Focus on Personal Operational Discipline to Get Work Done Right[1]

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Abstract

A focus on operational discipline (OD) is typically an important factor in helping organizations achieve excellent safety performance by preventing injuries and serious incidents. Programs to improve OD must include both an organizational focus for site leadership to implement appropriate systems and a personal focus for workers at all levels to complete their work the right way, every time, following these systems. This paper will discuss DuPont's OD program with emphasis on the personal focus needed to consistently get work done correctly and safely.

1. Introduction

Operational discipline (OD) is used to describe human behavior in following required systems, procedures, and practices to accomplish successful, high quality, and safe manufacture of a product. Sometimes confused with the pejorative meaning of "discipline" as punitive focus, for the Process Safety Management arena this word has a very different and important significance. If a company has good discipline in implementing and following significant operating requirements, a high level of OD can be achieved and many operating benefits, such as lower cost, higher productivity, and reduced incidents and injuries, can result. If, however, a low level of OD occurs, due to, for example, poorly-documented procedures, ineffective training, shortcuts, and other factors, good operating and safety performance will be difficult to achieve.

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A focus on OD requires a day-to-day commitment by company leadership to ensure appropriate systems, procedures, and other requirements have been established and by workers at all levels to consistently follow and meet these requirements. Ensuring day-to-day focus on OD as part of Process Safety Management is a continuing challenge, but a necessary one if we want to get work done right.

DuPont has for many years defined OD as the deeply rooted dedication and commitment by every member of an organization to carry out each task, the right way, each time [1]. The corporate PSM standard requires that "Sites shall implement and maintain programs and systems to achieve and maintain a high degree of operational discipline for all PSM elements in a manner that supports business and operating objectives." To support sites in meeting this requirement, the DuPont OD program has two parts: an organizational OD (OOD) focus for site leadership and a personal OD (POD) focus for individual workers at all levels of the site [2]. This paper will briefly review the OOD aspects of DuPont's OD program, but will primarily focus on POD to help get work done correctly and safely.

2. Organizational OD Overview

Organizational OD (OOD) helps define what corporate and site leadership can and should do to promote and achieve high levels of OD. Good OD will not happen on its own, but rather is something that requires continued management attention to implement appropriate systems, to monitor and evaluate actual performance, to demonstrate personal attention and dedication, to provide appropriate resources as needed, and to develop and support effective processes to facilitate employee understanding, involvement, and follow-through. The many benefits of OD in helping achieve world class manufacturing operations, reduce risk, and prevent injuries provide a basis for engaging leadership to support and maintain effective OOD programs [2,3]. Ultimately, OOD helps leadership foster and sustain a strong safety culture, provide comprehensive, integrated managing systems and procedures, and set and support high expectations for excellent safety and operating performance.

DuPont uses four OOD characteristics to define the different aspects of the OOD program and to help site leadership evaluate performance and identify priorities for improving site OD [2]:

- **Leadership Focus**: Leaders are passionate for safety and model the behavior they expect from others.
- **Employee Engagement**: Employees are active and enthusiastic about participating in safety-related activities.
- **Practice Consistent with Procedures**: Work is completed as planned, following authorized procedures.
- **Excellent Housekeeping**: Employees are proud of their workplace, maintaining consistently high levels of housekeeping.

The foundation of any OOD effort is Leadership Focus, as shown in Figure 1, without which priority and support for OD improvement cannot exist, as previously discussed. OOD also promotes strong Employee Engagement, where high levels of uninterested and uninvolved

employees will limit the organization's ability to achieve strong performance. An important part of Leadership Focus is providing the culture and work environment to engage employees and involve them in the safety effort as well as to understand their part in achieving a high level of OD, regardless of their position at the site. The most visible results of Leadership Focus and Employee Engagement are employees following approved procedures (Practice Consistent with Procedure) and maintaining equipment and work areas in good operating condition (Excellent Housekeeping). Additional information on OOD and the related topic of Conduct of Operations is available elsewhere [1,2,4,5].

3. Personal OD

While ultimately site leadership is accountable for results, achieving high levels of OD and subsequently achieving excellent operational and safety performance requires the active involvement of all employees in completing every job task correctly and safely every time. A strong OOD focus by corporate and site leadership, as discussed previously, provides the systems, procedures, tools, expectations, and support for personal OD (POD) programs for workers at all levels in the organization. Efforts to improve POD must necessarily be viewed as part of or overlapping with other major programs to reduce human error [6,7], including human factors analysis [8], behavior-based safety [9,10,11], human performance technology [12], human reliability assessment [13], etc.

DuPont uses three POD characteristics to define the different aspects of the POD program and to help site workers quickly review their readiness for completing their work tasks [2]:

- **Knowledge:** I understand how to do my work task correctly and safely.
- **Commitment:** I commit to do my tasks the right way, every time.
- **Awareness:** I anticipate potential problems and recognize unusual situations.

A quick review, therefore, considers if you know how to do a work task, if you plan to actually do it that way with no shortcuts, and if anything could go wrong that you should anticipate and be prepared for. As shown in Figure 2, all three POD characteristics are essential for an individual to work with a high level of OD. If, for example, an employee has Knowledge and Commitment, but not a high level of Awareness, when things don't go quite as planned, it is more likely that some part of the task may not be completed correctly, possibly leading to an injury or incident. Similarly, if an individual is not committed to completing a task correctly and safely every time, shortcuts may be taken or distractions may occur that lead to a lack of focus and an injury or incident may occur. These types of unwanted behaviors can ultimately lead to complacency about workplace hazards, potentially leading to further injuries and incidents.

Evaluating current performance related specifically to POD can be difficult, but some basic questions to consider are included in the following sections. In addition, evaluation of OD as part of incident and near miss investigations can indicate specific issues that can be addressed to improve both OOD and POD. For example, if a procedure is not followed by a worker resulting in an injury, careful analysis of why the procedure was not followed as related to Knowledge, Commitment, and/or Awareness in addition to other potential system failures should provide

insight for improving POD. Quality and other operational problems may similarly provide insight on POD issues at a site.

In addition to the approaches discussed in the following sections for evaluating and improving POD issues at a site, a simple approach for improving POD using well-designed, checklists is suggested. Checklists distill the essential parts of operating procedures into a useful format that serves as a reminder of key steps and potential problem responses when a work task is actually being done:

> Checklists seem to provide protection against such failures. They remind us of the minimum necessary steps and make them explicit. They not only offer the possibility of verification, but also instill a kind of discipline of higher performance. [14]

Checklists should be developed with worker input, should highlight the most important information and steps, and should be as simple as possible. Checklists should be used selectively and can provide the most benefit when the work task is complex, is done infrequently, and has significant hazards associated it. When properly designed and used, checklists are important and effective management tools that can be relatively easily implemented to help improve POD.

3.1 Knowledge

Understanding how to do a work task correctly and safely is, of course, fundamental to any work assignment. When approaching a job task, a worker can consider if they have sufficient Knowledge to do the work right by reviewing the following questions [2]:

- Do I know the correct way to do my job task, based on procedures, training, and other SHE system requirements?
- Do I understand why the job task is being done in a certain way, what needs to be accomplished, and how it should be done?
- Do I ensure that my equipment, tools, and PPE, if needed, are in good condition?
- Do I make sure my co-workers also know how to do their job task safely?

Development of Knowledge primarily results from ensuring that high-quality procedures are available for use, when needed, and that appropriate training on the procedures and other aspects of the work task has occurred. Understanding why a procedure has been developed in a specific way, accounting for job requirements, safety hazards, etc., provides more insight into the work task and helps ensure that it will be done correctly. Use of equipment, tools, and personal protective equipment is often an important part of getting work done correctly and safely, so checking the condition and knowing how to use required equipment is critical. Finally, since co-workers often work along side you to complete many job tasks, making sure that they also have sufficient Knowledge is essential for both their safety and your safety.

The availability and quality of procedures should be periodically reviewed with workers to ensure they are current. The quality and timing of training should similarly be reviewed to evaluate effectiveness. Some factors that can be used to evaluate Knowledge include:

- We only do certain tasks occasionally, so it's difficult to remember them.
- We don't have enough training.
- We think training quality needs to be improved.
- It's been too long since we had training.
- There are no procedures or the procedures are not easily available.
- We don't think the procedures are clear or they aren't current.
- We don't have equipment, tools, and PPE provided/maintained in good condition.

These factors can be addressed via an anonymous survey or interactively during a meeting to help provide worker input on potential areas for improving Knowledge and POD at a site.

3.2 Commitment

The Knowledge to do a work task correctly and safely does not mean it will always be done that way, possibly due to time pressures, production needs, unapproved procedure revisions, shortcuts, etc. Commitment to do the work based on job requirements and training reinforces work expectations and engages workers in doing the work right. When approaching a job task, a worker can consider if they have sufficient Commitment to doing the work right by reviewing the following questions [2]:

- Do I take personal responsibility for properly understanding my job task and making sure it can be completed safely every time?
- Do I plan to follow procedures carefully without shortcuts?
- Do I trust that procedures have been developed for a purpose, but suggest changes if they don’t make sense?
- Do I focus on the task at hand and set aside personal and work distractions?
- Do I care for my safety and the safety of my co-workers?

Fundamentally, Commitment is taking personal responsibility and being accountable for the work that you are doing and making sure it is done correctly and safely without shortcuts and other unapproved deviations from job requirements. If there is a need to change a procedure or a better way to do the work task is recognized, the established process for making changes must be used to ensure that the changes are carefully reviewed for potential safety hazards and authorized so that everyone is completing the work in the same way. Part of Commitment is focusing on the work task and paying attention to appropriate detail in completing in the work, rather than being distracted by personal issues or other things going on in the work environment. Caring for your safety and the safety of your co-workers reinforces Commitment to getting the work done safely.

Engaging workers and building Commitment is part of the OOD effort by site leadership. Various approaches exist based on behavior-based safety [9,10,15,16], coaching [17], management practices [18], etc. Some factors that can be used to evaluate Commitment include:

- We don't really care; just want to get job done quickly.
- We don't believe questions for help are encouraged.
- We don't have enough time to plan the job.
- We think shortcuts are the only way to get job done on time.
- We have too many distractions in the workplace.
- Our jobs are interrupted many times before completion.
- We're not encouraged to suggest changes to procedures or work practices.
- We don't think co-workers really want suggestions or help.

Again, these factors can be addressed via an anonymous survey or interactively during a meeting to help provide worker input on potential areas for improving Commitment and POD at a site.

3.3 Awareness

People make mistakes and work doesn't always go as planned for a variety of reasons, so paying close attention while completing a work task in order to respond safely to normal or unexpected variations is a key part of POD. When approaching a job task, a worker can consider if they have sufficient Awareness to do the work right by reviewing the following questions [2]:

- Do I anticipate that my job task may not go as planned?
- Do I understand if there are any unusual circumstances or hazards associated with my job task?
- Do I monitor my work environment carefully, including the activity of my co-workers?
- Do I prepare to respond quickly and safely, troubleshooting as needed, based on my training and procedures?
- Do I stop, think, and review procedures, or ask for help, when unsure of what to do, or if the task unexpectedly changes?

Recognition that a work task doesn't necessarily occur exactly the same way every time requires effective job planning and increases anticipation of potential problems and appropriate responses. Careful attention to detail and monitoring of the work environment allows early detection and appropriate troubleshooting of any situations that occur, including requests for assistance from other site personnel. Awareness may also reveal that the worker has incomplete Knowledge of the work task, allowing review of the procedure or involvement of other experienced workers for assistance.

Focus on the work while planning and conducting the job task is essential for completing it correctly and safely, accounting for both normal and unexpected variations. Many methods are available to support worker Awareness, including DuPont STOP™ [19], line of fire [20], critical moment [21], etc. Some factors that can be used to evaluate Awareness include:

- We don't have time to think through potential problems.
- We don't have time to monitor work areas and co-workers.
- We're too often distracted by personal issues.
- We don't think training/procedures clearly cover what can go wrong.
- We don't think training/procedures provide much troubleshooting help.
- We don't think asking for help is encouraged.
- We don't have anyone to ask for help.

These factors can be addressed via an anonymous survey or interactively during a meeting to help provide worker input on potential areas for improving Awareness and POD at a site.

4. Application

The key challenge to improving POD is to initially identify the most important issues at any specific site, since different sites likely will have at least somewhat different cultures, leadership, processes, etc. Once the local issues have been identified, they can be prioritized and specific improvement plans can be developed. Different approaches can be used [11,12,13], but the most common sources of information on POD include metrics [2,3,22], audits [3,22,23], incident investigations [3,22], and use of POD self-assessments [3,22,24].

Metrics, for example, can provide information on safety, quality, etc., problems at a site, and careful analysis of the root causes of problems, such as overdue action items, can highlight different POD issues. Audits can include interviews with site personnel to supplement more detailed technical audit questions to provide insight into site operations and issues. The root causes of specific gaps identified in audits can indicate POD issues. Incident investigations should carefully evaluate whether POD is a key factor, and further analysis and trending over one or more years can also help prioritize specific issues at a site, as shown in Figure 3. Finally, self-assessments, including the questions provided in Section 3 as well as additional site-specific questions, can be used to survey personnel at the site to identify gaps or issues. As shown in Figure 4, the Knowledge section of the self-assessment survey may indicate, for example, the need to re-evaluate the frequency and/or quality of training to help ensure that workers have the information they need to complete work correctly and safely.

Whatever source of information is used, improving POD requires the identification and prioritization of local, site-specific issues to develop improvement goals, plans, and resource needs. Sites should expect this activity to continue, where progress is made on some issues, new priorities are identified, and new improvement goals are set. As POD gains are made and sustained, benefits to overall safety and operational performance should be obtained, providing continuing support for additional improvement activities.

5. Summary

Once good systems have been implemented for ensuring safe activities at a site, a focus on OD is essential for ensuring that systems are followed and for achieving good performance. DuPont has implemented an OD program consisting of both an organizational part for establishing work requirements and a personal part for individual workers to complete their work tasks correctly and safely, every time. Personal OD programs, based on consideration of Knowledge, Commitment, and Awareness, for workers at all levels help get work done right, prevent serious injuries and incidents, and contribute to overall operational and safety excellence.

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Figure 1 – Organizational OD Characteristics

Figure 2 – Personal OD Characteristics

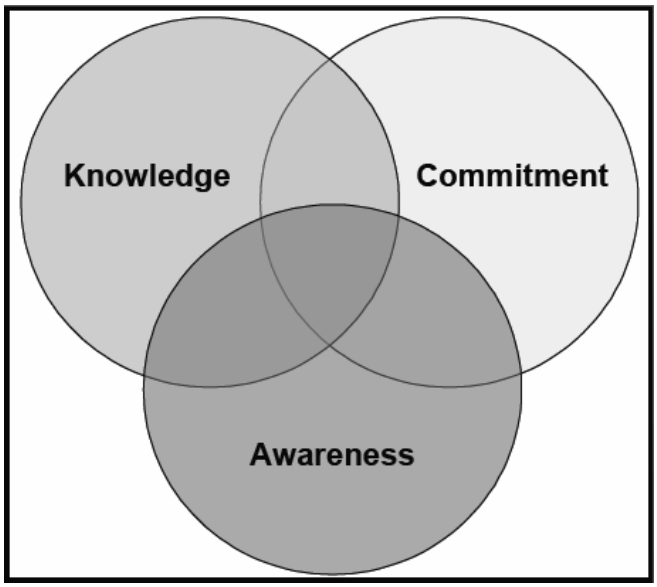


Figure 3 – Example POD Incident Trend Results

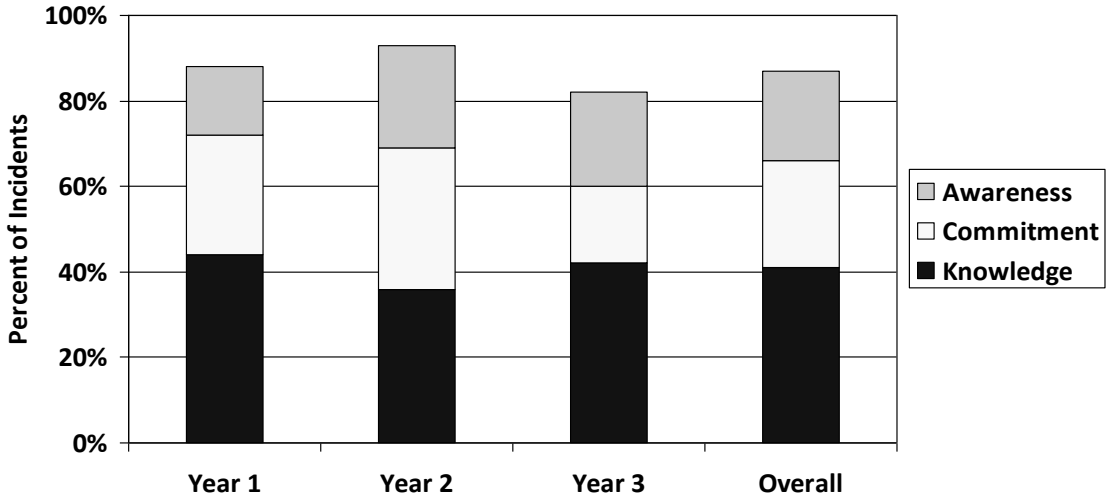
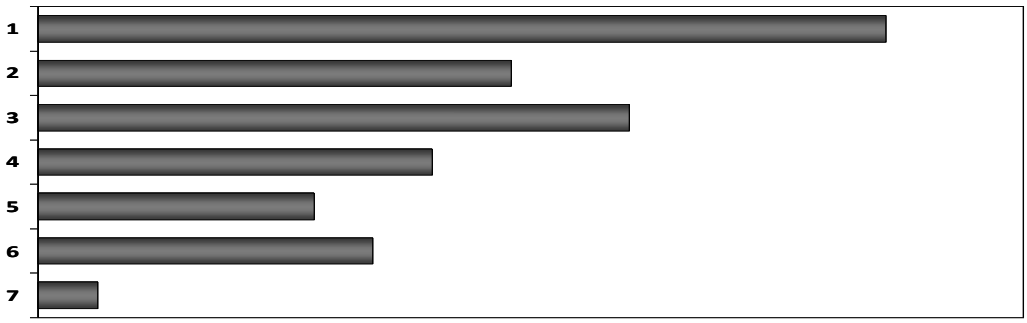


Figure 4 – Example POD Self-Assessment Survey Results (Knowledge)



1. We only do certain tasks occasionally, so it's difficult to remember them.
2. We don't have enough training.
3. We think training quality needs to be improved.
4. It's been too long since we had training.
5. There are no procedures or the procedures are not easily available.
6. We don't think the procedures are clear or they aren't current.
7. We don't have equipment, tools, and PPE provided/maintained in good condition.