

Home > Journal > Business & Economics > IB

[Indexing](#) [View Papers](#) [Aims & Scope](#) [Editorial Board](#) [Guideline](#) [Article Processing Charges](#)

IB > Vol.2 No.3, September 2010

OPEN ACCESS

A Proposal for Estimating the Order Level for Slow Moving Spare Parts Subject to Obsolescence

PDF (Size: 571KB) PP. 232-237 DOI : 10.4236/ib.2010.23029

Author(s)

Marcello Fera, Alfredo Lambiase, Maria Elena Nenni

ABSTRACT

During the last decade technologies have had a significant development in many areas, as military and civil protection, telecommunication and electrical distribution and production. Particularly in the mentioned areas we can find very complex products, with a cycle life generally longer than their components. Companies have thus the need to better manage the replacement of spare parts in order to reduce the holding costs and to satisfy the service level. In this paper authors analyse the state of the art about the spare parts logistic (SPL) problem for products characterized by a long cycle life and by slow moving spare parts subject to obsolescence. A new model to estimate the spare part order level is then proposed and tested on a simulated case.

KEYWORDS

Spare Parts Replenishment, Order Level, Obsolescence

Cite this paper

M. Fera, A. Lambiase and M. Nenni, "A Proposal for Estimating the Order Level for Slow Moving Spare Parts Subject to Obsolescence," *iBusiness*, Vol. 2 No. 3, 2010, pp. 232-237. doi: 10.4236/ib.2010.23029.

References

- [1] W. J. Hopp, R. Q. Zhang and M. L. Spearman, " An Easily Implementable Hierarchical Heuristic for a Two- Echelon Spare Parts Distribution System," *IIE Transactions*, Vol. 31, No. 10, 1999, pp. 977-988.
- [2] P. H. Koo, J. Jang and J. Suh, " Estimation of Part Waiting Time and Fleet Sizing in AGV Systems," *International Journal of Flexible Manufacturing Systems*, Vol. 16, No. 3, July 2005, pp. 211-228.
- [3] A. D. Wiggins, " A Minimum Cost Model of Spare Parts Inventory," *Technometrics*, Vol. 9, No. 4, November 1967, pp. 661-665.
- [4] M. A. Geisler and H. W. Karr, " The Design of the Military Supply Tables for Spare Parts," *Operations Research*, Vol. 4, No. 4, August 1956, pp. 431-442.
- [5] W. H. Hausman and L. J. Thomas, " Inventory Control with a Probabilistic Demand and Periodic Withdrawals," *Management Science*, Vol. 18, No. 5, January 1972, pp. 265-275.
- [6] L. F. Gelders and P. M. Van Looy, " An Inventory Policy for Slow and Fast Movers in a Petrol-Chemical Plant: A Case Study," *Journal of the Operation Research Society*, Vol. 29, No. 9, September 1978, pp. 867-874.
- [7] H. Block and H. Joe, " Tail Behaviour of the Failure Rate Functions of Mixtures," *Life Time Data Analysis*, Vol. 3, No. 3, 1997, pp. 269-288.
- [8] M. Aka, S. M. Gilbert and P. Ritchken, " Joint Inventory/ Replacement Policies for Parallel Machines," *IIE Transactions*, Vol. 29, No. 6, 1997, pp. 441-449.
- [9] W. K. Haneveld and R. H. Teunter, " Optimal Provisioning Strategies for Slow Moving Spare Parts with Small Lead Times," *Journal of the Operational Research Society*, Vol. 48, No. 2, February 1997,

- [Open Special Issues](#)
- [Published Special Issues](#)
- [Special Issues Guideline](#)

[IB Subscription](#)

[Most popular papers in IB](#)

[About IB News](#)

[Frequently Asked Questions](#)

[Recommend to Peers](#)

[Recommend to Library](#)

[Contact Us](#)

Downloads: 172,097

Visits: 338,101

Sponsors, Associates, and Links >>

- [International Conference on Management and Service Science \(MASS 2013\)](#)
- [The 4th Conference on Web Based Business Management \(WBM 2013\)](#)

pp. 184-194.

- [10] A. Mehrotra, N. R. Natraj and M. A. Trick, " Consolidating Maintenance Spares," Computational Optimization and Applications, Vol. 18, No. 3, March 2001, pp. 251- 271.