EVALUATING TIME OPERATION OF FLOATING CRANE ON COAL'S LOADING OF PT HANDIL BHAKTI PERSADA IN TABONEO HARBOUR SOUTH KALIMANTAN

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ABSTRACT

PT Handil Bhakti Persada, a coal mining company catering its domestic and international customers, owns a terminal to support its sales operation. This study was focusing on the time operation of floating crane on coal's loading in Taboneo Harbour, South Kalimantan in 2013. The objectives of this study were (1) to know the real time floating crane operation (2) to know time operation's planning of floating crane (3) to know the efforts done by the company on real time operation of floating crane. This study used descriptive qualitative approach to find out the loading level of coal. Horizontal and vertical analyses are used in this study. The horizontal analysis was used to compare real time activities both absolute and relative on certain time achievement. Whilst vertical analysis was used to describe activities trends on certain time achievement. This study showed that the real time coal's loading production on 2011, 2012, 2013 did not reach the target. This study recommended PT Handil Bhakti Persada to (1) make schedule for the operators (2) maintain loading equipment (3) supervise operational budget.

Keywords: *mining industry, floating crane time, Taboneo Harbour*

INTRODUCTION

Loading and unloading coal, to and from vessels, need both reliable equipment and human resources since target achievement on these activities is significant. PT. Handil Bhakti Pesana, in Taboneo Harbour, is a loading and unloading company specialized in handling dry bulk likecoal. This company owns loading equipment, like floating crane and others to support its activity. Nevertheless, hopes are far to reach from reality. It was found that the company was unable to reach the target achievement due to employees' lack of training, ineffective loading method, insufficient loading equipment, and lack of technical knowledge of floating crane operator and crew ship during loading process.

To get the questions answered, the writer employed descriptive quantitative method (Suharsini Arikunto, 2010) with target and realization evaluation approach (Subagyo Pangestu, 2000) by using the following formulae:

$$\frac{n-(n-1)}{(n-1)} \times 100\ \%$$

n = recent condition

n – 1 = previous condition

The target achievement is calculated by using simple math formulae

$$\frac{\textit{gross crane rate achievement}}{\textit{gross crane rate target}}$$

FINDINGS AND DISCUSSION

A. The analysis of coal's loading plan in 2011, 2012 and 2013 on coal's loading realization of PT. Handil Bhakti Persada.

On finished loading production, it is needed to know the comparison between Target or plan and Realized coal's loading by the company. The crane capacity is as follows:

x (100%)

Table 1. *Capacity Crane*

No.	***CraneCapacity***	***Sum in Metric Ton***
1	2 minutes	25
2	60 minutes	750
3	22 hours	16.500
4	1 month (28 days)	462.000

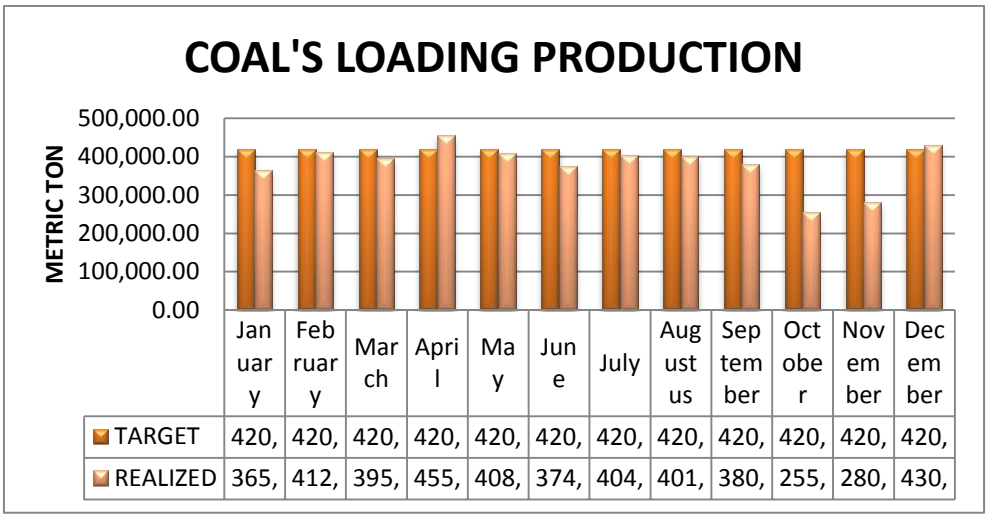
Source: as calculated by the writer

The writer analyzed the realization of loading coals to coal's loading target from 2011to2013 and the results were as follows:

Table 2. Comparison of Target and Realized coal loading in 2011

MONTH	Target	Realized	Margin	Achievement (in %)
January	420.000	365.000	-55.000	86,90
February	420.000	412.000	-8.000	98,09
March	420.000	395.000	-25.000	94,04
April	420.000	455.000	35.000	108,33
May	420.000	408.000	-12.000	97,14
June	420.000	374.000	-46.000	80,04
July	420.000	404.000	-16.000	96,16
Augustus	420.000	401.000	-19.000	95,47
September	420.000	380.000	-40.000	90,47
October	420.000	255.000	-165.000	60,71
November	420.000	280.000	-140.000	66,66
December	420.000	430.000	10.000	102,38
Total	5.040.000	4.559.000	-491.000	90,45

By looking at the margin between Target and Realized coal loading in 2011, it could be concluded that company's target was achievable on April and December while the rest of the months the target could not be met.



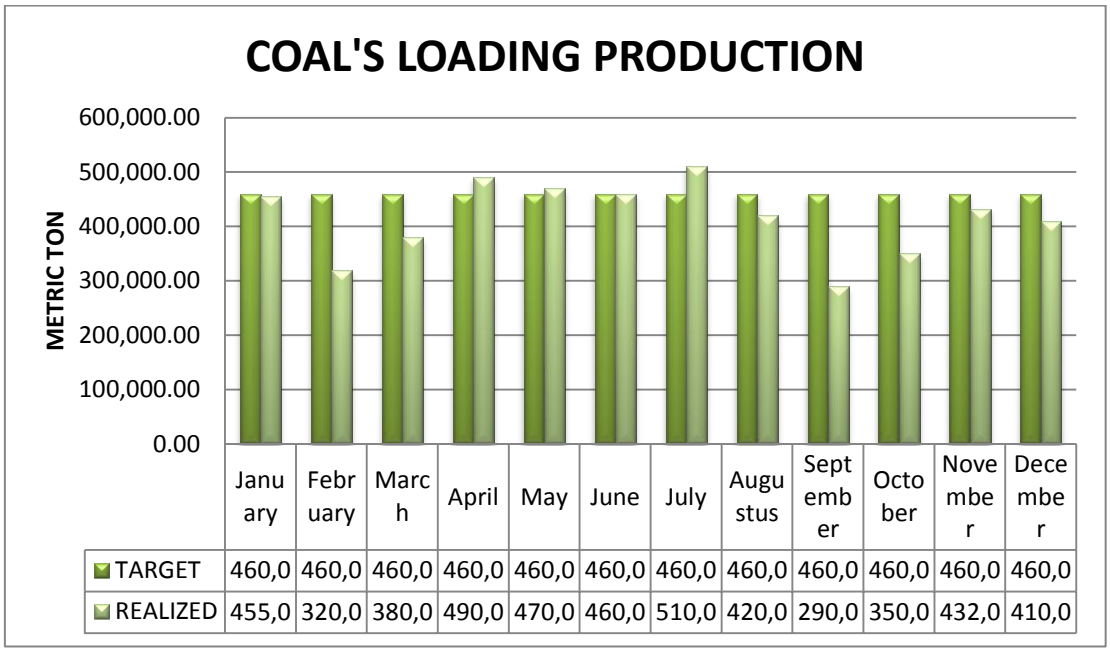
Picture 1. Trends of Target on Realized Coal Loading of PT. Handil Bhakti Persada in 2011
Source: as calculated by the writer

Table 3. Comparison of Target and Realized coal loading in 2012

Month	Target	Realized	Margin	Achievement (in %)
January	460.000	455.000	-5.000	98,91
February	460.000	320.000	-140.000	69,56
March	460.000	380.000	-80.000	82,60
April	460.000	490.000	30.000	106,52
May	460.000	470.000	10.000	102,17
June	460.000	460.000	0	100
July	460.000	510.000	50.000	110,86
Augustus	460.000	420.000	-40.000	91,30
September	460.000	290.000	-170.000	63,04
October	460.000	350.000	-110.000	76,08
November	460.000	432.000	-28.000	93,91
December	460.000	410.000	-50.000	89,13
Total	5.520.000	4.987.000	-533.000	90,34

Source: as calculated by the writer

Based on the data above, it could be seen that coal's loading target was achievable on April, May, June and July.



Picture. 2: Trends of Target on Realized Coal Loading of PT.Handil Bhakti Persada on 2012
Source: as calculated by the writer

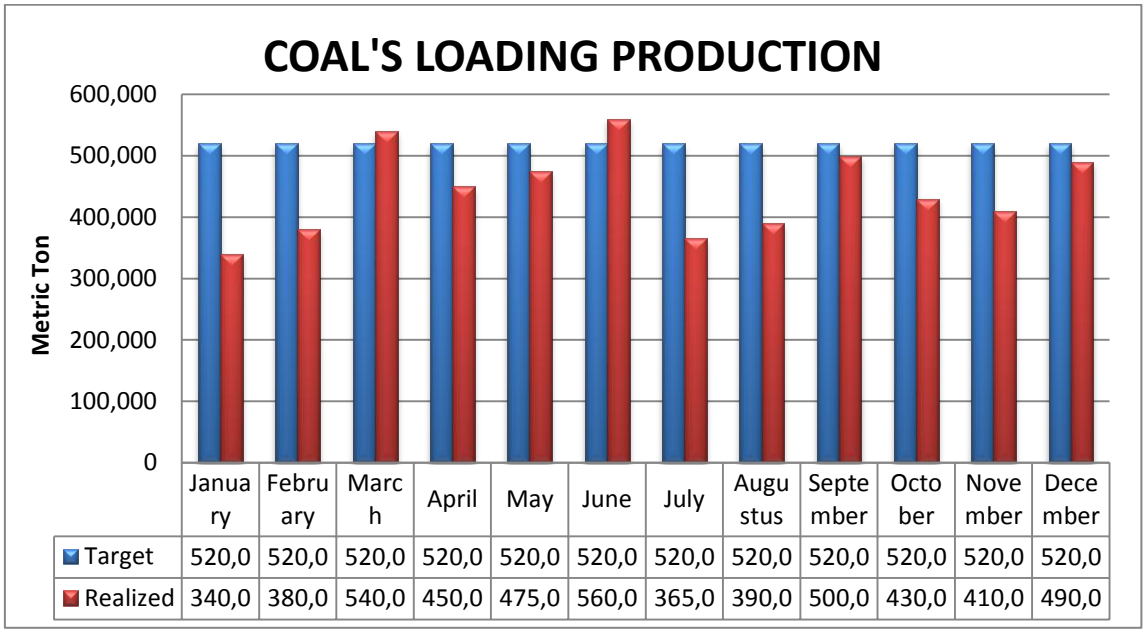
The challenges faced by the company for no getting its target on 2011 and 2012 were mostly because of bad weather, unready equipment , few transshipment and lack of man power.

Furthermore, the finding for 2013 was as follows:

Table 4. Comparison of Target and Realized coal loading in 2013

Month	Target	Realized	Margin	Achievement (in %)
January	520.000	340.000	-180.000	65,38%
February	520.000	380.000	-140.000	73,07%
March	520.000	540.000	20.000	103,84%
April	520.000	450.000	-70.000	86,53%
May	520.000	475.000	-45.000	91,34%
June	520.000	560.000	40.000	107,69%
July	520.000	365.000	-155.000	70,19%
Augustus	520.000	390.000	-130.000	75%
September	520.000	500.000	-20.000	96,15%
October	520.000	430.000	-90.000	82,69%
November	520.000	410.000	-110.000	78,84%
December	520.000	490.000	-30.000	94,23%
Total	6.240.000	5.330.000	-910.000	85,41%

Source: as calculated by the writer



	January	February	March	April	May	June	July	August	September	October	November	December
Target	520,0	520,0	520,0	520,0	520,0	520,0	520,0	520,0	520,0	520,0	520,0	520,0
Realized	340,0	380,0	540,0	450,0	475,0	560,0	365,0	390,0	500,0	430,0	410,0	490,0

Picture 3. Trends of Target on Realized Coal Loading of PT. Handil Bhakti Persada in 2013
Source: as calculated by the writer

According to the data in the table and picture above, the company was able to reach its target on March and June. The company was not successful in achieving its target on January, February, April, May, July, August, September, October, November and December. It was found that things hindering the company to reach the target were due to bad weather, unprepared loading equipment, overloading at the container terminal and insufficient human reserve.

However, it is believed that in order to reach the Target of coal loading the company should be supported by:

1. Loading equipment readiness.
2. Professional heavy equipment and crane operators.
3. On schedule loading
4. Sufficient human resource

The following is the recapitulation of Realized coal loading from 2011 to 2013 of PT. Handil Bhakti Persada.

Table 5. Recap of Realized Coal Loading from 2011 to 2013

Month	Target			Realized		
	2011	2012	2013	2011	2012	2013
January	420.000	460.000	520.000	365.000	455.000	340.000
February	420.000	460.000	520.000	412.000	320.000	380.000
March	420.000	460.000	520.000	395.000	380.000	540.000
April	420.000	460.000	520.000	455.000	490.000	450.000
May	420.000	460.000	520.000	408.000	470.000	475.000
June	420.000	460.000	520.000	374.000	460.000	560.000
July	420.000	460.000	520.000	404.000	510.000	365.000
Augustus	420.000	460.000	520.000	401.000	420.000	390.000
September	420.000	460.000	520.000	380.000	290.000	500.000
October	420.000	460.000	520.000	255.000	350.000	430.000
November	420.000	460.000	520.000	280.000	432.000	410.000
December	420.000	460.000	520.000	430.000	410.000	490.000
Total	5.040.000	5.520.000	6.240.000	4.559.000	4.987.000	5.330.000

Margin			Achievement (in %)		
2011	2012	2013	2011	2012	2013
-55.000	-5.000	-180.000	86,90	98,91	65,38
-8.000	-140.000	-140.000	98,09	69,56	73,07
-25.000	-80.000	20.000	94,04	82,60	103,84
35.000	30.000	-70.000	108,33	106,52	86,53
-12.000	10.000	-45.000	97,14	102,17	91,34
-46.000	0	40.000	80,04	100	107,69
-16.000	50.000	-155.000	96,16	110,86	70,19
-19.000	-40.000	-130.000	95,47	91,30	75
-40.000	-170.000	-20.000	90,47	63,04	96,15
-165.000	-110.000	-90.000	60,71	76,08	82,69
-140.000	-28.000	-110.000	66,66	93,91	78,84
10.000	-50.000	-30.000	102,38	89,13	94,23
-491.000	-533.000	-910.000	90,45	90,34	85,41

Source: as calculated by the writer

Based on the data above, it could be concluded that the average improvement of plan was 5.040.000 + 5.520.0000 + 6.240.000/3 = 5.600.000 MT and the actual or realized was 4.559.000 + 4.987.000 + 5.330.000/3 = 4.958.666, 67 MT. So, the average loading production achievement was 4.958.666,67/5.600.000 X 100%=88, 54%.

B. The Analysis of Realized Coal Loading from 2011 to 2013 of PT. Handil Bhakti Persada.

The main activity of PT. Handil Bhakti Persada is coal loading. Hence, target and realized on coal loading should be given top notch priority so the company know the challenges and strategies to overcome them.

The following is the illustration of crane capacity.

Table 6 : Crane Capacity

No.	Crane Capacity	Sum (Metric Ton)
1	2 minutes	25
2	60 minutes	750
3	22 hours	16.500
4	1 month (28 days)	462.000

Source: as calculated by the writer

And the following is the illustration of actual coal loading from 2011 to 2013.

Table 7 : Realized Loading in 2011 (in Metric Ton)

No.	Month	Actual Cargo	Rise (%)	Fall (%)
1	January	365.000	14,06%	-
2	February	412.000	12,87%	-
3	March	395.000	-	4,12%
4	April	455.000	15,18%	-
5	May	408.000	-	10,32%
6	June	374.000	-	8,33%
7	July	404.000	8,02	-
8	Augustus	401.000	-	0,74%
9	September	380.000	-	5,23%
10	October	255.000	-	32,89%
11	November	280.000	9,8%	-
12	December	430.000	53,57%	-

Source: as calculated by the writer

Based on the data above, the analysis was as follows:

1. From December 2010 to January 2011, the Actual coal loading went up for 14, 06%. The calculation was as follows:

Achievement percentage
$\frac{365.000-320.000}{320.000} \times 100\% = 14{,}06\%$

2. From January to February 2011, the Realized coal loading rose for 12, 87%. The calculation was as follows:
Achievement percentage
$\frac{412.000-365.000}{365.000} \times 100\% = 12{,}87\%$

The Realized coal loading on March, May, June, August, September and October 2011 was falling due to several factors, like:

1. Unsupported weather during loading process like rain or strong current waves.
2. Ineffective transshipment on loading process.
3. Mechanical faults during loading, for example malfunction of belt crane that hindered the work.
4. Lack of training man power that led to inefficiencies.

The following table describes the Realized coal loading from January to December 2012

Table 8: Realized Coal Loading in 2012 (in Metric Ton)

No.	Month	Actual Cargo	Rise (%)	Fall (%)
1	January	455.000	5,81	-
2	February	320.000	-	29,65
3	March	380.000	18,75	-
4	April	490.000	28,94	-
5	May	470.000	-	4,08
6	June	460.000	-	2,12
7	July	510.000	10,86	-
8	Augustus	420.000	-	17,64
9	September	290.000	-	30,95
10	October	350.000	20,68	-
11	November	432.000	23,42	-
12	December	410.000	-	5,09

Source: as calculated by the writer

The above data suggests us that:

1. From December 2011 to January 2012, the Actual coal loading increased for 5, 81%. The calculation was as follows:
Achievement percentage
$\frac{455.000-430.000}{430.000} \times 100\% = 5{,}81\%$

2. From January to February 2012, the Realized coal loading went down for 29, 65%. The calculation was as follows:

Achievement percentage
$\frac{320.000-455.000}{455.000} \times 100\% = (29{,}65)\%$

The Realized coal loading on February, May, June, August, September and December was falling due to several factors, such as:

3. Bad weather during loading process like rain or strong current waves.
4. Ineffective transshipment on loading process.

5. Mechanical faults during loading, for example malfunction of belt crane that hindered the work.
6. Lack of training man power that led to inefficiencies.

The following was table of Realized coal loading from January to December 2013

Table 9: Realized Coal Loading in 2013 (in Metric Ton **)**

No.	Month	Actual Cargo	Rise (%)	Fall (%)
1	January	340.000	-	17,07
2	February	380.000	11,76	-
3	March	540.000	42,10	-
4	April	450.000	-	16,66
5	May	475.000	5,55	-
6	June	560.000	17,89	-
7	July	365.000	-	34,82
8	Augustus	390.000	6,84	-
9	September	500.000	28,20	-
10	October	430.000	-	14
11	November	410.000	-	4,65
12	December	490.000	19,51	-

Source: as calculated by the writer

Based on the table above, the analysis is as follows:

1. From December 2012 to January 2013, the Actual coal loading fell for 17, 07%. The calculation is as follows: Achievement percentage $\frac{380.000-410.000}{410.000} \times 100\% = (17{,}07\%)$

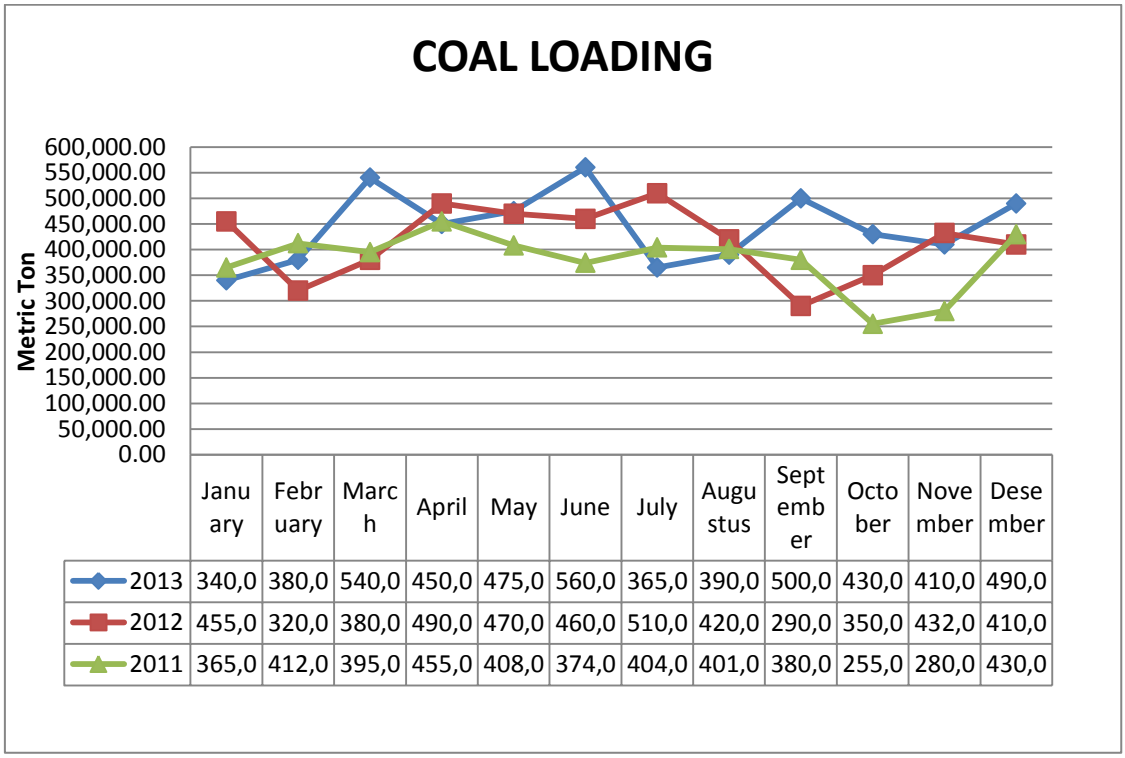
2. From January to February 2013, the Actual coal loading decreased for 17, 07%. The calculation is as follows: Achievement percentage $\frac{380.000-340.000}{340.000} \times 100\% = 11{,}76\%$

The Realized coal loading on January, May, July, October and November was falling due to several factors, such as:

1. Bad weather during loading process like rain or strong current waves.
2. Ineffective transshipment on loading process.
3. Mechanical faults during loading, for example malfunction of belt crane that hindered the work.
4. Lack of training man power that leaded to inefficiencies.

A full description of Realized coal loading from 2011 to 2013 is as follows:

From the graph below, it was found that the highest Actual coal loading was on June 2013 for 140.391,42 MT and the lowest Realized coal loading was on October 2011 for 18. 687, 89 MT. this graph also described the instability of Realized coal loading each year.



Picture 4. Realized Coal Loading in 2011, 2012 and 2013
Source: as calculated by the writer

C. The Strategies Employs for Achieving the Target

The strategies used by PT. Handil Bhakti Persada since 2011 to teach the Target coal loading were: on Human Resource: make effective operators' schedule so that the operators could work effectively and efficiently. The company also provided training to reduce human error. On method: Managers supervised the approved operational budget and minimized the tendency of over budget. On equipment: did scheduled maintenance and added and modified loading and unloading tools to achieve the company's target. On Finance: cash flow or company's capital was used efficiently for maintain and servicing the loading and unloading tools. On Marketing: multiplying company's network both domestically and internationally by promoting the company's strengths. On material: loading equipment like floating crane, LCT (Landing Craft Tank), Bulldozer and others were maintained and modified to maximize the operation.

CONCLUSION

By making evaluation on operating time of floating crane for loading coal on PT. Handil Bhakti Persada, the writer acquired some information. They are: from 2011 to 2013 the company's target was unachievable. Only after making evaluation on coal loading level in 2011, 2012 and 2013, the highest coal loading level in 2011 was on April at 455,000 MT and the lowest level was on October at 255,000 MT. in 2012, the maximal point was on July at 510,000 MT and the least was on September at 290,000 MT. Furthermore, the loading reached a peak on June 2013 at 560,000 MT and is lowest was on January at 340,000 MT.

Those things happened because of harsh weather and mechanical-related things with floating crane and malfunction of belt crane that hampered the loading process.

In order to improve the performance, the company should make effective and efficient schedule for the operators, provide training to minimized errors, supervised the approved operating budget and maintain and modify loading equipment to achieve the company's target.

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