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Measuring Departmental Operational Performance at Company "XYZ"

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INFO ARTIKEL

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Abstract

Performance measurement is an important part of an organization to determine the performance that has been achieved. Organizational performance achievements can be determined by comparing actual performance with performance plans. The results of performance measurements provide information to management in making decisions on subsequent program plans at the organizational or company performance level, work unit level and individual worker level. PT. XYZ is a manufacturing company that meets national needs. This research examines performance measurement in the PCX00 department which has 3 areas, namely Detail Part Manufacturing (DM), Component Assembly (CA), Final Assembly & Delivery Center (FD). The analysis stages begin with measuring performance, making fishbone diagrams, root cause analysis and then preparing improvement proposals. Level of performance measurement at the work unit level. The performance measurements that are considered are on time work orders and load plan performance from all fields with data collected in the fourth quarter of 2022 and the first and second quarters of 2023. The results of the analysis show that all load plan and on time delivery targets in the DM, CA and FD fields have not yet been achieved. achieved. By using fishbone diagrams and Pareto diagrams, PCX00 department performance can be improved.

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INTRODUCTION

Employee performance is one of the things that must be considered in every organization because it has a significant impact on the company's success. Performance is the willingness of a person or group of people to carry out an activity and perfect it in accordance with their responsibilities with the expected

results (Nursam, 2017). Organizational performance achievements can be determined by comparing actual performance with performance plans (Nisak & Iriani, 2023). The results of performance measurements provide information to management in making decisions on subsequent program plans at the organizational or company performance level, work unit level and individual worker level (Jane et al., 2021).

Employee performance has a direct impact on achieving company goals and objectives (Saribanon, & Kurniawati (2015). Employees who perform well help the company achieve its targets. Good employee performance increases productivity and operational efficiency. Employees who work well tend to complete tasks more quickly and efficiently. efficient, which in turn can reduce operational costs (Riyanto, 2023). Companies need to monitor their productivity to determine the current level of productivity, identify activities that are currently being carried out effectively and efficiently, and be able to analyze related deviations that have occurred or may occur. occur, and be able to take corrective and preventive action so that productivity does not decrease (Chandrahadinata & Maelani, 2023)

Company "XYZ" is a manufacturing company operating in the aerospace sector. The current performance condition of Company "XYZ" is still not good. Problems that occur especially in the Production Directorate include delays in product delivery, non-conforming products, low mandatory hour achievements, and others. This causes the company's performance to be considered not good. Improvements to company performance need to be made, but the proposed improvements are more focused on the Planning Control division, specifically in the Production Planning department (PCX00), including improvements to bottle neck issues, production delays due to delays in raw materials. Performance improvement can be done by measuring real performance first, to find out where the company's current performance level is. Indicators that need to be immediately improved are based on the weight of the largest contribution and productivity value (Cahyani, 2023). Analysis of the performance of the PCX00 department was carried out to find out which aspects caused the performance of the PCX00 department to decline using a cause and effect diagram, and the results of the cause and effect diagram will be analyzed to see whether the proposal is appropriate for this PCX00 department.

A company as an organization carries out various methods in managing various types of resources to achieve predetermined goals as a form of maintaining its existence. Managed resources consist of internal and external resources (Prasetyo & Ellitan, 2023). Of the many resources that are managed, one of them is human resources which are a vital aspect for companies that must be managed optimally through Human Resources Management (HRM) (Abdullah, 2014). Human resources are one of the most important priorities that must be managed by companies, both companies engaged in manufacturing and services, this is a necessity considering that the sustainability of the company will only be realized if the resources involved in the company are committed and of good quality (Kusumanto et al. al., 2018). So that we can continue to innovate following consumer needs (Amelyawati et al., 2023). This is why it is so important for companies to be able to implement a quality human resource management system considering that quality human resource management will be able to produce quality human resources and will undoubtedly support every line of the company and accommodate all the goals set by the company.

Performance is a successful achievement or failure of the organizational goals that have been set. Information about organizational performance is a very

important thing that is used to evaluate whether the performance process carried out by the organization so far is in line with the expected goals or not. Performance is the result of work achieved by an individual that is adapted to the individual's role or duties in a company in a certain period of time, which is linked to a certain value measure or standard of the company where the individual works. Jobs in all fields undergo job evaluation or assessment. Employee characteristics, behavior and performance are identified and measured individually or in groups as a basis for managers, supervisors, managers or development plans (Kusumanto et al, 2018; Asir 2022; Riyanto, 2023; Tran & Nguyen, 2020).

Organizational or work unit performance assessment is carried out using several methods. One method that can be used is a fishbone diagram. A fishbone diagram is a diagram that shows the causes and effects of a problem (Widnyana et al., 2022). This diagram is one of the seven basic quality tools and is used when we want to identify possible causes of a problem, especially when a team tends to think conventionally. The factors that are the main causes influencing the quality of the fishbone diagram including 5M+1E are machines, people, methods, materials, measurements and the environment. Fishbone diagrams are useful for quality improvement because they can visualize the roots of many problems in a simple format (Setiawan & Domodite, 2022; Adekayanti; Murnawan, 2014; Imformatika, 2016).

The next analysis model after the fishbone diagram is Root Cause Analysis. This analysis provides an overview of the root causes of a problem in detail. Identifying areas or units in the organization that need treatment, as well as providing solutions or interventions to improve and finding out how the organization can implement changes to improve the quality of its members' performance (Retnani et al., 2019; Oliveira, 2023). Root cause analysis is carried out by identifying the cause of the problem and looking for ways to reduce the cause of the problem and prevent the problem from occurring again.

RESEARCH METHODS

This research design is descriptive qualitative to find and identify, analyze the causes of problems and look for alternative solutions. Data comes from primary data, namely qualitative data from interviews with experts and secondary data, namely quantitative data from the company relating to the performance of the PCX00 department unit in the areas of Detail Part Manufacturing, Component Assembly, Final Assembly and Delivery Center (DM, CA, FD) in company “XYZ”. The factors analyzed are on time work orders and load plan performance. Performance data was taken for nine months, from October 2022 to June 2023. The analysis stages of this research are making performance graphs, Fishbone Diagrams, Root Cause Analysis, and then preparing improvement recommendations.

RESULT

The following is the target and actual data for three fields in the PCX00 department for the fourth quarter of 2022 (October – December), the first and second quarters of 2023 (January – June).

Table 1. Actual PCX00 Department Data

Time		Target		DM		CA		FD	
Year	Month	Ontime	Load Perform	Ontime	Load Perform	Ontime	Load Perform	Ontime	Load Perform
2022	Oktober	100%	90%	85.21%	59.90%	91.73%	80.15%	82.84%	83.41%
	November	100%	90%	86.95%	59.97%	90.06%	81.05%	95.71%	92.12%
	Desember	100%	90%	43.92%	58.53%	86.95%	78.33%	92.64%	91.34%
2023	Januari	100%	90%	26.50%	57.50%	71.07%	61.11%	82.79%	84.77%
	Februari	100%	90%	22.75%	60.50%	87.72%	85.49%	69.49%	81.83%
	Maret	100%	90%	39.60%	62.25%	75.98%	72.43%	85.28%	85.25%
	April	100%	90%	49.25%	58.00%	70.41%	58.41%	78.10%	71.32%
	Mei	100%	90%	66.80%	49.25%	90.48%	76.16%	94.12%	80.34%
	Juni	100%	90%	56.50%	53.50%	71.00%	85.00%	69.15%	71.18%

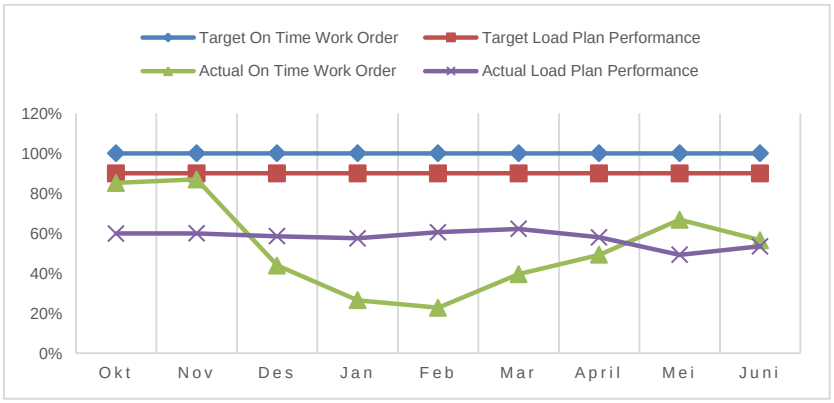
Source: PCX00 Department “XYZ” Company (2023)

As seen in table 1, it appears that almost none of the fields on the PCX00 meet the targets for On Time Work Order or Load Plan Performance. However, only in November and December in the FD sector the Load Plan Performance factor was met.

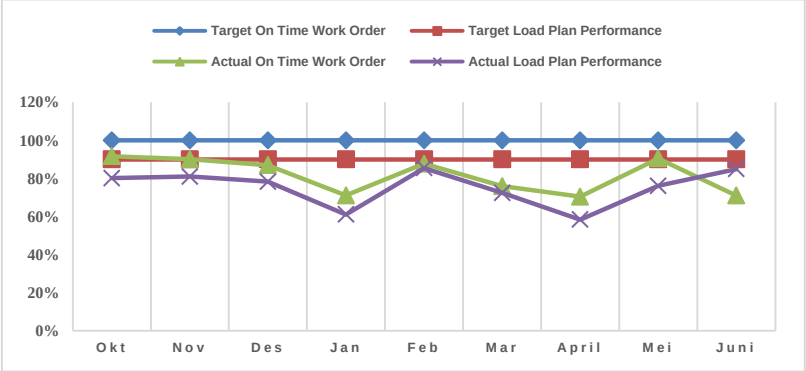
Processing of data obtained from companies is carried out in several stages:

1. Making graphs of On Time Work Order performance and Load Plan Performance

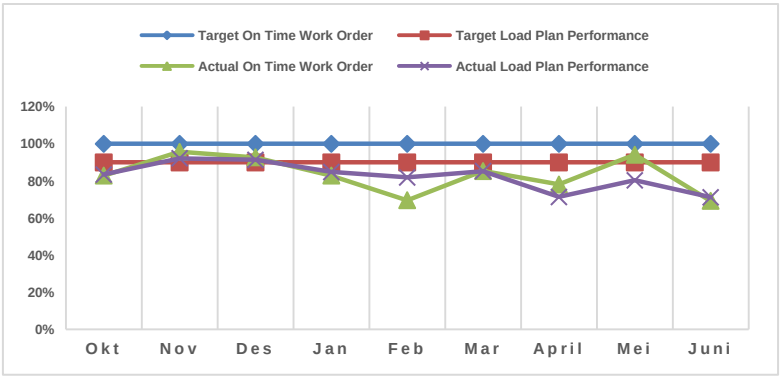
   The performance achievements of the PCX00 department are in the areas of DM, CA and FD related to On Time Work Order and Load Plan Performance. Based on the data in table 1, it can be identified using graphs. On Time Work Order and Load Plan Performance graphs in 3 fields.



Picture 1. DM Field Graph for October 2022- June 2023
Source: Data Processing (2023)



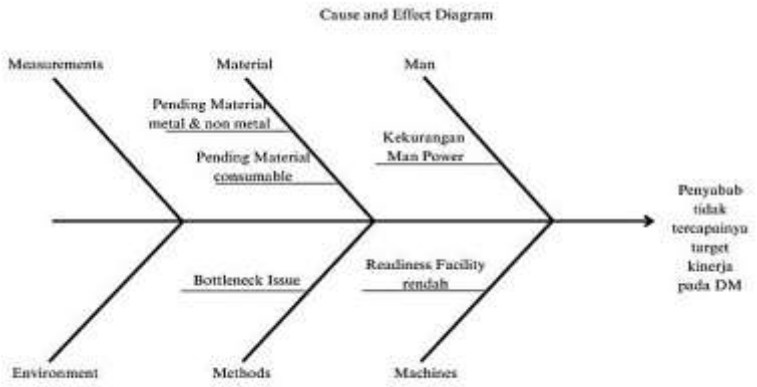
Picture 2. CA Field Graph for October 2022- June 2023
Source: Data Processing (2023)



Picture 3. FD Field Graph for October 2022- June 2023
Source: Data Processing (2023)

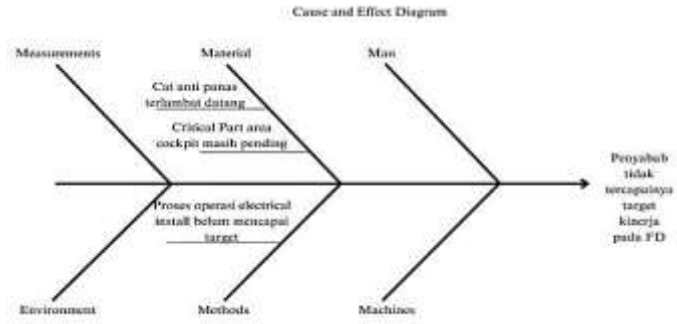
2. Making Fishbone Diagrams

The analysis method used next is the cause and effect diagram / fish bone diagram. This method is used to identify cause and effect in each PCX00 field, namely DM, CA, FD. If described, it will look like the image below:



Picture 4. Fishbone Diagram of the DM Field
Source: Data Processing (2023)

Picture 5. CA Field Fishbone Diagram
Source: Data Processing (2023)



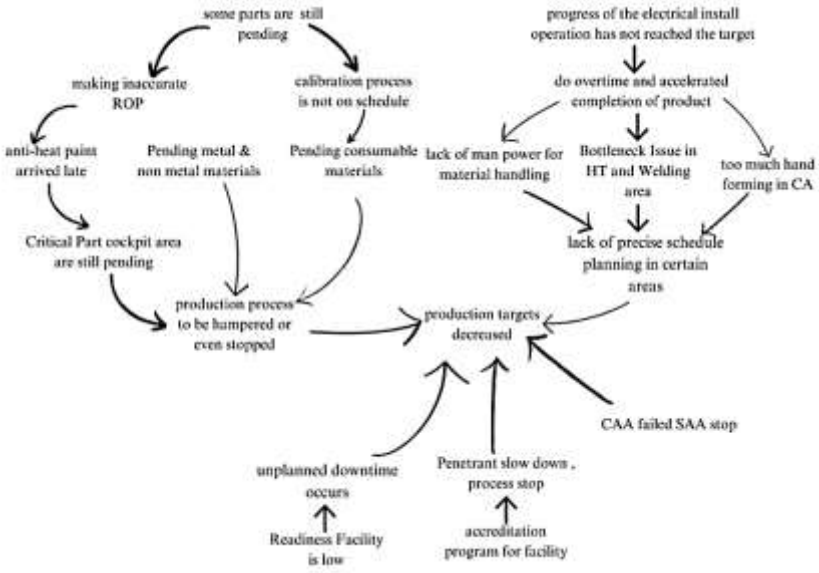
Picture 6. Fishbone Diagram of FD Field
Source: Data Processing (2023)

3. *Making Root Cause Analysis*

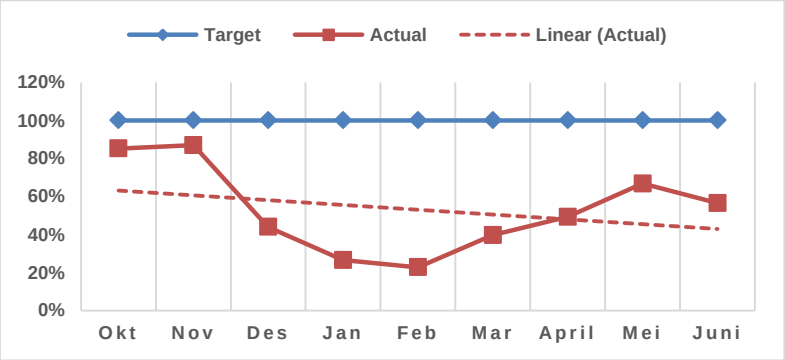
   After creating performance achievement graphs and fishbone diagrams, the next step is creating RCA (Root Cause Analysis). RCA creation is used to see causal relationships between existing fields and processes to find the root of the problem and the solution. RCA between fields and processes will appear in Figure 7.

DISCUSSION

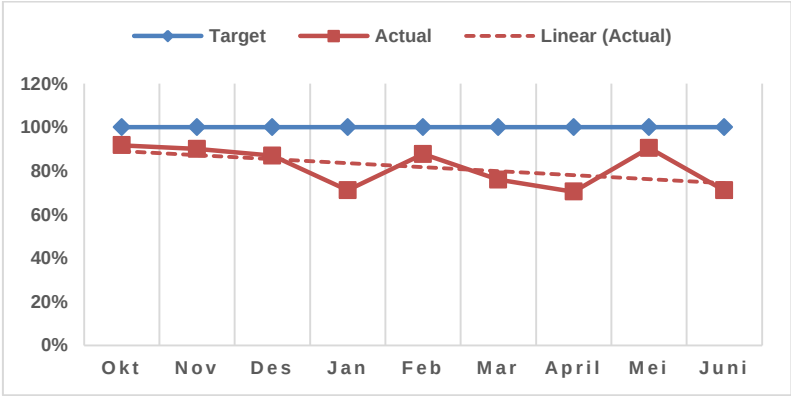
Based on the graph of On Time Work Order and Load Plan Performance performance achievements, it can be seen that almost all of the actual data did not reach the target, including On Time Work Orders in the DM, CA, FD fields, and Load Plan Performance in the DM & CA fields. However, apart from that, actual data was still found that reached the target, namely in the Load Plan Performance in the FD field in November and December at 95.71% and 92.64% with an initial target of 90%. The trend in performance achievement has decreased as shown in Figure 8-13. All fields (DM, CA, FD) in the On Time Work Order and Load Plan Performance factors show that the actual data trendline appears to all be decreasing, if improvements are not made, it is possible for the decline in performance to continue.



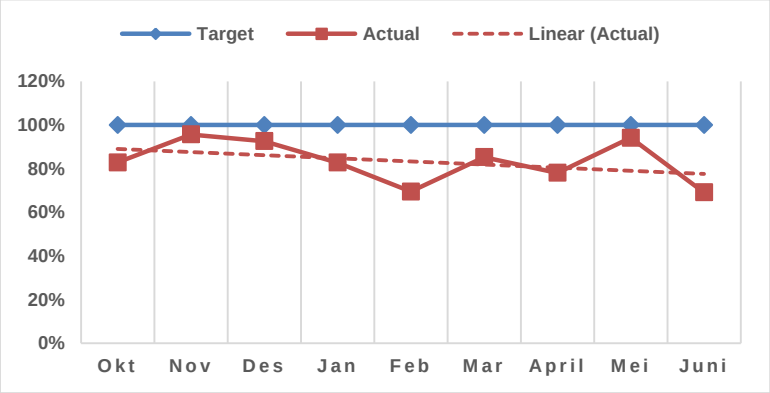
Picture 7. Root Cause Analysis
Source: Data Processing (2023)



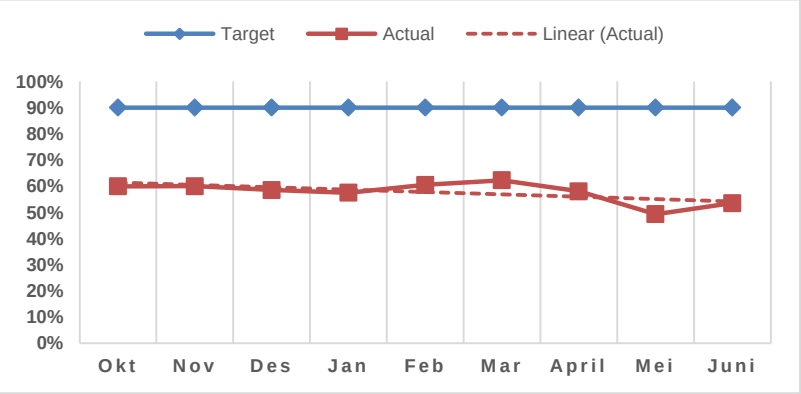
Picture 8. On Time Work Order DM Performance Trendline
Source: Data Processing (2023)



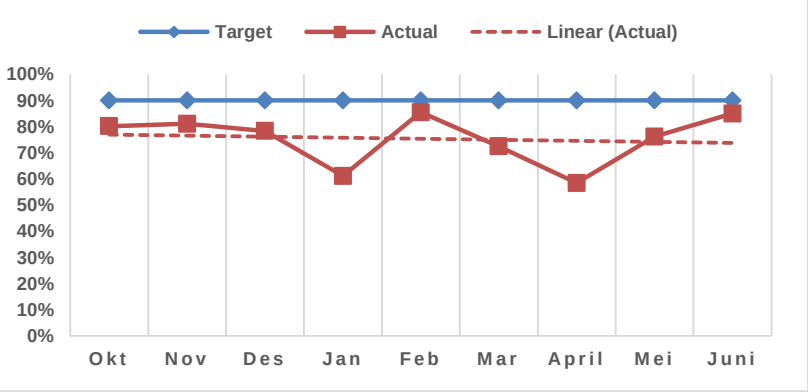
Picture 9. CA On Time Work Order Performance Trendline
Source: Data Processing (2023)



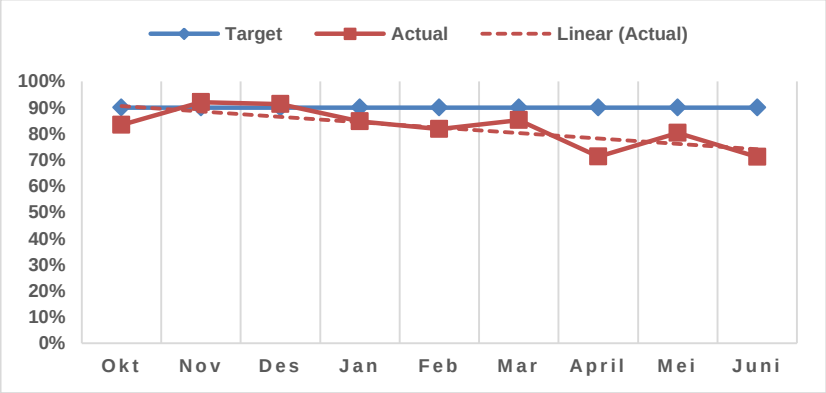
Picture 10. Trendline of FD On Time Work Order Performance
Source: Data Processing (2023)



Picture 11. DM Load Plan Performance Trendline
Source: Data Processing (2023)



Picture 12. CA Load Plan Performance Trendline
Source: Data Processing (2023)



Picture 13. FD Load Plan Performance Trendline
Source: Data Processing (2023)

Based on the Fishbone Diagram, it can be seen that the reasons for not achieving the performance target on PCX00 in each field include:

1. DM
   Readiness facilities at DPM are low in several work centers (machines causes), Bottleneck issues in the heat treatment and welding area (methods causes), Pending metal and non-metal materials (material causes), Pending consumable materials (material causes), Lack of man power for materials handling (man causes).
2. CA
   Too much hanforming (methods causes), Penetrant slow down due to program accreditation (machines causes), CAA fails & SAA stops with no output (methods causes).
3. FD
   The anti-heat paint arrived late (material causes), the progress of the electrical install operation has not reached the target (methods causes), critical parts for the cockpit area are still pending (material causes).

Material delays are the most dominant causal factor affecting PCX00 performance.

Based on the description of the following discussion, improvements are proposed as alternative solutions for each area that affects the performance of the PCX00 as in the following table.

Table 2. Proposed Improvements for Each Field on PCX00

Factor	Alternative Solutions
DM field: Facility readiness at DPM is low in several work centers; surface treatment, NDT, welding, heat treatment.	Availability of machine spare parts and preventive maintenance planning are made to a tighter schedule to prevent unplanned downtime.
Bottleneck issue in the heat treatment and welding area.	Additional shifts including additional qualified manpower to increase production capacity (HT and Welding)
Pending metal and non-metal materials; Bonding & Composite area (Phenolic, Glass Prepeg, and Adhesive Primer) sheet metal and machining area (spring material, aluminum profile, standard part tube bending)	Procure and pay for materials on time according to the production schedule.

Pending consumable materials (Argon gas, Androx, test block hardness, x-ray film, measuring instrument calibration).	Defining consumable material requirements and minimum stock levels. Carry out the calibration process according to the specified schedule.
Lack of man power for material handling.	Procurement of additional outsourcing manpower or PKWT specifically for material handling.
CA Field: Too much hand forming in the nose area 124	Specialized in hand forming
Penetrant slow down due to NADCAP (accreditation program)	-
CAA (Chromic Acid Anodizing) failed, SAA (Sulfuric Acid Anodizing) stopped, no output	Facility Improvement
FD Field: The anti-heat paint arrived late, so installation and functional test operations were hampered because the engine cowling could not be installed permanently.	Follow up was carried out with the MT team to accelerate the arrival of anti-heat paint with AOG
The progress of the electrical install operation has not reached the target (still pending overhead panel)	Overtime and accelerated completion of product A overhead panels were carried out
The critical part for the cockpit area is still pending, namely the central console	Accelerated completion of critical part of product B in CA and DM

Source: Data Processing (2023)

CONCLUSION

Fishbone diagrams and root cause analysis are able to identify problems that occur in the PCX00 department of company "XYZ". The analysis begins with measuring performance at the work unit level. The analysis factors that are paid attention to are on time work orders and load plan performance in the Detail Part Manufacturing, Component Assembly, Final Assembly and Delivery Center fields by taking data from October 2022 to June 2023. The results of the analysis show that all target load plans and on time delivery fields Details of Part Manufacturing, Component Assembly, Final Assembly and Delivery Center have not been achieved. By using fishbone diagrams and root cause analysis, proposals for improving the performance of the PCX00 department for the next quarter period were obtained.

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