Developing Effective Standard Operating Procedures

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Introduction

TQM (Total Quality Management), HACCP (Hazard Analysis Critical Control Points), ISO9000 (International Standards Organization), and Six Sigma are management programs designed to help companies maintain process and quality control, and remain competitive in a global business environment. At the heart of each of these programs, standard operating procedures (SOPs) drive the results. While business research and company performance continually demonstrate the power and effectiveness of these structured management control programs; you can benefit from the potential of SOPs without the added detail and development that these complete programs require.

Why Would I Want SOPs and What Will They Do For Me?

In today's business environment, SOPs must make bottom-line economic sense, especially if you invest the time and energy to develop and implement effective SOPs. Below are some of the ways they can have a direct or indirect positive impact on business performance.

1. Animals thrive on consistency and perform much better when things are done correctly, on time, the same way, every time.

2. People need consistency to achieve top performance. Doing jobs the same way every time rather than wondering, "How does the boss want it done today?" improves productivity. We are talking about consistency in routines, not mind numbing boredom.

3. SOPs will reduce system variation, which is the enemy of production efficiency and quality control.

4. Well-written SOPs facilitate training. Having complete step-by-step instructions helps trainers ensure that nothing is missed and provides a reference resource for trainees.

5. Well-written SOPs facilitate cross training. A SOP can be an excellent reference document on how a task is done for employees filling in on jobs they do not perform on a regular basis.

6. People tend to be supportive of the things they help create. Involving employees in developing SOPs can help assure the final product is more complete, useful and accepted.

7. SOPs can help in conducting performance evaluations. They provide a common understanding for what needs to be done and shared expectations for how tasks are completed.

8. Employees can coach and support each other if there is documentation available on exactly how various tasks must be done and everyone knows what their co-workers are supposed to be doing. This can also help generate a more cooperative team approach to getting all the daily tasks done correctly, everyday.

9. Having well defined SOPs, using them in training and insisting that they be followed can help keep employees safe at work and may provide some legal protection if an injury occurs.

10. Well thought out and implemented SOPs can greatly reduce biosecurity risks for your operation.

11. Developing and following SOPs for tasks where there is environmental risk, such as manure, chemical or waste handling, help to protect the environment and may provide some legal protection if an environmental mishap occurs.

12. Having SOPs can encourage regular evaluation of work activity and continuous improvement in how things are done.

Organizing the SOP Writing Effort

Developing a complete set of SOPs for a business can be a time consuming process. But a little time spent in the beginning to organize the effort can help reduce frustration with the process and make the effort more efficient and effective. Using the following five steps will aid in your organizing efforts.

1. Identify the key areas of concern for your operation where SOPs might be useful. For example, feeding, animal moving and handling, manure handling, equipment cleaning and sanitation, vaccination, bedding, biosecurity, animal health, new animal arrival, etc.

2. Using the list from step one, identify the top one or two priority areas for attention. In which areas are more controls desired or required? In which areas will economic returns or impact on the operation be greatest? Which areas are likely to yield some good successes early in the process so you can build momentum and excitement for the effort?

3. Focusing on the selected top priority areas from step two, identify all the processes, functions or operations that occur within each of these areas.

4. Group together and combine or subdivide further (which ever makes sense for your operation) all the important processes, functions or operations within each area. Then prioritize them for SOP development.

5. Identify the best individual to lead the development effort for each SOP and assign a development team of employees, managers, agribusiness representatives, consultants and anyone else who can bring relevant expertise to the effort.

Six Steps to Developing a SOP

A SOP for the same task will differ from farm to farm. There are also a number of different approaches to developing SOPs depending on the business, complexity of the SOP and the number of people involved in the development. The following six-step procedure will be useful and effective in most situations.

1. Name the SOP using descriptive action words.
    Examples: ***Mixing*** *Milk Replacer,* ***Identifying*** *and* ***Handling*** *New Calves,* ***Moving*** *Calves From One Group to Another*.

    > ***Tip:*** If you are developing SOPs for several different areas of your operation, give each area an identifying code then number the SOPs within it, for example, in biosecurity, SOPs B-1, B-2, B-3… in the feeding area F-1, F-2, F-3… for health H-1, H-2… This will make it easier to file the SOPs, refer to them in related SOPs, and for an employee to find a specific SOP for reference later. Keep them filed in one or more notebooks accessible to the employees. Include the date the SOP took effect, any revision dates and the authors' names.

2. Write a scope for the SOP. To do this, answer these questions: Which specific operations or tasks within an operation will be covered? Which are not covered? Who is the SOP written for?
    Example: *This* **Milk Replacer Mixing** *SOP is for all regular and relief calf feeders. The SOP starts with having clean and sanitized equipment and covers procedures through delivery of the milk to the calves. It does not cover cleaning and sanitizing the equipment or collecting and returning empty milk pails. For procedures covering these areas, see the appropriate SOP*. (This is where referencing codes and numbers for other SOPs comes in handy.)

3. Develop an overall task description.
    Include the number of people required for the task, their skill levels, the equipment and supplies required, any personal protective or safety equipment required, and a description of how the finished product or result should look.

    Example:

    ♦ *Milk replacer mixing is done in the feed mixing room.*

    ♦ *One person thoroughly trained in calf feeding does task.*

    ♦ *Equipment and supplies include: large mixing tank, hose to facet, milk replacer storage barrel and measuring scoop, large wisk, thermometer, and individual calf milk pails.*

    ♦ *Clean coveralls and a rubber apron must be worn.*

    ♦ *The expectation is that every calf will be fed an adequate amount of warm milk twice each day.*

    ♦ *Milk replacer mixing includes the following tasks:*
       • *Gathering supplies and equipment*

- *Inspecting supplies and equipment*
- *Measuring and record keeping*
- *Mixing*
- *Filling individual pails*
- *Delivering milk to the calves*

4. **Describe each task in detail.** In this section include the following:
   - Specific order in which activities are done
   - Timing sequences and times allowed
   - Materials or tools used and how they are used
   - Safety or health considerations
   - References to other associated SOPs

   Define terms and concepts when needed. **Place health and safety warnings prominently in the SOP.**

   > *Tip:* People can't remember more than 10 or 12 steps, so they tend to have difficulty with long SOPs. If your SOP goes beyond 10 steps, either break it into logical sub-task SOPs, or write a second shortened form of the SOP for use at the job site listing only the main steps, not the detailed explanations of the steps. Use the highly detailed form of the SOP for training and reference. Developing abbreviated versions of SOPs for use at the work site make excellent reminder aids for employees and help ensure that important items are not missed.

   Example: *From step three:*

   ♦ *Combine gathering and inspecting supplies and equipment. Write one SOP dealing with assembling and inspecting a toolbox or bucket containing all necessary equipment.*

   > *Tip:* Developing toolboxes or buckets for such activities as sick calf first aid, vaccination, tagging, dehorning, extra teat removal, foot care, breeding etc. and SOPs dealing with how those toolboxes are stocked, inspected and stored can be a great organizational aid and time saver. The toolboxes should contain all necessary tools, equipment and supplies as well as laminated SOP reminder cards.

   ♦ *Write a second SOP for mixing, measuring and record keeping.*

   ♦ *Write a third SOP for filling milk pails, delivery to calves and pickup from calves after feeding.*

5. **Get everyone on board.**
   Successful SOP development and implementation typically requires that all people who are affected by a SOP be involved in a team-based SOP development and problem solving process. To achieve that:
   - Ask several experienced employees to be involved in drafting the initial SOP.
   - Have trained employees check the written procedures against actual practices before implementation. Make revisions if necessary.

- Talk with all employees to gain agreement that procedures and expectations are appropriate and achievable.
- Inform everyone about the written SOP.
- Train them on the SOPs' contents and tell them where they can find it for future reference. Be aware that all your employees may not be able to read the SOP.

6. Set up a system to monitor the SOP regularly.
   The minute you write and implement a SOP it is time to evaluate and update it. Even new SOPs frequently need to be tweaked once or twice before they operate smoothly. Employees should report needed changes to their supervisor any time they see an opportunity, problem, or concern. Anytime something changes on the farm, each SOP within the areas affected by the change should be reviewed for accuracy and appropriateness. You, your experienced employees, your veterinarian, and other consultants should review each SOP annually. Take a team approach to modifying SOPs by including outside expertise along with employees and managers.

Presenting the SOP

Different SOP formats include:

Simple steps or a checklist. These are easy to write and follow and work well for short, simple, straightforward tasks.

Hierarchical steps. An extension of the simple steps format, this format works better for tasks that require additional detail or sub-steps within each primary step.

Linear flow chart. Think of this as a graphic version of the two previous formats. It works well for tasks where activities must be done in a specific order and where an easy-to-follow reminder at the job site is useful.

Annotated pictures. This format works well for people who cannot read or where a language barrier exists. Since pictures can dramatically reduce the need for written explanations, this format helps to shorten complex and detailed SOPs. For some employees, SOP pictures can make excellent work site reminders. For example a photo illustrating how a work site should be set up or arranged, or the proper locations of shields, levers, switches and handles on a piece of equipment.

Branching flowchart. This format makes complex SOPs, especially those with a number of decisions that affect subsequent steps, easier to follow. Boxes within the flow chart can also be expanded to include checklists or sub steps.

The best SOP format is one that, given the situation, does the best job of accurately transmitting the necessary information and facilitating consistent implementation of the SOP. The primary considerations for choosing the best SOP formats are:

- **The SOP.**
   Consider the SOPs' scope and complexity, the number of steps involved, the amount of detail necessary within each step, and how many decisions, if any, must be made that will influence subsequent steps.

- **The people who will use the SOP.**

  How do they learn? If they are visual learners, perhaps a series of pictures or a flow chart will work best. If they are auditory learners, then a cassette tape of instructions may be more useful.

  To get an idea of who learns best by seeing things and by hearing them, listen to the words they use. Someone who is visual might make comments like, "That looks good to me" or "I see what you mean." An auditory person might say, "I hear what you're saying." or "Sounds good to me."

  Physical limitations, such as poor eyesight, may necessitate large clear print or big bright pictures and plenty of light. If an employee's hearing is poor, the person may not be able to hear instructions, especially if there is competing background noise.

  Does an employee have a learning disability that interferes with his or her ability to comprehend and process information and instructions? Does the person have difficulty remembering instructions or details from one time to the next? Converting SOPs to brief reminder cards or pictures may be helpful. What are employee levels of English literacy? Can they read and understand it? Can they read and understand another language if the information were translated?

- **How the SOP will be used.**

  The purpose of a SOP is to give detailed directions so that any individual can do a job correctly, on time, every time. At the same time, any one SOP may have a number of different uses. Depending on the intended use at the time, the SOP may be written or presented differently to be more effective. A SOP that is part of a reference manual may contain large amounts of explanatory detail and even supporting background information so employees understand the biology and importance behind certain SOP steps.

  When using the same SOP in basic training, less detail may be desirable. The amount of detail should be tailored to the level of the training. For example, new trainees might be overwhelmed by large amounts of detail, so give them only the details they need to get the job done correctly.

  For in-depth follow-up training or retraining, you may want the SOP to contain more detail and background information explaining why certain things are done or the biology behind certain practices.

  The same SOP used as an on-the-job reminder should be a bare bones overview that is readily accessible at the work site, easy to see, and quick to review and understand.

Summary

To maximize the benefits derived from your investment in SOP development:

- Think first about the ways you intend to use the SOP after it is developed: Employee orientation and training, refresher training, advanced training, work site reminders, cross training, performance appraisal, employee safety and accident prevention, food safety and bio-security, process improvement, quality control, environmental protection, or job description development.

- Then decide who should be involved in its development.
- How can you best accomplish the development? .
- Select a format, or formats, for the final product based on the SOP, the people who will be using it, and the uses to which they, or you, will put the SOP.

It is important to realize that developing useful and effective SOPs requires time and commitment from all management and employee levels. Once the development task is complete three important steps still remain.

1. **Educate employees about the new SOP.**
2. **Control "procedural drift"** by ensuring that the SOP is followed consistently over time.
3. **Establish an evaluation and review system** to be certain that over time all the steps of an SOP are still correct and appropriate for the production system.