

The Level of Competency of Structure Technicians in Assembling Galley Panel of Boeing 787 In Jamco Philippines Inc.

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Abstract: - In Jamco Philippines Inc. to measure the level of competency of the structure technicians in assembling galley panel is a challenge. Finding out how competent the technicians is very important to make sure that the quality of work will satisfy the customer needs. This study would like to measure the level of competency of structure technicians in terms of practices, duties and responsibilities. The result of this research is that the structure technicians are mostly competent and need enhancement in different categories. This study found out that there was a problem in the level of competency of structure technicians, and to enhance it the researcher established of practical recommendations about how to enhance the level of competency of the structure technicians.

Key Words: — *Competency, Galley, Aircraft, Structure.*

I. INTRODUCTION

Nowadays, most of the companies have their own set of standards. Standards vary from one company to another. This is one way of differentiating them from others. Mostly of the institutions, invest on their workforce since these forms a huge part of their company specially to manufacturing industry. One of the significant factors that can contribute to the success of the company is through setting the competency standards of employees. Competency is the ability to apply knowledge and skill to produce a required outcome and the ability to perform activities within an occupation; to function as expected for employment; and the ability to do a job under a variety of conditions, including the ability to cope with contingencies (Trinder, 2008).

These provide acknowledgement that a person has demonstrated professional excellence and continues to uphold the high standards of his/her profession. They assist employers to satisfy themselves that a candidate for employment is suitably competent.

Competency develops from three components namely; education, training and experience. Some defines competency through certification of legal bodies in country. Competency can be developed through exposure to a range of activities that test the employees' ability to cope up with different circumstances.

We know for a fact that aviation industry has becoming in demand which greatly impact the creation of commercial aircrafts. With more airlines shifting to small and medium/large widebody airplane like 777 the company increased its forecast for the next 20 years to come (Boeing, 2017). In line with this, production of different parts of an aircraft has also increased. One of the critical parts of this is the creation of galley panels. It is worthy to note that the competency of technicians should be taken into consideration.

Along this, it is therefor, the purpose of the researcher to answer the level of competencies of the structure technician in assembling galley panel of Boeing 787 in Jamco Philippines Inc.

1.1 Statement of the Problem

This study aims to evaluate the level of competencies of Structure technicians in assembling galley panel of boeing 787 in Jamco Philippines Inc. Specially, will seek to answer the following questions:

What is the profile of the Structure technicians in terms of:

- Name of the participants

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- Gender
- Civil Status
- Age
- Position
- Educational Attainment
- Licenses/ Eligibility
- Length in stay in Jamco Philippines Inc.

What are the practices of the Structure technicians in assembling galley panels of boeing 787 in terms of the following:

- Painting
- Bonding
- Curing
- Assembling

What level of competency are the Structure technician of Jamco Philippines Inc. in performing their duties and responsibilities in terms of?

- Qualification
- Knowledge
- Skills
- Attitude

What is the level of competencies of the Structure technician of Jamco Philippines Inc. in performing their duties and responsibilities.

Based on the result of the study, what recommendations may be made to enhance the level of competencies of Structure technicians?

II. REVIEW OF RELATED LITERATURE

2.1 Foreign Related Literature

The concept of competence can have quite different connotations and definitions (Cheetham & Chivers, 2005; Stoof et al., 2002; Van Merriënboer, Van der Klink, & Hendriks, 2002; Westera, 2001). It should also be noted that there is a distinction in the literature between the term ‘competence’ and the term ‘competency’ (De Coi et al., 2006; Eraut, 1994). Competence is given a generic or holistic meaning and refers to a person’s overall capacity whereas competency refers to specific capabilities (knowledge, skill, attitude, ability). Cheetham and Chivers (2005) offer the following rather general definition of competence: Effective overall performance within an occupation, which may range from the basic level of proficiency through the highest levels of excellence.

Stoof et al. (2002), on the other hand, postulate that the meaning of the concept of competence is very unclear. They give a short overview of recent history of ‘competence’ and provide examples of current definitions, such as “a cluster of knowledge, skills and attitudes” or “the ability to handle a situation”. Stoof and colleagues conclude that it is useless to look for the true definition of competence and argue that everyone may construct their own competence definition instead, as long as it is viable. Viability of a competence definition increases when it is clear what the representations and opinions about competences are of the people who construct the competence definition. In addition, the goal of the competence definition should be made clear in order to construct a suitable and useful definition. Finally, it should be clear who the intended users of the definition are (Stoof et al., 2002).

2.2 Competencies Conception

1982, the US academic Boyatzis, set the building blocks of competencies framework which has become an acceptable part of modern practices in human resources management. As this framework distinguished high-performance practices from medium-performance practices and so on, all levels of activities in the organization, and all that in the light of the performance of the three axes, namely: knowledge, skill and ability (KSA).

There are many definitions of competence, for example The general framework of competencies concept emerged in the eighties of the last century as a response to organizational changes, which is in particular related to globalization and its consequences for human resources management (Azmi, 2010). Tett et. al, (2000) argued that —competence is a specific appearance that can be measured through behavioral reflections which affect positively or negatively the organizational efficiency. Brans and Hondeghem, (2005) argued that —human resource management practices based on competence concept achieve two types of integration, namely: vertical integration, and horizontal integration. The vertical integration links individuals and their behavior and strategic objectives of organization, while horizontal integration links functions and practices of human resources management with each other within interactive and harmony framework.

2.3 Human competencies

Human resources with knowledge and competencies are considered as key assets in assisting organizations to sustain their competitive advantage. Competitive 12 organizations all over the world depend on their human resources uniqueness,

and human resources managing systems effectively (Imtiaz, et al, 2013). —Competence emerges in the late 1980s and early 1990s for the purposes of expressing assessment target and development initiatives that should be relevant to management (Cheng et al., 2003).

2.4 Behavioral Competencies:

It is worth to mention that behavioral competencies are observable and measurable behaviors, knowledge, skills, abilities, and other characteristics that contribute to individual success in the organization. Behavioral competencies can be applied to all jobs in any organization or they can be specific to a job family, position, or career level. Behavioral competencies describe what is required to success in any organization far from specific job. So behavioral competencies are specific to a person instead of job. Behavioral competencies refer to personal attributes or characteristics that describe how a job or task is performed. 16 Individual performance competencies are different from organizational competencies and capabilities since they are more specific. Therefore, it is important that they should be defined in a measurable behavioral context for the purpose of validating the applicability and degree of expertisel (Nadine. et al, 2008).

III. METHODOLOGY

3.1 Research Design

This chapter describes and explains the plan that was implemented carrying out the research, the method of research, participants of the study, data gathering instruments, data processing techniques and the validation of the instrument.

This study aimed to determine the level of competency od Structure technicians in assembling galley panel of boeing 787 in Jamco Philippines Inc. for the year of 2017-2018. The main objective is to ascertain the competencies of Structure Technicians in the following areas:

- Painting
- Bonding
- Curing
- Assembling
- Qualification
- Knowledge
- Skills
- Attitude

The investigation was basically a quantitative a descriptive survey method that employed a questionnaire, direct observations in gathering data.

3.2 Participants of the Study

The area of the study is the Jamco Philippines Inc. the maker of the galley panel and floor panel the main branch is at America. JPI has a total population of 20 structure technicians for the year of 2014-2018.

3.3 Data Gathering Instruments

The researcher conducted questionnaires using the Likert four-point scale as the data gathering device. The survey questionnaire consists of three parts Part I dealing with the profile of the participants and Part II deal with specific questions concerning painting, bonding, curing and assembling and Part III questions concerning Qualification, Knowledge, Skills and Attitude.

3.4 Statistical Treatment of Data

The data gathered from the questionnaire will tabulate and appropriate frequency table constructed. The following descriptive statistics were used to analyze the data.

Frequency Distribution. The data gather will tallie and tabulate to indicate the number of participants to a specific question in the questionnaire.

The percentage will determine from the frequency of the participants or perceptual assessment of the participants.

The formula is:

$$P = \frac{f}{n} \times 100$$

Where:

P - Percentage (%)

f - Frequency (number of participants)

n - The total population

Weighted Mean. The weighted was used to get the average score on the ratings of the participants on painting, bonding, curing and assembling, qualification, knowledge, skills and attitude.

3.5 Computation of the Area Mean

The rating of all statements in the section will be tallied and added.

The sum will divide by the number of answer items.

The obtained value will be rounded off to the unit's place.

The formula for weighted mean is:

Where

$$X = \text{mean}$$

N = Number of participants

$$\sum = \text{summation of the frequency}$$

3.6 Computation of the Area Mean

The sub-sections mean will add.

The sum will be divided by the number of sub-sections.

The value was rounded off to unit's place.

The legend for the over-all mean/grand mean will use to determine the final evaluation mark through the Likert Scale as:

Table 1

LIKERT SCALE WITH THE LEVEL OF REACTION WITH THE UNIT WEIGHT, RANGE OF MEAN, LEVEL OF REACTIONS AND QUALITIES

Unit weight	Range of Mean	Level of reactions	Qualities
4	4.50-4.00	Always	Highly Competent
3	2.50-3.49	Often	Competent
2	1.50-2.49	Sometimes	Lease Competent
1	1.00-1.49	Never	Not Competent

IV. RESULTS AND DISCUSSION

This chapter presents analysis and interpretation of the data gathered from the survey questionnaires distributed and conducted by the researcher. The researcher used appropriate statistical treatment in the presentation of data.

TABLE 2

FREQUENCY & PERCENTAGE DISTRIBUTION OF GENDER PROFILE OF THE PARTICIPANTS

GENDER	Frequency (f)	Percentage (%)
Female	1	5.00
Male	19	95.00
Grand Total:	20	100.00

Table 3

FREQUENCY & PERCENTAGE DISTRIBUTION OF CIVIL STATUS PROFILE OF THE PARTICIPANTS

CIVIL STATUS	Frequency (f)	Percentage (%)
Married	10	50.00
Single	10	50.00
Widow	0	0.00
Grand Total:	20	100.00

TABLE

4

PAINTING	Structure Technician (Self-Rate)	Panel Assembly Technician	Supervisor	Manager	Total Mean	VI
a. Follows the standard in accordance with Work Instruction provided by JPI	4.00	3.60	1.80	1.40	2.70	C
b. Have a refresher training every three months	1.00	3.25	2.35	2.10	2.18	LC
c. Aware of painting procedure to identify the defect surface	3.50	3.45	1.90	1.40	2.56	C
GENERAL AVERAGE MEAN	2.83	3.43	2.02	1.63	2.48	LC

Legend: 1.00 – 1.74 Not Competent (NC); 1.75 – 2.49 Lease Competent (LC); 2.50 – 3.24 Competent (C); 3.25-4.00 Highly Competent (HC)

Table 4 shown above is the frequency & percentage distribution and mean results of participants in terms of painting. It shows that the overall level of competency in terms of painting is average with mean value of 2.48. The lowest ratee was the manager rate 1.63 or lease competent and the supervisor rate is 1.63 or not competent and structure technicians and panel assembly technician rate is higher than others.

The manager's rate is considered as lowest rate that means the enhancement for this process is needed

TABLE 5

FREQUENCY & PERCENTAGE DISTRIBUTION AND MEAN RESULTS OF PARTICIPANTS IN TERMS OF BONDING

BONDING	Structure Technician (Self-Rate)	Panel Assembly Technician	Supervisor	Manager	Total Mean	VI
a. Has a bonding license which proof that they can mix bond in correct ratio	3.75	3.90	2.60	1.75	3.00	C
b. Train to mix bond and will issue bonding license if the technician is qualified to mix bond and paint	4.00	3.60	2.25	1.35	2.80	C
c. Have their bonding license with expiration date	4.00	3.60	1.80	1.35	2.69	C
d. Cannot perform bonding without bonding license	3.30	3.55	1.55	2.55	2.49	C
GENERAL AVERAGE MEAN	3.76	3.66	2.05	1.75	2.75	C

Legend: 1.00 – 1.74 Not Competent (NC); 1.75 – 2.49 Lease Competent (LC); 2.50 – 3.24 Competent (C); 3.25-4.00 Highly Competent (HC)

Table 5 shown above is the frequency & percentage distribution and mean results of participants in terms of bonding. It shows that the overall level of competency in terms of bonding is competent with mean value of 2.75. The highest level of rate is 3.76 or highly competent. The lowest rate was the 1.75 that rate from the manager.

This practice was considered as competent. There are some technicians who are not yet qualified but try to mix chemicals for bonding purposes the management should be watchful because bonding practices should meet the customer requirements and maintain the required quality of service.

TABLE 6

FREQUENCY & PERCENTAGE DISTRIBUTION AND MEAN RESULTS OF PARTICIPANTS IN TERMS OF CURING

CURING	Structure Technician (Self-Ratee)	Panel Assembly Technician	Supervisor	Manager	Total Mean	VI
a. Make sure that all paint and bond cured in appropriate temperature and time	3.90	3.65	2.25	2.30	3.03	C
b. Undergo training before he/she can perform curing of parts of galley	1.55	3.50	2.05	1.30	2.10	LC
GENERAL AVERAGE MEAN	3.07	3.60	2.12	1.78	2.62	C

Legend: 1.00 – 1.74 Not Competent (NC); 1.75 – 2.49 Lease Competent (LC); 2.50 – 3.24 Competent (C); 3.25-4.00 Highly Competent (HC)

Table 6 shown above is the frequency & percentage distribution and mean results of participants in terms of curing. It shows that the overall level of competency in terms of bonding has the mean value of 2.62 or competent. The lowest ratee was the managers rate 1.78 or verbally interpreted as lease competent.

Undergo training before performing curing of parts of galley is lease competent because there no proper training/seminar that has been conducted how to perform the curing of parts. Rather the structure technicians trained by the supervisor verbally but not having the proper training.

TABLE 7

FREQUENCY & PERCENTAGE DISTRIBUTION AND MEAN RESULTS OF PARTICIPANTS IN TERMS OF ASSEMBLING

ASSEMBLING	Structure Technician (Self-Ratee)	Panel Assembly Technician	Supervisor	Manager	Total Mean	VI
a. Assemble the galley by using calibrated tools and equipment's	4.00	4.00	2.45	1.65	3.03	C
b. Always performing visual inspections for the installations	3.90	3.90	1.75	1.45	2.75	C
c. Well inform about the latest information and changes in assembling galley	3.25	1.55	1.45	1.75	2.00	LC
d. Dimensioning the extrusions, plates, rivets before and after installation	3.75	3.75	2.10	1.15	2.69	C
GENERAL AVERAGE MEAN	3.73	3.30	1.94	1.50	2.62	C

Legend: 1.00 – 1.74 Not Competent (NC); 1.75 – 2.49 Lease Competent (LC); 2.50 – 3.24 Competent (C); 3.25-4.00 Highly Competent (HC)

Table 7 shown above is the frequency & percentage distribution and mean results of participants in terms of assembling. It shows that the overall level of competency in terms of assembling has the mean value of 2.62. The lowest ratee was the Panel managers rate with 1.50 or verbally interpreted as not competent.

The well inform about the latest information and changes in

assembling galley got the lowest mean average because of the proper dissemination of other information's is must be documented or being post in one bulletin board so that everyone will be informed in any changes.

TABLE 8

COMPOSITE TABLE OF FREQUENCY & PERCENTAGE DISTRIBUTION AND MEAN RESULTS OF PARTICIPANTS EVALUATION OF THE PARTICIPANT PRACTICES OF THE STRUCTURE TECHNICIANS IN ASSEMBLING GALLEY PANELS OF BOEING 787 IN TERMS OF DIFFERENT CRITERIA

CRITERIA	Structure Technician (Self-Ratee)	Panel Assembly Technician	Supervisor	Manager	Total Mean	VI
a. Painting	2.83	3.43	2.02	1.63	2.48	LC
b. Bonding	3.76	3.66	2.05	1.75	2.81	C
c. Curing	3.07	3.60	2.12	1.78	2.64	C
d. Assembling	3.73	3.30	1.94	1.50	2.64	C
GENERAL AVERAGE MEAN	3.22	3.56	2.06	1.72	2.64	C

Legend: 1.00 – 1.74 Not Competent (NC); 1.75 – 2.49 Lease Competent (LC); 2.50 – 3.24 Competent (C); 3.25-4.00 Highly Competent (HC)

Table 8 is the composite table of frequency & percentage distribution and mean results of participants evaluation of the participant practices of the structure technicians in assembling galley panels of boeing 787 in terms of different criteria.

The painting practices shows that structure technicians are lease competent and the rest are competent and need to enhance their level of competencies.

TABLE 9

COMPOSITE TABLE OF FREQUENCY & PERCENTAGE DISTRIBUTION AND MEAN RESULTS OF PARTICIPANTS ON THE LEVEL OF COMPETENCY STRUCTURE AT JAMCO PHILIPPINES INC. IN PERFORMING DUTIES AND RESPONSIBILITIES IN TERMS OF DIFFERENT CRITERIA

CRITERIA	Structure Technician (Self-Ratee)	Panel Assembly Technician	Supervisor	Manager	Total Mean	VI
a. Qualification	3.60	3.71	2.66	2.56	3.13	C
b. Knowledge	2.58	3.38	1.94	1.55	2.36	LC
c. Skills	3.58	3.53	1.94	1.46	2.63	C
d. Attitude	3.57	3.80	1.76	1.58	2.68	C
GENERAL AVERAGE MEAN	3.33	3.61	2.08	1.79	2.70	C

Legend: 1.00 – 1.74 Not Competent (NC); 1.75 – 2.49 Lease Competent (LC); 2.50 – 3.24 Competent (C); 3.25-4.00 Highly Competent (HC)

Table 9 demonstrate the composite table of frequency & percentage distribution and mean results of participants on the level of competency structure at Jamco Philippines Inc. in performing duties and responsibilities in terms of different criteria. The knowledge got lease competent and the rest are competent interpretation and need to enhance the competencies of the technicians.

TABLE 10

RANKING DISTRIBUTION OF RECOMMENDATION OF THE PARTICIPANTS

Recommendation	Frequency	Ranking
1. Seminar for enhancement of personal and technical skills	20	1st
2. Refresher training every 3 months in special process (painting, curing bonding and assembling)	14	3rd
3. Shifting schedule so that the work load will be continue by the other	8	5th
4. Trained in different county by the specialist	16	2nd
5. Hire at least (2) females to be assign in inventory and calibration of equipment's	11	4th

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The table 10 appear above is the ranking of recommendation of the structure technicians. It shows that seminar for enhancement of personal and technical skills need to be conduct for the enhancement of the competency of the structure technicians.

V. CONCLUSION

Majority of the participants are males. And the participants are mostly general Y or millennial generation.

The practices of the structure technicians in terms of painting is lease competent. And the three remaining variables are verbally interpreted as competent. The level of competency of the structure technician in terms qualification, skills, and attitude is competent while knowledge is rated as lease competent.

Recommendation:

The management should have a refresher training to be strictly conducted at-least three or six months to enhance the level of competencies in terms of painting, bonding, curing, and assembling.

The management should give training to be strictly guide the structure technicians in their duties and responsibilities and have a self-improvement to consider them highly competent.

Propose seminars:

Aircraft Interior Design Familiarization

Aircraft Galley Assembling Procedures

Evaluation of level of competency Structure technicians must be conducted every 6 months-1year to know how competent and enhance their weakest point.

Posting in one bulletin board of planning sheet of equipment, parts and tools availability, latest improvement and changes in performing duties, responsibilities and practices of the structure technicians.