

HOW AEROSPACE COMPANIES EVALUATE SUPPLIERS

SUMMARY

More and more of your customers are installing formal supplier quality evaluation systems. This BMA was developed by the Aerospace Industries Association as a guideline for aerospace OEMs. If you do aerospace work, you should be familiar with these guidelines as well as the specific evaluation procedures that your customers use. These guidelines may also be useful in helping you evaluate your own suppliers. For further information on the AIA guidelines, contact the Aerospace Industries Association, 202-371-8432.

GUIDELINES FOR SUPPLIER PERFORMANCE RATING SYSTEMS

Supplier performance rating is a tool

Most large companies now have Supplier Performance Rating Systems in use. They cannot afford to bypass this important management tool. Many of the companies with operating systems are continuing to upgrade them to improve their usefulness.

With rating systems, as with any other types of systems, the objectives must first be identified. The objectives of a rating system should be: (1) to furnish the buyer with the performance information that he needs to assist with the source selection cycle, (2) provide effective communication between the buyer and the seller, and (3) guide the adjustment of the level of the source/receiving inspection activities. Not all rating systems meet these objectives. Many systems furnish the buyer with floods of information but not in a format to allow him to readily compare performance between suppliers of like commodities. Still other systems leave out important elements of consideration when rating performance. Some systems are so complicated that neither the buyer nor the supplier can understand or accept the ratings. To be an effective tool, the rating system must not only identify good or substandard performance but it should also identify those specific characteristics in need of improvement. To be accepted, a rating system must rationalize complexity, state of the art and other factors beyond the control of the supplier. The accuracy of the identification of responsibility for defects plays an important role in the effectiveness of any performance rating system.

An accurate and comprehensive rating system can be of assistance in structuring supplier/commodity improvement programs. Careful analysis of rating history will often make needed improvement programs very obvious.

No universal rating system

Since not all aerospace companies have the same products, goals or markets, one rating system is not practical for all. The relative importance of rating factors can vary depending upon a company's product. Each company must analyze its own requirements and develop its own performance rating system. Product lines within a company may require differing approaches. Careful planning up front may make the difference between a valuable tool or a costly mistake.

Determining the method that is used to summarize your piece part ratings into management reports should be part of the initial planning effort. The format of your rating reports must be determined by how the reports are to be used as part of your improvement or corrective action programs. Many rating systems summarize into three basic reports: (1) piece part by supplier, (2) commodity type by supplier, and (3) overall performance by supplier. Determine how the rating reports are to be used, then establish their format. One format applied to all commodities may not be the best approach.

Quality is first

In the aerospace industry, all companies consider suitable product quality as the most important rating factor. Poor quality reflects into cost, schedule and future sales. Quality performance rating should consider how much material was: (1) accepted, (2) scrapped, (3) reworked, (4) returned,

(5) used as is. This data should be collected from source inspection operations, receiving inspection/test operations, in-process inspection/test operations and field sources. A supplier's quality rating should reflect data from as many sources as practical. Ratings based on receiving inspection/test results only may not reflect a true picture of a supplier's product quality.

A rating system should display current experience as well as some past performance history to allow trend analysis.

Everyone wants to know why

A performance rating system should, when possible, include some backup information when a supplier's rating is high or low. The justifications can be placed into broad categories such as "dimensional discrepancies," "electrical failure," "damaged," "incorrect documentation," "late delivery," "no rejects this rating," etc.

Two last thoughts on quality rating

First, if you approve your suppliers' quality systems, be sure that approval can be affected by a poor quality rating. In most instances, the delivery of poor quality products can be traced to a weakness in the supplier's quality system as well as the basic cause of the defect.

Second, quality ratings should be a periodic summary of a supplier's quality performance. Communication with the supplier should be maintained on a problem by problem basis as each problem surfaces. Discrepant material should be returned to the supplier whenever possible. A rating report should be considered as a periodic report card to assess overall performance and develop corrective action plans if necessary.

Delivery schedule a close second

A supplier's schedule performance is another factor often used in evaluating a supplier's performance. Both delinquent and early deliveries can affect costs. Overtime pay, work around plans, and increased error rates are just a few of the factors that increase costs when suppliers fail to deliver materials on schedule.

In recent years more importance has been placed on the increased costs caused by early deliveries. A performance rating system should consider both early and late schedule performance as a factor in the overall supplier rating.

Develop your rating formulas with care

It is better to spend a little extra time developing the factors to be rated and their relative weights in the overall formula than to find yourself with an implemented but unusable system. In some instances rating formulas will be required for each part while in other instances one formula will do for an entire family of parts. In addition to assuring that all necessary rating factors have been included, make sure that each factor has been assigned a proper weight considering that part or family of parts. Many aerospace companies assign a team or personnel from quality, engineering and

production organizations to pool their resources to develop a meaningful rating system.

The rating report

One of the decisions to be made when developing a rating system involves developing a format to display the ratings. It is desirable to select a rating format that will be meaningful to both the buyer and the supplier. One approach that has been adopted by a number of companies recently is the "added cost" or "real cost" format. Less than optimum performance in any one of the factors selected to rate suppliers can be said to result in additional costs to the buyer. Since increased dollar cost is an easily understood concept, it is proving to be a popular technique.

To implement a cost driven rating system the costs involved with less than optimum performance must be accumulated and displayed as a ratio of purchase price. In order to reduce the task of accumulating the nonproductive costs associated with defective supplier material and schedule performance, some companies have developed a "cost standards" system. In a "cost standards" system, a cost standard is developed for each defect cost of a part or a family of parts. The levels that defects are identified are also factored into the standards. As the defect information is fed into the data base, it is converted to a dollarized output. By comparing the defect costs against the purchase price or bid price, a ratio or a "real" cost can be developed. The buyers can use this ratio or real cost factor to adjust bid prices on follow-on contracts to help them select the supplier with the lowest overall cost per item performance.

Some Do's and Don'ts

- Don't design your supplier performance rating system to be too complex. The more complex it is, the higher the possibility of error. A rating system must first, be accurate and second, be simple.
- Don't be too concerned with arriving at one overall rating for each supplier. In some situations, a rating by item or commodity may be of most importance. Tailor your system to satisfy your needs.
- Don't be afraid to tune the system for maximum performance. Chances are that your system won't perform at its maximum potential the first time around.
- Do indoctrinate your suppliers on your rating system early in the cycle. Let them know what to expect when doing business with you.

In summary, the most important factors to remember when developing or tuning your supplier rating system are: (1) its effectiveness as a tool for the buyer and (2) its effectiveness as a communication device with your suppliers.

This BMA was prepared by the NTMA Technical Department.