

CHAPTER 55

ECONOMIC ORDER QUANTITY AND PROCUREMENT CYCLE

SECTION I - GENERAL

255101 - PURPOSE

The purpose of this chapter is to present a mechanized procedure, employing a mathematical formula and specified decision rules, for computing the Economic Order Quantity (EOQ) and/or the Procurement Cycle.

255102 - SCOPE

The procedures contained herein apply to all replenishable demand type items. NSO items are excluded from the scope of this chapter.

255103 - REFERENCE

DLAM 4140.3, Materiel Management Manual.

255104 - POLICY FOR COMPUTATION OF PROCUREMENT CYCLES

a. Procurement cycle quantities will be computed in two ways:

(1) Through the application of an EOQ principle with restrictions so that procurement cycles will not ordinarily exceed three years nor be shorter than three months.

(2) Through the application of a Fixed Procurement Cycle expressed in months, to the most recent demand forecast.

b. When the Procurement Cycle quantity is computed by applying the EOQ formula, the procedures provide for translating it into months of demand.

c. After the procurement cycle in months has been determined for each family, the Minimum Procurement Cycle (in months) will be determined for all families in the same procurement group. Refer to appendix A-116 for an explanation of the Procurement Grouping Code (PGC). (This procedure does not apply to Fixed Procurement Cycle items.)

d. Despite the differing frequencies under which procurement cycles are computed, the demand forecast inputs to this procedure are all expressed in terms of a quarters demand so that one procedure is applicable to all items.

e. The EOQ principle will be applied to all replenishable demand type items, except those which for specific reasons will be managed using Fixed Procurement Cycles. Reasons which may support the use of Fixed Procurement Cycles include industrial or agricultural practices, economic production lots, carload shipments, and the like. Such exceptions must be based upon economic principles that clearly take

precedence over EOQ. All exception items will be coded as Fixed Procurement Cycle items with the number of months in the Procurement Cycle (in months) field. If a procurement cycle shorter than three months is deemed desirable for certain items, the DSC may designate such items as Fixed Procurement Cycle items, and specify a one or two month procurement cycle.

SECTION II - PROCEDURES

255201 - PROCUREMENT CYCLE FOR NEW ITEMS

IAW chapter 38, new items will have a Fixed Procurement Cycle, PC Code F. The Procurement Cycle in months for an item will be based on the Demand Value Code, H = 3, M = 6, and L = 12 months.

255202 - APPLICATION OF ECONOMIC ORDER QUANTITY AND PROCUREMENT CYCLE PROCEDURES

This procedure will be applied immediately after the recurring demand forecasting process, or whenever the forecast is changed manually.

255203 - SOURCE DATA

a. Source Data consists of:

- (1) Quarterly System Forecast of Demand (QFD System).
- (2) Quarterly Forecast of Demand (New Item).
- (3) Procurement Cycle (In Months) for Fixed Procurement Cycle Items.

(4) Management Policy Table 018 Transaction, DIC ZTA, appendix B-70, as depicted in appendix F-261.

b. The frequency of Procurement Cycle computations will coincide with the computation of demand forecasts:

- (1) VIP Items - Monthly.
- (2) Non-VIP Items - Quarterly (High, Medium, and Low Value Demand).

(3) Daily, whenever QFD or QFD/New Item quantity is changed and a recommended buy action is generated.

255204 - PRODUCT

a. Outputs: The outputs from this procedure consist of:

- (1) Procurement Cycle expressed in units of the item (PC (Units)).
- (2) Procurement Cycle expressed in months of demand for item (PC (months)).

b. Frequency of Outputs: The frequency of Procurement Cycle computations will coincide with the computation of demand forecasts as explained in paragraph 255204b.

255205 - CONSTANTS

a. The following factor/values applicable to this procedure are contained in Management Policy Table 018 and are assigned by the DSCs with HQ DLA approval.

(1) T Factor - Constant factor portion of the EOQ Formula.

(2) Procurement Cycle Break Point Value M1 for three year procurement cycle.

(3) Procurement Cycle Break Point Value M2 for six month procurement cycle.

(4) Procurement Cycle Break Point Value M3 for three month procurement cycle.

(5) At present, a T factor of 74, an M1 value of \$38, an M2 value of \$1125, and an M3 value of \$3750 are being used. These constants may be changed by the DSC only with HQ DLA approval.

b. The Procurement Cycle Period (PCP) in months can be varied in Management Policy Table 018 but are constants once they are entered into table 018 and are used for daily recommended buy determinations:

(1) Low Value Demand items have a normal 36-month PCP.

(2) Medium Value Demand items have a normal 22-month PCP.

(3) High Value-1 (\$4,500-15,000) Demands items have a normal six month PCP.

(4) High Value-2 (over \$15,000) Demand items have a normal three month PCP. (For DPSC the PCP for High Value-2 Demand items is six months.)

c. Values assigned to these constants will be used by all DSCs unless specific deviations have been authorized by DLA-O.

255206 - PRELIMINARY EDITING

a. This procedure does not apply to NSO items.

b. If the item is a replenishable demand type item, the item will be checked to determine whether it is a VIP or non-VIP item. This will determine whether a Procurement Cycle should be computed at this time. Procurement Cycles are computed:

(1) Quarterly for Non-VIP items.

(2) Monthly for all VIP items.

255207 - MINIMUM PROCUREMENT CYCLE FOR FAMILIES IN THE SAME PROCUREMENT GROUP

In treating items in the same procurement group (identified by a distinct PGC), the following procedure applies to all items:

a. After the PC (Months) has been determined for each item within the PGC, the Minimum Procurement Cycle (Months) will be assigned to each PGC dependent upon the characteristics of the items within that group. Assignment of this Minimum Procurement Cycle will normally be based on the lowest Procurement Cycle (PC) Months computed for the items in the PGC.

b. The Minimum Procurement Cycle (Months) will be entered into Management Policy Table 011 IAW appendix E-070 P. Whenever one item within a PGC breaches its ROP Review Level, all other items in the PGC will be mechanically reviewed to determine if they will breach their ROP within the Minimum Procurement Cycle time period. Those items that will reach their ROP during this time period will be recommended for procurement.