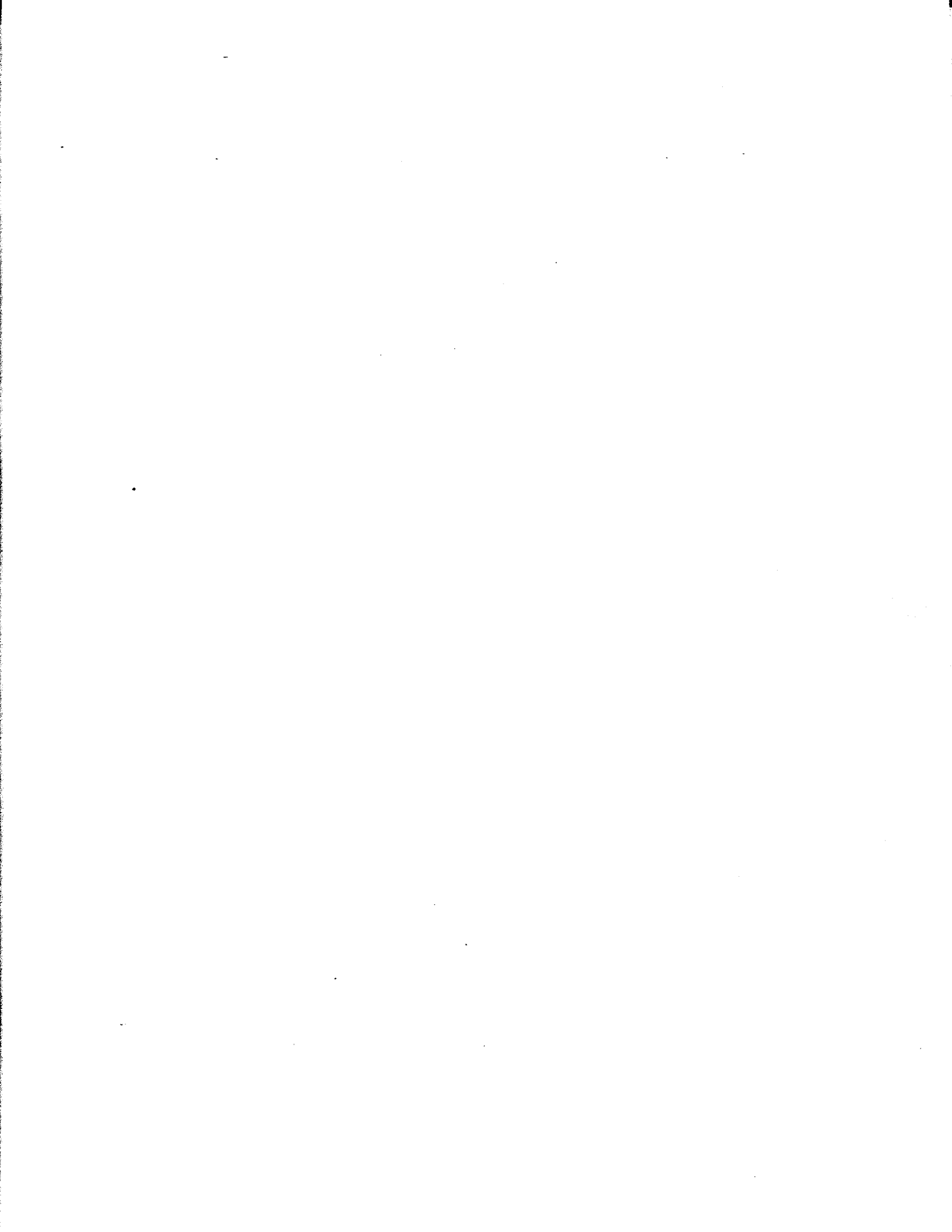


# **The Fun Factory**

An  
Interactive Exercise  
for  
Waste Reduction Training

by:  
**WRITAR**  
Waste Reduction Institute  
for Training and Applications Research, Inc.

completed  
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by Thad Schifsky



## Introduction

Public Policy staff in regulatory and/or policy-making positions are in an important position. They can influence waste generators in industry to adopt methods of environmental protection. This training manual outlines an exercise which can heighten public policy staffs' awareness of how waste is produced and how it can be reduced. At the same time, this exercise will provide participants with a sense of what it's like to work in an industrial setting and to use group problem solving techniques.

The instructions in this manual show the exercise facilitator in a step-by-step fashion how to take a group through the Play-Doh Fun Factory exercise. The training manual also includes a principles of operation section explaining how we developed this exercise, what our basic ideas are behind the exercise, and how we expect participants will benefit from the exercise. We have also included a section defining participant roles, as well as a list of equipment and materials needed.

## **Principles of Operation**

Nearly all training to date in waste minimization has been based on lectures and case studies, all of which are more properly termed education. Training to date has been given a lesser priority because the information to conduct training has not been available.

Our early training attempts at verbal role plays and small group discussions, while useful, did not prove as powerful, successful, and flexible as the Fun Factory training exercise. It's a fun exercise and we believe that people who have fun while learning are more likely to retain what they've learned. We are employing the principle that hands-on training allows trainees to become participants rather than observers. People would rather have the actual tools to work with rather than reflecting on concepts.

We determined that the regulatory audience who will participate in this exercise may not be familiar with what it is like to function in an industrial setting. Because of this, we wanted to construct an exercise to give these participants a good sense of how a business operates day-to-day. By participating in this exercise, they will also acquire a sense of how waste is generated and subsequently learn to recognize processes that create waste. Finally, with their enhanced sense of an industrial setting and knowledge of how waste is generated, we believe these participants will be more effective in promoting waste minimization in their respective positions.

## **Purpose**

To motivate audiences to promote, persuade and encourage waste minimization by taking them through a mock industrial process. This mock process is intended to heighten the participants' awareness of the importance of communication in waste minimization efforts. In addition, it is intended to help participants become more aware of sources of waste, options for waste minimization, and resistance to change.

## Objectives

We have several objectives in mind for this exercise. One is to help participants not familiar with industrial processes to understand these processes. Another is to help participants understand the challenges and frustrations of reducing waste in an industrial setting. A related objective is to show the participants that by taking part in this exercise, they may find their previous understanding of waste reduction and its implementation has little in common with the reality of waste reduction in an industrial setting. Our final objective is to help participants become aware of the importance of communication in waste reduction efforts, and to become aware of some of the many factors that make it difficult to actually implement waste minimization, such as labor relations, customer demands, and competition.

## Participant Roles

An ideal size for the group of participants is 20 people.

- Facilitator Role.

The facilitator would be ideally filled by a person who is comfortable with taking charge and leading a group of people through an exercise. Since the successful completion of this exercise depends on a high level of interaction among the participants, the facilitator should also be adept at promoting this interaction by his/her own example.

- Customer Role.

The facilitator takes on the role of the Customer after the Play-Doh machines are handed out. The Customer's role is to place orders, create pressure, demand quality, and generally harass the teams with the goal of creating an atmosphere of good natured chaos. The Customer's job begins with circulating to each team and placing the first order with each "Big Boss." After the teams have begun working, the Customer begins requesting sample parts from each team and inspects their quality. While inspecting each team's product, the Customer mentions how well their competition is performing. The Customer continues to inspect each team's product, mentions the competition's performance, and how important the job is to their company throughout the exercise.

Write the following titles and role descriptions on index cards.

- Big Boss

Keep your back to the process at all times. Everything is always late. You only care about the bottom line. Your links to your team are through Quality Control and the Production Manager, communicate to your team through them.

- Production Manager

The techs are lazy, QC is crazy, and the boss is on your case. You can look at the process once every five minutes. Get those parts out now!

- Quality Control (QC)

Everyone wants to slip something by you. Watch those techs carefully. You're the only guardian of the company's good name. If it's no good by you, it's no good.

- Technician (Tech) (Two Techs per Team)

You are underpaid and overworked. Only you understand the process. If only management could get organized! Don't let them push you around.

- RCRA Inspector (Optional)

You know that every facility has something to hide and your job is to find it. The paper work is never filled out right; their records are never where they're supposed to be, and all the labels are upside down.

## Instructions

1. Assemble attendees into teams of five and seat them around the "production floor." (see Materials Needed, page 9, line 4)
2. Assign a city or country name to each team for identification, and write the team names on a flip chart or chalkboard.
3. Explain to the teams that they are in competition with each other to produce a critical "part" for the military, and they will produce this "part" from play-doh using the Fun Factory machine. Tell them that since this is work for a defense contract, the parts have to be made to exacting standards.
4. Explain that Red play-doh is a toxic metal, Yellow play-doh is toxic because of volatile organic air emissions, and Blue and White play-doh is non-toxic. Explain that if toxic play-doh is mixed with non-toxic, the part is contaminated and considered waste. Write these specifications on the flip chart for the players' reference.
5. Explain that anything that is contaminated or isn't finished product is considered waste, therefore it can't be recycled and should be placed in a waste pile.
6. Assign roles by handing out the index cards (see Materials Needed, p.9, line 5, and Participant Roles, p.4). Roles can be assigned arbitrarily. Any extra people can be regulators.
7. Hand out Fun Factory machines and Play-Doh. Caution teams not to start until you tell them. Tell teams they will have 90 minutes to complete the exercise, after which there will be a 30 minute assessment and then a second 90 minute exercise. A half-hour break can be inserted in the exercise.



8. Tell the teams that you are the customer, and that you will order only through the Big Boss.
9. Tell the teams to open up the machines. This may distract them for a short time, so pause with your instructions.
10. Give the teams the first order to make 10 blue stars with a thickness comparable to the lid of the Play-Doh can. Explain that the parts are to be extruded with the machine, not molded by hand. Tell teams that finished parts should be smooth on both sides, and contain no mixed colors. Write the order and specifications on the flip chart.
11. Check on each team's progress. Begin quality control at this time, checking for parts that are not smooth or are shaped badly.
12. When any team is near completion of the first order, begin placing the second order of 10 white stars with the same thickness of the blue stars. Be careful not to tip off nearby teams about the content of this and future orders.
13. Place the third (5 blue rectangles) and fourth (3 red ropes) orders with all teams when any one team is close to completion of the second order. Tell them the rectangles should be made the smallest possible, with the same thickness as the stars. The ropes should be made as long as an index card is wide.
14. After you are certain all of the teams have begun the third order of 5 blue rectangles, announce to all of the teams that the customer has changed their third order to 3 red ropes, and the fourth order to 5 blue rectangles. This will (and is intended) to cause confusion and dismay among the teams as they will have to change their extrusion form, clean their machines, and guard against color contamination.
15. Continue checking for parts that are not smooth or are shaped badly, and begin inspecting parts for streaks of color resulting from sloppy color changes.

16. Remind the teams that they are in competition with each other. Since teams will work at different speeds, tell them you might have to pull the job from one team and give it to another.
17. At 90 minutes, tell the teams to stop, collect and segregate their parts and waste, and clean their machines. Determine who finished first. Inspect each team's finished parts for conformity to the standards of smoothness and shape and inspect each team's waste piles and note the amount of waste generated. You may wish to weigh each team's waste with a small scale to determine which team generated the most waste.
18. Ask the teams to appoint a group spokesman among themselves, and begin the discussion. Write responses on flip chart. Ask them what they think is wrong with the exercise as an industrial process (process analysis). Next, ask what they would change and why (options generation). Then ask each team what is the first thing they would modify and why (implementation). Last, point out the insights they have gained from the exercise. Examples of insights include:
  - a. how this exercise can help participants not familiar with the process understand the complexities of waste reduction in an industrial setting. This includes the added complexity and additional waste order changes can cause, especially with small orders which require the same "retooling" and cleaning as a large order.
  - b. all waste reduction ideas derived from this exercise came from the participants, which is often the case, or should be, in real industrial facilities.
  - c. a sense of how waste is actually generated, which can help participants to at least promote waste reduction ideas.
19. begin the exercise again and have everybody implement what they've learned.
20. clean up.

## List of Equipment and Materials Needed

1. Play-Doh Fun Factories
2. supplemental supply of Play-Doh
3. flip chart or black board
4. 24" x 36" sheets of white paper (often removed from a flip chart) for "production floor"
5. packet of 3" x 5" index cards
6. felt-tip markers for flip chart
7. chalk and erasers for blackboard