**Martin-Pullin Bicycle Corporation**

Martin-Pullin Bicycle Corp. (MPBC), located in Dallas, is a wholesale distributor of bicycles and bicycle parts. Formed in 1981 by cousins Ray Martin and Jim Pullin, the firm’s primary retail outlets are located within a 400-mile radius of the distribution center. These retail outlets receive the order from Martin-Pullin within two days after notifying the distribution center, provided that the stock is available. However, if an order is not fulfilled by the company, no backorder is placed; the retailers arrange to get their shipment from other distributors, and MPBC loses that amount of business.

The company distributes a wide variety of bicycles. The most popular model, and the major source of revenue to the company, is the AirWing. MPBC receives all the models from a single manufacturer overseas, and shipment takes as long as four weeks from the time an order is placed. With the cost of communication, paperwork, and customs clearance included, MPBC estimates that each time an order is placed, it incurs a cost of $85. The purchase price paid by MPBC, per bicycle, is roughly 65% of the suggested retail price for all the styles available, and the inventory carrying cost is 2% per month (24% per year) of the purchase price paid by MPBC. The retail price (paid by the customers) for the AirWing is $250 per bicycle.

MPBC is interested in making an inventory plan for 2014. The firm wants to maintain a 95% service level with its customers to minimize the losses on the lost orders. The data collected for the past two years are summarized in the table below. A forecast for AirWing model sales in the upcoming year, 2014 has been developed and will be used to make an inventory plan for MPBC.

Discussion Questions

1. Develop an inventory plan to help MPBC.
2. Discuss ROPs and total costs.
3. How do you handle the fact that the Reorder Point is larger than the EOQ?
4. How can you address demand that is not at the level of the planning horizon?

Demand for AirWing Model

Month 2012 2013 Forecast for2014

January 6 7 9

February 12 14 16

March 24 27 31

April 46 53 59

May 75 86 96

June 47 54 61

July 30 34 39

August 18 21 24

September 13 15 17

October 12 13 15

November 22 25 29

December 38 42 46

Total 343 391 443