

Design Document

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Online Teaching and Learning

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PART 1: Overall Instructional Plan

Purpose of Course

Currently, new box former operators at the Atlanta Syrup Plant lack a consistent and reliable method to learn how to operate the equipment. The existing training process relies on a subject matter expert (SME) giving verbal instructions, which the new operator repeats. The SME then demonstrates the task, and the operator practices until the SME feels, based on observation, that the operator is ready to work independently. While this method covers all the necessary topics, it leads to inconsistency. Different SMEs may train operators in varying ways, and even the same SME might not cover the material consistently each time. The purpose of the new online training module is to standardize the training process for new box former operators in a blended learning model.

New operators will first receive an overview of the equipment on how it functions to make boxes. This overview will introduce them to the various components of the equipment as well as the safety aspects of the equipment operation and how to maintain each component to ensure smooth operation at the expected speed. Finally, it will set clear performance standards and expectations for the operators.

Benefits of the Box Former Training:

- *It will standardize the instruction content.*
- *It will orient and prepare new hires to understand the equipment before they go on the floor.*
- *It will provide scaffolding for the hands-on training.*
- *It will allow new operators more time to process the new knowledge and articulate the equipment procedures.*
- *It will serve as a lasting instructional aid for on-the-job training.*

Goal

- *Students will be able to describe and demonstrate the box former operation and be able to initiate the production of boxes.*

Objectives

- *New box former operators will be able to articulate what is the purpose of the box former and the process to make a box.*

- *New box former operators will be able to recognize the box former equipment parts.*
- *New box former operators will be able to summarize the importance of performing pre-operation processes.*

Learner Analysis

General Characteristics

The audience for this course is primarily new box former operators, although experienced operators may also benefit from having the course readily accessible in digital format as a helpful resource. The training focuses on developing new hires in the use of the box former equipment. The age range for the operators is wide, from 18 to 50 years old. About 85% of the audience is African American, and 15% is Caucasian. The highest educational level in the group is typically undergraduate, with the majority of individuals having completed only high school.

Specific Characteristics

- *Basic Reading and Writing Skills: Learners should have the ability to read and understand training materials and instructions.*
- *Basic Computer Literacy: Familiarity with basic computer operations, such as using a mouse, keyboard, and navigating software interfaces, is beneficial. While not mandatory, this will help learners interact with digital training content more effectively.*
- *Attention to Detail: Precision and careful attention to operational details are critical for ensuring the correct use of box former equipment.*
- *Ability to Follow Instructions: Learners should be able to follow written and verbal instructions accurately to ensure safe and efficient equipment operation.*
- *Basic Mechanical Aptitude: A rudimentary understanding of mechanical concepts or experience handling mechanical tools can be advantageous.*
- *Teamwork and Communication Skills: Effective communication and the ability to work collaboratively with colleagues are important for addressing issues that may arise during equipment operation.*

While these prerequisites can enhance the learning experience, the training is designed to be accessible, and learners with minimal knowledge and skills will still benefit from the course.

Motivation and Attitude

The vast majority of the audience is motivated to participate in the training because it serves as an orientation and provides scaffolding for the actual work environment. Participants will be eager to learn the equipment procedures as it is an essential part of their work initiation.

Expectations and Vocational Aspirations

The Box Former is the first piece of equipment in the syrup manufacturing system. It is where syrup operators begin their careers, making it a key moment when individuals are highly motivated to learn and become part of the system. Mastering this equipment is the first step toward integration into the syrup manufacturing process and can lead to further growth opportunities within the system.

Contextual Analysis

The course will use a combination of videos, pictures, and print media to effectively deliver the training content. Revisions will be made as needed throughout the course's lifespan, with changes initiated by the production team, who serve as subject matter experts (SMEs). These updates will be managed through a change management program that ensures proper documentation of any changes to equipment processes and the actions derived from those changes. The training module will be mandatory for all box former operators and will serve as both a training aid and a proficiency measure to verify operators' skills. Access to the course will follow a scheduled pattern to ensure that all new operators complete it as part of their onboarding. After implementation, the training consultant will oversee managing and monitoring the course to maintain its effectiveness, including integrating updates highlighted by the change management process.

Modules/Topics

Course Modules (or Topics)	Description
Module 1: Box Former Overview	<i>This module aims to orient new operators by explaining the purpose of the equipment. It covers an overview of the parts and explains the panels and the Human Machine Interface (HMI)</i>
Module 2: Box Former Pre-operation	<i>This module emphasizes the importance of performing a thorough pre-operation process. It details the parts of the equipment that need attention during pre-operation and how to care for them properly.</i>
Module 3: Box Former Operation	<i>This module outlines the regular steps involved in the box-making process and clarifies the operator's role in the process.</i>

PART 2: Developed Lesson Plans for Modules

1. Module 1: Box Former Overview

The purpose of this module is to provide orientation. The objectives are to identify the parts of the box-forming equipment, understand the different panels and their functions, and recognize the HMI, its purpose, and its menu.

Learning strategies that will be used to engage the learners are peer teaching, asking questions to the SME, SME Hands on evaluations, and doing hands on training after each lesson, lastly completion of each module will make the new operator earn a badge.

Learner performance will be assessed through written assessments embedded at various points throughout the module. Non-graded assessments, such as checkpoints, will be conducted by the SME during hands-on practice and again at the end of the modules.

Each assessment will include written feedback, confirming correct answers and addressing incorrect ones. Additionally, the hands-on evaluation will feature verbal feedback from the SMEs, which will be documented in the training module as a discussion post.

2. Module 2: Box Former Pre-Operation

The purpose of this module is to explain the importance of performing pre-operation activities. The objectives are to identify the key components of the equipment that need to be maintained during the pre-operation stage and to summarize the significance of being consistent in performing these procedures

This module will include more hands-on practice stops than the other two. The operator will learn about five components of the equipment, followed by hands-on practice with maintenance personnel. This cycle of learning and practice will repeat until all equipment parts have been studied. After each practice, the new operator will complete an interactive assessment to help reinforce the information presented. The combination of blended learning and interactive assessments is designed to keep the learner engaged. Feedback will be provided after each assessment as well as during hands-on practice with the maintenance personnel

3. Module 3: Box Former Operation

The purpose of this module is to help new operators recognize and memorize the box-forming process. By the end of the module, operators will be able to effectively operate the box-forming machine and initiate the production of high-quality boxes that can securely contain the syrup bags.

This module will be split into two parts and each one will have a lot of hands-on practice time to help with the knowledge transfer.

Finally, there will be an official hands-on assessment where the operator will demonstrate to the SME that they are fully trained and capable of producing high-quality boxes by following the learned processes.

The SME will observe the new operator as they follow procedures, providing on-the-spot feedback. Once the entire module is completed, the new operator will undergo a final assessment, demonstrating the full process from start to finish.

Learner Engagement

In the current training, the SME (Subject Matter Expert) demonstrates an action to the new operator and then asks the new operator to repeat it. Following this, the SME shows the action again and practices it with the new operator.

With the new module, the process will be enhanced as follows:

Interactive Demonstrations: The new operator will be able to hear and see how to perform an action through detailed multimedia content. Once they feel ready, they will meet with the SME to clarify any doubts and then perform the action in the actual work environment.

Engagement with the Online Module: This approach encourages operators to stay connected with the online module since they will need to demonstrate to the SME that they have acquired the knowledge by practicing the action in front of them.

Written Assessments: Operators will also need to complete written assessments after the completion of each module to validate their understanding and retention of the material.

These strategies ensure that learners are actively engaged with the course content and motivated to fully participate in the training process.

Peer collaboration and Interaction

Three activities have been designed to incorporate peer collaboration and interaction. The first activity involves hands-on practice with a Subject Matter Expert (SME). The second activity allows learners to ask the SME a question about box former operation as a discussion post and in the third activity, the new operator will seek out current box former operators, introduce themselves, and request a tip on operating the box former which it will be then shared as a discussion post.

Lastly, to convey a sense of instructor presence, the training consultant will check in with new operators at the end of each module. Operators will be asked to write a summary of what they have learned and note any difficulties they encountered. This information will be then redirected to be addressed by an SME.