New Economy Transport (Revised)

The New Economy Transport Company (NETCO) was formed in 1952 to carry cargo and passengers between ports in the Pacific Northwest. By 2014 its fleet had grown to four vessels, one of which was a small dry-cargo vessel, the Vital Spark.

The Vital Spark is badly in need of an overhaul. Peter Handy, the finance director, has just been presented with a proposal, which would require the following expenditures at the start of 2015:[1]

New engine and associated equipment	$410,000
Radar and other electronic equipment	135,000
Repairs to hull and superstructure	330,000
Painting and other maintenance	110,000
	$985,000

NETCO's chief engineer, McPhail, estimates the post-overhaul operating costs for 2015 as follows:[2]

Fuel	$670,000
Labor and benefits	900,000
Maintenance	100,000
Other	130,000
	$1,800,000

The Vital Spark is carried on NETCO's books at a net value of $350,000, but could be sold now "as is" for $550,000. If the Vital Spark is overhauled, the $350,000 book value can be fully depreciated in 2015.

There is no question that the Vital Spark needs a new engine and general overhaul for the 2015 season. However, Mr. Handy feels it unwise to proceed without also considering the purchase of a new boat. Cohn and Doyle, Inc., a Wisconsin shipyard, has approached NETCO with a new design incorporating a Kort nozzle, extensively automated navigation and power control systems, and much more comfortable

[1] The repairs and painting and other maintenance can be expensed in 2015. The new engine, radar, and other equipment falls into the five-year MACRS class and must be depreciated starting in 2015. The overhaul can be done without losing any operating time.

[2] In future years, estimates of costs and revenues will increase with inflation. Mr. Handy's bankers have suggested that inflation will average 3 percent a year.

accommodations for the crew.[3] Estimated annual operating costs of the new boat for 2015 are:

Fuel	$490,000
Labor and benefits	730,000
Maintenance	70,000
Other	60,000
	$1,350,000

The crew would require additional training to handle the new boat's more complex and sophisticated equipment and this would probably lead to additional costs of $140,000 at the beginning of 2015.

The estimated operating costs for the new boat assume that it would be operated in the same way as the Vital Spark. However, the new boat should be able to handle a larger load on some routes, and this will generate additional revenues, net of additional out-of-pocket costs, of $150,000 per year. Moreover, a new boat would have a useful service life of 12 years. After 12 years it would not have any value. The Vital Spark with an overhaul could not last that long — probably only 8 years. At that point it would be worth only its scrap value of about $100,000. Cohn and Doyle have offered the new boat for a fixed price of $4,400,000, payable on delivery at the start of 2015.

NETCO is a private company, soundly financed and consistently profitable. Cash on hand is sufficient to rehabilitate the Vital Spark but not to buy the new boat. However, Mr. Handy is confident that the funds necessary to purchase the new boat can be readily obtained in the capital markets. NETCO has estimated that its opportunity cost of capital for major business investments is currently 15%. Mr. Handy feels that this is a reasonable number to use for the dry-cargo business.

Required: Calculate equivalent annual costs of the two alternatives — overhauling the current boat and buying a brand-new boat. To do the calculation, prepare a spreadsheet table showing all costs after taxes over each investment's economic life. Make assumptions as necessary. Be sure to include the effects of inflation. The tax rate for NETCO is 35%.

[3] The new boat falls into the 5-year MACRS class.