E2220 Practice for Establishing the Full Valuation of the Loss/Overage Population Identified During the Inventory of Moveable, Durable Property (Withdrawn 2009)[3]

E2221 Practice for Administrative Control of Property (Withdrawn 2011)[3]

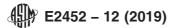E2279 Practice for Establishing the Guiding Principles of Property Asset Management

3. Terminology

3.1 *Definitions:*

3.1.1 *entity, n*—agency, company, organization, or institution.

3.1.2 *equipment, n*—non-expendable, tangible, moveable property needed for the performance of a task or useful in effecting an obligation. **E2135**

3.1.3 *equipment management, n*—systematic planning and control of equipment to optimize its service delivery potential and the management of associated risks and costs throughout its life-cycle in support of organizational objectives. This includes the process management and operations of acquisition or construction of the equipment; its operation, maintenance, and modification while in use; and its disposal when no longer required.

3.1.4 *operations, n*—exercise of the tasks that constitute equipment management.

3.1.5 *practice, n*—a definitive set of instructions for performing one or more specific operations that does not produce a test result. **Form and Style**[4]

3.1.5.1 *Discussion*—Of the several types of standards listed in the *Form and Style for ASTM Standards* guide, this standard is of the type designated as a practice.

3.2 *Acronyms:*

3.2.1 *CIP*—construction in progress

3.2.2 *EMPM*—equipment management process maturity

4. Summary of Practice

4.1 The EMPM model provides insight into the effectiveness of an entity as it acquires, uses, and disposes of the equipment necessary to the functioning of the entity. It enables a holistic approach and vision for achieving cost-effective, responsive equipment acquisition, use, and disposition. It clarifies and illuminates functional responsibilities and associated functional areas.

4.2 The functional responsibilities chart in Table 1 presents the distribution of duties as a hypothetical entity embarking on an EMPM assessment.

4.3 The equipment life-cycle as addressed in this practice encompasses three fundamental life-cycle phases: acquisition, use, and disposition.

4.4 This practice addresses two fundamental levels of equipment management activity within the entity: process management and operations.

4.5 This practice recognizes five maturity levels (see Table 2).

5. Significance and Use

5.1 *Internal*—The EMPM provides assessment results that are easy to understand and communicate. Areas requiring additional resources become apparent, and thus, can be more readily addressed. Improvement can be tracked in meaningful ways. Assessment detail allows attention to be drawn to processes of exceptional maturity and areas in which changes or additional resources, or both, are required to achieve process improvements.

5.2 *External*—Meaningful comparisons to external requirements are enabled. Comparisons of equipment management

between entities in different operational or business environments become meaningful and provide insight previously unavailable.

6. Applicability

6.1 This practice may be applied to the entirety of the legal entity or a clearly defined, designated constituent part.

6.2 An entity's equipment holdings may encompass equipment acquired by all legal means:

6.2.1 Company owned equipment,

6.2.2 Leased equipment,

6.2.3 Licenses,

6.2.4 Customer-provided equipment,

6.2.5 Seized equipment,

6.2.6 Bailed equipment,

6.2.7 Borrowed equipment, and

6.2.8 Loaned equipment.

6.3 This practice may be applied to the entirety of the entity's equipment holdings or a clearly identified subset. This designation constitutes the assessment universe for the designated entity.

6.4 To the extent this practice is applied to a limited equipment universe or is limited to a portion of the entity, these limitations should be prominently noted when presenting results of the assessment.

6.5 This practice should be applied to the designated equipment universe regardless of the internal organization acquiring, using, or disposing the equipment.

7. Levels of Equipment Management Activity

7.1 There are two fundamental levels of equipment management activity within the entity: process management and operations.

7.2 Process management encompasses criteria for the people, processes, and systems involved in equipment management for each life-cycle phase.

7.2.1 *Leadership:*

7.2.1.1 *Outcome/Process Orientation*—Management and control systems are based on specific desired outcomes or process-oriented metrics that encourage improved performance and effective management. (See Practice E2279.)

7.2.1.2 *Best Value Products*—Management systems are designed to deliver on a timely basis the "best value" product to the organization and its customers, while preserving the confidence of internal and external stakeholders. (See Practice E2279.)

7.2.1.3 *Personal Initiative*—Practitioners exercise personal initiative and sound business judgment in providing the "best value" services to meet the organization's needs. (See Practice E2279.)

7.2.1.4 *Lines of Authority/Accountability*—Management and control systems have clear, direct lines of authority and organizational accountability for performance and custodial care. (See Practice E2279.)

7.2.1.5 *Best-in-Class Management*—Best-in-class management practices and integrated management systems are recognized, identified, and adopted. (See Practice E2279.)

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[4] From the *Form and Style for ASTM Standards* guide, available from ASTM International Headquarters.

TABLE 1 Functional Responsibilities

Equipment Management Process Maturity (EMPM) Model
Responsibilities (O = Operations, M = Process management)

Internal Responsibilities in the Subject Organization (Example)	Asset Management	Functional Organization	Procurement	Logistics	Contracts	Import/Export	Senior Management	Receiving	Warehouse	Quality	Finance	Material Management	Configuration Management	Program Control	IT Asset Management	Calibration	Tooling Management	TBD
1.0 Acquisition criteria																		
1.1 Process management																		
1.2 Operations																		
2.0 Use criteria																		
2.1 Process management																		
2.2 Operations																		
3.0 Disposition criteria																		
3.1 Process management																		
3.2 Operations																		