

Pre-Makeready Time Consumption Optimization of Job Change Overtime in Sheet-Fed Offset Press

(A Case Study of “Dora Offset Printers”, Hisar)

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Abstract : Sheet-fed offset is most widely used method in the printing industry. In the sheet-fed offset presses, the time consumes during job change. The pre-makeready operations also effects the job change overtime in the sheet-fed offset presses. Therefore, it becomes very important to find out the various factors influencing the pre-makeready operations. In this research, various factors taken into account and measured/observed on each job day-to-day basis. We have found that few factors are more responsible those influenced pre-makeready process.

Keywords: Sheet-fed offset, pre-makeready, substrate, ink, plate, dampening solution

1. Introduction

All printing processes reproduce lines and dots that form of an image. Sheet-fed offset is most widely used method in the printing industry. The pre-makeready operations is very important in every printing press. In pre-makeready operations includes various operation which generally performed before the production of the job. In pre-makeready operations, we examined/checked the required raw materials. So that, the print production cycle will perform the task smoothly and easily.

There are different steps of pre-makeready process: check the plates for any defect, clean the back side of the plate, check all the correction mark on the proof with the plate, keep paper and ink ready to be used. In manual ink key duct system, operator should adjust the ink keys during plate mounting etc.

2. Literature Review

The purpose of pre-makeready is to reduce the downtime in production. Downtime is the time from the primary hardware breakdown to full running production. Obviously if whenever production isn't creating quality prints, benefits are lost. Reducing machine downtime has a moment the useful impact on assembling production effectiveness and yield. Based on platemaking time reduction, ink utilization reduction, and pre-makeready time reduction fragments issues concerning were dissected and day-by-day reports was gathered with the goal that every single issue is checked and separate altered activities are created.

3. Research Objective

The main objective of this research work is to find out & optimization of the various factors influencing job change overtime in pre-makeready operation in sheet-fed printing press.

4. Research Methodology

The whole research work is job-to-job basis. Pre-makeready operations are followed. The main factors of pre-makeready are plate checking, check plate from back side, substrate checking, ink checking, dampening solution checking and other adjustment. We prepared a check list of pre-makeready operations listed above.

5. Data Collection & Analysis

The data collection is main part of the research. The whole research is carried out at “Dora Offset Printers, Hisar”. The data collection is based on day-to-day observations. The data is collected with the keen observations and with the help of company members/workers.

5.1. Pre-Makeready Time Consumption

The pre-makeready time consumption data collected on day-to-day observation. During the data collection, we took some major factors like plate checking, check plate from back side, substrate checking, ink checking, dampening solution checking etc. Keen attention was given during the collection of data. The measured/observed time is shown in table below:

Pre-Makeready Time Consumption (Min.)					
Pre-Makeready Operations	Check Plate	Check Plate Back Side	Check Substrate	Check Ink	Check Dampening Solution
Avg.	1	1	2.36	0.28	0.23

Table 1 Pre-Makeready Time Consumption

5.2. Data Analysis

The date obtained in 121 jobs was analyzed using various statistical tools and techniques as shown suitable chart.

5.2.1. Pre-Makeready Time Consumption

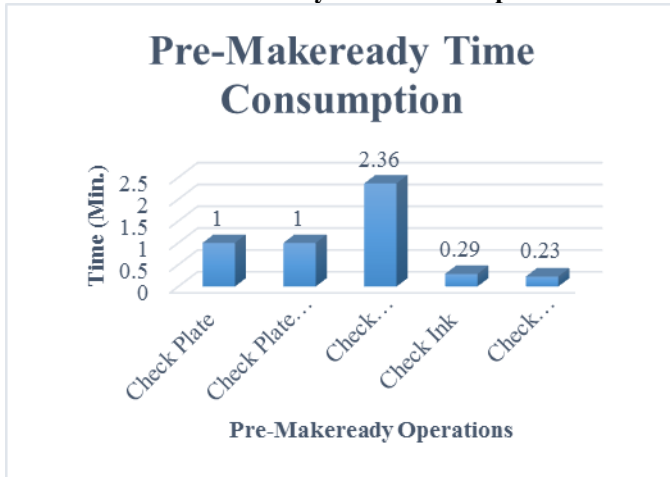


Chart 1. Pre-Makeready Time Consumption

6. Result & Discussion

The pre-makeready operations like plate checking, plate checking from back side, substrate checking, ink checking and dampening solution checking is very important factor for job change overtime in a printing press. The chart shows that the pre-makeready operation job change overtime consumption. According to this chart, the maximum time consumed by checking of substrate. The substrate checks average time consumption 2.36 min per job change. The plate check average time consumption 1 min per job change, the plate checks from back side average time consumption 1 min per job change, the ink checking average time consumption 0.29 min per job change, the dampening solution checking average time consumption is 0.23 min per job change.

7. Conclusion

The above study clearly shown that the substrate checking consumes the maximum time followed by inspecting of plate. Although, substrate is the important element of a printing press. Therefore, due care & attention is required of checking the substrate. To meet the customer satisfaction enough time must be given to be perform the checking of substrate. Due to this, the time consumption in pre-makeready operation will increase. To manage this time, a printer may increase the skilled manpower and utilize them for maintain output.

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