

By John Dolce

Repair, Replace or Rebuild: Making Effective Choices

The driver of all repair, rebuild or replace decisions, after all, is the bottom line.

As vehicle, system and component manufacturers steadily improve the durability and reliability of their products, everyday indications of this trend can be found in longer warranty periods and increasingly extended maintenance intervals and replacement cycles. Still, because each situation is unique, there's not one simple answer to the best bottom-line business decision about whether to repair, rebuild or replace equipment.

How does a fleet manager know when he or she is making the right decision? Among other things, successful utility fleet managers develop the experience and expertise to analyze the option that makes the best sense. Accurate forecasting, for example, plays a large role in answering the question of repairing, rebuilding or replacing a vehicle, system or component. A number of facts will help forecast at which stage in a vehicle's life cycle to consider the options:

- **Consider the condition of the vehicle.** Has it failed? Has it had a number of chronic problems? Is it running, but not at optimal production? How has it been maintained?
- **Is this the right vehicle for your operation today?** And—more importantly—will this be the right piece of equipment in five years after it is rebuilt?
- **What are your current vehicle requirements?** Will you need this vehicle to do a job before a repair or rebuild can be completed? How will rental costs affect your bottom line while the vehicle is being rebuilt?
- **What is the current resale market for it?** Is it a good time to sell this vehicle as used or trade it in?
- **Will new vehicles boost your utilization and lower operating costs?**

If you have the facts, the choice of a quick fix, certified rebuild or replacement will be clear. The decision is also one of simple economics. In general, if it will cost up to 50 percent less than new and give you 75 percent of the new component's life, then a fix, rebuild or replacement is usually the right choice. But this can only be of value if giving the vehicle or one of its components a new life cycle will lower operating costs in the long run.

If the numbers do show a repair or rebuild to be the best financial decision, there are a number of options. In-house or outsourced repairs will most quickly fix a component that has failed or is not

performing well. When the numbers do not support this option, looking at the value of new components can be an effective exercise.

For example, let's do the arithmetic for a 110-amp alternator that costs \$300 new, \$150 rebuilt. Presume the vehicle has 100,000 miles on it and the failed alternator is out of warranty. Let's also presume the vehicle has a targeted life of 400,000 miles, a new alternator lasts 100,000 miles and a rebuilt component will last 75,000 miles. Finally, two hours of labor are required to remove and replace the alternator. Here's the math:

<p>New Alternator: $\\$300 \times 3 = \\900</p> <p>Labor: $\\$75 \text{ per hour} \times 6 \text{ hours} = \\450</p> <p>Total Cost = $\\$1,350$</p> <p>$\\$1,350/300,000 \text{ miles} = \\$.0045 \text{ per mile}$</p>

<p>Rebuilt Alternator: $\\$150 \times 4 \text{ repairs} = \\600</p> <p>Labor: $\\$75 \text{ per hour} \times 8 \text{ hours} = \\600</p> <p>Total Cost = $\\$1,200$</p> <p>$\\$1,280/300,000 \text{ miles} = \\$.004 \text{ per mile}$</p>
--

In this scenario, the rebuilt approach is more cost effective presuming it does not impact vehicle availability. In addition, the remaining vehicle life is a critical determining factor in the equation.

Also important in the replace or rebuild decision is to focus on core condition. Rather than wait for an alternator to fail catastrophically, for example, anticipating normal wear-and-tear replacement cycles and controlling the condition of cores so they can be rebuilt reliably makes success more likely.

Most important in these cases is to clearly define policies and procedures. The driver of all repair, rebuild or replace decisions, after all, is the bottom line. The repair, replace or rebuild decision still has a significant impact on fleet operating and maintenance costs. This makes it all the more important to measure, watch and pay attention to meaningful indices that support cost-effective decisions.