

Question 1

This question concerns Ordering processing.

(a) Study the two-inventory cycle representations in Figure 2.1.

The first shows a theoretical profile; describe the operating level, the safety level, the procurement cycle, the procurement lead time, and the procurement level and safety stock. The second is a representation of an actual inventory cycle,

Comment on the differences between the two profiles and provide an analysis on how you would better manage the company with the second profile.

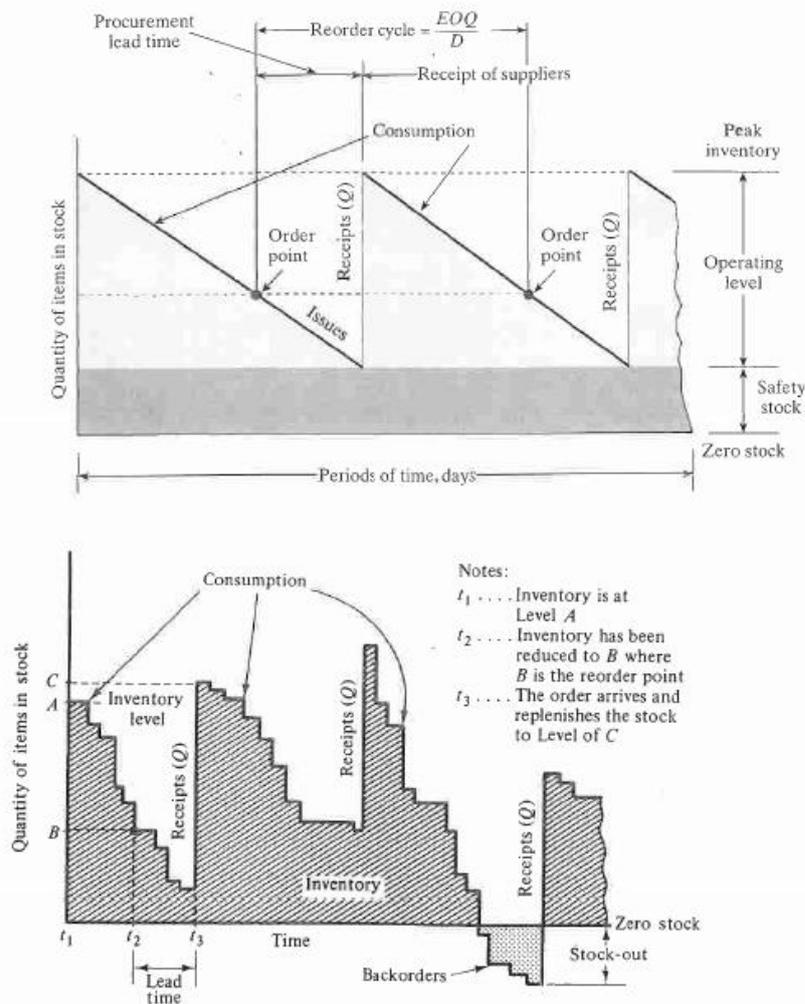


Figure 2.1

- (b)** What are the important EOQ assumptions and comment if these assumptions are realistic in a real-world situation.
- (c)** CalcCo is a manufacturer of calculators, currently producing 200 per week. One component for every calculator is a liquid crystal display (LCD), which the company purchases from LCDCo for £1 per LCD. CalcCo management wants to avoid any shortage of LCDs, since this would disrupt production, so LCDCo guarantees a delivery time of 0.5 weeks on each order. The placement of each order is estimated to require 1 hour of clerical time, with a direct cost of £15 per hour plus overhead costs of another £5 per hour.

What should be the Economic Order Quantity (EOQ), the reorder point (assume no safety stock) and the TC? To ensure production continuity CalcCo determined that the standard deviation of the lead time demand is 20 LCDs. To ensure a 90% confidence of production continuity the company has decided to introduce a safety stock. What is this stock and re-calculate the order point.

- (d)** Explain how Monte Carlo Simulation could be used to improve estimates and show how this could be applied.