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Maximizing Resources Through Secondary Reparable (Secrep) Residual Demand Management



Naval Postgraduate School

Abstract

- This research analyzed the practices associated with maintaining a safety stock of secondary reparable (SECREP) to meet United States Marine Corps (USMC) demand. This research found evidence of accelerated spending on SECREPs in the fourth quarter, but no evidence that increased spending improved readiness. Currently, USMC bases its annual SECREP requirement on execution data (expenditures) from previous years, rather than actual demand. We conclude that the RIPs should use actual demand data to estimate future demand, and review back-order lead time and priority codes relative to stock allowance to ensure SECREP items purchased are actually needed to improve readiness.

4th Quarter	
Non Hockey Stick Period	Sum of OBL AMT
Monday, July 9, 2018	\$135,410.98
Tuesday, July 10, 2018	\$75,875.77
Wednesday, July 11, 2018	\$91,829.10
Friday, July 20, 2018	\$159,146.65
Monday, July 23, 2018	\$137,273.81
Wednesday, August 22, 2018	\$1,203.87
Monday, August 27, 2018	\$6,519.89
Total	\$607,260.07
Avg Weekly Expenditure	\$67,473.34

Hockey Stick Period (6 - 30 Sep)	Sum of OBL AMT
Thursday, September 6, 2018	\$13,236.86
Monday, September 17, 2018	\$431,636.72
Wednesday, September 19, 2018	\$10,899.34
Thursday, September 20, 2018	\$11,830.15
Friday, September 21, 2018	\$936,976.08
Monday, September 24, 2018	\$903,734.83
Tuesday, September 25, 2018	\$224,836.65
Thursday, September 27, 2018	\$179,129.35
Friday, September 28, 2018	\$3,549,638.85
Saturday, September 29, 2018	\$4,996,027.84
Total	\$11,257,946.67
Avg Weekly Expenditure	\$3,752,648.89

Secondary Reparable Purchases during FY 2018 4th Quarter (Hockey Stick Period = Last 3 weeks of the 4th Quarter)

Methods

- The Hockey Stick Phenomenon is an increase in demand/purchases at the end of the quarter and fiscal year.
- Examine RIP purchases by date and line item, the required number of on-hand items (allowance) by line item, on-hand inventory when the purchase was made, and lead time information.
- Conduct cost analysis to ensure that end-of-quarter purchases are made where they will make the greatest contribution to incremental readiness.

Results

- The results show that end of fiscal year additional (hockey stick) purchases do not always positively impact the metrics within all three observed MEF RIPs.
- I MEF Metrics Scorecard depicts readiness level after FY 2018 end of year purchases.

Coordinated SECREP Management: I MEF Metrics Scorecard (Includes Ground and LD)

Metric	Desired Direction	What it Measures	Baseline Summary	Sep 18 Results	Oct 18 Results	Nov 18 Results	Dec 18 Results	Jan 19 Results	Feb 19 Results	Mar 19 Results	Apr 19 Results	May 19 Results	Jun 19 Results	Jul 19 Results	Aug 19 Results
SECREP R: % of Total MARES Reportable PEIs deadline w/ a SECREP on order*	↓	Customer Support: Effectiveness	Jun 17 to Nov 17 Range 0.71% - 0.90%	0.94%	1.40%	1.39%	**not reported	1.18%	1.40%	1.32%	1.14%	1.03%	0.94%	0.93%	1.10%
Inventory Excess over Total Allowance (\$)	↓	Inventory Mgmt-Efficiency	\$16M - \$31M	\$34M	\$30M	\$34M	\$34M	\$32M	\$30M	\$37M	\$35M	\$31M	\$36M	\$39M	\$47M
Inventory Excess over ERQ (\$)	↓	Inventory Mgmt-Efficiency	\$8M-\$18M	\$19M	\$18M	\$21M	\$21M	\$20M	\$18M	\$26M	\$22M	\$19M	\$24M	\$23M	\$29M
Inventory Deficiencies (\$)	↓	Inventory Mgmt-Efficiency	\$1.7M-\$7M	\$3.4M	\$5.4M	\$5.6M	\$5.6M	\$4.9M	\$10.7M	\$9.5M	\$8.1M	\$10.4M	\$9.5M	\$3.1M	\$1.9M
Backorder CWT (days)	↓	Customer Support: Effectiveness	49 d - 80 d	87 d	72 d	95 d	**not reported	**not reported	96 d	71 d	121 d	99 d	71 d	71 d	93 d
Enterprise Aggregate Fill Rate (%)	↑	Customer Support: Effectiveness	Target >= 80%	64%	59%	65%	**not reported	**not reported	56%	67%	65%	65%	66%	50%	52%

I MEF Metrics Score Card depicting readiness Readiness Levels after end of year purchases

Recommendations

- The RIPs should review back-order lead time and priority codes relative to stock allowance to purchase items that are actually needed for maintaining the desired fill rate.
- The analysis of this research supports the (tentative) claims and recommendations favoring items with moderately-long back-order lead times on the buy list, at the beginning of the year.