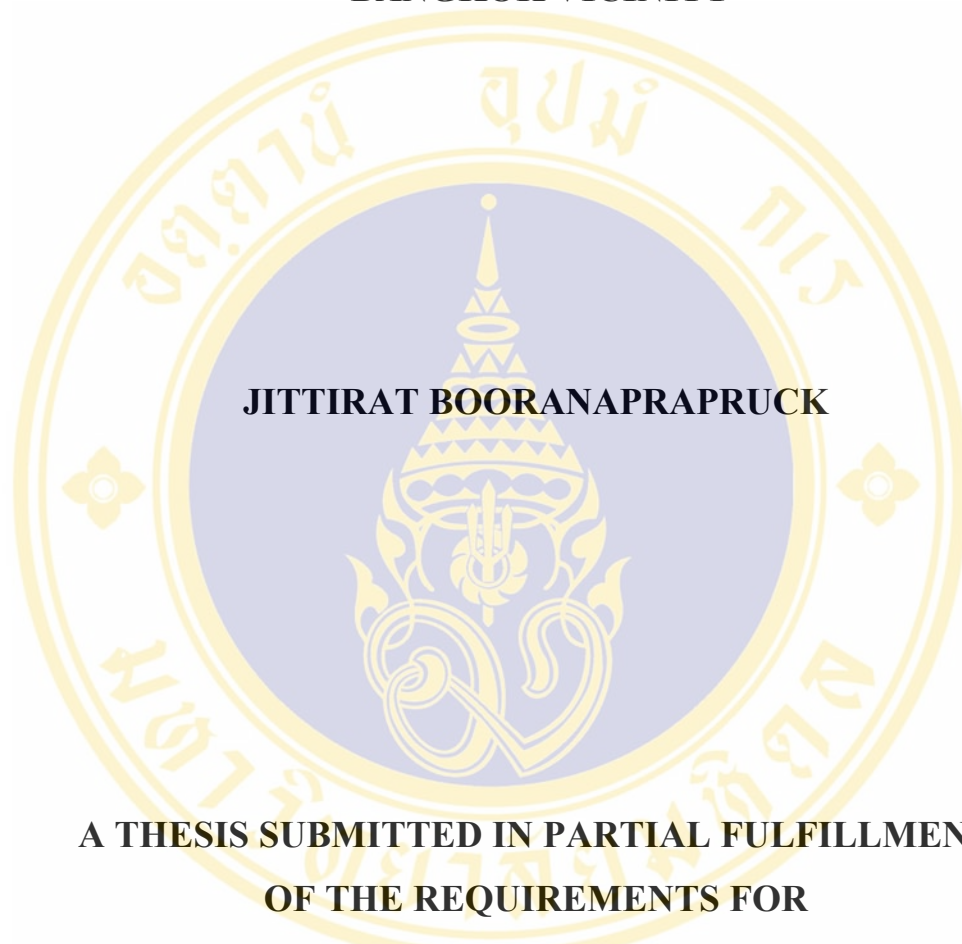


**INDUSTRIAL ACCIDENTS IN THE CONTEXT OF LABOR
PROCESS: A CASE STUDY OF FOOD CANNERY FACTORY IN
BANGKOK VICINITY**



**A THESIS SUBMITTED IN PARTIAL FULFILLMENT
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(MEDICAL AND HEALTH SOCIAL SCIENCES)
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Thesis
Entitled

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BANGKOK VICINITY**



Jittirat Booranaprapruck

Miss.Jittirat Booranaprapruck
Candidate

Suphot Dendoung

Assist.Prof.Suphot Dendoung, Ph.D.
Major-Advisor

Mullika Muttiko

Assoc.Prof. Mullika Muttiko,Ph.D.
Co-Advisor

T. Puntarigivat

Assist.Prof. Tavivat puntarigivat, Ph.D.
Co-Advisor

Rassmidara Hoonsawat

Assoc.Prof.Rassmidara Hoonsawat,
Ph.D.
Dean
Faculty of Graduate Studies

Veena Sirisook

Assist.Prof.Veena Sirisook, Dr.P.H.
Chair
Master of Arts Programme in
Medical and Health Social Sciences
Faculty of Social Sciences and Humanities

Thesis
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was submitted to the Faculty of Graduate Studies, Mahidol University
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On
10 October, 2003

Jittirat Booranaprapruck

Miss.Jittirat Booranaprapruck
Candidate

Suphot Dondoung

Assist.Prof.Suphot Dondoung, Ph.D.
Chair

Mullika Muttiko

Assoc.Prof.Mullika Muttiko, Ph.D.
Member

C. Suttawet

Mr.Chokchai Suttawet, Ph.D.
Member

T. Puntarigvivat

Assist.Prof.Tavivat Puntarigvivat, Ph.D.
Member

Rassmidara Hoonsawat

Assoc.Prof.Rassmidara Hoonsawat,
Ph.D.
Dean
Faculty of Graduate Studies
Mahidol University

Suree Kanjanawong

Assoc.Prof.Suree Kanjanawong, Ph.D.
Dean
Faculty of Social Sciences and
Humanities
Mahidol University

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I would like to dedicate all usefulness of this study to all workers who are playing the most important roles in the lines of production producing things for the humanity

Jittirat Booranaprapruck

INDUSTRIAL ACCIDENTS IN THE CONTEXT OF LABOR PROCESS: A CASE STUDY OF FOOD CANNERY FACTORY IN BANGKOK VICINITY**JITTIRAT BOORANAPRAPRUCK 4237567 SHMS/M****M.A. (MEDICAL AND HEALTH SOCIAL SCIENCES)****THESIS ADVISORS: SUPHOT DENDOUNG, Ph.D., MULLIKA MUTTIKO, Ph.D., TAVIVAT PUNTARIGVIVAT, Ph.D.,****ABSTRACT**

This research was conducted in the period of January 2002 to December 2002 to study the relationship between accidents and the labor process in a food cannery factory situated near Bangkok. The factory in the study employed 2,169 workers in a labor intense division of labor system to produce canned food. I interviewed 20 randomly selected workers who had been injured on the job. I also looked at the production records and labor information.

The results of the study show that, firstly, there was a significant discrepancy between the records collected by the safety section (52 accidents were recorded) and the first aid section (529 accidents were recorded). Secondly, the usage of imperfect raw materials, the common usage of pointed or sharp tools or heavy equipment, the speed of work at the assembly line conveyors, and working in an inappropriate working environment or unsafe conditions contribute to the incidences of accidents. Thirdly, management policies of the organization such as the distribution of work into too many subdivisions, the hierarchical structure of management, the use of principles to maximize profit creating an unsafe environment, the unjust treatment of workers by management, the set-target production policies emphasizing the scope and quantity of the workload have brought about the unsuitable characteristics of the labor process-working in a hurried manner for excessive period of time with inadequate rest time might be a significant factor in the occurrence of accidents. Fourthly, despite having concern for the safety standards in compliance with the laws and regulations, safety officers did not pay close and serious attention to their duties. This might increase the possibility of accident occurrences as well.

In conclusion, I recommend that safety officers and nurses in the first-aid section should cooperate together to record and share the essential information regarding work-related accidents. Workers should play a greater role in the decision making process as regards organization and the process of production. Furthermore workers should have more input on safety control management, safety practice and training, the accidents prevention program, and other relevant matters.

**KEY WORDS: INDUSTRIAL ACCIDENTS / LABOR PROCESS /
WORK ORGANIZATION / FOOD CANNERY FACTORY**

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อุบัติเหตุจากการทำงานของคนงาน โรงงานอุตสาหกรรมในบริบทกระบวนการแรงงาน: กรณีศึกษาโรงงานผลิตอาหารกระป๋องในเขตปริมณฑล กรุงเทพมหานคร (INDUSTRIAL ACCIDENTS IN THE CONTEXT OF LABOR PROCESS: A CASE STUDY OF FOOD CANNERY FACTORY IN BANGKOK VICINITY)

จิตติรัตน์ บูรณประพุกษ์ 4237567 SHMS/M

ศค.ม. (สังคมศาสตร์การแพทย์และสาธารณสุข)

คณะกรรมการควบคุมวิทยานิพนธ์: สุพจน์ เต๋นดวง, Ph.D. (Health sociology), มัลลิกา มัติโก, Ph.D. (Medical and Health Social Sciences), ทวีวัฒน์ ปุณฺชกรวิวัฒน์, Ph.D. (Religion and society).

บทคัดย่อ

การวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาความสัมพันธ์ระหว่างอุบัติเหตุจากการทำงาน กับกระบวนการแรงงานในโรงงานผลิตอาหารกระป๋องแห่งหนึ่งในเขตปริมณฑล กรุงเทพมหานคร โรงงานนี้มีแรงงาน 2,169 คน มีการใช้แรงงานอย่างเข้มข้น และมีระบบการบริหารจัดการองค์กร ในการผลิตสินค้าปริมาณมาก กลุ่มตัวอย่างคือแรงงานที่เกิดอุบัติเหตุจากการทำงานจำนวน 20 คน เครื่องมือที่ใช้ในการเก็บข้อมูลคือ แบบสำรวจข้อมูลแรงงาน แบบสัมภาษณ์ระดับลึก แบบสังเกตและบันทึกกระบวนการผลิตในโรงงาน โดยมีระยะเวลาในการเก็บข้อมูลระหว่าง เดือนมกราคม 2545 – ธันวาคม 2545

ผลการศึกษาพบว่า ประการแรก ในปี พ.ศ.2545 มีความแตกต่างของข้อมูลสถิติอุบัติเหตุจากการทำงาน โดยสถิติอุบัติเหตุที่บันทึกโดยเจ้าหน้าที่ความปลอดภัยมีจำนวน 52 ครั้ง ในขณะที่สถิติอุบัติเหตุที่บันทึกโดยพยาบาลประจำโรงงานมีจำนวน 529 ครั้ง ประการที่สอง กระบวนการแรงงานที่ประกอบด้วย การใช้วัสดุดิบที่ไม่สมบูรณ์ เครื่องมือที่แหลมคมและหนัก การทำงานตามจังหวะการควบคุมของระบบสายพาน การใช้กำลังร่างกายอย่างเข้มข้น สภาพแวดล้อมในการทำงานที่ไม่เหมาะสมหรือไม่ปลอดภัย เป็นสาเหตุของการเกิดอุบัติเหตุ ประการที่สาม การจัดองค์กรการทำงานที่มีการแบ่งแยกย่อยการทำงานที่ละเอียด การบังคับบัญชาแบบลำดับชั้น การมุ่งแสวงหากำไรก่อให้เกิดสภาพแวดล้อมที่ไม่ปลอดภัย การบริหารงานบุคคลที่ไม่เท่าเทียมกัน การปลูกฝังนโยบายการทำงาน การขยายการทำงาน และการเพิ่มปริมาณงาน เป็นตัวกำหนดลักษณะท่าทางในการทำงาน แรงงานต้องทำงานอย่างเร่งรีบ ต่อเนื่องและยาวนานตามระบบการทำงาน จนทำให้แรงงานเกิดอุบัติเหตุจากการทำงาน ประการที่สี่ ระบบการบริหารงานความปลอดภัยมีการปฏิบัติตามกฎหมายแรงงาน แต่การปฏิบัติงานของเจ้าหน้าที่ความปลอดภัยมักไม่ได้ให้ความสนใจกับงานด้านความปลอดภัย และนำมาสู่การเกิดอุบัติเหตุในโรงงาน

ข้อเสนอแนะจากการวิจัยคือ เจ้าหน้าที่ความปลอดภัย และพยาบาลควรร่วมมือกันในการเก็บรวบรวมข้อมูลอุบัติเหตุจากการทำงาน แรงงานควรจะมีส่วนร่วมในการจัดองค์กรการทำงาน นอกจากนี้ระบบการบริหารด้านความปลอดภัยของโรงงาน ควรมีเจ้าหน้าที่ความปลอดภัยที่ทำหน้าที่ในการป้องกันและแก้ไขปัญหาอุบัติเหตุจากการทำงานโดยเฉพาะ

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CHAPTER I

INTRODUCTION

1.1 Background and the significance of the problem

The changes of Thailand's society and economy following the increase popularity of capitalism caused a shift in its infrastructure from agricultural-based to industrial-based. Industrial growth and employment rises were very rapid. The nations' economic growth was as high as 8.6% of the GNP in 1995 (Siam Post 1996: 17). The growing industrial-based economy resulted in movement of the workforce from agricultural sector to industrial sector. After the economic crisis in 1997, many companies and plants closed down. Job cuts caused the workforce to move back to agricultural sector. The economy rebounded slowly back to become somewhat more stable in 1999 (Vision Path Institute 2001: 14). The economy rebounded to its peak in 2002 when the economic growth was at a high level of 5.1% (Thai Post 2003: 9). This again caused a return of the workforce back to the industrial sector. The life of each member of the workforce has changed considerably, from living close to nature and using only simple tools to work in polluted environments with exposure to chemicals and performing tasks with more complicated machines in poor working conditions. In other words, they now risk their health as well as their own safety than when they were in agricultural sector.

Occupational injuries and sickness have been a problem for a long time, but information has not been gathered until 1974. The Labor Department started the compensation fund and information was collected more systematically. This problem became increasingly severe as industrial technology kept on advancing. (Labor Department, 1987)

Statistics of occupational injuries in Thailand from 1990 to 2001 reveals that the numbers of injuries have been increasing every year especially in 1996. In that year, occupational injury was at 245,616 cases of which 962 were death and 5,060 were disabled.

This mean that there were an average of 3 deaths and 14 disabled cases each day. Even though the numbers of cases have decreased to 230,376 in 1997, but the numbers of death and disabled cases have increased to 1,033 and 5,301, respectively. These numbers decrease in the following years, but it also shows an increasing trend for the overall cases. (Office of National Safety Committee 2542: 45)

Table 1 Numbers and rates of occupational injuries categorized in levels of severity in Thailand from 1990-2001

Year	Death (cases)	Permanent total disabled (cases)	Permanent partial disability (cases)	Temporary disabled (cases)	Total (cases)
1990	564	12	1,291	77,161	79,028
1991	581	9	2,141	99,542	102,273
1992	740	15	2,010	129,035	131,800
1993	980	10	5,436	150,244	156,548
1994	816	13	4,406	180,818	186,053
1995	940	17	5,469	209,909	216,335
1996	962	18	5,042	239,594	245,616
1997	1,033	29	5,272	224,042	230,376
1998	790	19	3,714	181,975	186,498
1999	611	12	3,396	167,978	171,997
2000	620	16	3,516	175,414	179,566
2001	607	20	3,510	185,484	189,621

Source: Workmen's Compensation Fund Office

This decrease is caused by the economic crisis in 1997. This caused a stop of economic growth and a sudden recession. Many financial institututes faced liquidity problems as well as non-performing loans, and were forced to close down. Foreign financial sources began to demand for payment, causing outflows of money of the country. Increasing numbers of non-performing loans forced banks and other financial institutions to stop issuing loans. Many businesses were short of money and must

downsize or even went out of business. In 1998, 50,498 employees were laid off from 1,052 businesses. (Welfare and Labor Protection Department, 2000: 75)

Each year, government must pay compensations to occupational injury cases, including permanent and temporary disabilities as well as death. The amount increased every year especially in 1997 when the total cases amounted to 1,986.39 million baht as in Table 2 below. (Aikaporn Rakkwamsuk and others 1997 : 14)

Table 2 Amount of compensation from 1987-2001

Year	Compensation (million baht)
1987	267.74
1988	362.62
1989	413.19
1990	490.14
1991	617.24
1992	753.31
1993	926.51
1994	1,169.39
1995	1,370.03
1996	1,609.50
1997	1,986.39
1998	1,629.82
1999	1,404.40
2000	1,256.85
2001	1,276.60

Source: Workmen's Compensation Fund Office

Impacts to health and occupational injuries can be viewed from 3-labor status, individual, family members, and social members. As individual, labor is faced with pain and suffering, both physically and mentally, when injured or lost of organs. He/she may be forced out of work. When disability causes work efficiency to decrease, family must spend time and money to take care of the person. They may be in grief with the disabled or the death and lose the opportunity to get support or benefit

from the person. Society also loses human-resources as well as productivity from the labor. (Penkae Larp-ying, 1997 : 8)

The way the government handling occupational injuries was to issue a law concerning occupational hygiene and safety, and inspect work safety of various businesses. In the second quarter of 1999, of the 2,635 workplaces inspected, there were 1,065 or 40.1% that were not practicing according to the law. (Welfare and Labor Protection Department, 1999: 30) This means the risk of the overall workforce of facing occupational injuries. Laws cannot be enforced fully on employers. Furthermore, there was no report of any punishment on employers who did not pass the inspection.

From review of past literature, they mostly viewed the causes of workplace accidents as being from individuals that did not protect themselves, did not use tools properly, and behave in a careless manner. Another cause was from improper environment or equipment did not meet the standard. Most corrective actions, therefore, were aimed toward individual mistakes by providing courses in occupational safety and learning to accept the use of protective equipment as well as their capabilities. They did not look at organization structure nor production related cause, which are the actual causes of occupational health and safety.

For this study, the researcher selected to study manufacturing canned foods factory in the Bangkok vicinity area because of 3 reasons. The first is due to statistics that shows increasing numbers of occupational injury and safety cases since 1990. The numbers were the highest in 1996 at 245,616 cases. Even though the trend has been decreasing since 1997 due to the economic crisis in Thailand, the number rose again in 2001 to 189,621 cases. This included 72,823 cases in the Bangkok vicinity area of Samutprakarn, Nontaburi, Patumthani, Nakhonpathom, and Samutsakorn. (Office of the National Safety Committee, 1999: 47) The numbers became 75,092 in 2000 and 77,928 in 2001, respectively. (Statistics of Accidents 2001, 2001:67)

The second reason is according to statistics of occupational injury and sickness categorized in levels of severity which reveals that the number is relatively high in the canned foods and beverage industry from 1996-2001. The number varies only slightly from year to year. In 2001, the total number of cases is the highest at 17,447 as seen in Table 3. (Social Welfare Office, 1999: 121, Statistics of Accidents 2001, 2001:79)

Table 3 Numbers and rates of occupational injuries in the canned foods and beverage industry in Thailand categorized in levels of severity from 1996-2001

Year	Death	Permanent total disabled (cases)	Permanent partial disability (cases)	Temporary disabled more than 3 days (cases)	Temporary disabled less than 3 days (cases)	Total (cases)
1996	32	1	128	4,507	7,576	12,244
1997	41	1	218	4,446	8,215	12,928
1998	31	1	174	4,153	7,778	12,137
1999	31	-	177	3,939	7,544	11,691
2000	25	1	139	3,709	7,725	11,599
2001	56	2	263	5,519	11,607	17,447

Source: Workmen's Compensation Fund Office

The third reason is to develop the quality of work life among labors. Since the researcher is one of the staff at this plant, the study of the causes of accidents were in relation to the labor process, working environment and organization structure. These studies in relevant to occupational injury and health should benefit in policy making in terms of prevention and reduction of accidents within industrial plants so that labors can have better quality of life.

1.2 Research questions

Research Question: Do the labor process have any relationship with work-related accidents?

Other questions:

1. How is the labor process in the factory?
2. How is the situation of work-related accidents within the industrial factory system?
3. Do the labor process have any relationship with work-related accidents?

How?

1.3 Research objectives

General objective:

To answer the research question whether the labor process have any relationship with work-related accidents and how.

Specific objectives:

1. To study work-related accidents among labors in the industrial factory system.
2. To study the characteristics of the labor process within the industrial factory system.
3. To study the relationship between the labor process and work-related accidents.

1.4 Expected outcomes

1. Broaden the knowledge of explaining how work-related accidents occur as well as occupational safety.
2. Stimulate labors to realize the causes of work-related accidents and become more involved with the prevention and solving parts of occupational health and safety problems.
3. Result in a guideline in stating the strategy to prevent and solve work-related problems as well as increase work-related safety for other related personnel.
4. Result in a guideline for studying and developing further researches concerning work-related accidents and occupational health problems.

1.5 Definitions of words

Capitalist mode of production means a form of manufacturing which investor owning manufacturing factors exploit the efforts of labors who do not own manufacturing factors by controlling the labor process in creating excess values of manufacturing that leads to collection of capital.

Social relation of production means a form of relationship in manufacturing society that is not equal between investor owning manufacturing factors causing investors to have more influence over the workforce in the labor process; investors are able to control the workforce in the labor process.

Labor process means work activity of labors that combine individual effort with tools and machines to convert raw materials into final products which reflects the relationship in manufacturing society between investors and labors.

Means of labor means land, tools, machines, and plants.

Raw materials mean raw materials or beginning state of products in the manufacturing process which are converted to final products by labor process.

Labor power means the ability of labor to work under the labor process.

Work organization means a form of work administration in the plant including hierarchical organization structure, work policy, labor recruitment and selection, hiring system, work evaluation, and work motivation as well as work discipline.

Surplus values of manufacturing means the difference of product value and total productivity value of labor in each day; product value less labor wages.

Exploitation of excess values of manufacturing means action which investors force labor to put effort or ability to work to manufacture products that have value higher than the labor wages.

Overtime means work of labors in excess of 8 hours each day

Work-related accident means unexpected, unintended, and unplanned occurrence during work in industrial plant causing injuries to organs or parts of the body, disabilities, or death.

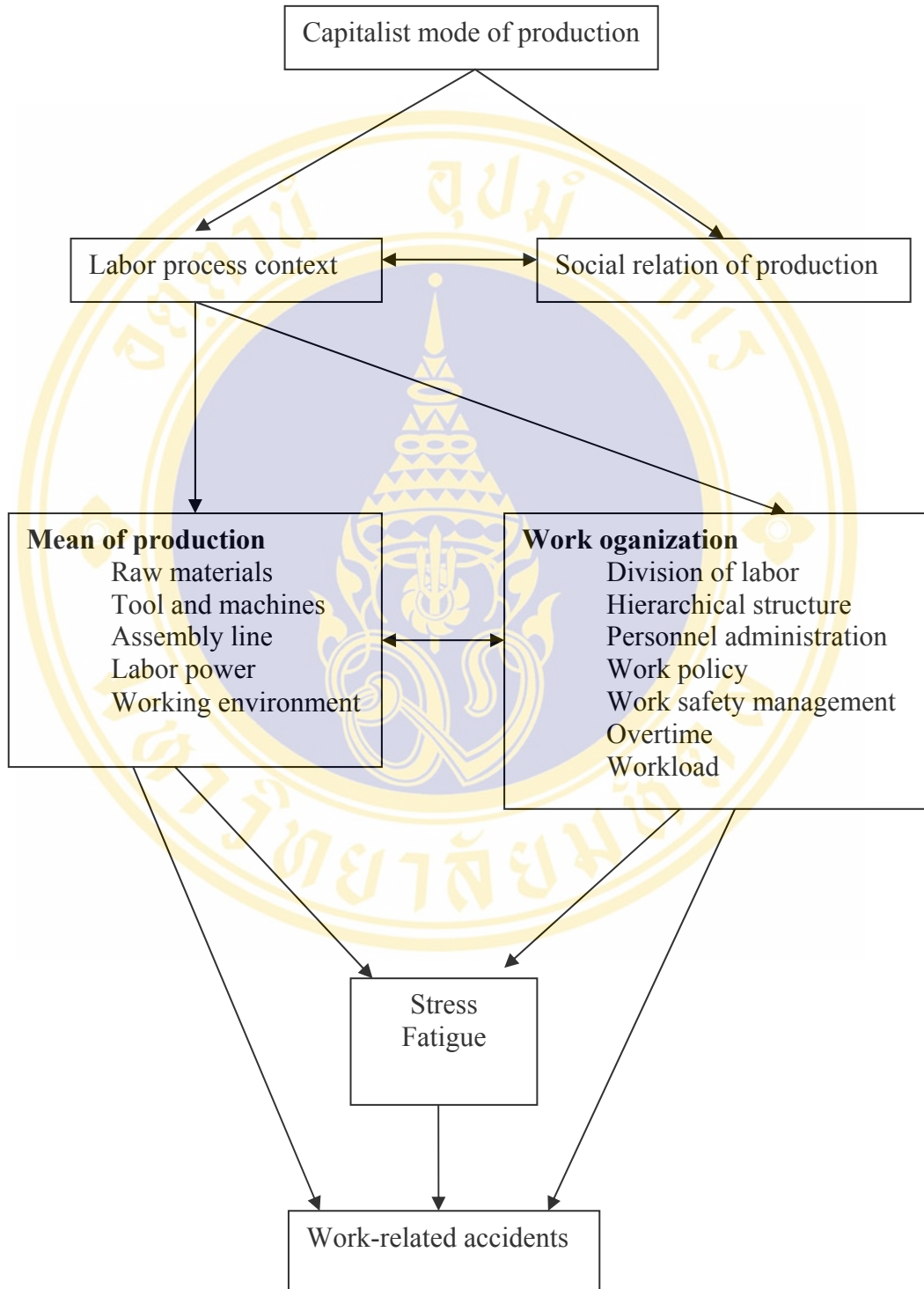
Stress means negative feeling toward work environment including pressures, worries, unhappiness, desperation, or boredom that can show physical symptoms such as headache, dizziness, insomnia, fatigue, and tiredness.

Capitalist class means owning manufacturing factors including tools, machines, land, and plant.

Labor means person, not including management and administrative positions, working in various departments within the manufacturing process that receives daily wages.



1.6 Conceptual Framework



CHAPTER II

REVIEW OF LITERATURES

The answer to the question why labor in industrial factory experiences work-related accidents, we must review theories or researches related to the topics. From reviewing literatures, it is found that there are many concepts explaining work-related accidents including concept of medical and public health, concept of occupational hygiene, concept of psychology, concept of structural-functionalism, and concept of political-economy.

2.1 Medical and Public Health Concept

This concept sees that the cause of accident is due to the weak condition or abnormality of the body, which cause the decrees in the ability to control oneself and leads to an accident. The doctors are more interested in treatment after accidents than to prevent it. They want to know how severe the injuries are, which part of the body is hurt, how to give treatment to each organ so that it functions properly again, and if any organ is lost, would the person become disabled which affect the amount of compensation to be received.

It is seen that this concept pays attention only to the individual and thus not cover that context of the environment. The concept of epidemiology sees that the outbreak of the disease in an area or in people or at a certain time requires three factors including the host, the agent, and the environment. (Kumnuan Ungchusak 2000: 7-8) Then the rate or the incidence can be depicted in terms of place, person and time.

The host factor includes sex, age, work experience, and income. It is found that men have a chance of being in an accident with four times higher than women. (Occupational Hygiene Division 1995: 54) Most workers involved in an accident are from the age of 20-30, followed by 30-39 and 18-19 respectively. (Occupational Hygiene Division 1995: 43) Persons with less experience are involved in more

accident than persons with more experience. Finally, persons with lower income have more chance of being in an accident than persons with higher income. (Chucheeep Romsai, 1991, Rungrat Srisuriyavesana, 1994, Occupational Hygiene Division, 1996)

The agent factor includes microorganisms, chemicals, dust, gas, vapor, heat, light, sound, rays, tools, and machines.

The environment factor means the surroundings of the host that have impacts on the host being. They include work condition under pressure and strictness or poor working environment such as loud noise, humid weather, coldness, or poor ventilation.

The research by Karun Ratanasatjatam (1986), which studies the risk factors of those involved in work-related accidents during the construction of the second phase of Mae Maw factory, has a population of 1,356 workers in Electrical Generating Authority of Thailand. Samples are taken from the group experiencing accident and the controlled group with 145 samples from each group.

The study reveals that most accident occurred in units with machines. Most accidents were in the month of September and are found in the morning more than in the afternoon. Accidents occurred more after 1-2 hours after starting work. Hands and fingers were mostly injured. Persons involved in an accident were between 25 - 44, married with 2 children, had primary school diploma, and were Buddhists. Most smoke, drink, were not under medication, and had normal eyesight. All were instructed to use personal protective equipment. They were mostly workers in assembly section with average work experience of 3 years. Most were not trained for their job. Before the accident, most had about 6-8 hours of sleep. Their attitude toward the accident and their jobs were good. Finally, the stress level in each unit was about the same.

2.2 Occupational Hygiene Concept

Occupational Hygiene means taking care of the health, the hygiene, and the safety of all professionals, so that they have to health whether physical, mental, and social. The work includes process in public health, which deals with the sickness nature of men did study from the beginning, when symptoms become apparent, when

the person is feeling better, or the result of a disability or death. This process involves six aspects as follow: (Shinosoth Hatsabamrur, 1990 : 14-18)

1. Control of the environment and the cause of sickness including monitoring the working environment and controlling any threats to health and hygiene
2. Promotion of health and hygiene by physical examination and providing health study in Occupational Hygiene
3. Specific protection by using personal protective equipment
4. Diagnosis and treatment including monitoring the health and hygiene, first aid, and minor treatment
5. Elimination of disabilities
6. Rehabilitation

This concept emphasizes the host and the environment more than the agent. The agent or chemicals are just part of the working environment, and are called the threat to the health and hygiene, which will result in sickness or injuries to the workers. There are two ways to control this threat. The first is to eliminate them such as stop using chemicals. The second is to reduce the threat down to the level that is not hazardous such as reducing the noise of machines.

So this concept views the cause of accident as being from unsafe acts and unsafe conditions. Unsafe acts include: (H.W.Heinrich, 1959)

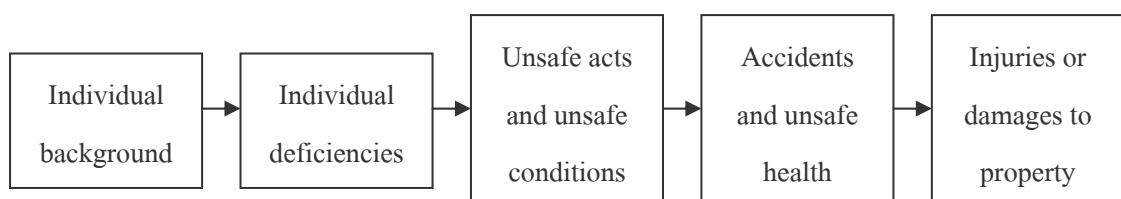
- Incorrect work procedures or steps
- Improper attitude such as accident is bad luck and cannot be prevented
- Distraction
- Carelessness
- Risk-taking behavior
- Not following the rules and regulations of works safety
- Working without the use of personal protective equipment
- Improper clothing
- Removing of safety parts installed on machines
- Unsuitable use of tools and equipment
- Playing while working
- Working when the physical and mental healths are not ready such as being sick, drunk, or having problems

Unsafe conditions include

- The moving parts of machines that are not covered
- Incorrect factory layout
- Untidiness and dirtiness in putting materials
- Bumpy floor in the factory
- Working environment that is not safe nor hygienic such as improper lighting, high heat, dust, and toxic vapors
- Malfunction or dysfunction machines
- Malfunction of electrical equipment or system

The study of H.W.Heinrich agrees with the domino theory of accidents with the principle ideas of arranging the hazards in steps. If any event leads to step 1, it will affect the following steps respectively until the last step, which is an injury. This is like putting 5 domino pieces next to each other. When the first one falls, the other four also falls. The 5 domino pieces are:

1. Individual background including physical and mental health or chronic disease affecting work,
2. Individual deficiencies such as lack of experience in using tools or working beyond one's capability,
3. Unsafe acts and unsafe conditions such as below average working environment or risk of accidents,
4. The occurrence of accident and unsafe health such as a fall or a slip,
5. Injuries or damages to property.



Accident prevention according to the domino theory or the chain of accident is to take out the third domino or removing the unsafe acts and unsafe conditions so that the fourth domino or accident does not fall.

It is seen that the domino theory emphasize his individual disadvantages more especially individual background. This theory lacks systematic view. Bob Firenze (Chalermchai Chaikittiyaporn, 1990 : 23-24) proposes a safety system explaining that the study of the cause of accident will have to include a whole component of the system that relate to each other. The components include men, machine and environment. Each component is important in making decisions in each task and the occurrence of accident as follow:

1. Man must make a decision to act out in a certain way to accomplish his task. But each decision involves risk that leads to failure that can result in an accident.
2. Machine must function properly without error. If it is badly designed or lacks proper maintenance, malfunction of the machine can lead to accidents.
3. Environment at work plays an important role in production. Bad environment can cause problems to man and machine, which can lead to accidents.

However, even the best worker can make a wrong decision as a result of stress, which reduces the ability to make a decision.

Other related researches are such as that of Sansanee Thanakitjatorn (1994) that studied factors related to accidents from sharp tools in nurses working in hospitals in the Eastern region. There were 816 samples. The research used a questionnaire, which found that the accident occurred at a rate of 48.5%. The equipment involved in most accident was the disposable syringe and fractured medicine bottle, which led to injuries to the hands. Most accidents occurred in the morning. Three out of four nurses came into contact with patients' blood and body fluid after the accident. The cause of accident was carelessness. Other factors that gave higher risk to the nurses were having younger age and little experience, and being single. Nurses with medical record and on medication were involved in accidents more.

Work characteristics that put higher risks to the nurses were dealing with syringes and sharp tools as well as cleaning of tools. Nurses with overtime jobs were involved in accidents more than those with no overtime jobs. Nurses working in shift also had higher risk than those working in normal hours. The environment in the patient board also promoted accidents such as improper lighting and limited working space. Most nurses with low awareness of safety had higher risk of being involved in accidents than those with high awareness.

Kiattiyos Eam-aikkong (1984) studied factors relating to sickness of female workers in textile industry in Samutprakarn province. There were 756 samples. The study found that working condition or the working environment, especially sound, had influence on sickness of the female workers. Other environmental factors included dust, light and heat during the summer. Working in shift led to sickness due to improper sleeping period. Lifting or carrying heavier loads also influenced sickness as well.

Experience had no influence on sickness in the female workers since each unit in the factory had different work characteristics and working condition.

The concept of ergonomics deals with the relationship between men and the working environment, or designing suitable work for the worker. The environment in this case includes tools, materials, the way each person work, and working procedure of each person as well as intra-group relationship. To design suitable work for each person, physical characteristics must be considered and work must be suitable with each person's anatomy as well as his or her mental. (Chompoosak Poolkate and Chaiyuth Chawalitnitikul, 1990:413) This concept relies on information from other subjects such as engineering, anatomy, physiology and behavioral science so that the person can work effectively and be happy as well.

According to the concept of ergonomics, if the work is too complicated or requires ability beyond the human limitation or requires unnatural gestures, the worker would be tired, have stress, or have pain in the wrists, arms, shoulders, neck or back. These would lead to the risk of accidents or injuries or abnormalities in the muscles and bones. They would also have a long-term impact on the worker such as boredom with work, chronic headache, and insomnia that to reduce the effectiveness of the worker.

Most researches in the ergonomics are about working gestures such as sitting, lifting heavy objects, reaching, and tiptoeing. These all result in injuries to the muscles and bones. Wattana Eawsawat (1998) conducted a study on electrical signals and fatigue of workers working on short stools or tall stools to evaluate fatigue after working for 90 minutes by applying electrical pulse to the muscle every one minute and asking worker about their fatigue at 10, 30, 60 and 90 minutes. This was an experimental research conducted on female workers of the age between 20-39.

These workers had an experience on the average of 15 years. Their average height and weight were 158.8 cm. and 53.6 kg., respectively. Ten of the samples had never had problems with muscles and bones.

The evaluation found that working on tall stools would have lower pain in erector spraine than working on short stools, while pain in gatrocnemius tibialis anterior was indifferent. The evaluation of overall fatigue found that workers on tall stools were in more proper position. So the use of tall stools should be considered.

D. Ferguson (1976 : 183-186) studied the pain and anatomy of telephone company workers by measuring body dimensions, stance, working environment, and various equipment. The study found that back pain was the most common, and the height of the chair also played important role both to the back pain and to the satisfaction of the worker.

From researches of working gestures that led to sickness and fatigue, the design of chairs more suitable for work was done. Samakkee Pohchareon (1993) studied the construction of movable chairs for workers in yarn-spinning mills to reduce fatigue in workers. The design followed the concept of economics. The chair could be adjusted 14 cm to suit various heights of workers. The chair could move to the left or right at a speed of 25 meter/second, and was controlled by two switches at the foot.

The experiment with the chair was conducted on 32 female workers in a yarn-spinning mill. Each worker was given four hours on the chair and then compared the differences when using and not using the chair. The experiment showed that with the chair, the fatigue was less. The comparison of efficiencies showed no difference.

It can be seen that the concept of ergonomics emphasizes working environment that is more suitable to the worker in terms of their physical and anatomy more than their mental. The concept does not look at the ability to make the decision to work by oneself. It also lacks the view of cultural aspects of work.

All in all, the factor of host does not contain the contexts of culture, belief and psychology that look at human as being human with feeling, thoughts, and ability to make own decision.

2.3 Psychology concept

2.3.1 Psychoanalysis concept

Freud started the scientific studies of human behavior and personalities. His important concept was the subconscious and the personality structures. Freud paid close attention to the subconscious. He compared the human mind to the floating icebergs in the ocean. Only a small portion is above sea level, while the remaining is underwater. The subconscious is like the part below sea level, containing most components of the mind. Freud explained that the subconscious had many mechanisms such as motivation, suppressed emotion, thought, dream and memory. The subconscious has influences over the conscious, and stimulates a person to act out common daily behaviors. It also motivates various unreasonable and abnormal behaviors.

As for personality structures, Freud explained that they are composed of three forces namely id, ego and super ego. An individual's personality depends on how these three forces work with each other. Id is the forces that human are born with, which means instinct. It usually involves physical desire to pursue satisfactions without taking into account reasons, facts or truths. Ego is the force of knowing and understanding the realization of truths, reasons, actions to achieve goals, and ways to fulfill id. Super ego is the force of knowing, but is different from ego. It involves different values such as good, bad, right, wrong, virtue and justice. If one force has influence over the others, it will determine the individual's personality. For example, if there were higher id, the individual would be childish and self-centered. If there were higher ego, the individual would be reasonable or become a practitioner. If there were higher super ego, the individual would be an idealist or a theorist. Freud believed that development and experience during childhood provide the basis of the personalities when the individual becomes adult. The development during adulthood is merely a build onto this basis.

Freud also stated that (cited by Kaplan, et., 1980 : 1953, 3306) individual that likes to hurt oneself or commits suicide has apparent conflict within the mind. Injuries from accident are examples of inflicting pain on one's body. It is a way to blame

oneself and is an outlet of the subconscious to see that as an accident. Furthermore, Freud also stated that it is half intended to inflict the pain. It is an action while being conscious to commit suicide. Half of it is the intention to destroy one's life influenced by the subconscious, while the other half is the ability to use skill to threaten one's life and to conceal the mishap to oneself.

Freud, Dunbar (1973) and Alexander (1949) studied the personalities of individual involved in an accident according to the psychoanalysis theory. Later on, Leshan (1952) studied 52 individuals with tendencies to have accidents due to the mind and found that they all had common personalities. All were unable to have deep relationship with others, not successful in attempting to reach higher social status, aggressive toward those with higher authority, and had erratic behaviors. Subsequent study showed that being quick-tempered also leads to accident easier than being thoughtful. Lower level of tolerance also leads to accidents easier as well. Leshan saw accident as a success of the desire to punish oneself and to rely on others.

Sudow Lertwisuttipaiboon (1993) studied the relationship between personalities and accident of workers in stamping factories. The study compared personalities of male workers involved in accidents with other male workers. The tool used to collect data was the California Psychological Inventory survey, translated into Thai by Dr.Narongsak Channual and company. The samples were 70 male workers involved in accidents and underwent rehabilitation at the Worker's Rehabilitation Center of the Social Security Office, and 70 male workers with at least one-year experience and had never been involved in accidents. The samples are collected from 6 stamping factories and data were analyzed using t-test.

The study showed that personalities of the group of workers involved in accidents were significantly lower than those of the other group. These personalities included dominance, achievement via conformance, flexibility, tolerance and intellectual efficiency. Only femininity was significantly higher in the group of workers involved in accidents.

2.3.2 Eysenck's Personality Concept

Personality of an individual is composed of specific characteristics that influence behavior under different circumstances and time. Eysenck (1970, 1975) divided individual's personalities, in respect to level of sensitivity to stimuli, into two types, introversion-extroversion and stable-unstable or neuroticism.

Extroversion has characteristics of socializing and having many friends. Extrovert individual likes to engage in exciting activities, likes taking risk, and has low tolerance to various circumstances. Normally, this type of individual wants to express his or herself, is humorous, interactive, and likes new challenges. Furthermore, he or she has no worries, likes things to be convenience, is optimistic as well as joyful. However, the individual has a tendency to be aggressive and does not hesitate to express discontent.

Introversion has characteristics of being quiet and avoiding social engagement. Introvert individual must feel ready before doing anything and does not trust immediate circumstances. This type of individual dislikes exciting activities and lives the everyday life subtly. He or she wants things in life to be neatly laid out and is able to control satisfaction or dissatisfaction very well. Sometimes the individual is pessimistic and takes into account the basis and ethics of the society and organizations too much.

Unstable individual usually ties worries to neutral stimuli. He or she is worried at every thing that happens even under circumstances that pose no danger. This type of individual has strong and unstable emotions, is very sensitive, and thinks too much.

Stable individual has good mental health. He or she has emotions, thoughts, feelings and actions suitable to the circumstances. This type of individual can adapt to the environment well.

Eysenck's theory is based on psychological experiments. It is divided into four groups to express personality trait. They are introvert-stable, introvert-unstable, extrovert-stable, and extrovert-unstable.

1. Extrovert-unstable individual likes to socialize and engage in group or social activities. He or she is very joyful, but has unstable emotions that can change rapidly. This type of individual is easily aroused and irritated, or is choleric.

2. Introvert-unstable individual dislikes expressing his or her self. He or she abides strictly to rules and regulations. This type of individual is easily irritated and constantly worries. Furthermore, he or she is pessimistic or melancholic.

3. Extrovert-stable individual has leadership trait. He or she has confidence and likes to socialize as well as to communicate with others. This type of individual likes talking and taking care of others, or is sanguine.

4. Introvert-stable individual likes to think more than act. He or she usually thinks of the impossible. This type of individual dislikes expressing his or herself, or is phlegmatic.

B.J Fine (cited by Eysenck, H.J., 1977: 238-244) studied occurrences of accident according to Eysenck's Theory. The samples were from the University of Minnesota students. The 933 samples were divided into 3 groups according to the MPI test. The groups were introverts, intermediate and extroverts. It was found that extreme extroverts were involved in more severe road accidents as well as violated traffic laws more than the other two groups significantly.

Eysenck studied accident-prone motorists and other motorists. He found that the two groups differed significantly. The accident-prone group liked to over-express and was more sensitive. He also found that personalities that led to accidents were carelessness, aggression, and impatience to authority. Other personalities included having strong emotions, easily distracted, and lacking responsibility. These personalities showed over-expressive and over-sensitive characteristics more than normal.

S.Bieshenvel and M.E.White studied pilots in terms of personal traits that led to aircraft accidents. The samples were South African and were divided into accident-prone and normal groups. The MPI test was used and found that the accident-prone group differed significantly from the normal group. The differences were the accident-prone group was more expressive, had stronger emotion, and was easily excited, aroused and distracted. This group also had a tendency to be impatient and careless as well as shifting behaviors due to changes in emotions.

It can be seen that Eysenck's Personality Theory emphasizes the cause of accident as being from individual personalities. Extrovert-unstable individual is accident-prone. The explanation of the cause of accident by this concept still lacks the

view that individual can think for him or herself by taking into account his or her experiences as well as experiences of others in expressing behaviors, which should explain the cause of accident better.

2.3.3 Cognitive Concept

This concept emphasizes thinking and awareness. The internal conditions including thought, imagination, on memory, feeling, decision, emotion, and awareness are important to behaviors. Various behaviors are a result of the individual's thinking process. Therefore, changes of behaviors are from changes of thoughts. There was an application of this theory to explain disease prevention behavior by Rosenstock, Becker and Maiman (1974 in Veena Sirisook, 1991 : 74-78) in a form of Health Belief Model. This model was proposed in attempt to try to explain prevention and promotion of health behaviors. An individual would have a mental state that showed readiness in acting out the behavior that related specifically to health criteria. These criteria were determined by being aware of the chance of risk or danger from the individual's own criteria. Each individual would have different level of awareness of the chance of being sick or infected with a disease. Individuals who were aware of these chances would remain calm. Individuals who were aware of the risk of being infected or under extreme danger would have preventive behaviors. This all depended on evaluations of each individual on how severe the threats were. Individuals would look at health problems whether the disease or danger could lead to death, or whether the disease would cause reductions of the physical and mental functions or not, or whether the disease would lead to permanent disabilities or not. But for individuals to act out preventive behaviors depended on the evaluation of the potential benefits, and then the weights of the threats and the foreseen costs were compared. If the awareness of benefits and the readiness were high with low threats, the individual should have an according behavior. On the contrary, if the individual had low readiness and high threats, they would be obstacles to the preventive behavior.

According to this concept, it is believed that the cause of accident is from the awareness of the individual of having low risk of being in an accident as well as low severity of possible injuries. After the evaluation of the benefits from work shows that

the pay is higher than the medical cost, or the threat is low, the individual will be careless. He or she will have no preventive behavior during work and does not use protective equipment, and the accident occurs. On the other hand, the individual who is aware of the high risk and extreme danger that could lead to disability or death will have preventive behavior. This is especially true if the evaluation of the benefits suggests that the pay is less than the medical cost, the treatment period is long, and family members may have to lose time and money to take care of him or herself.

Researches following this concept usually study the preventive behavior of disease more than accident. An example is a research by Tararat Duangkhae (1998) that studied the relationship between the Health Belief Model and the action to prevent infection among patients of tuberculosis. The study found that the Health Belief Model of the patients had a slightly low score, but the prevention from being infected had a slightly high score.

This concept emphasizes the thought process of the individual on evaluation of danger during working. Sometimes workers are aware that the risk involved is high and could cause disability or death, but they still have to perform the tasks without any protective equipment. This concept cannot explain this due to the lack of taking into account motivation that propels the workers to be in a risk. It also lacks the analysis of the social structures that force these individuals to be at risks of being involved in accidents.

2.3.4 Humanitarianism Concept

This concept aims at helping individuals to achieve the perfect life. Psychologists, like Maslow, explained human motivation in a form of levels or steps. They are, from the lowest to the highest, basic needs or physiological needs, safety needs, belonging and affection needs, esteem needs, and self-realization needs. Afterward, Maslow suggested another needs at the top, which is the needs to be above the control of nature. (Suree Kanchanawong, 1999: 50) Maslow believed that a satisfaction of one step would lead individuals to the next step, but the individual would eventually return to the step that he or she is not satisfied.

According to this concept, the cause of accident is due to the individual not having his or her physiological needs fulfilled including food, shelter and clothing that help the individual to survive. These individuals, therefore, have to work hard or work overtime till the bodies become tired and fatigued, and accidents occurred. Other than this, the fact that they receive low pay drives them to take a short cut, not follow proper procedures, or not using any protective equipment to work more to get more pay. Accidents eventually result. So based on this concept, if motivation for the workers is desired, the physiological needs must be fulfilled first. When this need is fulfilled, the individual will have preventive behavior. Even though this concept can explain the cause of accident, the need of an individual does not always have to be in steps.

2.4 Structural-Functionalism Concept

This theory views that the social system is composed of smaller components. Each component has its own function and works together to achieve the same goal in order for the society to survive and be developed. Unusual situation can result if each component does not function properly. When workers in production become sick, the doctor has to treat them. But the workers can only become patients when the doctor certifies that they should take sick leave and then they can be entitled to any rights stated by the law such as to receive compensations or government-provided services. The workers are responsible of proving that their sickness is from working. The workers are also required to take care of their own health or be back from sick leave to perform their tasks onward.

The employers must provide suitable environments both inside and outside of the factories. They must provide protective equipment, and effective tools and machines as well as to ensure that they be inspected continually to prevent dangers and accidents from occurring to the workers.

The government must monitor both the employers and the employees so that both play their roles and functions as they are supposed to. This is especially done to keep balance within the system. Employers must abide by the law in providing

suitable working environment, while employees must follow the rules and regulations of the factories by using protective equipment.

When each component does not function or become dysfunctional, there will be a deviance in the society. For example, workers do not use protective equipment provided, are being careless at work, do not know how to operate or control machines, and play with each other during work. All these lead to an accident. This is also true when workers do not play the role of patients and causes the injuries to be worse.

Doctors that are responsible in promoting health, prevention and treatment of diseases, and rehabilitation become ignorant of their responsibilities by giving treatment with state-of-the-art equipment only when there are accidents, and provide rehabilitation only when disabilities are likely. If the symptoms are minor, the workers can become normal again. If the symptoms are quite severe, the workers may be disabled and unable to work again. This does not reduce the accident statistics.

Employers, who are responsible in providing the working environment, overlook the standard of safety by not providing protective safety equipment, not following the laws, and giving low wages that workers must work more to earn more. These can contribute to accidents due to tiredness and fatigue of the workers.

The government does not enforce the laws such as allowing illegal modifications of buildings that cause it to collapse, overlooking businesses that violate the laws on safety, and not providing adequate and suitable protective equipment. These lead to more severe cases of occupational hazards that, without proper solution, can become social problems.

This theory pays close attention to the social structures that are static more than dynamic. It studies changes in the society, emphasizing the roles and functions of each component without taking to account the changes involved. There is also no context on the relationship between production and the social power that creates inequalities.

The concepts discussed so far are not sufficient to explain the cause of accidents. The medical and public health concept suggests that accident is a result of fatigue that reduces the ability to control oneself. Epidemiology concept suggests that accident is a result of the imbalance of the three factors, host, agent and environment. Occupational Hygiene concept suggests that accident is a result of unsafe acts and

unsafe conditions. Eysenck's personalities theory suggests that accident is a result of individual's personalities and extrovert-unstable individual is accident prone. Cognitive concept suggests that accident is a result of being aware of the risk or danger, and its severity. Individual who is aware of the risk of getting injured severely will have preventive behavior and has a low chance of being in an accident. Humanitarianism concept suggests that accident is a result when individual does not have his or her basic needs fulfilled. Finally, work structure theory concept suggests that accident is a result of each component in the society become dysfunctional. All of these concepts do not include the social context that influences these individuals to work with tools and machines in specific labor process that becomes the cause of work-related accident.

2.5 Political-Economics Concept of the Labor Process

Political economist is the science aiming to analyze the relations between men within the production process. It is about "man" in the society. The center of the analysis is man as being a part of every society. Marx and Engels pointed out that there were many types of social relations in the society. Both gave importance to social relation related directly to the production process called relations of production. How the relations in the production process are depends on the characteristics or steps of each specific production method. (Preecha Piampongsarn, 1986 : 3-4)

In the production process, different groups will have relations with others. This is called relations of production. To be able to manufacture, the groups must have means of production, which can be an individual's property, properties of the group, or shared properties. But whomever it belongs to, the owner of the means of production will also be the owner of the production. For this reason, most relations within the production process are determined by the owner of the means of production. Ownership (or types of ownership such as private, corporate, or public) is then the important basis of social relations between groups no matter in any period of social development.

Relations of production are not isolated, but are tightly tied to productive forces. On the one hand, the development in productive forces will push for a change

in the relations of production. On the other hand, the relations of production determine whether to stop or to push for an advancement in the productive forces. Therefore, it is necessary to study the relations of production and its relatedness to the development in productive forces. (Preecha Piampongsarn, 1986 : 3-5)

Each production method will have its own specific class structure. The relations between the production method and the class structure are divided into two characteristics.

The first characteristic is that in a society with classes, the relations are determined by ownership of the means of production and the relations of production. Under this ownership system, the society can be divided into two groups or major classes, the group of owners of the means of production and the group without the means of production. The differences in status can be seen clearly in the work division process. The group of owners usually does not have to work or does only light work, and receives higher share of production. Thus, ownership of the means of production also means having the power to control the labor and the labor production as well.

The second characteristic is that not only the production method determines the class structure that is in line with the production method itself, in reverse, the class structure within the society is also an important factor in providing support for that production method as well. For example, the group (or class) that totally owns the means of production would benefit greatly from this complete ownership. For this reason, there is a need to maintain this production method as long as possible. Therefore, they will try to resist anything that would bring changes to the existing production method.

From the evolution history of man, there are five forms of relations of production.

In earlier community system, the basis of relations of production was that the means of production belonged to the society according to the characteristic of productive forces during that time, when men only knew how to use tools made of stones. The use of these simple tools did not allow man, by himself, to fight against nature and meat-eating beasts. They must find foods in-groups, whether the foods are fruits, fish, or hunted animals. This led to shared ownership of the means of

production and the production itself. During that time, the idea of personal ownership did not exist. Only certain production tools that were necessary to protect against beasts were considered personally owned. There was neither fleecing nor classes during that time as well.

In slavery system, the basis of relations of production was that the slave owner was also the owner of the means of production as well as the labor of production, the slaves. As for slaves, the owner could buy, sell, transfer or kill like animals. This type of relations of production was suitable for and in line with the productive forces at that time. Men knew how to use metal tools. They also knew how to cattle farming, build irrigation, create handicraft, and divide the works into various aspects. These did not exist in the earlier community system. In this slavery society, there was an exchange of production between individuals and also between societies. The collection of wealth was only among a small group who also suppressed the larger group. This society did not share labor in production, only the forcing of the slaves to work. Slaves were labor in production and were fleeced by their owners who did not labor. During that time, the ownership to the means of production belonged to individuals. Slave owners were the holders of total ownership. The image that this society gave was the clear division between the rich and the poor, the group doing the fleecing and the group being fleeced, and the group with total rights and the group with no right. Class struggles also existed in this society.

In farmland possession society, the basis of relations of production was that the owners of lands were also the owners of the means of production, but not the owners of labor or slave attached to the lands as in the slavery society. These slaves could not be killed, but they could be bought and sold. At the same time, while there was a holding of ownership to the land, there was also personal ownership of peasants, artisans who owned the means of production, and personal business using only own labor. This type of relations of production was in line with the productive forces at that time. In this society, there was an improvement on iron casting as well as the use of weaving machines. Agriculture was also improved. There were also factories and skill-worker shops. All of these were the characteristics of the productive forces then. New or improved productive forces required the creative thinking of production by labor, motivation to produce, and interest to work. So the landowners abolished

slavery because slaves were labor that did not care to work, and had no motivation. The landowners preferred the slaves attached to the lands more. These slaves had ownership of the means of production, were interested to work and were able to give back part of the production to the landowners. During that time, personal ownership had improved. Fleecing was as common as or just a bit less than during the time of slavery society. Class struggles among those being fleeced characterized this society.

In socialist system, the basis of relations of production was that the society was the owner of the means of production. In this system, There was no one to do the fleecing or being fleeced. Products were distributed according to labor effort in reference to the principle of “If you do not work, do not eat.” The relations among those in production were cooperative with full help between each other. This was agreeable with the full productive forces due to the social characteristics of the production method being in line with the fact that the society owned the means of production.

In capitalist system, the basis of relations of production was that the capitalists were the owners of the means of production. There were only labors in production, which were the labor forces that were not properties of the capitalists. These labors could not be bought, sold, transferred, or killed because they had their own individual freedom. However, employees were bounded to selling their own labor effort to capitalists in order to survive. This was the cause of these labors being fleeced heavily. The capitalists owned the means of production. In this society, peasants and artisans also owned personal properties. Both were no longer slaves attached to the lands. Their personal properties were a result of waging their own labor. At the same time, large mills and factories with many machines were built in place of small skill-worker shops and small factories. Large farmlands with advance tools and technologies along with machines replaced small farmlands using only primitive tools. (Joseph Stalin, 1975: 60-70)

After machines were brought into the production process, workers lost the ability to control themselves in the labor process. Workers were forced to be under control of machines. The introduction of machines had destroyed the symbol between production tools and workers. This circumstance changed the social relations between workers directly into the production tools. The introduction of machines into the

production process had increased the intensity of labors and had replaced manual labors. The workers' control of the labor process by capitalist system was, therefore, inclusive.

Later on, capitalism expanded the sizes of productions. There were divisions of works among workers that resulted in simpler jobs to be performed. There was no need of high skills or abilities. Even new workers who were female and children could perform the tasks after only a small amount of training. The result was that the factories could hire women, children, and labor from agricultural fields to replace men conveniently at a lower wage. The productivity was not reduced in any way. As a matter of fact, productivity had increased. The result was the more the production was expanded, the values and skills of the workers were decreased. (Mendel, 1975)

Thus, the social relation of production according to the capitalist mode of production has changed the social relation in the past. Then, workers worked together creatively to produce their own products. Now the relations have shifted to between man and machine or man and materials in terms of exchangeable relation to satisfy the need of profit and retained earnings of capitalists. These causes have affected the labor process of workers. It is the labor process that causes various health problems later on.

Labor Process under Relations of Production in Capitalist Mode of Production

Labor process means human activity in converting objects, both natural and ready for production, into products by using instruments of labor. (Navarro, V., 1982: 8-13)

The elements of labor process consist of:

1. The object of labor: In producing material goods, there are two types of production factors, raw materials and primary materials. Raw materials are obtained directly from nature, and the first task of labor is to take these materials in their natural forms such as timbers from forests. Primary materials are objects in the form that is ready for production such as ore. Primary materials can be both the principal elements

of a product or auxiliary primary materials. Auxiliary materials can be absorbed by labor tools, such as oil for the wheels, or be included with raw materials in the production process, such as dye for leather or wool. They can also assist workers to work more conveniently, such as to give heat or reduce the temperature in the workplace.

2. The means of labor: There are two meanings to this, in a strict sense and in a broad sense. The means of labor in a strict sense means tools and machines that workers use, and are between labor and the object of labor such as shovels for miners, sewing machines for tailors and typewriters for typists. On the other hand, the means of labor in a broad sense, other than tools and machines, also include factories, lands or other things that are necessary for production.

The means of labor can be analyzed as technical sophistication as well as things that allow workers to continue their jobs. They can also be analyzed as social relations of production among workers or between workers and the objects of labor. It also includes the level of work controls that workers can control the production process of the means of labor.

3. Labor power: Human activity in normal production process is called labor or work. Marx called the effort that man use in the working process “labor power”. It also means the physical effort of workers in working together with the means of labor to convert raw materials into products.

The basic characteristics of the labor process and the basic components of the labor process are shown in Figure 1 and 2 below.

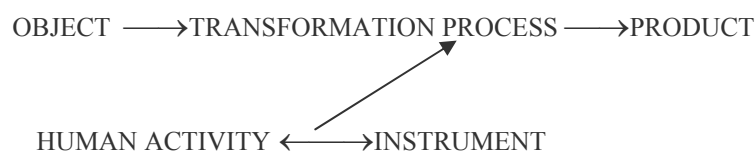


Figure 1: Basic characteristics of the labor process

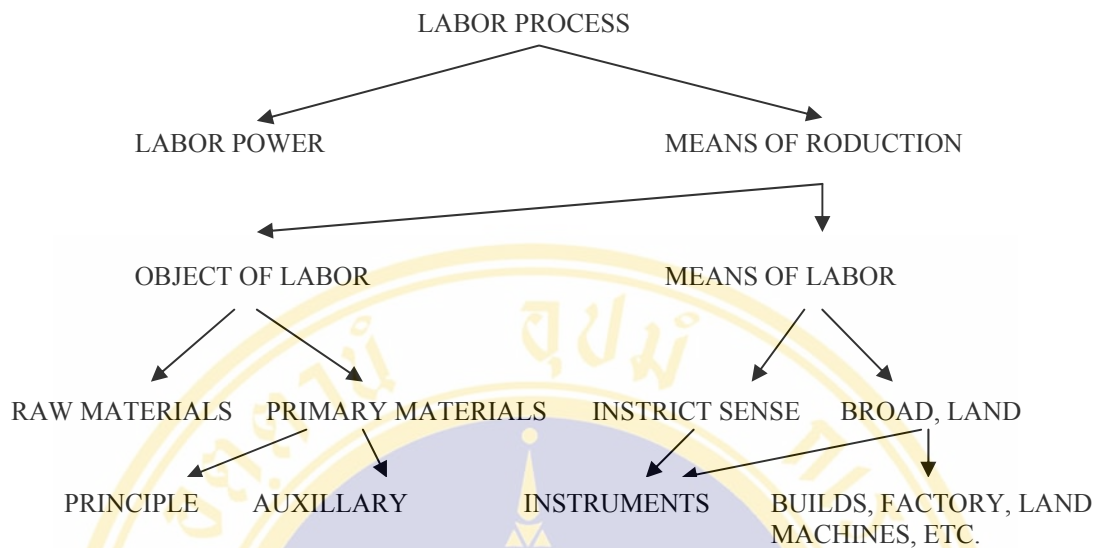


Figure 2: Basic components of the labor process (Navarro, 1982 : 10)

Labor Process in Capitalist Mode of Production and the Health of Workers

The analysis of the relations between work and health requires understanding of the relations between health and the changes in method of production. The method of production is determined by two components. They are:

1. The work process in the context of the labor process that includes the conversion process of object of labor/work into products. It was the changes in the labor process that explained the effect in stress and health conditions at work. (Braverman, 1974: 193-194)

The primary components of the labor process had influences on the health of workers. The objects of labor/work that had physical, chemical and biological properties could present hazards to the health of workers, such as chemicals, tools, some minerals, etc. The means of labor/work, including tools and machines used in production, would determine the movements and rhythms during work as well as would restrict the freedom to make decisions of workers. These led to stress and accident as a result of the use of tools and machines, capitalist mode of production, and capitalist venture on surplus values in the labor process.

2. Work organization under the labor process that relates to the class structure. (Salaman, 1984)

In petty commodity production, workers owned the object and the means of labor, and could control the labor process. Artisans and small peasants worked alone. They could decide when, how and where to produce. They had unity between work and the means of labor, such as buildings. This led to manufacturing. The form of work had changed. Workers must work with each other. They could still control their own tools during work and used their own skills, but they had lost the control over where (must work in factories with other) and when (must work during the time that capitalists assigned) to work. They could only control how to work.

Not for long, simple forms of working together were replaced by more complicated forms based on the basis of technical division of labor such as sowing where some workers furrowed and some factoryed the seeds. So, technical division of labor arose in manufacturing. Each worker was restricted of work characteristics and methods. The work that each worker was responsible for had different specifications according to production steps. This way of working divided workers into two types according to production. These were 1) manual labor that depended on the ability to manage his or her working tools, and 2) detail labor that was assigned specific tasks. They were only a part of the whole work that each worker contributed.

When the mode of production had developed into the age of capitalism, it had changed into large industry that used developments of machines and technology in production that required intensive capitals instead of labor. This led to the change in the existing relation. The introduction of machines into large industrial factories had destroyed the unity between the means of labor and the labor, and had created a new unity between the machines and the capitalists. Therefore in large industrial factories, workers did not control machines. In reverse, the machines controlled the works. Capitalists of large industrial factories were not only the owners of the means of production, but also the actual controllers of the labor process. Capitalists could force each worker to work as they saw fit. Thus, capitalists controlled both the means of production and the working process.

Work organization in industrial factories under the labor process to increase productivity and venture maximum surplus value include:

1) Division of work/labor by using scientific management was the attempt of capitalists to apply science in controlling complicated problems resulting from controls of worker in the rapid growth industry such as taylorism, which had three basic principles. (Braverman, 1974: 113-120)

The first was the dissociation of the labor process from the skills of workers, which means that all the works were studied and gathered as knowledge in the hands of management. At the least, this knowledge was equivalent to the knowledge of workers in performing normal works. They were studied systematically to find the best and quickest way. Thus, the labor process was separated from artisans and from prior knowledge of workers. Then, the knowledge was tabulated into groups as well as was deduced into the form of rules, regulations and restrictions of work.

The second was the separation of conception from execution. The unity of the labor process is broken by this separation of mental from manual labor. The overall knowledge of work had come under the ownership of managers or administrators. Workers were assigned only the works that primarily required labor. The knowledge in working of workers was reduced to only that required within their responsibilities.

The third was the use of monopoly knowledge by capitalists to control every step of the labor process and the work methods. The overall components of the labor process were planned and prepared. There were determination of work specifications, work period in each day, and measurement and evaluation of the pre-calculated work of each worker. In each worker's job, there would be work division. Workers were assigned to work in fragmentation of simplified tasks, which had specific job and task descriptions. Workers were trained to work according to the work specifications that had already been designed or determined by the management.

Thus, work division according to skilled tasks was a reduction of skills and power of production of labor. Workers could no longer control their own production, which caused them to feel separated from their works and led to diminished satisfaction in work. Workers lacked happiness in working. Work was no

longer a process or an activity that brought creativity to life. It was not a part of labor life anymore.

2) Organization structure would be a large work system with various groups of people working together. To achieve organization's goal, bureaucracy was introduced. Bureaucracy was a type of management that had hierarchy. There was division of work into each specialization. Authority and responsibility were passed downward, from the top to each supervisor and to his or her subordinates. (Somyos Naveegarn, 1997 :47-48)

Each position would have total authority within the scope of work specified. Work division, capability, authority, responsibility and other things were determined clearly. Each supervisor must be responsible for his or her action and decision as well as those of his or her subordinates. Thus, the overall operations of the organization would have order or arrangement according to the scope of work and clear chains of command. Each position must be responsible of operation and control to the best extent. The authority given to each position was clear and workers could not interfere with other duties beyond their own tasks. The decision making in this system was controlled by rules, restrictions and regulations. Behaviors depended on discipline and control. The use of authority and force were limited by restrictions of the organization.

The introduction of bureaucracy into the labor process was due to the claim made by capitalists that the organization of production was necessary. The management of labor was important to scientific and technological organization. But the truth was the reason of capitalism to achieve profits and to have control over work. This reflected the interests of the class. Other than this, capitalists were able to create their replacement and acted out their power through a group of people acting as representatives that oversaw their interests. Their representatives could also conveniently manage the tools that control work including rules, regulations and work disciplines as well as punishment on workers to suppress those that opposed them. The purpose was to control the class struggles. (Salaman, G, 1984: 168-169)

3) Personnel management means the use of management tools on personnel including selection, training, pacification in workplace, job placement, hiring, promotion, punishment, manipulation and motivation that allow the

organization to control workers' job. The jobs are to be suitable with the production process designed by scientific management to attain profits or fleecing of labor from workers.

The desire of capitalists to obtain maximum profits from operations, resulting in the selection process is strict only to choosing only workers that can work for them. Workers that cannot do the job will be fired or laid off. At the same time, the selection process will consider workers from the markets that have abundant labor to immediately replace the workers fired or laid off. After the workers are selected, training follows. Workers are trained to have skills and experiences, and this does not take a lot of time since the works are already divided to simplify the tasks. This selection process is used to link with labor market segmentation. These workers will have to compete against each other to find jobs, which eventually lead to decrease in unity. Thus, the selection system that is linked to the labor market is used to regulate and control the jobs of workers.

Training includes factoring philosophy and policy in working in industrial factories with an objective of responding to the factory's profit as well. Then, the factory will assign each worker according to the position available in each production unit. This is to allow workers to work for themselves. Other than this, in case the workers resist or object to regulations and disciplines in working, there will be punishment sentences from warning, reprimanding, pay cutting, temporary dismissal and firing.

Other than this, motivation by setting minimum wages can lead to lower-level workers having to work hurriedly. The hiring contract between factory and workers on a daily basis and the reduction of welfare result in loss of job security among workers. At the same time, the factory has extended overtime periods as well as has offered rewards to workers who work hard, never take leaves, or be absent. All of these are for workers with limited income and job insecurity to work harder to earn more overtime pay. Workers must work hard to get rewards and annual bonuses. The upper-level workers who are responsible for management will receive high benefits and a lot of welfare so that these workers can control lower-level workers.

Personnel management by applying different pay-steps, rewards and benefits to these two groups of workers cause segregation among workers that help controlling the works of workers easier.

The production organization and the use of production process or the use of production technology to control workers under the capitalist social relation of production has caused two types of fleecing of surplus value. They are absolute surplus value and relative surplus value. Details are as follow:

1. Absolute surplus value is the main type that appears in underdeveloped capitalist countries. This is done by lengthening of working time as well as keeping the wage just enough to survive. This results in more labor effort by workers along with little rest.

2. Relative surplus value is the main type in developed capitalist countries. When the power of negotiation of the labor has strengthened that lengthening of working time becomes impossible, a new method is introduced by capitalists to increase work intensity. This is done to increase the workers' speed in performing tasks such as the change of production tools to higher technology, and the use of continuous assembly lines. This method accelerates the production process by 10 times. Under this system of assembly lines, workers are given rhythms of works, movements, and routine tasks. The organization of work into more specific tasks such as fragmentation, working in shifts, and bureaucratic management cause workers to feel that they are not taken advantage of. Capitalists can readily control the labor process altogether.

Working in shift, assembly lines, and bureaucratic management have separated workers from every other things in the labor process, from themselves and their colleagues. The workers became slaves, and are controlled by machines and technology. Shift working employed by capitalists has forced workers to overwork, and has caused increase fleecing of the relative surplus value. This affects the health of the workers in terms of stress, fatigue, tiredness and accidents from tools. Details are as follow:

Table 4 Relations between the labor process and health

OBJECT OF LABOR :	physical, chemical, biological properties	----->	accidents toxicity pathogenic factors
MEANS OF LABOR :	technology, organization specific manner of working - rhythm of work - limits decision	----->	stress accidents accident proneness of machine
EXTRACTION OF SURPLUS VALUE :	absolute - lengthen working time -> - saving capital relative - intensity of work - productivity by changed technology	----->	stress and fatigue :vulnerable to disease & accidents more risks accidents & toxicity

Source: Navarro (1982: 13)

The affect on the health of workers reoccurred when there are new industries and new technology of the social division of production as follow:

1. New industry that uses and creates toxic substances such as chemical industry separated from chemical production process in textile industry, synthetic rubber industry, plastics and pesticides that expanded in the 1950's and 1960's in the U.S.A. These caused incidences of cancer to increase sharply in a later time. It has been estimated that about 20-38% of cancer cases results from working in various types of industries.

2. New technology such as computers and production robots has affected the health of workers similar to using machines. Another possibility is shift working that has expanded to cover most of the work force such as 25% of workers in the U.S.A. and 21% of workers in France. Working in shifts deteriorates workers physically and mentally as well as destroys the workers' daily life. It is also the cause of layoffs and strikebreaker.

2.6 Research Concepts

The Labor Process and Accidents in Industrial Factories

From all concepts that have been reviewed including medical and public health concept, occupational hygiene concept, psychological concept, and work structure concept, it can be concluded that these concepts cannot explain and cover accidents completely. This is because these concepts aim to study individual personalities and the general environment. These factors are under the context of labor process that drives labor to accidents. Therefore, the researcher has chosen the political-economics concept for this research. Under this concept, the labor process under unequal relation of production between capitalists (owning the object of labor) and workers (with no object of labor). This relation is based on profit venturing that capitalists act on workers, and cause the capitalists to attempt in any possible ways to fleece as much surplus values from workers as possible to collect capitals. Capitalist in factories have then introduced production process management and organization to control the works done by workers to obtain maximum labor effort from workers. The methods are such as the use of continuous assembly lines to increase work intensity by forcing workers to have rhythms and movements according to the pace of machines.

Organization of production helps capitalists to better control the works done by workers including specifying work system by division of labor that causes each worker to have more detailed responsibility along the steps on assembly-line production system. There is also the use of hierarchy in management, from top to bottom as well as authority and responsibilities of each position. Work regulations and disciplines were also determined to control workers and to punish workers if there is any violation. Personnel management is used to select, train, and pacify workers. Job placement results in conveniences in hiring new workers to replace old ones all the time forcing the old workers not to resist, protest, or suggest any ideas to change work criteria in the labor process. This is considered a part of work control system of workers. At the same time, capitalists have specified promotion steps, rewards and annual bonuses to motivate workers to maximize their labor effort.

Meanwhile, capitalists has lengthened working time as much as they can by forcing workers to work overtime and lowering the minimum wage to just enough to survive, indirectly forcing workers to work more overtime. Shift work is also introduced to allow machines to run at the highest efficiency possible to produce as much as possible.

The labor process with components of production process and work organization has caused workers to have specific manner of working that is hurried, redundant, and continuous for a long time. The specific movements are also according to the tasks being performed. This causes pains in various organs of the body such as wrist pains, arms pain and shoulders pain from doing repeating, hurried and continuous work. Pains around the feet, calves, thighs and lower back from standing still for almost one day long have caused workers not able to do their works normally or continuing to work can cause fatigue that could lead to work-related accidents.

In work process with fragmentation by division of labor, workers cannot control their working process. In addition, the use of bureaucratic management system with hierarchy has caused workers to be separated from work and from colleagues, which results in stress that leads workers to lack concentration and may cause work-related accidents.

Lengthening of working time by working overtime along with lowering pay have forced workers to work hard and have insufficient rest as well as under consumption. The following results are stress, tiredness, fatigue, sickness and accidents.

In summary, the components of the labor process under unequal relation of production between capitalists and workers. Capitalists try in any possible way to achieve maximum surplus values from workers by arranging production process and using assembly lines to increase work intensity. Organization of work like division of labor, bureaucratic management and personnel management have caused workers to face with health problems as well as other risk factors that can lead to work-related accidents.

Examples of relating researches about health problems and work-related accidents are:

Novek, J. et al (1990) studied mechanization of labor process, and accidental risks in packaged meat products industry. In 1980, the main industry in Canada was during an economic reform. At the same time, the loss rate of workers' working time due to accidents was increasing.

This research was to find relations between organization, labor process, and risks of work-related accidents by using a case study of packaged meat products industry. The study found that consolidation of small factories into large factories, highly specialized tasks, and mechanized factories had regressive relations among workers. During poor economic condition, the increase intensity of the labor process to increase the speed of production had caused fatigue and had led to high rate of work-related accidents

Kannika Reungdede (1996) studied "Female factory workers' health in the context of the labor process, gender role and gender relation: A case study in an electronics factory in the central region of Thailand". The objectives were to research the facts on health problems of female labor. The health problems included physical and mental health, prenatal and postnatal health, and unsafe abortion problems using qualitative research method. The samples were divided into two groups, 20 female workers and 10 male workers. The study on male workers was for comparison purpose. Case studies by surveying, observing, and in-depth interviewing were gathered from workers' sickness record with the following results:

1. Health problems of female workers in electronics parts production factory related to work was from working in shift, lengthy working period, low amount of movement during work due to working with machines, and contact with toxic chemicals as well as cold working environment had led to general sickness. Fatigue and muscle pains around the eyes and the neck or repetitive strain injury caused workers to consume painkiller everyday. Other than this, there were problems on eyesight, allergies, skin problems, menstrual pain, miscarriage, early birth giving, accidents and stress.

2. Changes in the labor process to increase production efficiency by assigning and controlling workload and using management and control technique were

the causes of health problems in workers. Other causes were reduction of overhead by minimizing personal time spent at work, lengthening of working time to achieve maximum hours, dividing work into shifts, having rewards and bonuses, promoting foreign investment, and using toxic chemicals without any or with insufficient protective measures.

3. Health problems in female and male workers were different because of cultural belief that women were more natural in muscles-eyes coordination and working with delicate matters better than men were. The concept of work division by physical criteria saw that women were weak and were not suitable to heavy workload. Women were then assigned to more delicate tasks requiring patience to repetitive and continuous work such as in quality inspection, repair and part feeding into machines.

4. Female workers had burden to look after children and every house chores without any convenient appliances. These were tasks other than in the factory. Family forced women to work twice harder, and caused insufficient rest that led to tiredness and other sickness as well as stress.

Kitti ShiYalap (2001) studied the labor process, muscle pain and fatigue, and the use of non-narcotic analgesic drugs in industrial factory. This case study was in canned food production factory in the Bangkok vicinity area. The objectives of this research were to study relations between using analgesic drugs to heal muscle pains in workers and the labor process in canned pineapple unit in the factory. The research was mainly quantitative.

The study found that the use of analgesic drugs to reduce pain in workers resulted from the criteria of the labor process in the unit with technological components of production including division of labor on assembly lines and the use of machines to control rhythms and movement. Organization of production including policymaking and goal setting, bureaucratic management, scientific management, regulations and disciplines, selection and hiring, welfare, and motivation had forced workers to perform repetitive and continuous work for a long period of time. There were also specific works that caused repetitive and chronic pains around organs that were used the most during work. At the same time, this labor process helped workers gain more experience in using analgesic drugs whether by seeing others consuming them and receiving from factory administrator as well as from colleagues. From the

criteria mentioned, workers had used analgesic drugs to allow themselves to be able to work. The analgesic drugs had eventually become an important production tool in the labor process.

Boonleua Chimbanrai (1996) studied “Factors in management, workers and environment and relations with work-related accidents: Comparison of metal stamping factories with high and low Injury rate in Samutprakarn”. This research was a cross-sectioned study with an objective to study factors of work safety management. The samples were taken from 25 metal stamping factories with more than 100 workers in Samutprakarn. The workers were registered for compensation fund at Samutprakarn’s Social Security Office in 1975. The factories were divided into two groups, 597 workers from 14 factories with high rate of injury cases and 979 workers from 11 factories with low rate of injury cases. Data was collected by interviewing the management, inspecting the working environment, and testing of working safety attitude among workers.

The study found that factories with low number of cases had better quality of safety management, working environment, and safety condition than factories with high number of cases. When factors related to workers were analyzed by stepwise logistic regression, it is found that factors related to work-related accidents, in order of importance, were: education level below high school (OR = 1.84, 95% CI = 1.43 – 2.35), employment period of less than 2 years (OR = 1.74, 95% CI = 1.41 – 2.16), poor safety attitude in working (OR = 1.7, 95% CI = 1.38 – 2.11), and men (OR = 1.61, 95% CI = 1.37 -1.97). Age and working experiences were not found to have any relation with work-related accidents.

Somchai Laohapipatchai (1996) studied “Relations between health control belief and safety behavior of workers in an electric appliance factory”. The objective of this research was to study relations between health control belief and safety behavior of workers. The samples were 215 workers in an electric appliance factory. Data was collected using questionnaire and analyzed using SPSS/PC.

The study found that: (1) belief in health control and inner power related to safety behavior during work significantly at a confidence level of 0.05, but the awareness of risk of accident and benefit-threat, belief in other people’s power, and power of chance did not relate to safety behavior; (2) belief in health control could

predict safety behavior of workers at 2.08% at a confidence level of 0.05; (3) differences in age, employment period, education level, and children under responsibility showed no difference in safety behavior; and (4) workers with different gender had different safety behavior significantly at a confidence level of 0.05.

Suteekarn Eaimyingpanich (2000) studied “Occupational stress in the context of labor process under transformation of production system in textile industry of Thailand”. The objective was to study the relation between components of the labor process that had a changeover of production system under the production process and the stress of workers using both qualitative and quantitative. The samples were from a large textile industry factory that had replaced outdated production technology with modern one. There was a lot of hiring. The selection was specific for this case study.

The study found that, under the context of labor process, there was a bureaucratic organization structure with hierarchy. The factory produced spinning yarns using machines ranging from outdated to modern and automatic. The stress among workers was a result of conditions of the organization and production process. It was also resulted from capital collection in capitalist mode of production. This was reflected in terms of reactions, physical expressions, emotional variations, and improper behaviors as follow:

1. Physical reactions were reflected in a form of variable actions. Frequent encounters were tiredness, fatigue, pains, insomnia, digestion disorder, headache, deterioration of general health, and health problems resulting from unsuitable working environment.

2. Mental reactions were reflected in a form of feelings. The study showed that the stress pattern in workers was higher than average (average is 1.055). Reactions in a form of feelings and experiences with stress included uneasy and irritated feeling, boredom, worry, anger, doubt, emotional instability and letdown, personal conflict, burdensome, self-divided, and separation from colleagues and work. These feelings led to stress and lacks of satisfaction at work.

3. Behavioral reactions were responses to stress including conflicts among colleagues and various resistance such as anonymous letter, dissatisfaction with new factory regulations, avoiding work, and complaint. This also included self-destructive

behavior such as use of sleeping pills to relieve stress and fatigue from unsuitable work, as well as behavior that posed risks of work-related accidents.

Summary. From reviewing concepts and literatures in labor process and work organization, it can be seen that relations of production under capitalist mode of production determines social relation. It has changed social relation into relations of production of fleecing. The result of the change in this relation appeared in a form of work by workers called labor process, which is composed of production process and work organization to control the workers. Production process allows maximum fleecing of labor effort from workers by using automatic assembly lines that run continuously to increase work intensity. This forces workers to have rhythms and movements dependent on the paces of machines. Work organization includes work fragmentation that leads to division of labor along assembly lines, bureaucratic management with hierarchy, and personnel management using rules, regulations, punishments, and motivation. Other measures include lengthening of working time, giving low wage to force workers to work overtime, and forcing workers to use maximum labor effort. Thus, the labor process and the work organization have caused health problems resulting in stress, fatigue, and other risk factors that could eventually lead to work-related accidents.

CHAPTER III

RESEARCH METHODOLOGY

The research was designed as a qualitative were to study the characteristics of labor process and accidents in the factory and to study the relation between labor process and the industrial accidents of the laborers in a factory in Bangkok vicinity. The research design and methodology were as follows:

3.1 Selection of a factory sample

This research was conducted in a food cannery factory in Bangkok vicinity. The selection of the factory in this research was the purposive sampling. The factory has mass commodity production and uses intensive labors and machines to produce commodities. The factory has division of labors, hierarchy organization, production control with the assembly lines, scientific management with regulations, discipline and overtime working system.

3.2 Samples

The selected factory has 2,169 workers. The researcher studies the statistics of accidents in the factory between 1999 to 2002. Twenty labors who had accidents and visited nursing room were chosen to study. The selection base on the following criteria: to select the labors from the section that had frequency of accidents, the labors had accidents during the time that the researcher was working in the factory, after that there was the inquiry on the basic information and followed the labors to their houses for the in - depth interview, they willingly gave a good cooperation in the study. The researcher selected twenty samples and presented five samples as the case studies. The five case studies were the representatives of each section process. There were details about the life before entering. The labor process, the entering of the labor process, working process accidents from working, causes of accidents and the management of accidents.

3.3 Study Period

The study period used in this research was one year from January 1, 2001 to December 31, 2002.

3.4 Instrument used in Collection Data and Sources of Data

3.4.1 The instrument used in collecting data was the field note composed of survey and observation records, in – depth interview and labor survey.

1) The survey and observation records about the production in the factory composed of general working condition and work postures of labors, social relation among internal labors group and with employers or the representative of employers both inside and out side the context of labor process, production process, nursing welfare.

2) The in – depth interview was about general information of labors, information about health problems, health problems in working in the industrial factory, labor process, relation of labor process and problems on working accidents

3) The labor survey was composed of general information, working information, health problems and accidents (Details shown in the appendix)

3.4.2 There were two data sources: personnel data and document data.

1) The personnel sources were administrators, safety officer, supervisors, chief of labors, labors and factory nurses. (Details shown in the appendix)

2) The document sources were the records on accidents of the safety officers, the records of accidents in the nursing room and information issued by the factory and the announcement on every kind of boards in the factory area.

3.5 Collecting Data

3.5.1 Select the industrial factory with the determined characteristics. Then, the researcher contacted with the industrial factory to ask for a permission to collect the information within the industrial factory.

3.5.2 Survey general condition inside and outside the factory by using the observation and inquiry the administrative officers. Then, the data was recorded.

3.5.3 Study health background from the annual health examination in the registration records when the labors came for services in the nursing room. Such information was recorded.

3.5.4 Study the general information of the labors from the in – depth interview the labors who had accidents from working. The researcher found the information from the nursing room about the labor who had accidents. The researcher began to interview by introducing oneself and told the interviewee the research objectives. Then the researcher asks for a permission to use the tape recorder so that it would be convenient to collect the data. There would not be any interference in the interview. The data would not be brought for the bad image towards the interviewee. If the interviewee was not comfortable with the recording of the tape recorder, note taking would be used. The interview was composed of interview forms with simple language and friendly manners. The questions were open – ended so that the interviewee could give opinions as much as he wanted to.

3.5.5 Check the data collected from each day. If the data were not complete, the additional interview would be administer in the next day.

3.5.6 Analyze the data from each day and put in separate files.

3.5.7 The data testing for reliability and validity: In testing the data, the researcher should repeatedly ask the same, main research issues with many different labors indifferent times and places. This collected data would be proved with the document data, history of labors' health problem record and labors' accident record, accordance with the data from informal conversations with represent of employers and observation data.

3.5.8 Analyze all of the data, summarize and recommend.

3.6 Data Analysis

The data analysis was composed of the following steps:

3.6.1 Organize the data for the analysis

The data collection and data analysis were proceeded at the same time during the research process. In each day after collecting the data, the researcher would keep the record thoroughly and classify them. The data analysis was also conducted. The

data investigation was done for the convenience in final analysis. This would make the researcher know which data needed to be added.

3.6.2 Establishing Files were used to classify data from the interview and the observation. Both of the interview and the observation were descriptive so that it could be used for the analysis, and report writing.

The establishing files were divided into 3 types:

3.6.2.1 Background files

The files were classified according to the small topics and had the labels on the files so that they would be easily classified and search for the general data such as the background data about the factory, labor process and personnel information.

3.6.2.2 Analysis Files

These files were the heart of the total data analysis. In each day, after work, the researcher would study the data to find out the meanings of data such as problems causing the accidents of the labors and labor process from the interview and the observation. After getting the conclusion, the data would be kept in the analysis files. The files would be divided according to the small topics and made the labels of the titles as the background files.

3.6.2.3 Fieldwork files were the files about steps and data collection in each step of the performance including problems and solving the problems. These files demonstrated the research methodology

3.6.3 Sorting and coding the data were to classify the related information according to the files for the analysis

3.6.4 Conclusion was to explain the agreement of different data from the observation, the survey, the interview and the field work records in order to show the picture the research result.

3.6.5 Discussion was to discuss the research results and answer the research question including recommendation in the sense of policy and research in the future.

CHAPTER IV

GENERAL CHARACTERISTICS OF THE LABOR PROCESS IN THE FACTORY BEING STUDIED

4.1 General characteristics of canned tuna manufacturing industry

4.1.1 The development of Thai canned sea food industry

After Thailand started the National Economic and Social Development Plan Volume I (1960-1965), the state effort in the industrial development has led to the policy to replace importing industrial products by manufacturing ones. Although the canned sea food industry was not recognized during the period of the National Economic and Social Development Plan Volume I because government only emphasized in developing sugar, drinks, textile and houseware industries. While the economy continually developed according to the National Economic and Social Development Plan Volume III (1971-1975) and IV (1976-1980), the state policy was changed to support and encourage manufacturing for export as well as supporting investment in manufacturing industrial products of private sector, particularly, the manufacturing industry to replace imports and for exports. It was to reduce the commercial deficit and to seek more foreign income. In the policy of supporting private investment, Government founded the Board of Investment (BOI) in 1972, which was an important step in expanding the productivity of domestic industrial sector, in order to support investment and tax privilege. Additionally, the development of canned sea food was notably stressed in the National Economic and Social Development Plan Volume III, as there were some exports of canned tuna products already in 1970 and the government saw the opportunity in this industrial development.

The support of canned seafood industry started in 1972; the first who received was SAFCOL (Thailand) CO LTD. It was the joint investment, between domestic and transnational capital such as Australia and Taiwan, to produce the canned seafood for

selling in Thailand and worldwide. From 1973-1982, there were supports in ten of investment in canned seafood and transformed food. The total of all investment was 773.35 million baht and the export of canned seafood has expanded to the world market since 1975 which saw 2,780 ton of exports and increased to 65,769 ton in 1982. An important factor accelerating the development was the abundance of resources and their cheapness. The application of modern fishing technique also helped as the amount of sea lives caught has increased so much more than the domestic demand. While the ability to catch was high, the export was limited because of its poor hygiene due to the short of fundamental industry such as freezer industry. As a result of transnational investment, the technology-transferred occurred according to the demand of products, finally, met the hygienic standard of importing countries.

Canned and transformed seafood industries are the sort of manufacturing industry to respond to the demand of international market. The domestic demand is small comparing to the total amount of productivity. The canned seafood is consisted of canned tuna, canned sardine, canned crab, canned prawn, clam in pressurized package, and squid in pressurized package. The transformed sea food is consisted of many sea food products, for example, herring, sardine, anchovy, caviar, lobster, and crustacean such as clam etc.

There are about 70 factories in canned tuna industry, 20 of them do only canned tuna which can be grouped into small medium and large sized factory. There are about 58 factories considered as a standard large-sized factory. Small factories use available domestic material while medium and large factories use imported raw material. Most of factories are located near material sources in order to reduce the cost of transportation. While southern factories are located in Songkhla and eastern factories are located in Rayong but most of all are in Samutprakan, Samutsakorn and Bangkok. There are two reasons for locating in such areas. One is because many factories use import raw material, which arrives at ports in Samutprakan and Samutsakorn, another is that most factories produce many types of product including canned sea food and fruits. Because various types of material are used, the factory does not, therefore, have to be located near the ports.

4.1.2 Domestic canned tuna market

Thailand canned tuna market is quite small, as the amount of domestic demand is distinctively small comparing to the amount of the total productivity. Domestic consumer prefers canned sardine to canned tuna. Also Thai people eat fresh seafood a lot more than canned seafood due to the freshness and its availability. However, some producers have turned their attention to domestic market in the present, instead of producing only tuna in brine or in vegetable oil, they start making canned tuna fried with chilies, tuna steak, tuna in mild curry and tuna in green curry etc.

4.1.3 The export of canned tuna

In past 10 years (1989-1998) of exporting canned tuna, value of export increase 8.94 % per year by average. Each year Thailand has revenue from exporting canned tuna of more than ten thousand million baht. As a large canned tuna exporter in the world, Thailand was, actually, the world's largest exporter from 1989-1994 consecutively but the value of export started to drop in 1995 until hit the lowest point in 1996, the year when recession occurred. In that year the export had the value of only 12,384 million baht. The following year 1997 the value increased to 17,388 million baht and the value of exporting canned tuna, had the highest increment in the past 10 years (1989-1998), in 1998 is 25,176 million baht increasing from 1997 by 7,838 million baht.

Thailand's major exporting markets are United States of America, European Union and Japan, also there are some other minor markets like Taiwan, Canada, Singapore, Australia, Argentina and Brazil. Thailand is now the largest exporter in the world with other countries in nomination like Philippine and Indonesia. Perhaps, it is fair to say that the world's most important canned tuna exporters are countries in Asia as the amount of export is about 70 % of the entire world's amount. There are, also, some exporters from Europe such as Spain and Italy and countries from Africa such as Ivory Coast and Senegal etc. Nevertheless, Thailand has high standard and quality in manufacturing technology, a lot of labor markets to support production, its punctuality in delivery according to agreement as well as the effort in improving product's quality

all the time. All such attributes make Thailand play an important role in exporting canned tuna in the world's markets.

In the past ten years of exporting canned tuna to the world's markets (1989-1998), United States of America was the largest market. In 1998, the value of exporting canned seafood to USA was 25,176 million baht, which was 37.05 % of the total value of canned seafood export to the world's markets. For canned tuna, the value of export to USA was 7,530 million baht, which was 29.92 % of the total value of canned tuna export to the world's markets. At the same time, the value of export to England and Japan were 2,342 and 1,140 million baht, which were 9.30 % and 4.53 % of the total value of canned tuna export to the world's markets respectively.

4.2 General characteristics of the studied factory

From the study, it has been found that general characteristics of a factory are the history of industrial factory, physical character and the factory's location, characteristics of the production building and the factory's floor plan, the production process as the following details.

4.2.1 History of industrial factory

The studied factory is the canned food factory, specifically, canned tuna in brine, canned tuna in vegetable oil, canned tuna in tomato sauce, tuna in bag and tuna as a cat food. The finished product will be exported with the amount related to the order. Important export markets are USA, countries in Europe, countries in Middle East, countries in Asia and countries in South America. No such products will be sold in Thailand. The production is done upon the customized order by consumers, product is customer branded.

The origin of the factory

The factory opened on the 1st August 1988 with starting registered capital of 67 million baht. Early management was a family system, capital owner was the factory chairman joining by his wife, brothers and sisters as managing staff. A foreigner was hired as a factory manager and each section was managed and controlled by section manager.

The change of management

The factory changed its management during the economic crisis in 1995. It amended situation by let some of its labor have a break and pay them half-day labor fee in order to reduce some of the capital cost. A lot of labor resigned as a result of pay cut so that there were only 200-300 people remaining in the scaling section. The factory did ask for more loans from a commercial bank for rehabilitation. The bank approved the request under the condition that the factory must send the rehabilitated plan and the bank would send their man to control the factory management. Moreover, the factory must hire a professional management team to run the factory that involved hiring a foreigner to be a general manager, appointing a factory manager and dividing the management to different sections, appointing the production manager, finance and accounting manager, buying manager and quality control manager.

At the moment the factory has a registered capital of 80,000,000 baht. The managing director is a foreigner, the factory manager controls the production process, the personnel manager controls all the administrative management. The factory management is divided into different sections having section manager controls all the operations such as quality control section manager, fresh and steamed fish section manager, scaling section manager, packaging manager, product storage section manager.

4.2.2 Physical character and the factory's location

4.2.2.1 Factory's location and its environment

The factory is located in the suburban area of Bangkok. It is 500 meters off the main road. The two-lane road to factory is made of asphalt. There are two separated building in the factory itself, one is the production building and another is the goods storage. Also, there is a clear yard in front of the goods storage used for loading. Area around factory is residential area, dormitory for labor and small grocery shop made of dried grass and leaves.

4.2.2.2 The production building's character and the factory's floor plan

The factory has divided operational area as follows.

Office building

The office building has 3 floors, the ground floor is used as the manager office, personnel and administrative section, the first floor is used as financial section while the second floor is used as the blister pack section (packaging tuna).

Production building at the back of the office building

The production building has one floor with tile roofing. It has been arranged as following. The fresh fish section is located outside and to a side of building. It is in a clear area with tile roofing. It is also used as a pick up point of freezing tuna in order to checking size and quality before sending them to production area. This section's operation is using labor as its primary workforce. They are forced to work quickly according to the speed of fish belt in selecting the fish sizes.

Precooked fish section is located inside at the rear of building. It is again the section to use labor and the working tempo depends on the speed of fish belt as well as the working of the steaming pot.

Cleaning fish section is located inside next to the steamed fish section. Operation in this section involves intensive workforce (pure labor without machines involving). The working tempo is extremely quick under close control from supervisor.

Packaging can section is located inside the production building, next to the scaling section to the inside. Operation in this section involves combination of workforce and belt system machine. Working tempo depends on the speed of belt used for packaging canned fish and closing lid.

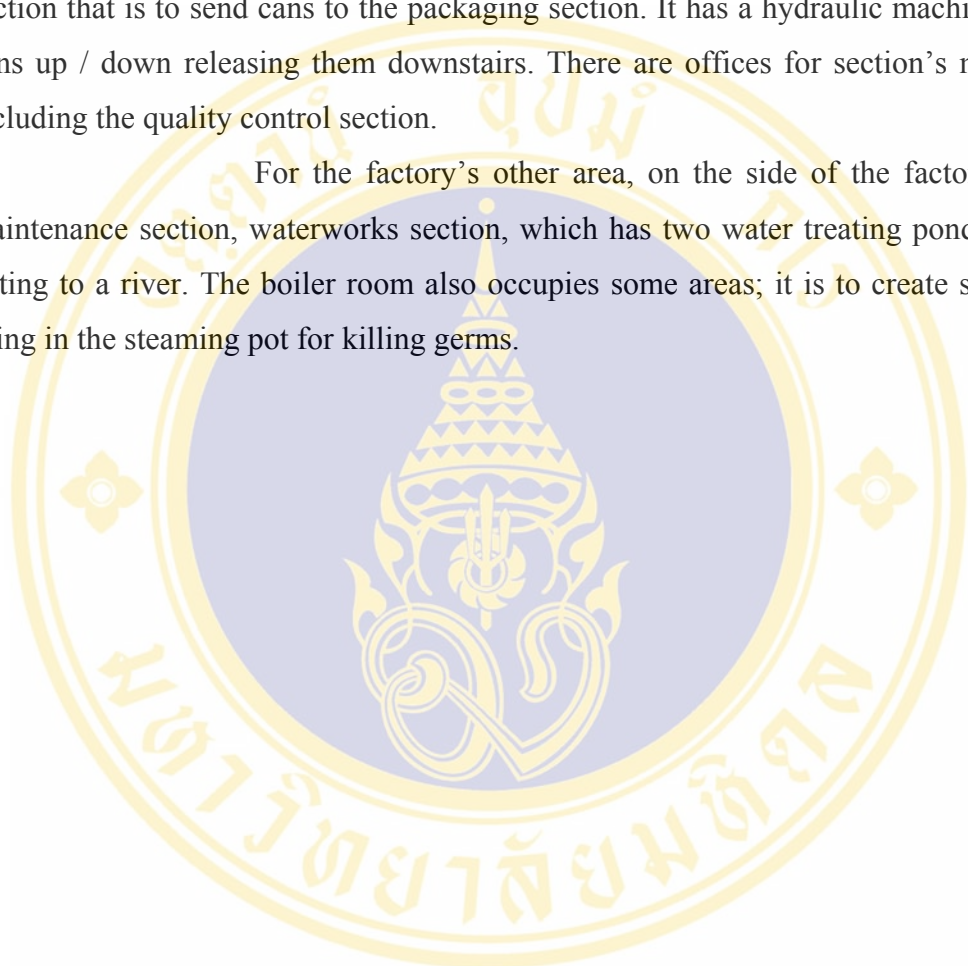
Retort section (sterilized section) is located inside the production building, next to the packaging section. This section is controlled by the sterilized machine, which has a strictly regulated on-off time in order to maintain fish quality.

Labeling section is next to the office building. Its operation depends on the speed of machine and the belt carrying products. It has a spare area for keeping products before sending to the goods storage.

Warehouse is a building to keep all the ready products before delivering to customers. It is a single floor building in front of the factory clearly detached from the office.

On the second floor of production building, there is a support section that is to send cans to the packaging section. It has a hydraulic machine to lift cans up / down releasing them downstairs. There are offices for section's managers including the quality control section.

For the factory's other area, on the side of the factory is the maintenance section, waterworks section, which has two water treating ponds before letting to a river. The boiler room also occupies some areas; it is to create steam for using in the steaming pot for killing germs.



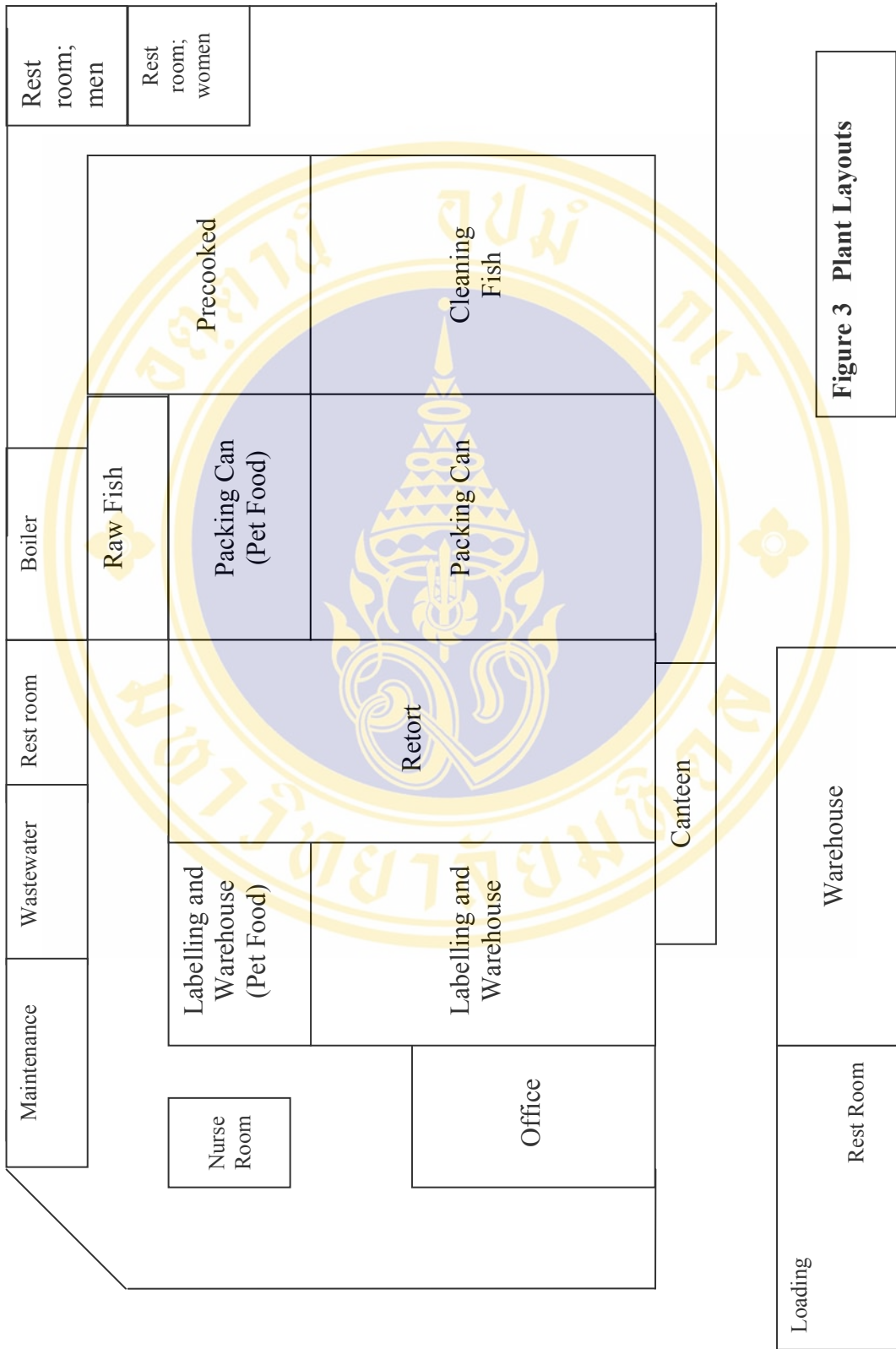


Figure 3 Plant Layouts

4.2.3 The factory environment

4.2.3.1 Physical character of building

The production building is a single storey building with high tile roofing. The wall is made of bricks with no holes. There is no allocation or zoning in the factory and the area inside is quite limited. When the factory increased its production capability without expanding the operating area, all the labor, then, had to work crowdedly in the same area.

In each section's floor, most of them are wet because of water and oil from each production process. Although, there are maids to clean them, the production is a continual process and it leaves water and oil on the floor all the time.

4.2.3.2 Dust and contaminated particles in the air

Dust is found the most in the labeling section and the goods storage. It comes from boxes and papers used to separate each storey of cans.

Contaminated particles are mostly found in the labeling section and warehouse section. They come from the cleaning chemical for cans such as alcohol, polishing oil and glue for product label. Additionally, exhaust from forklift used for transporting products from labeling section to warehouse creates smokes hanging everywhere. Labor has to work under this environment for continuous 12 hours a day and it makes them hard to breathe.

Other toxics are chemicals such as Caustic soda used to clean up machines, tools, fish trolley, steaming pot, Chlorine for hand washing before beginning their job, chemicals to mix with fish blood to make pet food. These chemicals do create skin and respiratory irritation.

4.2.3.3 Noise

Noise in the factory includes machine noise, forklift and noise of releasing can from upstairs. The loudest section is the packaging can and retort section and both are close to each other. The sources are the canning machine, noise of cans moving along a metal belt from upstairs and noise of steaming pot for sterilization. Labor in both sections do not have any noise protection. High level of noise can easily be felt by walking into these two sections. Shouting is an only method to communicate inside and the temporary lost of hearing is common after walking out. The second

loudest section is the labeling and warehouse section, raw and precooked fish section. These sections have noise from the forklifts delivering things between sections.

4.2.3.4 Heat

Inside factory is a quite hot environment and its air circulation is not very good as the building is fully closed. There are fans installed to different positions but they are insufficient to drain the heat. Especially, the sections to control fish temperature, such as raw and precooked fish section, have too little number of fans because the usage of fan will increase fish temperature and fish will be spoiled quicker. Furthermore, the precooked fish and retort section, which are the ones working with high temperature steaming pot, has a very high temperature atmosphere.

4.2.3.5 Light

Cleaning fish and packaging can section have highest light, there is a metal rail putting all over section for placing bulbs providing lights for labor. This is different to the raw fish section, which has to download fish from truck and they have very little light in front of the office where they are working. Labor has to use light from the forklift's beam while they are working. Labeling section has light only in the area of labeling machine, other areas for placing products do not have lights bulb.

4.2.3.6 Odor

There is always a smell of fish inside the factory. Raw and precooked fish section has most of the fish smell. However, once the fish is steamed, its smell is least reduced. Apart from that, in these sections there is smell from labor's sweat.

4.2.4 Social character and the studied labor's custom

4.2.4.1 Background

From twenty interviewed labor, most come from other provinces, notably from northeastern part, such as Surin, Burirum, Nakhon Ratchasima, Srisakes. The second most come from northern part such as Chiang Mai, Chiang Rai, Sukhotai and Phitsanulok. The third come from middle part of Thailand such as Utaithani, Supunburi and Nakhonpathom. There is one from Suratthani in the southern part.

Most labor comes from agricultural family, mostly farmer. Once the harvest season is done, labor will move to work in factories. Some of their income will be sent home for buying fertilizer, pesticide and hiring labor for harvesting.

4.2.4.2 Age

Most labor has an age upper 33 years old. The second have an age 18-25 years old. There are four in the group of 26-32 years old. Only three are found in the group under 18 years old.

4.2.4.3 Marital status

Most labor is married, as there are 9 married, 6 singles and 5 divorced.

4.2.4.4 Education

Most of them have graduated the third year of secondary school as there are 8 passed such a level, 6 graduated from the fourth year of elementary school. There are 5 who have graduated from the sixth year of elementary school and only one has graduated in diploma level.

4.2.4.5 Present accommodation

Most labor rent dormitory nearby the factory for its convenience in traveling. They come to work by walking and it takes them about 5-20 minutes. Labor living in the city stay with their parents. Their primary way of traveling is by factory bus, which its fee is responsible by the factory.

The rental rate of the factory dorm is 260 baht / month. In case of family dorm, the rate is 1,300 baht / month. Other dorm rental rate varies from 600 to 1300 baht / month.

In general, the room is small, some have their own bathroom while some must use a shared one. Most rooms have one entry door and one window with a circulated air duct on the ceiling. Kitchen, dressing and bedroom are in the same room. Most sanitation has draining pipe, but the pipe does not have any lid.

4.2.4.6 Income

Most labor receives daily pay at the lowest official rate of 165 baht / day according to the Labor Act of 2002. Later on in 2003, government changes the rate to 169 baht / day, so as the factory.

4.2.4.7 Working duration

There are 14 who have been working in the factory from one month to one year and 4 have worked here for 1-2 years. Only one has worked here for 4 years and another for 10 years.

Table 5 Characteristic of case studies

Name	Age	Section	Working Duration	Education	Back-ground	Marital Status	Accident
Miss. KanDa	25	Labelling	1y. 7 mo.	M.3	Surin	Single	Being nipped
Miss. Daw	19	Labelling	4 mo.	M.3	Buri rum	Single	Cutting
Mrs. Leela	42	Labelling	4y.	Pathom4	Phitsa nurok	Married	Being nipped
Mrs. Kanika	35	Labelling	2mo.	Pathom4	Nakhon Ratcha sima	Divorce	Being nipped
Mrs. Pranee	38	Labelling	1y.	M.3	Utai thani	Married	Being nipped
Miss. Nutcha	22	Packing	2y.	M.3	Buri rum	Single	Cutting
Miss. Wandee	17	Packing	7mo.	M.3	Sukho tai	Single	Being nipped
Miss. Supansa	18	QC	7mo.	M.3	Srisa kes	Single	Cutting
Miss. Sunisa	17	Packing	6mo.	M3	Srisa kes	Divorced	Being nipped
Mrs. Jarunee	38	Packing	10y.	M3	Surat thani	Divorced	Cutting
Mr. Manop	21	Packing	10mo.	Pathom4	Chiang Mai	Married	Cutting

Table5 Characteristic of case studies (cont.)

Name	Age	Section	Working Duration	Education	Back-ground	Marital Status	Accident
Mrs.Pet charat	31	Precooked	1mo.	Pathom6	Chiang Rai	Married	Cutting
Mrs. Somsri	42	Precooked	1mo.	Pathom4	Sukho tai	Divorced	Cutting
Mrs.Suda	39	Precooked	2y.	Diploma	Srisakes	Divorced	Eye injection
Mr.Dee	30	Precooked	2y.	Pathom4	Surin	Married	Being bumped
Mr. Sompung	25	Precooked	8mo.	Pathom6	Srisakes	Married	Cutting
Mr. Somsak	40	Raw Fish	1y.	Pathom4	Surin	Married	Being pierced
Miss. King kaew	16	Cleaning	6mo.	Pathom6	Ratchaburi	Single	Being bumped
Mrs. Jamsai	31	Cleaning	4mo.	Pathom6	Utaithani	Married	Cutting
Mr.Mana	27	Cleaning	4mo.	Pathom6	Supunburi	Married	Falling

Source: Nursing Room

From above information, it shows the general characteristics of canned tuna industry, the factory background, general character of laboring process in the factory, physical character and the factory's location, factory's environment, social character and the labor's custom. This information is to use in supporting and analyzing the relationship between laboring process with the accidental problems and health problems in the factory. In next chapter, researcher shall state about the laboring process and the factory's organization in details.

CHAPTER V

LABOR PROCESS

The labor process (definition in Page 7) of the factory under study (canned tuna factory) is composed of two components. They are the labor process and the work organization. In this chapter, the researcher will present details of the labor process including the raw materials in producing tuna and the production process of canned tuna. The work organization, including internal organization of the factory, bureaucratic management with hierarchy, work policy, labor recruitment and hiring, working overtime, motivation, rules, regulations and disciplines, and welfare, will also be presented.

5.1 The Labor Process

5.1.1 Raw materials used in production of canned tuna

5.1.1.1 Sources of raw materials

There are two sources of raw materials used in production of canned tuna including those that are imported and those that are from domestic fisheries. Most of the raw materials are imported, as high as 80-90% of the overall demand. The remaining 20% are from domestic source.

The raw materials from domestic source are small tuna. There are tongol tuna and bonito tuna. Both are not commonly used to produce canned tuna because of low demand in the foreign markets. Recently, skipjack from domestic fisheries are found to have smaller sizes. The amount caught has increased through the years since 1970. In that year, 4,682 tons of skipjack were caught. In 1992, the amount caught was 169,072 tons. Afterward, the trend decreases. In 1996, only 122,833 tons were caught. About 80% of the amounts caught are from the Gulf of Thailand. Fisheries in the upper and eastern region of the Gulf of Thailand are between October to April. Between May to September, fisheries move to the west

coast as well as the lower region of the Gulf of Thailand around Samui, Pa-ngan, and Erawan gas field. It can be seen that during 1993-1996, the amount of skipjack caught has decreased continuously. Even though Thailand has a deep-sea fishery ship, but that is only one ship and is still under experiment. This results in low ability to catch tunas that are deep-sea fish and are in international water, and the amount does not meet the demand of the industry.

Since Thailand cannot catch enough tunas to meet the domestic demand, producers of canned tunas have imported raw tunas in addition. The imported amount is 80% of the overall production. This is to guarantee sufficient raw materials for production as well as to reduce the risk of seasonal variation of the raw materials amount. There are three types of Raw and frozen tunas imported. They are skipjack, yellow fin, and albacore tunas. Skipjack contributes to 75-80% of the total amount imported, followed by yellow-finned and albacore. Most are imported from Japan and the U.S.A., followed by Taiwan, Singapore, Maldives, and Indonesia. The imported amount in 1992 was 430,109 tons valued at 18,396 million baht. This increased to 1,077,619 tons valued at 11,414 million baht in 1994. In 1996, the amount imported decreased to 319,164 tons valued at 8,909 million baht. It is expected that the amount imported will begin to decrease due to the problem of decreasing amount of tunas caught in the Indian Ocean and the Atlantic Ocean. This has caused the amount of tunas in the world market to have increasing trend.

5.1.1.2 Types of tunas

Tunas that are commonly used to produce canned tuna are in the Thunnidae family including both white meat tuna and light meat tuna. They are:

5.1.1.2.1 Skipjack tuna is most popularly used to produce canned tuna

a. Skipjack's general characteristics include full-round body, sharp tail, wide mouth, and medium eyes. Its first dorsal fin is stiff and high, while the second dorsal fin extends to the tail. The anal fin is toward the tail, while the tail fin curves inward. The distinguishing point is the 4-5 black stripes on the lower part of the body extending from the pectoral fins to the tail. The stripes remain visible even if

the fish has been dead for a long time. The back is dark blue and black, while the stomach is silvery white. Its skin is thin, and can be scratched by hard objects easily.

b. Skipjack's habitat is in open sea with deep water, some current, and temperature ranging between 15-25 degrees Celsius. They are easily detected when their school is chasing after their preys on the surface of water. They live in a school of large amount, and are found more in the Andaman Sea coast than in the Gulf of Thailand.

c. Skipjack is about 18-32 inches long, and is 3-7 kilograms in weight.

d. Skipjack's meat is reddish and soft, but when it is cooked, the meat becomes hard. The meat quality is lower than that of yellow fin and albacore since raw meat has darker color that results in lower quality once cooked.

5.1.1.2.2 Yellow fin tuna is the second most popular tuna in Thailand

a. Yellow fin's general characteristics include full-round body with tapered head and tail. It has a small mouth as well as wide and long pectoral fins. The first dorsal fin is hard and short at the middle of the body, while the second dorsal fin is long and curvy like the anal fin, and is bright yellow. The tail is also yellow with tail fin that curves inward. The back is bluish black that fades along the side of the body. The stomach is yellowish silver. There are small dots extending from the pelvic fins to the tail that are clearly visible when the fish is still young.

b. Yellow fin's habitat is in open sea with deep and clear water. They live along the rock strips in the middle of the sea or along the shoulder of the continents. Small fishes live in large school, and swim to the surface to catch their preys. Large fishes leave the school and feed in deep sea sometimes. They are found seasonally in the Andaman Sea coast. They are more abundant in Japanese water as well as in Australia.

c. Yellow fin is about 27-60 inches long, and is 7-25 kilograms in weight.

d. Yellow fin's meat is light and is chipped into flat layers easier than albacore and tongol. Yellow fin is popularly used in canned tuna production since it gives higher productivity than skipjack and other types of tunas.

5.1.1.2.3 Albacore Tuna (Long Fin Tuna) is the third popular tuna in Thailand.

a. Albacore's general characteristics include full-round body with tapered head and tail. It has a small mouth and crescent-shape tail. The first dorsal fin is dark yellow and hard, while the second dorsal fin and the anal fin is yellow and softer. The stomach is silver with white lower part. The distinguishing point is the long, sword-like pectoral fins that extend to the tail fin.

b. Albacore's habitat is in water with surface temperature of 15-19 degrees Celsius, as well as in deep water with temperature of 13-25 degrees Celsius. They are found mostly in the southern part of the Pacific Ocean, the southern part of the Indian Ocean, and in Central America.

c. Albacore is about 15-36 inches long, and is 4-15 kilograms in weight.

d. Albacore is the only type of tuna that can be used to produce white meat tuna. It is considered the best tuna for canning production since raw meat has a very light color.

5.1.1.2.4 Tongol Tuna

a. Tongol's general characteristics is like the other tunas, but it has longer body and wide and pointed mouth. It has large pectoral fins. The first dorsal fin is hard and high, while the second dorsal fin extends toward the tail. The back is dark blue and black. The stomach is silver. There are white dots from pectoral fins to the tail. The tips of every fins are grayish yellow.

b. Tongol's habitat is in open sea. They feed near the surface to half the depth. They live in school when small, and feed separately once they grow larger. They are found mostly in the South China Sea and the Gulf of Thailand.

c. Tongol is about 70-130 centimeters long, and is 15-20 kilograms in weight.

d. Tongol's meat is light color and firm.

5.1.1.2.5 Bonito Tuna

a. Bonito's general characteristics include round, tapered at the head and tail and wide and pointed mouth. Its dorsal fins are hard and high with large crescent-shape tail. The skin near the back has scale-like marks extending to the

pectoral fins. The remaining parts are smooth with no scales. The back is dark blue with black pattern from the dorsal fins to the tail. Every fins are black. The side of the body and the stomach are silvery white. There are 3-4 dots under the pectoral fin on each side.

b. Bonito's habitat is in open sea about 10-20 kilometers from the shore. They live in school and feed near the surface. They can be seen easily when the whole school chases their preys on the surface.

c. Bonito is about 18-32 inches long, and is 2-5 kilograms in weight.

d. Bonito's meat is dark and firm.

5.1.2 Production process of canned tunas

The production process of canned tunas is divided into sections as follow: Raw Fish Section, Precooked Fish Section, Cleaning Fish Section, Packing Can Section (for cats and for people), Retort Section, and Labeling and Warehouse Section. The canned tuna production steps are shown in the diagram below.

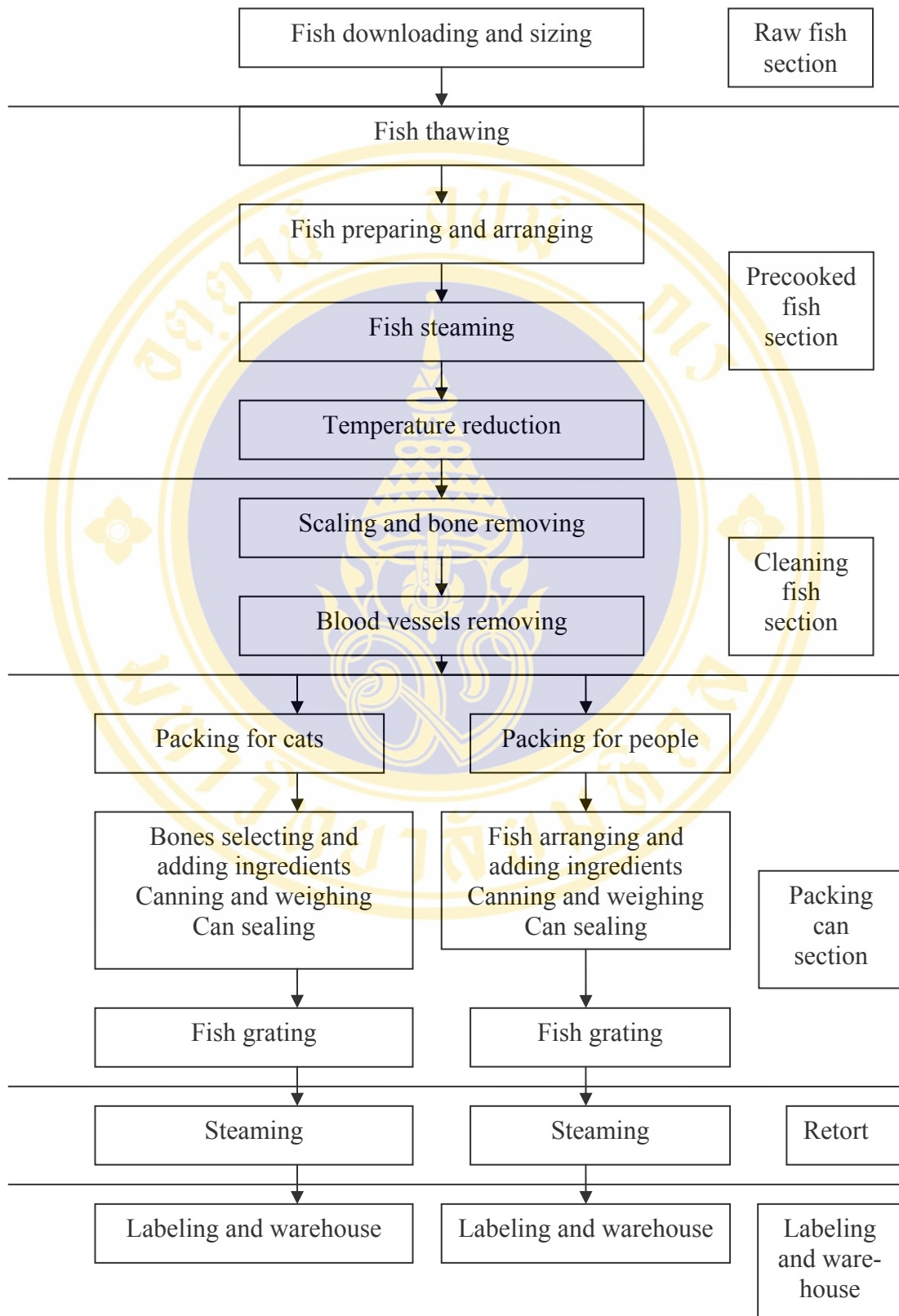


Figure 4 Production steps of canned tunas

Details of the working steps in each section are as follow.

5.1.2.1 Raw Fish and Precooked Sections

5.1.2.1.1 Raw Fish Section is responsible for unloading the raw materials from transporting vehicles and sizing of the fishes before moving on to the Precooked Section.

There are two steps in this section, unloading and sizing of the fishes.

a. Fish unloading refers to moving the fishes from transporting vehicles such as ten-wheeler trucks and container trucks on to the belt assemblies for sizing the fishes later on. Fish unloading is done at three locations, the loading zone in front of the factory, in front of the office, and in the Raw Fish Section area inside the factory. The location is chosen depending on the sizes of the vehicles and how ready each location is.

Frozen fish unloading are mostly done in front of the office or in front of the factory. Frozen fishes refer to frozen tunas that are transported via container trucks, which is big and long. It is impossible for the vehicle to enter the factory area. Each container can carry 25 tons of fishes. The container is sealed with opening at the rear of the container. The temperature inside is controlled to keep the fishes in Raw condition. The fishes in the container are of the same kind and size. Once the container is opened, there will be cold air spreading over 6-7 meters around the area. The unloading begins with maneuvering a forklift carrying two empty buckets to the rear of the container. The workers are divided into three groups covering three positions around the area. The three positions are in the container, on the buckets, and on the ground close to the container. Three workers will be in the container, and are responsible for unloading the fishes into the buckets. Another worker will be standing on the buckets (the side close to a cement-well beside the wall), and is responsible for putting the fishes into the buckets. The other two workers on the ground will be responsible for gathering the fishes that are dropped on the ground back to the buckets. Once the buckets are full, the worker driving the forklift will move the buckets to the Fish Thawing Section.

The step of fish unloading is labor intensive. The worker in the container will use his hands and feet to push the fishes toward the rear of the container, while the worker standing at the rear will slowly put the fishes into the buckets below. The worker will hold the fishes by their tails and slowly put them into the buckets (the bottom of the bucket is about 1 meter below the container). When about half the bucket is filled, the worker will use his hands and feet to push the fishes into the buckets. He will have to bend down and up throughout the process. The workers will need about 5 minutes to completely fill one aluminum bucket (600 kilograms). When the bucket is full, the worker driving the forklift will stack the buckets 2-3 stack high in front of the second container to carry the fishes inside. He will put more empty buckets at the rear of the first container so more fishes will be unloaded. Then, he will carry the buckets full of fishes inside to thaw the fishes. The workers inside the container will have to bend up and down continuously until the whole container is unloaded, which normally takes about two and a half hours. After all the fishes are unloaded, the workers will use a hose to spray water to clean the inside of the container. Each day there will be about 1-2 containers for unloading. When there is no unloading of frozen fishes, the workers will be unloading the fishes from the dock.

Unloading fishes from the dock refers to the unloading of fishes from a ten-wheeler truck. Each truck can carry 13 tons of fishes. Frozen tunas are carried on the trucks covered with nets and canvases. The fishes are of various sizes. This unloading is carried out at the Fish Unloading Section in the factory. The process requires three male workers to unload the fishes on to the belt assemblies.

The unloading area is in an open area under a roof. The unloading requires a steel structure on the ground next to the truck. The structure is as tall as the truck-bed. The front end of the structure is as wide as the width of the truck, while the back end is as wide as the belt assemblies. There are two tires on the steel structure. When the truck backs into the structure, a worker will chock the wheels of the truck to prevent it from rolling. Afterward, another male worker will use a hammer to move the steel pin that locks the rear of the truck. He will have to move away from the truck immediately once it is about to be opened. The rear of the truck

will drop on to the tires on the steel structure. Then the workers will remove the canvases and the nets from the truck.

Fish unloading is a labor-intensive process. Three male workers will get on the truck bed to unload the fishes onto the belt assemblies. Each worker will bend down to grab the tail of a fish on each hand and throw them onto the belt repeatedly. Once the fishes around the rear of the truck are unloaded, the truck driver will move the truck forward. A worker will remove the tires and put them under the steel structure. The truck driver will back the truck toward the structure again. The workers will put a piece of wood about 2 meters wide and is as long as the width of the truck. Three male workers will now start to unload the remaining fishes.

Each worker will have to bend down and grab a fish on each hand and throw them onto the belt assemblies. They will have to do this repeatedly. The workers will get to stretch when the fishes lying on the truck bed have been unloaded completely. They will have to throw a fish into the stack of remaining fishes to cause the fishes to slide down from the stack. Then they will have to bend down, grab the fishes, and throw them onto the belt again. The unloading of one truck-full of fishes requires about one hour.

Once the fishes have been completely unloaded, the workers will come down from the truck bed and clean their gloves and their hands. Some wash their feet and their boots using tap water. Some workers wear two layers of gloves. The insides are a pair of black rubber gloves, while a pair of black fabric gloves is worn on the outside. Workers give a reason that wearing two layers of gloves allow them to grab the fishes easier with no slipping. They say that wearing the rubber gloves on the outside cause them to be torn easily. They also show the torn rubber gloves that they wear inside as well.

The unloading of frozen fishes and fishes from the dock requires a division of male workers into groups. Each group will have three workers. Each group will take turn to unloading the fish. The remaining groups will size the fishes. When the first group finishes unloading, the second group will start the unloading. The first group will take turn sizing the fish instead. When all the groups have unloaded the fishes, the first group will go back to unload again. This keeps on repeating until all the fishes in every truck are unloaded for the day. The next group to

do the unloading will begin their turn the following day. For example, if fourth group was the last group to unload on the previous day, fifth group will be the first group to unload on the next day.

b. Fish sizing refers to selecting the fishes that have the same sizes and are the same kind into the same buckets. The sizing requires eight workers. The sizing area is next to the steel structure used for unloading. It is a two-level belt. The belt next to the structure is tall, about 3 meters long. The other belt is lower and is about 10 meters long. Each belt will have steel sides about 3 inches high. The side of the belt will have 7 scales to weigh the fishes placed along the length of the belt. In front of the belt will be twelve aluminum buckets, each capable of holding 600 kilograms of fishes.

The fishes used to produce canned tunas are divided into five sizes, very big, big, medium, small, and tiny. Very big fishes weigh 10 kilograms or more. Big fishes weigh from 7-9 kilograms. Medium fishes weigh from 3-5 kilograms. Small fishes weigh from 1-3 kilograms. Finally, tiny fishes weigh less than 1 kilogram.

The working steps are labor intensive, and are controlled by the belt assemblies. The weight workers responsible for sizing will have to stand along the side of the belt. Each worker will be assigned with which size of fishes they will be responsible for. They will have to keep their eyes on the fishes on the belt. If the fish passing in front of them is of the size they are responsible for, they will have to grab the fish and put it in the bucket. The workers are skillful in judging the size of the fishes. If they are not sure of how much the fish weighs, they will put the fish on the scale to check. The workers will divide the tasks as follow.

The first worker responsible for sizing will stand at the front end of the belt facing inward with two buckets behind him. When the fishes move along the belt, he will grab only the fishes weighing from 7-9 kilograms (big fishes). He will grab the fishes by the tail and throw them into the buckets behind. If he is not sure of the size, he will use the scale to his left to weigh the fish. If the fish is not the size he is responsible for, he will just wait for the next fish to come.

The second worker stands opposite from the first worker across the belt, but a little bit further away from the front end. He will have a bucket in front

across from the belt and a scale to his left. This worker is responsible for fishes weighing from 5-7 kilograms. If the fishes moving pass him is medium size, he will push them into the bucket or grab the fish and throw it into the bucket.

The third to the eighth workers will stand at the lower belt. They will stand next to the second workers. There will be nine buckets in front across the belt. They will be responsible for sizing the fishes that are 4-5 kilograms, 3-4 kilograms, and 2-3 kilograms. The first seven workers are male, and the eighth worker is female, responsible for sizing the fishes weighing 1-2 kilograms (with three buckets to the front and side). The scales are to the left of the workers (there are five scales with the third and fourth workers sharing a scale).

When the buckets are full, a worker will drive a forklift and carry the buckets away. The fishes are thawed inside. Another worker will drive another forklift carrying empty buckets to replace the full buckets. Each bucket requires different amount of time. Some buckets only take about 15 minutes, while others take up to 30 minutes to be filled.

To inspect the sizes of the fishes in the buckets, there will be a male worker with a hook walking back and forth in front of the buckets. He will see whether the fishes in the same buckets are of the same size. If the fish is of different size, he will use the hook to pull out the fish and put it in the bucket with the corresponding size. If he is not sure, he will throw the fish back on to the belt to have the worker weighing the fish on the scale. Then he will put the fish back to the corresponding bucket.

Quality inspection of the fishes is done during both the unloading and the sizing of the fishes. This is done by a worker from the Quality Control Section. This worker will have a basket put on a cart that he pulls with him. He will randomly choose a fish from each bucket and put them in his basket to have the fishes inspected for quality.

The fish sizing process is labor intensive, and is controlled by the belt assembly systems. Therefore, the workers must work according to the pace of the movement of the belt.

Raw Fish Section used to work one shift from 6:00 p.m. to 6:00 a.m. But when production increased to 120 tons per day, two shifts have been

employed. Each shift works for 12 hours, 8 hours of regular time and 3 hours of overtime. The first shift is from 6:00 a.m. to 6:00 p.m., and the second shift is from 6:00 p.m. to 6:00 a.m. The factory has changed the time again when production goal increased to 150 tons per day. The first shift changes to 8:00 a.m. to 8:00 p.m. while the second shift becomes 8:00 p.m. to 08.00 a.m..

5.1.2.1.2 Precooked Section is responsible for preparing the fishes for the production process. It begins with thawing, removing internal organs, size arranging, steaming, and reducing the temperature. Then, the fishes will be moved to the Cleaning Section.

There are eight steps in the Fish Steaming Section as follow.

a. Thawing of fishes that are normally frozen at -20 degrees Celsius. This is done by running water through the fish buckets for 2-3 hours. The water must have a temperature of 13 degrees Celsius or lower, so that the temperature of the fishes is around 5 degrees Celsius. If the temperature of the fishes is higher than 5 degrees Celsius, microorganisms and enzymes can cause the fish to start rotting.

There are two areas opposite each other to thaw the fish. The floor is covered with white tiles, and is slanted toward the back. The area is divided into three blocks, while the opposite side has two blocks. Each block can have three buckets laid out with another bucket stacked on top. A rubber mat is put on the floor before stacking up the buckets. The mat is about 1 foot wide, and is as long as the length of the floor. Above is a PVC tube to run water into each bucket. There will be a hose for each bucket. The water spilled over the bucket will have brownish white bubbles. The side and the back have drainage for the spilled water.

The relations between the weight of the fishes and the thawing time is according to the table below:

Temperature(°C)	1-2 kilograms	3-4 kilograms	5-8 kilograms
-13 to -16	2 hrs.30 min.	3 hrs.30 min.	4 hrs. 30 min.
-8 to -12	2 hrs.	2 hrs.30 min.	3 hrs. 30 min.
-5 to -7	30 min.	50 min.	1 hrs.

After the fish has been thawed to ± 5 degrees Celsius with the water of no more than 13 degrees Celsius, there will be a worker driving a forklift to move the bucket on to the floor. A male worker with a t-shape steel about 2 meters long will stick the steel into the sealed lid of the bucket, and remove the lid to allow water to drain out completely. He will then put away the steel, and the driver of the forklift will put the bucket on the hydraulic stand. Water runs out of the bucket as it is moved, causing the floor below to be wet. There are two hydraulic stands to pour the fishes. The driver will drive the forklift to put the bucket on the first stand, and remove the empty bucket (that has been poured) from the second stand outside. He will repeat this process alternately between the first and the second hydraulic stands.

The process of fish thawing is labor intensive in controlling the water temperature and the fish temperature, as well as the use of forklifts to move the buckets around.

b. Pouring refers to moving the fishes from the buckets onto the belt by using hydraulic stands for later production process. After the bucket is put in the hydraulic stand, there will be another worker controlling the stand to pour the fishes onto the belt. He will also spray water on the fishes for washing. Then, the fishes will be moved along the belt toward the process of arranging and removing of internal organs.

c. Arranging refers to putting the fishes in pattern suitable for the next process. This is done on another belt attached to the one next to the hydraulic stand. The belt is elevated to above waist-height of the workers. Workers will stand on either side of the belt. Behind the workers are steel barricades. There will be two workers, one male and one female, standing opposite each other on the beginning end of the belt. The fishes are arranged so that the bodies are slanted with the heads pointing away from the workers (pointing to the right of the cutter), and the tails pointing to the side of the workers. Arranging the fishes this way allows the cutters to remove the internal organs easier and more convenient.

d. Cutting and removing of internal organs requires two workers for cutting and six workers for removing of internal organs. The cutters will stand on either side of the belt. They will stand next to the workers arranging the fishes. The cutters will cut from the head toward the stomach using a sharp-end knife about 14

centimeters long. It takes about one second to cut each fish. The fish that has been cut will move along the belt for removing of internal organs. The workers will repeat this routine until all the fishes from the bucket are cut. They can stop only for lunch break.

Removing of internal organs requires six workers. They will stand opposite each other on either side of the belt with three workers on each side. They will use their left hands to remove the organs, their right hands controlling the knives, and remove the organs. The organs are thrown away into the square openings in front of the workers, and are moved back to the bucket next to the second hydraulic stand via a belt system. These organs will be purchased and converted to fish maw. The time taken to remove the organs is about 2-3 seconds. The workers will have to repeat their routine until all fishes from the bucket are taken care of. The workers must hold the knives with their right hands. If they are left handed, they will have to get used to using their right hands. If they cannot use their right hands, they will be removed and placed in other position. Most workers are female with only one male. The explanation from the supervisor was that female workers work faster than the male. The work characteristic is suitable for female. As for the male workers, they are more suitable with physical-demanding works like moving the grates.

Every workers doing the cutting and removing of internal organs wear head covers that extend downward to the chin in the front and to the shoulders in the back. Female workers wear red Hawaii-neck shirts with no pockets. Male workers wear black t-shirt with plain-color pants. Workers wear plastic aprons covering under the necks down to the ankles with white boots. Most workers wear plastic gloves on the left hands, while not wearing any glove on the right hands that hold knives. Only one or two workers wear gloves on both hands.

e. Washing refers to cleaning of the inside of the fishes. There will be two workers on either side of the belt toward the end to clean the fishes. The worker will use the left hand to take out whatever is remained, while using the right hand to spray water into the fish to clean. The fishes that have been cleaned will be put on the third belt, going around the cutters. The workers doing the washing control the flow of the belt. If the cutters cannot work fast enough, the washer will stop the belt from moving. The stop button locates at the end of the belt.

Quality inspection of the fishes is done by workers from Quality Control Section (QC). The area used for inspection is the end of the cutting belt. It has elevated steel floor about 1 meter high with steps. There are three steps to the inspection, observing the skin, checking the Rawness, and smelling. The worker will see whether the stomach of the fish is burst or not. If it is, the fish is of low quality. The skin is observed to see the amount of scratches, whether there are rust and paint on the skin (if there is, it will be sent to the Cleaning Section for further inspection). Rawness is checked by pressing on the fish. If the fish is soft, it is not fresh. Smelling is done to see whether the fish is rotten or has any other odor. If there is any smell, the fish will be taken out. The next inspection is the temperature of the fish by sticking a rod into the fish. The temperature must be ± 5 degrees Celsius. If the temperature is higher or lower than this, the steam room must be notified to adjust the pressure and time used in steaming the fishes.

f. Sizing refers to putting fishes of the same kind and weight on the same grate for steaming process. Fishes that have been washed are arranged on a grate. The grates are divided into 7 levels. Each level is separated into two sides, and are free to move up-down and in-out. Male workers will roll the grates into a structure called lift. There are a total of twelve lifts. After the grates are rolled into the lifts, a steel strip is put around the grates. On the top of the lift, there is a steel chain used to pull the grates to a desired level. There will be a level control in front of the worker. Small fishes are arranged along the width of the grates, while medium and big fishes are arranged along the length of the grates.

Workers arranging the fishes will stand on an elevated steel base (behind the cutters). The first worker will arrange grade D fishes, followed by workers responsible for grade C and grade B, respectively (there are a total of eight workers). There are four grades of fishes as follow.

Grade A fishes are Raw with no scratch on the skin. The stomach is not burst with red gills and firm body. Most fishes for canning purposes are not found to be this grade, since they are frozen.

Grade B fishes have scratches less than 10% on the skin with clear eyes. The stomach is not burst with red gills and firm body.

Grade C fishes have pale skin with scratches and a little burst on the stomach.

Grade D fishes have sloppy skin with burst stomach, protruding bones, and dark green gills.

When workers have arranged the fishes fully on the grate, another male worker will remove the steel strip and roll the grate to the front of the steam room.

g. Steaming is done in the steam room. The area in front has brown steel floor full of blood and water. The area is about 2 meters wide. The rolling of a grate is very difficult. One grate requires 2-3 male workers to roll. If the grate is not full, two male workers will lift one level of the grate onto the empty grate. If the slot is high, the workers must swing the grate a couple of times before being able to put the grate into the slot. Below this area are twelve steam rooms. The center will have a small tube of about 10 centimeters at the diameter that provides the heat. To roll the fishes into the steam room requires the use of a steel bridge to link between the floor and the room. Each room can accommodate 6 grates. Once the room is full, the worker will close the room by screwing around the door. There are a total of 10 screws. The workers must use a lot of effort in screwing. Tall workers can screw the screws near the top easier, but has difficulties in screwing the screws close to the ground that sometimes cause back pain. On the other hand, short workers must jump up to screw the top screws. Some would stand on the steel bridge so that they can screw the screws easier.

Fishes that have been washed are steamed at a temperature of about 95 degrees Celsius at a pressure of 1-2 bars for 60-90 minutes depending on the size and kind of fishes. The steaming is done to remove the skins and bones from the meat, which makes Cleaning easier. Furthermore, it increases the elasticity as well as allowing protein to precipitate.

The temperature of the steam room is controlled by a panel of buttons on top of the room. Female workers will control the amount of steam coming out of the room. There will be steps extending from the side of the room, as well as a walkway connecting all 12 rooms (at the clerk's table, one can feel the heat radiating from the room; the time of observation was during the winter, so it felt warm).

h. Temperature reducing is done after steaming. Male workers will unscrew the doors at the back of the steam rooms. They will put a steel bridge between the room and the ground. The workers use slings to move the grates out of the room. The grates are pulled to the area in the back where there are tubes with small holes that spray water droplets onto the grates. This reduces the temperature quickly. There will also be another male worker at the end of the belt to control the pulling of the sling.

The temperature of the fishes is checked immediately after the door of the steam room is opened. It is done by female workers from the Quality Control Section and A steel rod is used to pierce the bones at the center, which is the thickest part, to see whether the temperature is as required.

Works are divided into two shifts as follow.

First shift is from 9:00 a.m. to 6:00 p.m.

Second shift is from 11:00 p.m. to 8:00 a.m.

Working time in each shift is the normal eight-hour working time plus three hours of overtime, totaling twelve hours. Afterward the factory has changed the working time due to new production goals from 120 tons per day to 150 tons per day, and the working time has been adjusted. The first shift becomes 8:00 a.m. to 8:00 p.m., and the second shift becomes 8:00 p.m. to 8:00 a.m.

5.1.2.2 Cleaning Fish Section

This section brings the fishes that have been steamed and remove the skins, bones, and blood vessels. Only the meat will remain after the process, and is ready for packing. Fishes that have been scaled are divided into four groups according to the length.

5.1.2.2.1 The work process of this section is labor intensive. The process is divided into two parts, removing of skins and removing of blood vessels.

1) Removing of skins are divided further into 3 steps as follow.

a. Moving the fishes into the Cleaning Fish Section requires two male workers. The workers will roll the steamed fishes from the cooling room into this section. The fishes are weighed on a scale. Another worker will record the scale

readings. Then, the fishes are rolled toward the table to remove the head. The first worker will bring out a tray from a stack on the table, and pull the grate almost all the way out. The grate is lowered, and the worker will carry the fishes onto the tray, 2-3 fishes for each tray. If the fishes are very big, only one fish can be put in each tray. Then, the tray will be pushed toward another male worker to remove the heads.

b. The worker will remove the heads and put them in the tray below. The brain stems are put in another tray on the table. After the heads are removed, the tray is pushed toward another worker, who will distribute the fishes to other workers to remove the skins.

c. Removing the skins is done on three rows of tables, three tables in each row. Each table will have workers on either side. The tables are stainless steel with racks at the middle. The racks have two levels (totaling three levels when also considering the tabletop). The top level is for bones and brains, the second level is for scaled fish, and the tabletop is for the fishes that are not yet scaled.

Removing the skin is done at a table where five male and female workers are to perform the tasks. The male workers will carry the fish on the left arms with the fish extending over the forearm, and use the right hands to hold the knives to remove the skins. The left hands will move the fish around until the skins are completely removed. Some female workers will do the same thing, but some will have the fish on the tray. They will use the left hands to move the fish around, and remove the skin using knives on their right hands. After the skins are completely removed, the fish is cut to remove bones. The bones are put on the top rack. The fish that has been scaled is put on the second rack, and the workers work on the next fish. Workers will continue this routine task repeatedly, while standing at the same place. They have to work statically, and will get to rest when the supervisor stops for lunch break. Fishes with the skins removed are to have blood vessels removed next.

The target of removing the skins is set by the management. Each worker must be able to remove the skins of 50 fishes in one hour. To check for this rate, workers collecting the bones are to count the number of bones that each worker left on the tray. When the factory has increased production to 150 tons per day, the target has also been changed. Each worker is now required to remove the skins of 60 fishes in one hour. This causes the workers to work hurriedly.

The skin removing area and the blood vessels removing area are separated by a white-tile wall about one meter high. There are three passages big enough to allow one fish cart to pass at any moment. The wall is to separate the dirty zone from the clean zone. The skin removing area is dirty, while the blood vessels removing area is clean. Earlier, both are done on the same tables. Later, management has changed this after customers commented that it causes the meat to be dirty. So they are separated from each other ever since.

The skin removing area is full of water dripping out of the fishes, as well as the skins. There will be workers cleaning the mess all the time, but the floor remains a mess, slippery and risky of falls. The workers will have fish skins all over their arms, shirt sleeves, aprons. Their shirts have yellow stains under the armpit area.

Moving the fish to the clean area requires that workers from the dirty area put the trays on the cart at the other side of the wall. A worker in the clean area will distribute the fishes along the tables so that the workers can remove the blood vessels.

2) Removing of the blood vessels has 4 steps as follow.

a. Distribution is done by a worker rolling a fish cart. The trays are put at the middle of the table. There will be more than one worker distributing the fishes so they must roll the carts pass each other. The space is limited, and they must not run into each other as well as not hitting the workers standing at the table.

This area works in lines. The first shift and the second shift are not the same. The first shift has 9 lines, while the second shift has 5 lines. Each line has 10 tables. Each table has about 5-6 workers. The first and the second line are of experienced workers that work fast. So there are only 4-5 workers at each table.

b. Removing of blood vessels are done on stainless steel tables. Workers stand on either side of the table. The arrangements are much the same as skin removing tables with racks at the middle of the table. The top rack is for blood vessels, the second rack is for the fishes that are finished, and the tabletop is for the fishes to be worked on. Each worker will have two trays in the front, one for the blood vessels, and the other for pieces of meat. Workers will put part of the fish (about 1 in 4 of the whole fish) on their left forearms, holding the knives in their right hands and

removing the blood vessels until only the meat remains. Then, workers will turn the fish over and remove any remaining skins. When done, they will put the fish on the second rack, and start with the next pieces. The work is routine, continuous, and repeated. Workers must stand in the same place throughout the process. They have to strain their left arms to hold the fishes, and their right hands to hold the knives. They will get to rest only when the supervisor dismisses them for lunch break.

The target of removing the blood vessels is set by the management. The section is required to scale 10 tons of fishes in one hour. So each worker is assigned the amount for each hour. Experienced workers must remove the blood vessels of 10 kilograms of fishes in one hour. Other workers are required the rate of 7-8 kilograms per hour.

c. Collecting the fishes after removing the blood vessels is done by workers with collecting carts. The cart has a scale where the fishes are weighed. This is done to check the work rate of the workers whether they meet their targets of removing the blood vessels. Collection is done continuously. Supervisors will observe the workers constantly, and will check each worker's productivity in the book every hour. If the supervisor found that any worker is working below the required rate, the worker will be approached and rushed with loud noise. This rush can be on the whole table or on individual. Workers that are rushed will have serious expression on their faces. They will hurry to work as fast as they can. The finished fish is rolled toward the back of the section ready for the Packing Section. The shredded fishes and the blood vessels are taken to the Fish for Cat Section.

d. Shredded fishes are taken to the tables next to the Fish for Cat Section. Bones removal is done on the stainless steel table. Workers will put shredded fishes on the middle of the table. Workers at the table will gather the fishes in front of them, and use their hands to move the fishes around to remove the bones. Workers use both their hands to put shredded fishes without bones on trays at the middle of the table. The workers must stand in the same place all the time. They will have to strain their eyes to look for bones and remove them from shredded fishes.

5.1.2.2.2 Working time of the Cleaning Section

Work in the Cleaning Section is divided into two shifts. The first shift is from 7:00 a.m. to 4:00 p.m. The second shift is 5:00 p.m. to 3:00 a.m.

Workers in the first shift are assigned different start time to ensure continuous labor process. The preparation team will start to work at 6:00 a.m. The skin removing team starts at 6:30 a.m. And the blood vessels removing team starts at 7:30 a.m. During the period when the first shift overlaps the second shift, there will be about 800 workers in the Cleaning Fish Section with limited space.

The end of each shift is not certain, depending on the order of how much fish must be scaled each day. If a lot of fishes is required, each shift must extend the work period. The working period also depends on the sizes of the fishes. Small fishes require longer time. Some days, workers on the first shift have to work 5-7 hours of overtime, while workers on the second shift have to work 3-4 hours of overtime.

The working time in the Cleaning Section has been changed since the factory has increased production to 140 tons per day. The factory has recruited more workers to divide the work into two shifts. Many newly hired workers leave the factory after a short while. The factory then returned to single shift, but extending working time further 5-8 hours. The first group starts to work at 7:30 a.m. and the second group starts at 10.00 a.m. A little while after the shift change, the factory was able to hire workers to replace those that left. The factory then went to two-shift system like before.

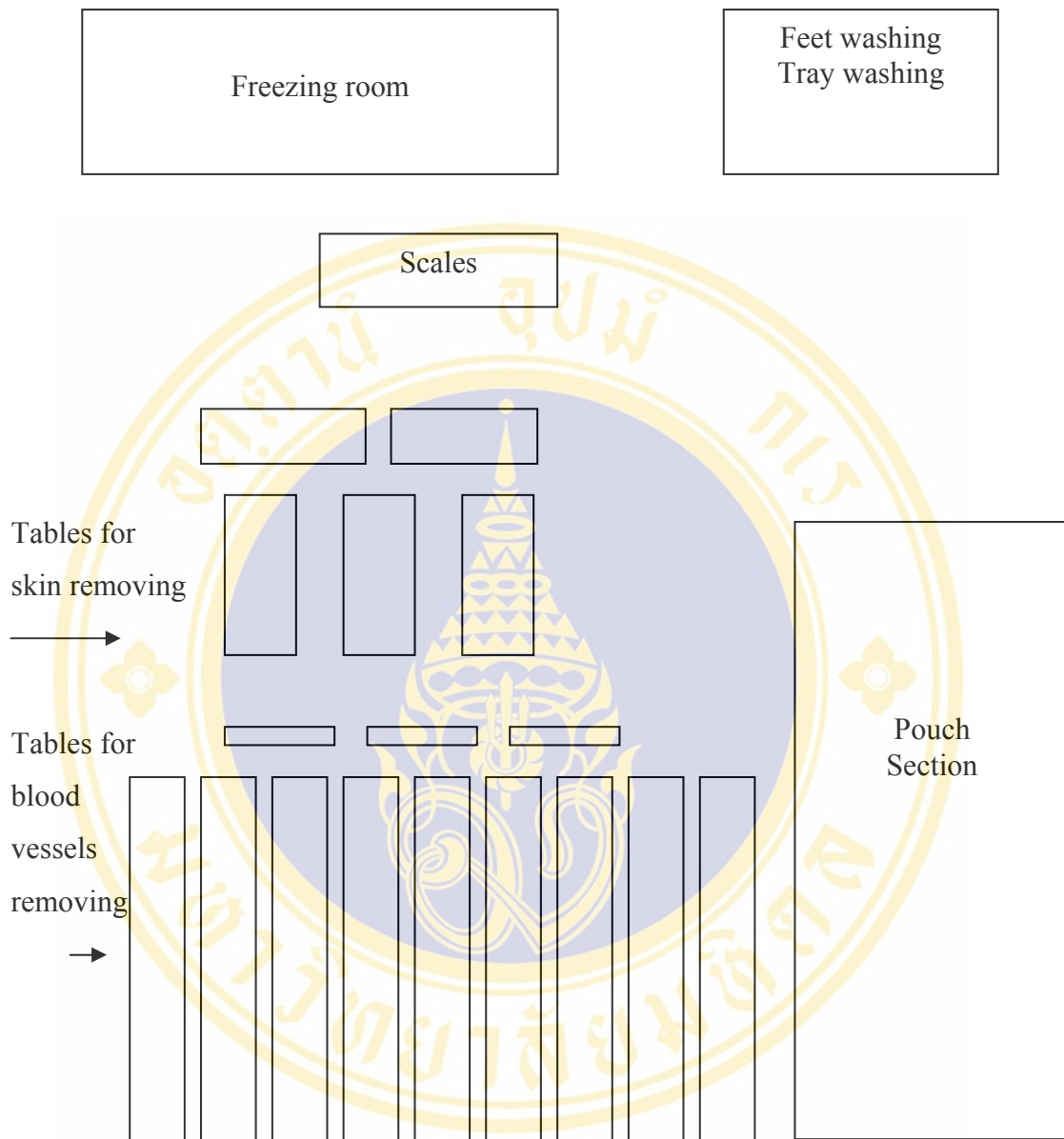


Figure 5 Cleaning Fish Section

5.1.2.3 Packing Section

Packing Section is responsible for canning the fishes. This section is divided into two subsections, Packing Section and Cat Food Section.

5.1.2.3.1 Packing Section is responsible for bringing fishes that have been processed earlier, and can them in desired sizes and weights. Ingredients are added including water, saline and sunflower oil. Then the cans are sealed, washed, and arranged in grates ready to be retorted.

There are three types of fishes to be packed, shredded, chunk, and solid. Shredded pack is small pieces of fishes. Chunk style is large pieces of fishes. Solid pack is the same as chunk style, but it is done more neatly.

a. Grated or Shredded Pack

Shredded pack is the use of small pieces of tunas with lower quality. The pack consists of 188 grams tuna meat and 95 grams ingredients. The ingredients include water and sunflower oil. The machine for shredded pack is composed of three parts, the head, the middle and the end.

The head of the machine is responsible for mixing the fishes. There are two sizes, grate and shredded. Workers must weigh both sizes in the portion specified, 2 kilograms of grated and 8 kilograms of shredded. The portions are put in trays and are laid out on a table in front of the machine. Weighing is done in front of the table using a scale locating to the left of workers. The scale is on a cart carrying the fishes. The cart has 6 levels; each level can hold two trays of fishes. Once the fishes are weighed, the trays are pushed toward workers responsible for mixing.

Mixing is done on a 2 x 1.5 meters aluminum table. The tabletop is about 5 centimeters high. There are two workers mixing the fishes. They stand opposite each other across the table. The workers will dump fishes from both trays onto the table and start to mix. After the fishes are thoroughly mixed, another worker will put the fishes into the bucket next to the machine.

The bucket is made of aluminum and is about 10 centimeters deep. Next to it is a slot for putting cans. These cans are released from the Service Section on the second level of the factory. The cans travel down an aluminum rail. The worker will use both hands to gather the fishes down into the cans, trying to put

the same amount into each can. The cans packed with fishes travel along a chained belt toward the middle of the machine.

The middle part of the machine is responsible for weighing the cans. The cans travel on a rubber belt with aluminum wires on top. The wires divide the belt along its length into three parts. Either side is for the cans that have been weighed, while the middle is for the cans that have not been weighed. Both sides of the belt have aluminum plates attached to it. There are ten workers responsible for weighing, five on either side. Each worker has aluminum trays on their left. The scale is on the tray as well as shredded fish. If the weigh is below the required weight, shredded fish is added to the cans. The scale is more like a balance with two arms. On one arm is a salt jar. The can is put on the other arm. The worker uses the right hand to pick up three cans at a time, and put them next to the tray. During weighing, if the needle points 3 scales to the right, it means that the can has the right weight. The workers will put the weighed can into the slot on the belt closest to them using their left hands. If the weight of the can is too light, the workers will add more shredded fish. If the weight is too high, the workers will take out some meat from the can.

The end part of the rail is for adding ingredient, seaming and can washing. There is one worker responsible for adding ingredients. There are two pails containing ingredients. The first pail contains olive oil, and the second pail contains saline. When the olive oil in the pail runs out, the worker will drain the oil into a basin. There is a pump that pumps the oil back into the pail. This is the same as for saline in the other pail. Both the olive oil and the saline travels downward in tubes. The lower part of the tubes has 5 holes. When the cans pass through along the belt, olive oil and saline will flow into the cans in specified weight. The worker will check for the weight of the ingredients by putting empty can on the belt to let the ingredients flow into the can. Then, the can is weighed to check for the amount of the ingredients.

Seaming is done next to the ingredient adding. The seammer is composed of three gears that send the cans into the seammer. There is one worker responsible for putting in the lid, while another worker is responsible for checking the seam. The worker will randomly choose a can leaving the seammer for inspection. The inspection requires touching and feeling of the seam. The worker will hold the can on the left hand, and will use the right hand to check the seam. If the can passes

the inspection, it is put back onto the belt. The seam inspection requires another worker from the Quality Control Section. This worker will take 10 cans on the tray for inspection each time.

Can washing is the last step in the Packing Section. Seamed cans will travel on the belt toward the can washing machine. The machine is a long enclosed rectangular rail made from aluminum. Inside the machine is hot water. Cans that have been washed will travel on the belt onto a disk for the Retort Section. Seamed cans are arranged on grates. Another worker with a PVC tube will sweep the cans onto the grates. The cans are arranged in levels separated by plastic sheets. When one layer is arranged, the worker can move the grates up or down using the hydraulic adjustment button located to the right of the worker. This enables the worker to work without having to bend up and down.

b. Chunk or Chunk Style

Chunk style is the fish meat that still has the original pattern. Chunk pack has more pieces of fish than solid pack, and is small (not smaller than 1.2 centimeters). The ingredients include water, saline, or sunflower oil. The machine is composed of three parts, the head, the middle, and the end.

The head of the machine is responsible for packing the fishes. There are four workers working in this area. The first worker stands at the head of the machine, facing the belt assemblies consisting of three belts. The first belt rotates from top to bottom across the horizontal of the machine. The second and third belts are on the vertical, and are on either side of the first belt. The second and third belts will rotate from the head to the end of the machine. Workers will pick up chunks onto the belt as the first layer. The worker will put the chunks continuously not to leave any space. The second worker stands next to the belt, and is responsible for picking up small pieces of fish from the aluminum tray and putting them into the slot as the second layer. The third and the fourth workers are responsible for arranging the larger pieces of fish on top. The fish will travel on the belt toward the cutting machine, which will cut the fish into slices. The fishes that have been sliced are packed into cans that travel down the rail.

The middle part of the machine is responsible for weighing the cans. There is a belt with steel plates that separate the belt into three parts along its

length. The sides of the belt have aluminum used to weigh the cans. There are ten workers responsible for weighing, five on either side of the belt. Cans will travel on the outer edges of the belt. The first worker uses the right hand to pick up a can from the belt and weigh it on the scale on top of a tray. The scale has two arms with a salt jar on one arm. The other arm is for putting the can to be weighed. Once the worker has weighed the correct weight, the can will be put in the center slot of the belt. If the can is too light or too heavy, the can will be put in the slot closest to the worker. The next worker will weigh the can. If the can is too heavy, the worker will use a chopstick to remove the fish from the can. The worker holds the can on the left hand and operates the chopstick on the right. The can is held with the thumb, the forefinger, the ring finger, and the little finger. The index finger is above the can to press on the fish and the can. When the weight of the can meets the specified amount, the can is put in the center slot of the belt. Sometimes there are too many cans traveling down the belt, and the workers cannot weigh the cans in time. The workers then will take 3-5 cans out and place them on the aluminum next to the workers. The weighing is done continuously until all the cans have been weighed. The last worker at the belt is responsible for leveling the surface of the fish in the can. The worker will use a rubber disk with handle on the right hand, and punch it on the fish so that the top part is leveled. Then the cans travel toward the end part of the rails.

The end part of the rail is responsible for adding ingredients, seaming, and can washing. The cans that have been weighed will travel on the chained belt for ingredients adding. The ingredients are in stainless steel pails above the belt. Below the belt is a basin to catch ingredients that do not fall into the cans. There is a pump to pump the ingredients back to the pail. The ingredient used on the observation day is saline. Saline flows from the pail downward in a tube. The tube has holes for saline to run into the cans. There is a worker responsible for adding ingredients. The worker controls the amount of saline running into the can. If the saline runs out, the worker will add more saline into the basin below, and it will be pumped back up to the pail. The worker uses the right hand to slow down the flow of cans so that the desired amount of saline gets into the can. The worker will check for the amount of saline constantly by putting empty cans on the belt to catch the saline, and

then weighing the can. If the amount of saline is less than desired, the worker must slow down the movement. The cans are ready for seaming.

Seammer is circular with three gears that move the cans into the machine. There is a worker responsible for putting in the lids. After the can is seamed, it will travel onto a round tray. Another worker will inspect the seam. The worker will randomly pick a can, hold it on the left hand and feel the seam with the right hand. If the worker found flaws with the seam, the maintainer is notified to repair the seammer. The worker will put the good cans on a round tray. There will also be an inspection by workers from the Quality Control Section. The worker will randomly pick up 10 cans for inspection each time. The cans that have been inspected will enter the washing machine, which is an enclosed rail. The rail slopes upward. The inside contains hot water. The cans that have been washed will travel to the Retort Section.

c. Solid or Solid Pack

Solid pack uses cooked tuna meat that is cut across and put in a can. There are about 3-5 pieces of fish. There are two sizes of cans, 7.0 ounces and 66.50 ounces. The 7.0 ounces can contain a piece of fish of same thickness without any flake. The 66.50 ounces can contain many layers, each layer having the same thickness of no less than 2.5 centimeters. Flake is allowed at lower than 18% of the weight of the fish. The steps are almost the same as chunk pack, but it is done more neatly.

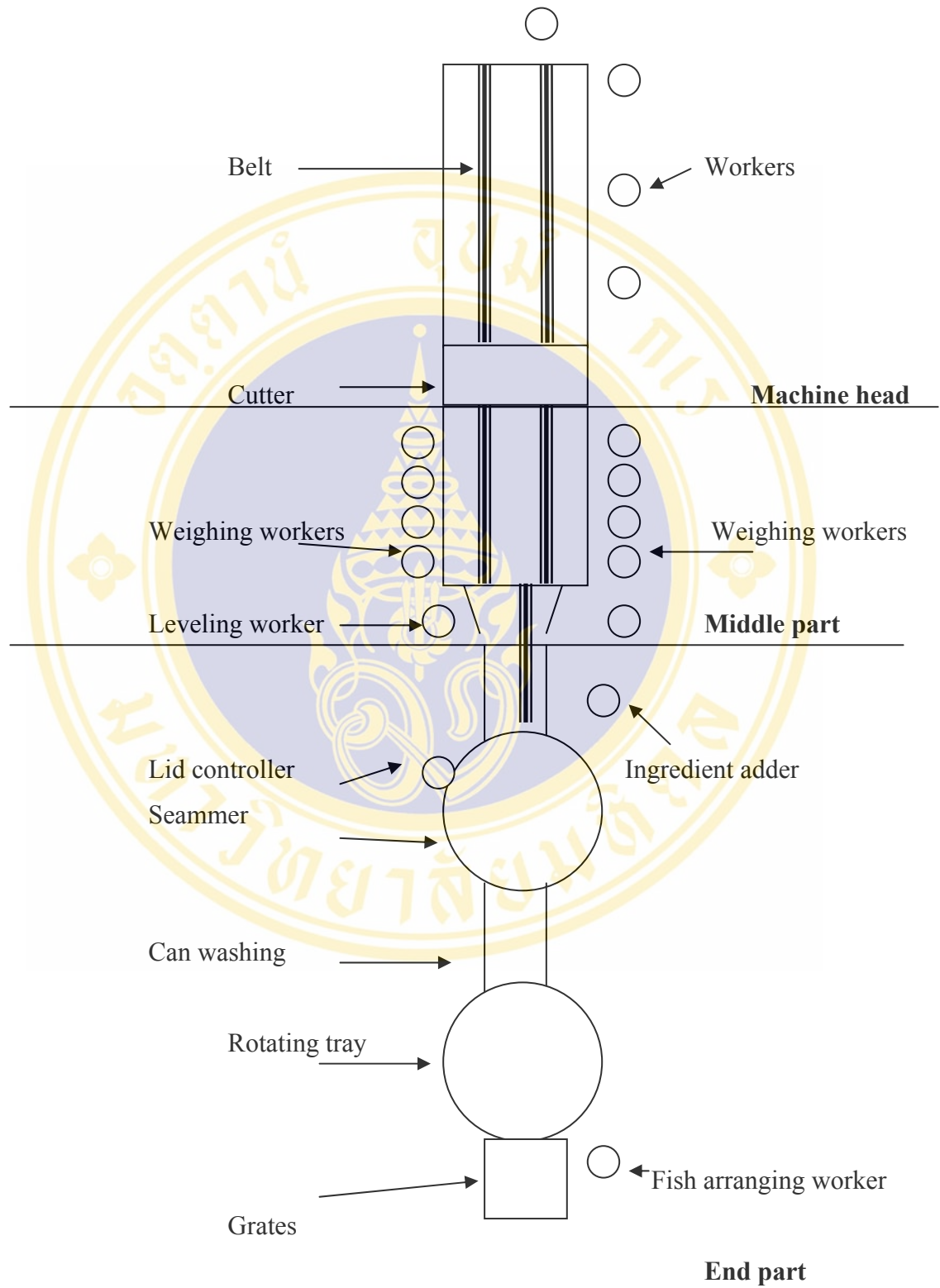


Figure 6 Working Steps in the Packing Section

5.1.2.3.2 Cat Food Section

This section packs fish blood into cans for cat food with the following steps.

a. Bone removing can be done either by machine or by hands.

Bone removing by machine begins with workers rolling in fish blood from the Cleaning Section and placing it in front of the machine. The front part of the machine is a square funnel, followed by a belt that slopes upward. The bone removing part is circular with two outlets. The outlet below is for the bones, and the outlet to the side is for the blood with bones removed. Two workers at the funnel will pour the blood into the funnel. The blood will move along the belt to the bone removing section of the machine. The blood without bones will run into a bucket. The blood remaining in the machine will be taken out by another worker, and put in to the bucket. The bucket is then taken to weigh on the scale. Another worker will be weighing fish meat to mix with the blood.

Bone removing by hands is done on a 3 x 1 meters stainless steel table. Workers responsible for bone removing will stand on either side of the table. There are seven workers on each side. The workers will pour the blood on the table, and put a tray on the blood for bones. Workers will gather the blood in front of them and start to stir the blood with both hands. When bones are found, they are removed and put in the tray. Workers use both hands to compress the blood with bones removed, and put them in a bucket at the middle of the table. When the bucket is full, another worker will take the bucket and put it next to the bone removing machine, so that it can be weighed. The worker will weigh three portions into the same bucket consisting of 8 kilograms of blood from the machine, 2 kilograms of blood from hand removal, and 1 kilogram of shredded fish. After it is weighed, another worker will put it in a cart, and take it to mix with other chemicals.

b. Mixing blood with chemicals is done on a table. Chemicals are placed in shelves next to the table. A female worker will take two white chemicals and mix them in a small pail. The pail is then put on the table. Workers responsible for mixing are six male workers. They stand on either side of the table facing each other, three on each side. Each pair of workers will pour the bucket on the table, followed by the chemicals. The workers must mix the blood and the chemicals so that

the mixture becomes homogeneous. Afterward, the blood is gathered back into the bucket. It will then be checked for metal parts. If there is any metal, there will be loud noises. The worker will remove the metal. The blood that passes metal check will be put in a bucket. It is then taken to the packing machine.

c. Packing is done using cans that move downward to the ingredient adding machine. Ingredients are saline or vegetable oil. Then a pail filled with saline will flow along the belt next to the workers. The workers will pour the blood into an aluminum bucket next to the belt. A worker will gather blood into the cans. Another worker will push the blood toward the first worker. The cans filled with the mixture will travel along the belt. The belt is divided into three slots along its length. The cans will be in the center slot, ready for weighing.

Weighing is done by 10 workers with 5 standing on either side of the belt. Each worker has a stainless steel tray with a scale and fish blood. The workers will take a can and weigh it. If the weight is the desired weight, the can is put onto the slot closest to the worker. If there are too many cans, the workers will pick up three cans at a time. The cans that have been weighed will travel along the belt. Two workers are responsible for compressing the top part of the can so that it is leveled. The workers use a rubber disk on their right hands to compress the mixture. The cans that have been finished travel on the belt toward the seammer.

d. Seaming and can washing is done next. The cans will move onto a rotating tray and to the seammer. There is a worker responsible for putting lids into the machine. The cans are drawn into the machine by three gears. The machine will draw air out of the cans and seam the cans. The cans that have been seamed will pass through the washing machine. The washing machine is an enclosed rail that slopes upward. Inside the rail is hot water. The cans that have been washed will travel to the rotating tray in the Retort Section. They are put on grates to be retorted. A worker will use a PVC tube to sweep the cans onto the grates in layers. Each layer is separated by plastic sheets with holes. When the cans are fully laid on the grates, the last plastic sheet is tied to secure the cans on the grates.

5.1.2.4. Retort Section

This section is responsible for steaming to kill germs and to cook the fish. The steamer is horizontal type (come-up time). There are a total of 26 steamers. The time needed for steaming depends on the weight and the size of the cans. For example, a half pound can require steaming at 240 degrees Celsius for 75 minutes.

When heat is added, air is let into the steamer to maintain the pressure inside. Cold water is added to cool down the cans. When the cans cool down, the air pressure will keep decreasing. After 30 minutes, the steamer is opened and the cans are taken out. The cans are cooled down further by convection using fans.

5.1.2.5 Labeling and Warehouse Section

There are 7 labeling machines with three types of labeling. The first is for cans lay out on palettes. The second is for cans lay out on grates. And the third is for cans to be inspected. Method selection depends on the can size as well as the type of products.

a. Labeling of cans lay out on palettes are done with large cans. The cans are put on wooden palettes in layers separated by papers to prevent impact between cans with clear plastic sheets wrapped around the palettes. Workers use hand lifts to move palettes to the labeling machines. The plastic wraps are cut, and three workers will move the cans onto the belt, starting from the top layer. The paper is first put against the belt and workers then sweep the cans onto the belt. For layers that are lower than the belt, workers must bend down to pick the cans up and put them on the belt. The belt will take the cans to a rotating tray that pushes the cans onto a steel rail. The rail will turn the bottom of the can upward. There will be a female worker standing next to the rail, wiping out dirt from the cans as they move pass. This worker stands on a stool 50 centimeter high. The stool is 1 x 2 feet. The worker must take off her shoes. Wiping is done by using cloth soaked with oil and alcohol to clean the cans. The worker will one cloth on either hand. The cans that have been wiped move along the belt into the labeling machine in a slanted manner. The cans that have been labeled will move along a steel rail. There will be 4-5 workers responsible for arranging the cans into boxes. Another worker will be folding the boxes and put them on the steel shelves to the side. The box is put in front, and the workers will use both

hands to pick up the cans, two cans per hand each time, and put it in the box. When the box is full, the workers will push the box onto a belt that will carry the box to sealing machine. The box is sealed with clear tape. Once the box is sealed, another worker will stamp the production date on the box. The box will travel along the steel rail. Another two workers will take the box and put it on a palette. When the palette is full, a plastic wrap is put around the palette. A worker will use a hand lift to move the palette to the side. Afterward, another worker will drive a forklift to take the palettes to the warehouse to be shipped to customers later.

b. Labeling of cans lay out on grates are done with small to medium size cans. The cans are put on grates in layers, each layer is separated by plastic sheet with holes. Two female workers will pull the grates close to the labeling machine. The lower part of the grate must be in line with the hydraulic stand to be able to move each layer to the same height as the machine. Once the grate is leveled with the machine, the workers will secure the grate with a steel piece. Then, they will use cloths soaked with alcohol and oil to clean the upper lid of the can. After the lid is cleaned, the worker will push the can onto the belt. The belt will take the cans to a rotating tray that sends the cans to a steel rail. The rail will flip the cans upside down. Another female worker standing on a 50 centimeters tall stool will clean the bottom of the cans using two pieces of cloth soaked with alcohol and oil. The cleaned cans travel along the belt into the labeling machine in a slanted manner. The labeled cans will travel along the upper belt. There will be workers putting the cans in boxes. A worker will fold boxes and put them on the steel shelves next to the rail. The opposite side of the rail will be 4-5 workers responsible for arranging the cans into the boxes. The workers will pickup two cans in either hands and put them in the box. When the box is full, the workers will push the box onto a waist-high belt. The box will enter a sealing machine. The boxes that have been sealed will move along a steel platform. A worker will stamp the date of production on the top panel of the box. Workers at the end of the machine will arrange the boxes on a palette until the palette is full. The palette is then wrapped with plastic sheets, and is moved to the warehouse.

c. Labeling of the cans to be inspected cannot be done right away. The workers must clean the lid of the can first. The cleaned cans are put on a wooden palette. Once the cans pass quality inspection, the cans are cleaned and are labeled.

There are two labeling machines for these cans. Two workers will pull the grate next to the machine. Then, they will clean the upper lid of the cans with cloths soaked with alcohol and oil. After the cans are cleaned, they are pushed onto the first rotating tray that sends the cans into a steel rail. The rail will turn the cans upside down. The cans then move to the second rotating tray. Another worker will clean the lid of the cans here. After the cans are cleaned, the workers will use their hands to sweep the cans onto a wooden palette on the hydraulic stand. The palette can move up or down. On one side of the palette will be a wooden screen extending from the waist of the workers to the ground. The other side is not screened. There are two workers responsible for arranging the cans on the palette. One worker stands at the screened side, while the other stands at the unscreened side. The workers must reach over to clean the cans around the center area, and have to put their feet under the palette. In this way, they are at risk of catching the palette and injure themselves. Behind this worker, there is a pile of papers. The worker will put paper on each layer of the cans to prevent impact. The hydraulic stand is used to move the palette up and down, so the workers can push the cans onto the palette easier. The workers continue their tasks until the palette is full. Once the palette is full, the workers will remove the screen, and use a hand lift to pull the palette away from the hydraulic stand. Then, plastic sheets are wrapped around the palette, and are taken by a worker driving a forklift to the warehouse.

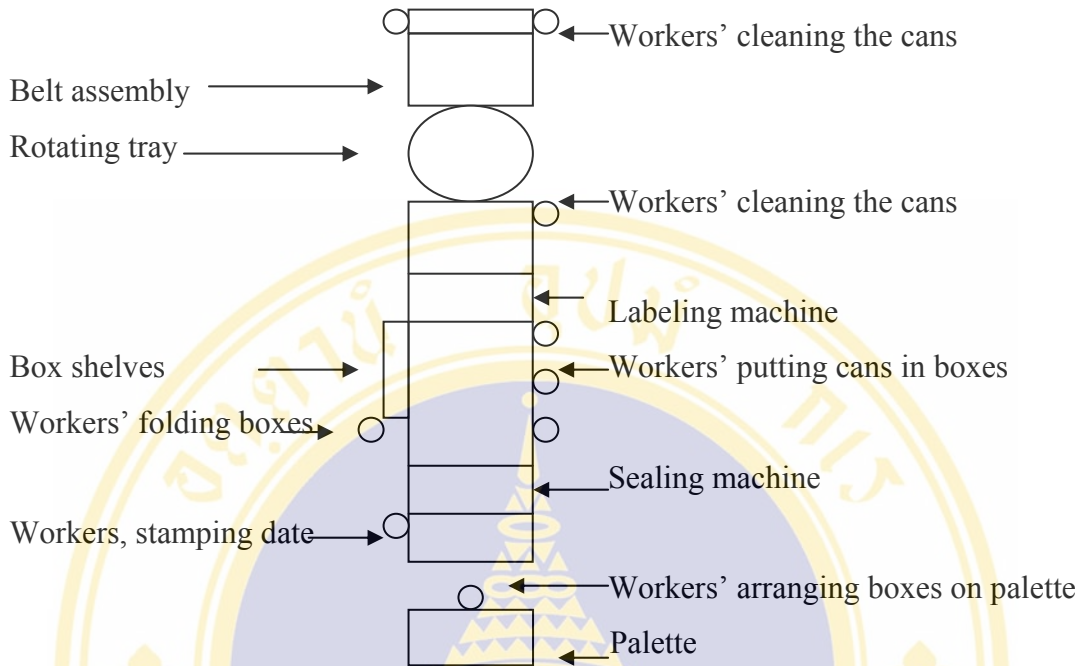


Figure 7 Labeling steps of cans on palettes and cans on grates

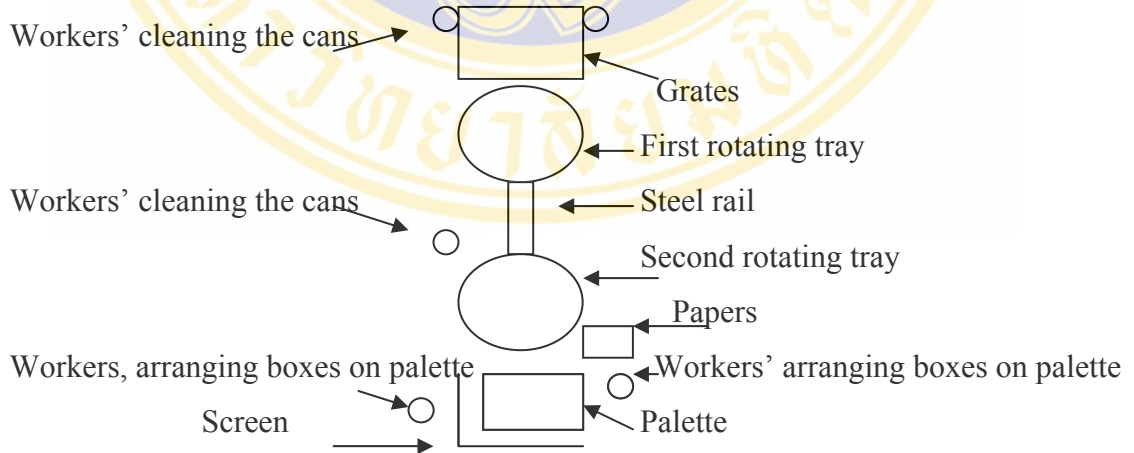


Figure 8 Labeling steps of cans to be inspected

5.2 Production Organization and Control of Labor

Organization is a tool used by factory capitalists to control works and fleece labor effort in order to achieve profit for themselves. The study found that the factory has changed from a family business to an organization including bureaucratic organization with hierarchy, work division into sections, work fragmentation, and the use of assembly lines. The factory has exerted policies as well as rules and regulations, disciplines, welfare system, and motivation tools to control workers to response toward the goals and policies. Details are as follow.

5.2.1. Organization within the factory

Organization structure of the factory is divided into two lines: the production line and the administrative line. The production line is further divided into main production and quality assurance, while the administrative line is divided into personnel management, finance and accounting, purchase, and warehouse. The details of each function are as follow.

5.2.1.1 Production line includes main production and quality assurance. Each has its own manager to supervise and control its function. The whole production line is under the responsibilities of the Operation Manager. The production line is divided into sections including Raw Fish – Precooking Section, Cleaning Section, Packing and Cat Food Section, Retort Section, Labeling and Warehouse Section, and Special Product Section (Pouch-blister pack).

Control of workers is under a hierarchical structure with the highest position being the Factory Manager Director. This Board represents investment bankers in managing for profits and debt-paying capability. Under the Board is the Operation Manager that controls the whole production line, follow by section managers, supervisors, foremen, and workers in each section, respectively.

The number of personnel in each section in the main production function is as follow. Raw Fish – Precooking Section has 123 workers. Cleaning Section has 470 workers. Pouch Cleaning Section has 50 workers. Packing Section has 326 workers. Pouch-Packing Section has 141 workers. Cat Food Section has 14

workers. Labeling Section has 188 workers. Pouch-Labeling Section has 36 workers. Meanwhile, the quality assurance function has a total of 129 workers.

5.2.1.1.1 In the main production function, each section has its own activity according to the work division along the production steps. The Raw Fish-Precooking Section will receive raw materials and arrange the sizes and the kinds of the fishes. Then the fishes are precooked by steaming. Afterward, the precooked fishes enter the Cleaning Section, where they have their skins, bones and blood removed for further canning.

Then, workers will pack the fishes beginning with cutting, packing, adding ingredients such as saline and vegetable oil, and washing. The fishes are retorted at different pressure.

Production control unit has supervisors to oversee and control production to achieve maximum productivity according to the factory's goals and policies.

5.2.1.1.2 Quality-assurance function has the Quality Assurance Section to inspect qualities in every production steps starting from raw materials and continuing throughout each production process in every section. The final product is also inspected to assure the quality of the product according to the working activity in the main production function.

5.2.1.2 Administrative line includes the factory's administration and services. They include Personnel Management Section, Finance and Accounting Section, and Material and Purchase Section. Senior Factory Manager has the highest authority in the administrative line.

Personnel in this line are 9 workers in the Finance and Accounting Section, 9 workers in the Personnel Management Section, and 1 worker in the Material and Purchase Section.

5.2.1.2.1 Personnel Management Section is responsible for recruiting workers to work in the factory as well as evaluating qualification of each applicant. It is also in charge of allocating personnel, and taking care of documents concerning hiring, assigning, managing pays and other interests according to the factory's policies. It is also responsible for personnel records, disciplinary actions,

and workers' orientation. Welfare including drinking water, room and board, medical fees, and other welfare is also under the responsibility of this section as well as supervision of the factory so that it abides by the labor laws.

5.2.1.2.2 Finance and Accounting Section is responsible for financial and accounting issues in the factory. They include wage and salary payments, overtime pay, and taxes as well as control of expenses and incomes, and budget allocation. Other responsibilities are capital and assets management so that they are used with maximum efficiency.

5.2.1.2.3 Material and Purchase Section is responsible for purchase of materials and other things that are important to operations of various units.

5.2.1.2.4 Warehouse Section is responsible for storing of finished products as well as raw materials and equipment used in the production process. There is a system controlling the flow of products, and maintaining the products' integrity. Other than these, this section is also responsible for contacting distributors to distribute products to customers in the amount and time required. As for the empty cans used in production, this section is responsible for distributing the cans to various production units according to the order forms.

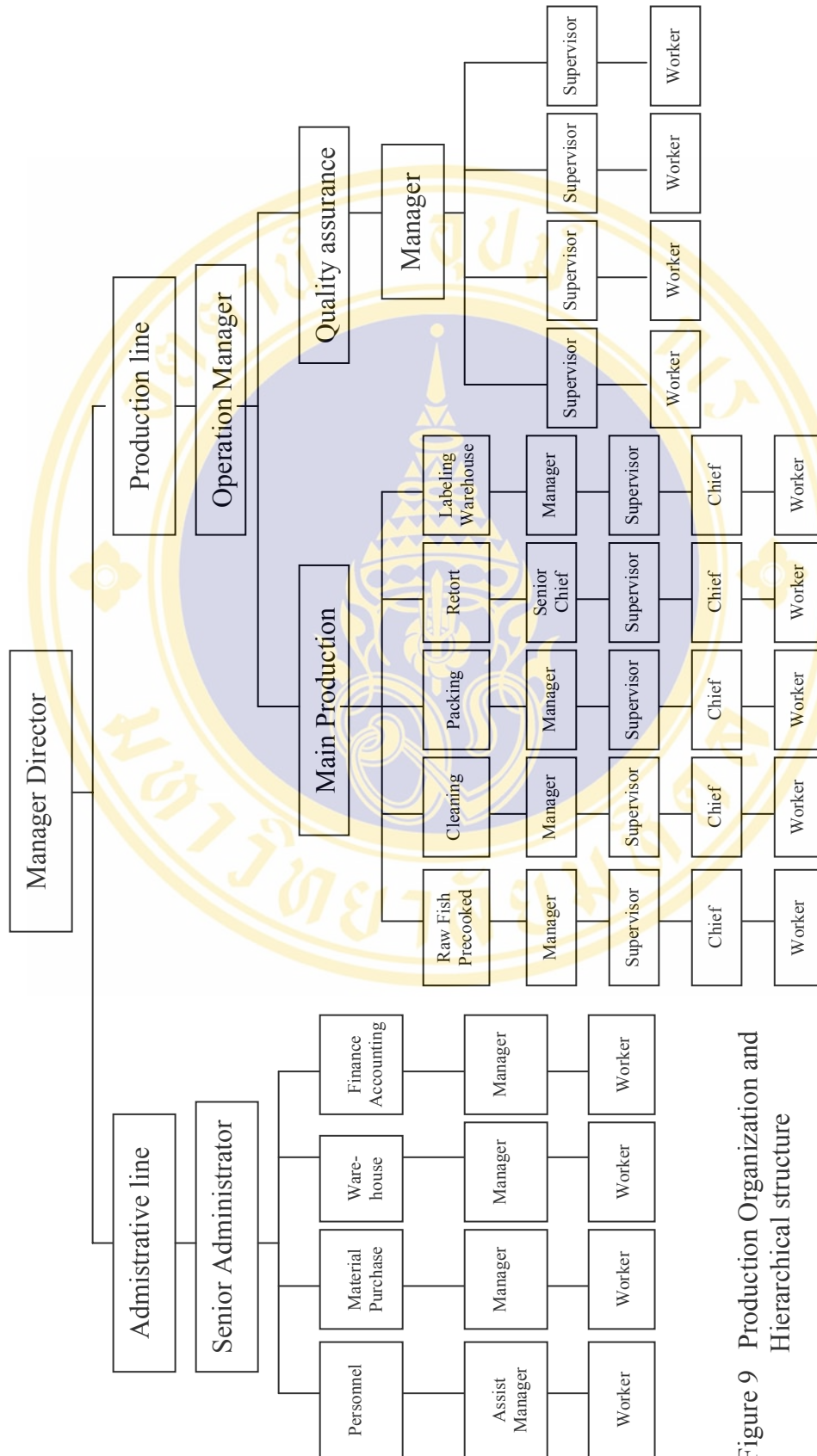


Figure 9 Production Organization and Hierarchical structure

5.2.2 Bureaucratic Structure with Hierarchy

The factory has used bureaucratic system of management with hierarchy to control the works of labor in the production line as follow.

5.2.2.1 Characteristic of the hierarchical structure is that the person in the higher hierarchy has authority over the persons in the lower hierarchy. The production line has the Manager Director as the highest authority that oversees the whole production process. Under the Board are section managers who control their responding sections. The section manager will give orders to the supervisors. Each section has different number of supervisors. Each supervisor, receiving orders and policies from the section manager, will give orders to the chief under their responsibilities. They would have to control and monitor the production process that they are responsible for. The number of chief under each supervisor varies according to the work characteristics in each production process.

The production in the Raw Fish Section is not so labor intensive. There are two supervisors in this section. One supervises the day shift, and the other supervises the night shift. They will alternate their shift every month. Each supervisor has control of 31 workers. Therefore, many chief are not necessary. There is only one chief to assist the supervisor in the Raw Fish Section.

The supervisors in the Raw Fish Section also supervise the Precooking Section as well, with assistance from chief to control the workers. There are a total of 129 workers in this section that require 5 chief to assist the supervisors.

“(The supervisor) will look around. Sometimes he would order the chief, and the chief would give orders to us, like steps. The production manager at night would also come in. We don’t know the time he gets in. He (the Raw Fish Section manager) also passes by. When he passes, he will go to the Precooking Section to oversee the workers there. Then, he would call the chief for questions. He rarely talks to the workers. Then, he would go back to his office to work”

Works in the Cleaning Section is very labor intensive. It requires a lot of workers to clean the raw materials for further canning. Therefore, many

supervisors are necessary in this section, along with many chief to assist them. Control is divided into 8-9 production lines, with each line having 1-2 chief to oversee the work of 50 workers.

Other than the chief to oversee the workers, there are also many assistants to the chief as well. The assistants will be trained to become the chief. Thus, they are very strict in controlling and reporting any occurrences to the chief. If the assistants have good performances, they will be promoted to chief.

The Packing Section also has hierarchical structure. Orders are given in steps from the manager to the assistant manager, who gives orders to the section chief, who in turn gives orders to the assistant section chief. The assistant section chief supervises the chief, and the chief oversee the workers. An example is as follow.

“Mr. A is bigger than Mr. On. It’s written on the board. Mr. A is the assistant manager. He used to be in the warehouse. Mr. On is the section chief. Ms. Ueay is an assistant to Mr. On. There are three of them. Mr. A also helps, but it’s written at the entrance that he is the assistant production manager... Works are in steps. The yellow caps, the chief, oversee the workers. They do not work. Mr. On would not let them. He would let them oversee the works only. If they do work, they would just stand in one place. They would get blamed if Mr. Ood sees them... The yellow cap is the first step chief. There is also a yellow cap with black stripe. Now they ware the same cap, but are in different positions. The yellow cap with black stripe would oversee the yellow caps. Like Ms. Oy, the assistant section chief, would give orders to the yellow caps with black stripe, in steps. Mr. On and Mr. A would give orders to Ms. Ueay. Ms. Ueay in turn gives orders to Chamlong, Mr. On’s, wife who is one of the yellow caps with black stripe. She would give order to the yellow caps. Then, the yellow caps would tell the workers what to do.”

The Labeling and Warehouse Section also has hierarchical structure with Mr. Sompong as the section manager. He is responsible for controlling three supervisors. They are Mr. Su supervising the warehouse outside, Mr. Kung supervising the blister pack, and Mr. Golf supervising the warehouse inside. Under the supervisors are the section chiefs.

“Mr. Sompong is the warehouse manager. Mr. Su supervises the warehouse outside. Mr. Kung supervises blister pack. And Mr. Golf supervises the packing and cat food. Pouch pack is under Mr. Kung. Under the supervisors are the yellow caps or the section chiefs. Each section has one chief. My section chief is Mr. Samai”

The above example shows hierarchical structure used in controlling and fleecing of lower workers. Controls are downward steps. The persons with higher authority would lay out policies and give orders to those that are in lower hierarchy to follow, such that the specified goals are achieved.

5.2.2.2 Authorities of Chief and Labor Control in Each Section

Hierarchical structure allows the chief with authorities to force the workers to work to achieve the organization goals. The chief are representatives of the capitalist in controlling the workers. They would oversee that workers work all the time without resting. Workers are not supposed to talk during working. The chief are responsible for reporting the workers' performances to higher authorities. The following are words from workers.

“The yellow cap (strictest) does not allow talking during working. We are to pay close attention to work because he has to report to higher authorities about how much works are done in so many hours, something like this.”

If the chief sees that workers are not doing anything, he would tell them to keep working. The workers must follow what the chief orders. Some workers put up resistance by just holding on to the cart.

“The chief is persistence about work. We can't stay still. When other workers are pulling out carts from the lifts and we do not help, he would yell at us. We are tired and we want to rest. We don't want to do any thing yet. We rest for less than 5 minutes, and when we feel better, we go back to work.”

“The chief sees and tells us to help. He tells us and we obey. We can’t do otherwise. SO we just hold part of the cart and push and pull like others.”

5.2.2.3 Control Measures of Chief on Workers

Control measures that chief use on workers include pressing, grumbling, verbal abusing, scolding, fining, and warning. Details are as follow.

1) Pressing

Chief use pressing to make workers work faster to achieve specified goals. It is done every minute, and has been used for a long time, according to the words of some workers below.

“It’s the same. There is no single day without pressing, every minute. It’s done constantly for years. They would say hurry, hurry, like that, keep on saying it. They can only say one word, the chief. Come to think of it, it’s funny. The workers removing the skins are in a hurry to keep up with those that are removing the blood, and the chief would be shouting hurry, hurry.”

“They are hired to say that word. The yellow caps are hired to say hurry. Those in the precooking are as well. They would shout hurry, hurry until their throats are dry. They are hired to say that.”

If workers do not achieve the specified goals, some workers will not be allowed to work overtime. Workers are allowed to work overtime only if they can work according to the specified goals.

“If (the goal is not achieved), some workers are not allow to work overtime, something like that, until the goal is achieved.”

2) Grumbling

Chief use grumbling when workers work slower than their liking. In this case, workers must hurry and work faster.

“It’s everything. Weighing the fishes too slow and he grumbles. There are no fish and he grumbles. He grumbles at anything...Hurry up, he would say.”

“Like weighing the fishes too slow, he would say hurry up. There is not enough workers, how could it be faster. He grumbled a lot on that day.”

“We work slowly and the fishes are left in pile. ”When we see the pile, we would gather the fishes. Sometimes there are many piles, even in the rails. The chief would grumble. Many workers and fishes are left in pile. Hurry up and weigh the fishes. Something like this goes on all day long.”

Workers not only are grumbled at by chief, new workers are also grumbled at by fellow workers that they work too slowly and are stupid. These workers must tolerate these grumbling.

“...The workers also grumble. Why are you so stupid, spending such a long time and still can’t weigh the fishes? At first I had to tolerate all these, just be patience. Some grumbling is during the first few days on the job. Something like it’s been many days and you still can’t do it, something like this.”

3) Verbal abusing

Chief will use verbal abuses on workers to cause workers to become angry and irritated. When workers become irritated, they can work faster as indicated by words of a worker below.

“Selecting the shredded fish must be fast. If we could not do it fast enough, he would use verbal abuses to get us irritated. He said that he likes doing it because when workers are irritated, they work faster. If they are not irritated, they just work unenthusiastically.”

4) Scolding

Scolding is used when workers do not work or do not perform up to management's expectation. Scolding is done in steps. Manager would scold at chief, who would then scold at workers as shown in words from workers below.

“If (the goal is not achieved), we get scolded at. Mr. Boy (Manager) would scold at us. When he comes over he would do that...Every time we see him he would scold at us. When the chief see him, they would try to walk away, but they can't. He would call for the chief every time. When he comes, he would just point. That's dirty. This is dirty. This is ok. We get headache every time he comes.”

“If (the chief) does not look over and it gets dirty, he gets scolded. Once he got his turn, we get scolded by him instead.”

The way to show the management of existence of control is to scold very loudly when in front of a supervisor. The workers must listen, without any argument. If the workers argue, the chief would be accused of being stubborn.

“If a supervisor stands there, the head man would be real loud. If (the supervisor) is not there, he would scold at us less. This is to show how strict the chief is to the workers in front of the supervisor. We have to be careful when we get scolded at by the chief...When (the chief) scolds at us, we don't react. If we argue, he would say that we are stubborn. He would find our faults all the time. The chief can order anything. No one can argue.”

Sometimes when the chief is scolded by management, he would seek sympathy from the workers by crying.

“Sometimes he would come here and cry. He was scolded at by higher authorities. He would come here having red eyes, about to cry intentionally.”

Some workers that are scolded at cannot tolerate the situation, and quit their jobs.

5) Warning

Warning is used when workers perform less than they used to or they work slowly. Working slow causes the chief to be blamed by management, as indicated below.

“Meetings between supervisors and chief are quite often, about once a month. Most is about work, how it will be changed. This would call for a meeting. If we could not perform like we used to, he would call us and give us a warning to increase our performance. He would ask for a cause of why work is slow. It is too slow, and he is warned by management so he has to warn us.”

6) Fining

Fining is a control measure that workers must be aware of. They must work cautiously not to damage the products like dropping the cans.

“...Sometimes we made mistakes and got fined. If a can is dropped, we are fined 20 bahts. When we drop a can and it's dented, we are fined 20 bahts for each can.”

7) Warning note

Warning note is issued as a document. It is used when the mistake affects the production process such as being absent from work and not working overtime. If a worker received three warning notes, he will be fired from his job.

“If we don't (do overtime), we receive a warning note...Others (workers) received a warning note for being absent from work. If we received three notes, we are fired.”

“If the workers cannot work up to his expectation, he would blame us. He would say that we would receive a warning note. He would give us the note.”

“I used to be absent and got a warning note. If I got three notes, I would be fired.”

If workers cannot achieve the specified goals, they would be forced to resign.

“Workers resign quite often. They have to work according to goals. If they can’t they have to resign.”

Bureaucratic structure with hierarchy causes authorities to transfer in steps. The chief represent the capitalist in controlling the workers. The control measures being used include pressing, grumbling, verbal abusing, scolding, warning, fining, and issuing a warning note. These measures allow the capitalist to maximize the fleecing of the labor efforts.

5.2.3 Work Policy

The fact that the factory has entered the competition in the world market has caused the needs for acceptances among customers in order to gain higher amount of orders in the world market. Therefore, the factory has established working policy according to the ISO 9200 standard to improve the products in order to be certified by foreign organizations as well as to be accepted by customers worldwide. Working policy according to the ISO 9200 is to produce quality products with methods that have international standard of quality, with safety, is environmental friendly, and meets customers’ satisfaction. The factory received ISO 9200 certification in 2002.

Management has implanted this working policy in workers by having the chief constantly train as well as warn workers to act according to the policy of the factory. Workers are to pay close attention while working. They have to work neatly with no error to ensure that the products are of high quality, and are not damaged such as dented cans.

5.2.4 Control of Workers by Scientific Management Method

5.2.4.1 New knowledge and the monopoly of it are introduced to control the labor within the production process. Management will plan for production

as well as will study the format and method of production. This knowledge is only in the hand of management, which causes workers not to have any bargaining power.

“Production is the one that gives order since it’s made there. They must order the amount of fishes to get so many cans. They receive orders. If we cannot make them in time, they must increase. Suppose one day we ship out 3 containers, they would have to order more fishes to be able to meet the amount.”

5.2.4.2 Work division among workers

Work division separates works that require brains from works that require physical effort. Chief uses their brains, so meetings for planning would require chief to attend. Workers do not have the chance to attend these types of meeting.

“Chief attends the meetings. Workers never get to attend. When they attended the meeting, they never told us what the meeting was about.”

Characteristics of management do not only require attending meetings for planning, the chief are responsible in overseeing the workers without having to do any work.

“Anyway, chief must coordinate all the time. They have to oversee the production lines, the beginning, the end, and must coordinate with the chief. They have to leave the workers. The first foreigner did not allow chief to work. They have to keep their eyes on machines without doing any work. The chief don’t work, they just manage their staff to accomplish the tasks.”

Characteristics of work for workers do not require brain using. The workers will perform labor intensive works, as indicated by one worker below.

“We are subordinates, so we don’t have to think, just work. We just work the tasks that don’t require brains to think. We don’t have to think about the

weight of the fishes or the kinds of the fishes. We just put them in the room like we were told. The task is one dimension, unlike those of the chief. They have to oversee the workers in front of the rooms, in the rear of the rooms, and every other things.”

5.2.4.3 Time and motion study of workers

The factory determines the goals for workers to achieve. Each section is to achieve the previously set goals. This is done by timing the works of workers, which maximizes benefits from the labor effort. This cause the workers to work continuously, and every worker must accomplish the same amount.

“They would measure the amount and evaluate each worker’s performance every hour. There is a portion unlike before, when anyone can do any amount of work. It’s a measure against everyone. Every worker must get the same. Like to catch 13 tons of fishes in an hour, they would see how much is caught by each worker in every minute...On the rail, removing the organs from 25-30 fishes takes one minute, depending on the sizes...Then, it was not separated, just time the amount in each minute. Now it’s better. We work the same amount. It’s equal.”

“The chief also times us. When it’s full, he would write down the time we finished. It’s about half an hour. He would set the time...My friend would write down the hour and minutes. When it’s full, the time is recorded. We have to hurry. If we are late, the chief blames us. He would say we don’t get as much today, only 8 or 9.”

“Light blue is more tiring. They have to work the same task at the same place. He times how many kilograms are achieved in each hour.”

5.2.5 Workers Recruitment and Hiring System

The labor process in production of canned tunas is simple and requires no skills. The workers that the factory wants do not have to have prior skills. They can learn the work process in a short period of time.

Recruitment is under the responsibility of the Personnel Management Section. The methods used to recruit workers include announcements made with the Job Placement Office in Job Placement Department under the Ministry of Labor and

Social Welfare, announcements on bulletin boards in front of the factory and nearby areas, contacts through workers to get their relatives and friends, and local villagers. The application period, as well as interviews, is during 10.00-12.00 hours everyday.

In 2002, the factory has expanded production to a new goal of 140 tons per day. This requires 800 more workers in the Cleaning Section to be able to allocate workers into two shifts, the day shift and the night shift. Applications are mostly from contacts of workers already working in the factory. These are from unemployed labor in the village. For every new worker hired in the Cleaning Section, the worker who brought in the new worker will receive 100 bahts, with criteria that the new worker must work for 7 days prior to getting that reward. These new workers are hired on a daily basis. They will receive all welfare entitled to daily contract workers. The reason this method was selected by the factory was that it requires many workers in a short period of time. Furthermore, this is not formal. Staff from the Personnel Management Section conducts applications in each province. After the interviews, if the applicants are found to meet the criterion, they will be transported to the factory at an expense of the factory.

The factory has specified the criterion of workers as follow. They must be strong and are able to use physical strength since the nature of work is physically demanding. Other requirements such as age, education level and work experience are not of importance. The applicants must be between the age of 15-40 years old. If the applicant is older than 40 but has work experience, they will be considered on a special basis.

Another requirement that the factory gives higher importance for workers in the Cleaning Section is that the factory prefers female to male workers. The reason for this is that female workers are more delicate than male workers. They are also seen as being easier to control, and thus, the factory can fleece more effort out of them.

Work orientation given to new workers does not emphasize work safety issues. Workers say that the factory does not give orientation concerning safety. Orientation is conducted in the morning between 9:00 to 12:00 a.m. The orientation includes opening of new bank accounts and obtaining the ATM cards, since wages are deposited in to workers' bank account. The factory allows workers to choose hospitals for their social security cards. The orientation also mentions the policy, rules and

regulations, and work disciplines, especially on what to wear. Workers are to wear factory uniforms. They must be clean, and wear no makeup or any perfume. They cannot bring things into the factory. In the afternoon, workers begin their works in different sections. Workers in the Packing Section must be trained in the Cleaning Section for 3 days.

The recruiting system that gives no importance to education level and age forces older workers to keep on working in the factory. They are afraid to resign since other factories require new workers to be of certain ages and having certain level of education. Workers that resign are mostly young adults, with high turnover ratio.

5.2.6 Hiring and Work Controlling of Workers

There are two hiring systems that the factory uses, monthly and daily basis, with the following details.

1) Hiring on a monthly basis is applicable to management-level employees including managers, supervisors, office workers and chief. These workers have job security. They are not laid off easily since the factory must give them compensation.

2) Hiring on a daily basis is applicable to workers in production, since the factory does not have to provide a lot of welfare. Workers are not given bonuses, and are laid off easily without having to pay for any compensation. These workers receive the minimum wages stated by law of 165 bahts per day.

As for payments of the wages, the factory pays the workers in production on the 5th and the 20th of the month, or on a biweekly or 14-day basis. For other employees, salaries are given on the 25th of the month. All levels of employees are paid by deposits to their corresponding bank accounts.

Hiring is not the same for the monthly and daily basis. Only a few employees are hired on a monthly basis. They are in administrative fields. Workers in production are hired on a daily basis. The differences can be observed from the table below.

Table 6 Hiring in the Factory in 2002

Section	Daily basis		Monthly basis	
	Number	Percent	Number	Percent
Raw Fish	31	1.36	3	0.13
Precooking	129	5.65	10	0.44
Cleaning	774	33.90	19	0.83
Pouch Cleaning	77	3.37	1	0.04
Packing	240	10.51	16	0.70
Pouch Packing	103	4.51	7	0.31
Retort	36	1.58	8	0.35
Cat Food	111	4.86	3	0.13
Seammer	17	0.75	5	0.22
Labeling and Warehouse	284	12.44	24	1.05
Blister Pack	56	2.45	3	0.13
Service	47	2.06	5	0.22
Quality Assurance	129	5.65	24	1.05
Maintenance	46	2.02	16	0.70
Personnel Management	17	0.75	16	0.70
Production Planning	-	-	2	0.09
Accounting	-	-	9	0.39
Cost	1	0.04	2	0.09
Managers and Assistant managers	-	-	12	0.53
Total	2098	91.90	185	8.10

Source: Personnel Management Section

5.2.7 Work Evaluation and Motivation

In the past, the factory has used an evaluation system within the organization. The chief evaluate the workers and rate them in percent. The ratings are used to adjust pays. Afterward, the evaluation system is discontinued, and the factory has adjusted pays to the minimum wages.

Motivation to get workers to be most productive for the factory include extra pays for working three consecutive months with no leave or tardy. They will be considered this extra pay on the fourth month. After the fourth month, the workers receive 50 bahts. If they do not take leave or be tardy the next month, they will receive 100 bahts. If this goes on till the third month, they will get 150 bahts. The extra pay increases to 200 bahts on the fourth month, and remains that rate until the workers take leave or be tardy. Once they take leave or be tardy, the rate goes back to 50 bahts again. This motivation method forces workers to come to work even though they may be sick. It can be said that workers are just a part of production mechanism like machines. They are not treated as human.

5.2.8 Work Disciplines and Work Control of Workers

Work disciplines are used by capitalist to give more authorities to the assigned group than workers at lower level. The important disciplines used to control lower workers include the following.

5.2.8.1 Day and Time of Work

The factory has specified that workers must work from Monday to Saturday, 8 hours a day. Start time in each section is determined by the section chief.

The factory controls entrance and exit of workers by using a card stamping system to record the time of work. There are three places the workers can record their time of work. The first is at the Security Stall in front of the factory for office workers and management level. The second is at the entrance of the Labeling and Warehouse Section for workers in this section. The third is at the side entrance for workers in other sections. Each location will have a staff monitoring the card stamping process. The factory has issued rules for card stamping that workers are not allowed to stamp cards for other workers or to alter or to destroy their own and other workers' stamp cards. If this case is found, both the worker doing the stamping and the worker that let others stamp his or her card will be fired. There are a few stamping machines, so workers must come very early before time to be able to stamp their cards prior to the specified time, as indicated by words from a worker below.

“(The cards) are stamped over there. There are many workers, especially in the morning like this. The Light blues are all over the place. There is hardly a space to walk by. Workers rush to stamp their cards with only two machines. There used to be three machines, but they removed one of them. We can’t get the cards stamped. It’s not in time. We get in late. It’s 15 outside, right? There are twenty there. We have to be in since 5 minutes ago. Once we get the cards stamped, that’s 15 minutes. Then we have to get our aprons and other things inside and that’s it...In the evening, we also get our cards stamped. When we want to get out after work, we get it stamped right away.”

The factory forces workers to be at work 10-30 minutes before the actual start time to get dressed and be prepared to work. The factory is very strict with the workers on the issue of being on time.

“...It’s been passed on. Don’t be late...They say this everyday, like don’t come to work late. The Light blues have never been late. They get in early. After seven they are gone. By seven fifteen, they are all inside.”

“Starting and leaving from work, they would say to be at the factory 10 minutes before time. If we are on time, they would say that we are so on time. We have to be here at least 10 minutes early, no matter what section you are in.”

If workers get in more than 5 minutes late, they are punished. They have to work for 30 minutes to compensate for being late if there is overtime. If there’s no overtime, the workers will receive only a half-day wage.

“When we are 5 minutes late, we just do overtime. Suppose we get in at seven thirty, we get to rest at four. If we get an hour rest, we will be fresh, like till four thirty. If there’s no overtime on that day, we will just go to other place and come back and get our cards stamped. We would go put on labels or fix some fishes for half an hour, just to compensate the time.”

“...I got in late (today) at seven thirty-five. (Normally) I got in at seven thirty. I have to stay late. If there’s overtime, I continue to work with no pay, since I got in later than 10 minutes. I have to work for half an hour. I have to work till

five. Normally I work till four thirty. If there's no overtime, they just deduct our pay to half a day. I get only 80 bahts.”

Disciplines concerning working time are set so that workers deliver the highest productivity to the factory. The fact that workers get to work early to prepare all the necessary equipment is actually adding the surplus to the factory, as indicated by one worker below.

“Every section must get in early. This is for us to prepare all equipment. If we have to find the equipment, it's a waste of time. This is not a bad thing if you understand. Time is valuable. It's their time. Any factory is like this. From what I've asked, their times of 1 minute, 3 minutes, or 5 minutes are all valuable. Our time is not worth anything.”

Rules and regulations concerning the day of work can be changed when seen appropriate by the factory. If there is a holiday that they want workers to have long vacation, schedule will be changed and workers have to work on Sunday. This means the workers have to work two consecutive weeks with no day off. Workers working on the rescheduled day get normal pay. They are willing to work in order to be able to go home in the countryside for many days.

5.2.8.2 Working Period and Break during Work

The factory does not allow workers to leave the factory area during production. They have to remain in the production lines all the time. Workers will get to rest during lunch break or restroom break. They cannot talk while working.

1) The factory allows workers to rest only during lunch break. The time of this break is uncertain. It depends on the production process. For example, in the Precooking Section, if the fishes are not thawed and are not able to have internal organs removed, the chief will allow the workers to have their lunch break even though they have been working for two hours. The break will last for one hour. After the break, workers must go back to work until they have worked for 8 hours for the day, and then they can work overtime.

“The break is not certain. Sometimes it’s at noon. Sometimes it’s at two.”

“It’s tiring in this factory. At home we can rest if we want to, but not here.”

The time that workers get for their break is also uncertain. Some day, they get 30 minutes break for lunch, and 30 minutes break before their overtime. The break is one hour if there’s no overtime. The 30-minute break enforced by the factory causes workers to hurry in finishing their meals.

“There’s lunch break and then the four thirty break. Thirty minutes in each break totaling one hour for the day.”

“A break of half an hour, we have to hurry up and eat. We have to have water beside us to get the food down.”

The Packing Section controls the lunch break by having workers stamp their cards when they go for the break, and when they come back from the break. If the break is only 30 minutes, the workers must hurry.

“Lunch Break and we have to stamp our cards. We have to hurry like this everyday...We have to stamp in and stamp out not to exceed our time. Suppose it’s a half hour break at eleven. We have to be in at eleven twenty. Outside the clock runs slow. If it shows fifteen, it’s already twenty five inside...The break in the evening we don’t have to stamp, only at lunch break.”

“We have to eat hurriedly. It’s only half an hour. If it’s an hour, we could eat slowly. It’s an hour. If it’s half an hour, we must hurry.”

“A break of half an hour, we have to hurry up and eat. We have to have water beside us to get the food down. There must be at least 10 minutes remaining...We have to walk fast. It’s not so good to run. If it’s an hour, it’s better.”

There is only one break for the night shift workers. The Precooking Section has uncertain time of break, as indicated by one worker below.

“There’s only one meal break around one or two or three in the morning. Sometimes it’s at five depending on the break.”

2) Restroom break requires that workers sign the time that they leave for the break and return from the break in a logbook. They are also required to leave their personal identification cards before taking the break as well.

“The time is checked, whether the break is long or short. Before it wasn’t checked. It began last week. The time is checked from beginning till the end of the break. It’s not specified, but depends on how long each break takes. The worker from the warehouse does the checking. He has a logbook. When we go for a break, we will take our ID card and leave it on the table. He will put our names in the book along with the time. When we return, he will give us back the ID card and enters the return time.”

“He would give it to the supervisor to see what we work and how long we spend in the restroom.”

The time check forces workers not to take restroom break. Before they used to go when they have to or to wash their faces when they are tired. Now, they will try to hold on and go to the restroom only once a day.

“I don’t take (restroom) break often since there is a time check, only once (a day). Before I used to go whenever I felt like going. I would go to wash my face...(Now) I’m afraid to go. I don’t wash (my face). I just stand there to rest (when tired)...It’s not good, the time checks.”

“I would go (to restroom) once a day. Sometimes I go twice and he would complain that I walk very often. One time Ms. Sairoong went three times. The chief told her to stop and showed her a long roll of paper that he claimed was the list of names of workers that leave for restroom breaks. He would record the minute and the hour. He would give only 5 minutes. To get to and from the restroom takes 5 minutes. We only have 10 minutes to be back. If we take 15 minutes, it’s ok. But if

it's half an hour, the chief would scold at us and told us to go only once. He would say that we go to restroom to take a nap."

Chief would oversee that workers work all the time without stopping. If they see any workers stop working or just standing still, they will force them to work.

"We can't stand still. He would say that we don't help. Like seeing fellow workers pulling the cart out of a lift and do not help, he would scold at us. We are tired and we want to rest. We don't want to do anything yet. We stopped for less than 5 minutes just to rest. Then we would continue working...He couldn't see us like that. He would tell us what to do. We have to do what he said."

Not only chief controls the workers in taking break, they also make sure that workers do not talk during work.

"He said that during work we have to work. Don't bother with anybody else. We can't even talk."

"When we are inside we have time for no other thing, only time to weigh the fishes. We can't talk much. It's not good having the chief see that. They don't allow talking at all...If there are fishes, we have no time to talk. Each would be working, weighing. Before I heard that shredded fish must get 20 cans per minute. So I had to hurry."

Thus, working period and break during work show the seeking of surplus value from the labor effort using discipline as a tool.

5.2.8.3 Overtime

The factory has overtime system. Workers would just call this OT. Overtime is required only when production is increased due to increase in orders. During the time of this research, the factory required workers to work overtime everyday. The overtime period in each day is not the same, depending on the amount

of work and the fish's sizes. If there is a lot of work and the fishes are small, the overtime period will be long.

Pays for the overtime period are at one and a half times the normal rate. So the management (monthly salary) receives more overtime pay than lower-level workers (daily wage). Workers on a daily basis receive overtime pay of 30 bahts per hour.

The use of daily and minimum wages allow the factory to fleece more out of workers without having to pay for any extra welfare. This minimum wages also motivates workers to find ways to get higher pays whenever they have a chance to do so.

5.2.8.4 Rules and Regulations on Uniform and Cleanliness of Workers in Production

The factory has specified the uniform for every worker. Workers are referred to as the color of their shirt and cap. The uniforms of workers in production are as follow. Male workers in the Raw Fish-Precooking Section wear black T-shirt provided by the factory, while the female workers wear red shirt. Workers in the Cleaning Section wear light blue shirt. Workers in the Packing Section and the Quality Assurance Section wear white shirt. Workers in the Cat Food Section wear green shirt. Workers in the Retort Section wear blue shirt. Workers in the Labeling and Warehouse Section wear gray shirt. Lower-level workers must wear white cap that is assigned by the factory. Chief and supervisors wear white shirt. The supervisors wear white cap with light blue stripe. The chief wear yellow cap with stripe of their section's color. As for pants, the factory has specified that workers wear polite pants in the color of black, blue and navy blue. They are not allowed to wear pants that have bright color or pale color or other color than those specified. Office workers also wear uniforms that the factory specified as well.

The factory forces workers to bring their uniform and get change at work. Since this factory is a canned food factory, importance is given to cleanliness. If workers are to wear uniforms from home, they may bring germs from outside that can contaminate the food and causes the food to be of bad quality. This is especially true for workers in the Cleaning Section to change their uniforms at work.

“It’s against the rules of production. We have to keep everything inside, even our boots and aprons. Everything is inside. We have to get change inside.”

“We have to dress cleanly, depending on the section. If the Light blue (the Cleaning Section), they would change in the factory. But for the White (the Packing Section), they can wear it from home. The boots are put on outside.”

“They say that for us in production (the Light blue), it’s better to get change at the factory so that dust does not get on the uniform when we travel. The other thing is that it’s dirty. It’s better to change at the factory, and the uniforms don’t get dirty...The dirt would get on the fishes, I think. That’s what they say. They are afraid the fish would be dirty and has low quality.”

“Before we wear the uniform from home. Now we have to get change. They have lockers to keep our things. They say that germs get on uniforms, so we have to change. They don’t allow us to take our boots out. Before we wear our boots home. Now we keep them in lockers...There’s a place to wash. When we get off housekeeping would have the chemicals ready in front of the restrooms. They would have hangers for aprons. Now they have a place to put the boots.”

Not only workers must get change, the factory also forces workers to wash their hands in specified chemicals. They also have to wash their boots with chemicals prepared by the factory. If workers do not follow these rules, they would be blamed and issued a warning note.

“In this factory, everyone must wash. If we don’t wash, we get a warning note. A friend of mine in the Cleaning Section got it. She didn’t wash. The chief saw it and gave her a warning note.”

“They say not to wear any shoes from the outside. They are afraid we would bring some germs inside. When we enter the production room, we have to wash our hand, and dip our feet in chemicals.”

Workers tend to resist this rule since they have to change twice. Afterward, the factory becomes less strict since it cannot provide lockers for every

worker. However, the Cleaning Section is still forced to change their uniforms at the factory, except for new workers that have no lockers.

“I’m lazy to get change twice. I wear one thing, then take it off and put on another thing. Now I wear the uniform to work. They don’t say anything. Before they stopped us from doing it. They said that we would bring in germs. I didn’t know what germs. I couldn’t see them...They did that for 2-3 months. They stopped us, but some didn’t obey. One section follows and another doesn’t. If one can wear, the other can. So they stop restricting. Some workers put them in lockers.”

To oversee the neatness among workers, security staff is responsible for checking workers’ neatness at the entrance. All workers must have their ID cards clearly shown at chest level before they enter the factory. Security staff is also responsible for inspecting whether workers bring anything into the factory such as candies, inhalants and balms, cigarettes, and cosmetics. The factory is afraid that these things may fall into the products and causes bad quality. If these products reach the customers, the factory could lose its reputation.

“When we enter, they would check. If they found it, they would not let us bring it in. Foods are not allowed inside. We enter at the security stall. They would look for food, candies and cigarettes. They don’t let these inside.”

“They don’t allow foods. Jewelry like rings and watches are also not allowed.”

“Necklaces are not allowed. They say that it might fall off. A lot of things like mirrors and inhalants are not allowed inside.”

Other than checking for things that workers bring to the factory, there is also a check of workers’ personal cleanliness, like checking whether workers tug in their hair neatly enough or not. They check whether there are loose hair at the back by putting an equipment against the workers’ backs to see if there’s any hair on the shirt. There is also a staff checking the workers’ nails every Monday. Workers must clip

their nails. The factory also issued a rule prohibiting makeup, painting of nails, and wearing of perfumes, since these will affect the quality of the product.

“They don’t allow us to wear makeup or use lipstick. They want us to keep clean. We can’t have long nails or paint our nails.”

The factory has issued these rules on uniforms and has forced workers to abide by the rules, but the factory has pushed the burden to workers by having to buy this equipment out of their money. The factory put these things for sale in the Personnel Management Section. They include shirts, aprons, caps and boots. The factory only provides gloves. Workers will get three pairs of gloves a month. If they are torn, workers must buy new pairs using their own money.

“They (uniforms) are not given. We have to buy them. There’s only buying in this factory. The gloves are provided. It’s the only thing. They give us three pairs a month. But they are not tough. Three pairs last about three weeks, and we have to buy them ourselves...Exchange is not possible. They say they already gave all out. I went and asked, and they didn’t give any.”

5.2.8.5 Rules and Regulations for Taking Leave

These rules and regulations include sick leave, business leave, maternity leave, vacation leave and other holidays. Details are as follow.

1) Sick leave. Workers are allowed to have no more than 30 days of sick leave and still get paid. Sick leave must be done through written document that is handed to chief or other superior authorities. Sick leave of three or more days requires doctor’s consent. If the worker is unable to present the doctor’s consent, he or she must explain their sick leave in written document.

2) Business leave. Workers are entitled of business leave, but hey must notify the chief ahead of time so that the chief can find their work replacements to ensure continuous production process. Workers on business leave do not get paid since they are hired on a daily basis.

3) Vacation leave. Workers on a daily basis that have worked for a year are allowed vacation leave of 6 days per year. They will receive the normal wages. The vacation leave cannot be collected toward the following year. Vacation leave is not allowed for 2 consecutive days. Workers wanting to take vacation leave must hand in a written document to their chief or higher authorities ahead of time. When they are given permission, they can take the leave.

4) Maternity leave. Female workers who are pregnant can get maternity leave before and after giving birth in a total of 90 days. The factory will pay the normal wages throughout the leave, but no more than 45 working days. Pregnant workers can ask to change position in the factory temporarily before or after giving birth.

Even though workers can ask to change their positions, they still work the same jobs as other female workers. For example, workers in the Cleaning Section still have to stand and work like other female workers.

5) Holidays

The factory has announced that there are 13 holidays in each year. The factory holds the right to change these holidays if it is seen appropriate, but no less than 13 days each year. These holidays include the New Year, Chinese New Year, Labor Day, the Queen's Birthday, Chinese Autumn Festival, End of Buddhist Lent, the King's Birthday, the Last Day of the Year, and Songkran holiday. As for Songkran holiday, workers are allowed to take leave for many consecutive days, but they have to work on Sunday ahead of time to compensate for that. These means workers must work for two consecutive weeks without any day off. The factory allows one free Sunday, and workers have to work again the following Sunday. Most workers are willing to work on Sunday in order to be able to go home in the countryside and spend many days with their relatives.

As for other holidays that government agencies have, the factory does not allow workers to take leave. These holidays are such as Makhapuja Day, Visakhapuja Day, Beginning of Buddhist Lent, and Chakkri Day. Workers see that Buddhist Lent Day is an important day for Buddhist, and they should be allow to take leave to give alms and offer foods to monks.

Thus, rules and regulations for taking leave reflect the importance of working days to the factory. They enable the factory to benefit from the surplus value of labor.

5.2.8.6 Work Disciplines and Punishment Terms

The factory has defined a set of disciplines to ensure that production process goes on smoothly and safely, as well as for the factory to be most beneficial. Other than disciplines, the factory also states punishment terms to enforce the disciplines so workers obey their superiors. Therefore, workers must follow the disciplines set forth by the factory. The disciplines that have been stated as work regulations include the following.

1. Workers must be responsible in performing their assigned tasks with their full capabilities. They must be diligent and honest, and do not blame each other or cause any damage to the factory or to other workers.
2. Workers must come to work and leave work according to the times specified by the factory.
3. Workers must obey the orders of their superiors or the factory.
4. Workers must follow work regulations and pay close attention to announcements by the factory that are posted on the bulletin boards.
5. During the time of work, workers must not attend to their own business, except when proper excuse has been allowed.
6. Workers must intend to work diligently with unity. They are to help each other as well as coordinate among themselves. They are not to wander around in other sections, unless there are work-related issues.
7. Workers must pay close attention to their performance. They are to report to their superiors when there is any occurrences that may cause damages to properties, products and reputation of the factory.
8. Workers must be ready all the time, and are willing to follow orders of changes in positions seen fit by the factory.
9. Workers must not do anything other than their assigned tasks or improper to doing their jobs.

10. Workers must not break or ignore rules and regulations, announcements, or orders issued by the factory.

11. Workers are not allowed to go outside of the factory during work, unless it is on the factory's business or permitted by their superiors.

12. Workers that agree with their superiors on working overtime or working on weekends must come to work accordingly.

13. Workers must not come to work late, or leave their tasks, or be absent frequently, which may cause damages to production or to the performance of the factory.

14. Higher authorities must be responsible for workers under them in following strictly to disciplines and regulations. If any worker violates any restriction, they are to report to the manager as soon as possible. If they do not report or help cover up the violation, they are considered as guilty as the worker who conducts the violation.

15. The factory has authority to issue orders or announcements as seen appropriate in order for workers to follow. The factory also has the authority to move and rotate positions of workers as seen appropriate.

16. Workers must not play around during work or work inertly with intention to pass by the time that can cause damages to the factory.

17. Workers must not promote or support break up of unity or arguments or fights, among themselves or with others. This includes the use of threat around the factory area or in the housing area, both during work and outside of work.

18. Workers must not post any sign, distribute documents, make appointments, hold meetings, have discussions, or distribute any printings that are not prepared by the factory. They must not destroy announcements by scratching, tearing, moving, altering, duplicating or any action of this sort without permission.

19. Workers must not steal, take, or bring properties or products of the factory out of the factory area without permission. They must not steal others' belongings as well.

20. Workers may not participate in strikes that violate the industrial relation act, announcements, orders and laws.

21. Workers must not intentionally slow down their work.

22. Workers must not act or say things that are aggressive toward their superiors due to dissatisfaction from orders, suggestions or warnings issued by their superiors.

23. Workers must not ignore orders justified by the laws of their superiors, the factory, or the factory work regulation.

24. Workers must not be dishonest in performing their tasks or engage in criminal acts against the factory intentionally.

Disciplines on properties and safety.

1. Workers must follow rules and regulations concerning the safety of the factory.

2. Workers that are specified by the factory to wear protective equipment must follow strictly to rules and regulations, or else the factory will not be liable for any danger that may occur.

3. Workers that have no responsibilities with machines are not to start or stop any machines.

4. Workers must use tools corresponding to the tasks with correct using methods to ensure safety.

5. Workers must maintain tools and equipment neatly for convenience of use and inspection.

6. Workers must maintain tools and equipment so that they are ready for use with safety all the time. If they are damaged or are in nonfunctional condition, workers must report their superiors immediately.

7. Workers must not play around using equipment at work.

8. Workers must keep the work area clean. They must not throw any food, waste or lubricants on the floor that could lead to accidents.

9. Before workers leave the factory, they must look around the work area so that the area is in nonfunctional status. This includes electricity, cooling machines, fans, electrical equipment and machines.

10. Workers must notify their superiors of any injuries immediately, no matter how severe the injury is.

11. Workers must warn fellow workers or notify their superiors when their fellow workers do not follow the safety rules and regulations.

12. Workers must cooperate with security staff or other related staff in searching personal belongings. They must hand over their belongings to security staff for search before leaving the factory area.

13. Workers must not destroy or causes damages to tools, equipment or other properties of the factory. They must not take tools and equipment or other properties of the factory for their own or other's benefits.

For workers who violate or avoid the specified disciplines, the factory has defined punishment terms for as follow.

1. Verbal warnings are given in the case of minor violation or an act of carelessness. Chief would use this type of warning when workers cannot work fully for the factory, including doing nothing and not performing up to the specified goals.

2. Written warnings are given in the case of absentees or workers having frequent sick leave or business leave.

3. Pay cut.

4. Temporary suspension without pay is used in the case that workers carelessly or intentionally cause accidents that lead to damages to the factory.

5. Layoff without compensation.

5.2.8.7 Welfare of Workers

5.2.8.7.1 Housings. The factory has provided housings for employees that are divided according to the positions. Management level like Marketing Manager and Quality Assurance Supervisor get rented townhouse in a villa across the street about one kilometer from the factory. Lower-level workers like those in production get rented flats, one located near the factory and the other belongs to the National Housing Department.

a. Townhouse for the management locates in a market near the factory. They are for supervisors and section managers. The houses are two and a half stories with fences. The factory pays for all the rent. The house has two occupants, Marketing Manager and Quality Assurance Manager. They have housemaids to clean the houses and do the laundries. The maids would do these chores every other day, and get overtime pay from the factory. Occupants do not have

to pay for anything. Other management that does not get the townhouse is paid 1,000 bahts a month for house rental fee.

b. Flats near the factory locate 100 meters away from the factory for convenience of workers even when they have to work late at night. There are two flats close to each other. For the new flat, the factory rents the whole building, while for the old one, the factory rents out only some rooms. Workers staying in these flats are from many sections including from Personnel Management Section and every section in production. The flat has two stories. The lower floor is for families, both male and female. The second floor is for female only. There are a total of 48 rooms. Now, the factory has allowed male workers to stay on the second floor of the new flat. Male and female workers live in different rooms. Rooms face each other with walkway at the center. The flat has entrances both in the front and at the back. The back passage is closed at night. Each room has a front door and a window. The rear is the restroom. The factory houses 6 workers in each room. If there are many workers, some rooms may have up to 7 occupants. Now the factory put 6-8 workers in each room. Workers have to stay in the flat since it is close to work. The room is not spacious, with space to sleep and put little things. The factory collects rent from workers at a rate of 130 bahts per week per worker. This is deducted from the workers wage. Workers are also responsible for water and electric bills.

c. Flat of the National Housing Department is occupied mostly by workers in the Cleaning Section, since this section has more workers than any other sections. There are also workers from other sections, but only a few. The building has 5 stories, which the factory rents out 70 rooms. There are also other occupants renting the flat. To get from this flat to the factory takes 30 minutes. The factory would pay for transportation, which are 5 converted trucks. Most workers staying in this flat work the night shift. The workers are taken from the flat to the factory at three thirty in the afternoon. In the morning, the factory would notify the trucks to pick up workers according to the out of work time. Workers will leave around five, five thirty, or six thirty. There will also be a special transportation for new workers. New workers are placed in the day shift. Workers staying in this flat pay 130 bahts per week per person. Water and electric bills are separated. There are 5 occupants in each

room. This flat is about 30 kilometers from the factory, but it is chosen due to many rooms available.

The fact that workers from various places live together have caused many problems. Old workers threaten new ones. They act like they own the rooms. Other problems include not enough rest as well as safety of personal belongings.

1.1 Old workers act like they own the rooms. Taking showers also causes problems since they share the bathrooms.

1.2 Problems of not enough rest are due to the fact that workers work in different shifts. Workers in the night shift do not get enough rest. Whenever there is any room available, workers would move to the vacant room right away.

Other than this, workers do not get enough rest due to the flat locating too far. Day shift workers get to the flat around eleven at night. Once they get to their rooms, they have to do laundries and eat. They would get to sleep around midnight, and have to wake up at around four in the morning since they have to take turns taking showers. Once they finished, they would come down and wait for transportation at five thirty. The trucks drop of workers at the factory around six in the morning.

1.3 Problems of disturbing noises from adjacent rooms include loud music and loud talking. Since they live together, when the neighbor is too loud, they are afraid to tell for fear that they will not get along. This has caused not enough rest.

1.4 Problems with safety of personal belongings are also issues in the flat. Workers must keep their valuables to themselves even when they take a shower. If they do not bring their valuables along, they have to fin a place to hide them.

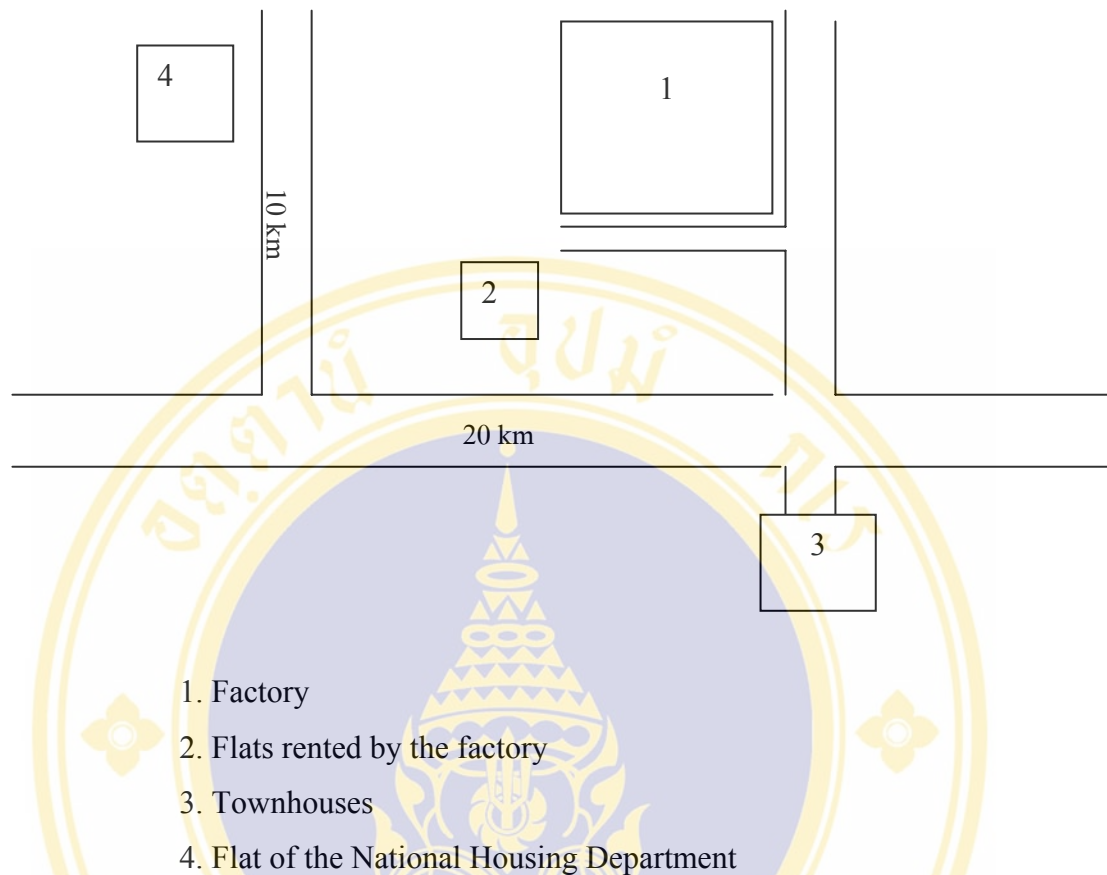


Figure 10 Locations of the factory and workers' housings

5.2.8.7.2 Transportation Welfare. Before the factory only provided transportation to management level employees, office workers, and workers that work overtime. Lower-level workers did not have any transportation provided. They had to commute on their own expenses. Those that stay close to the factory would walk to work. Other workers would use public transportation to get to work. Workers living in nearby provinces would hire the whole bus and travel to work together.

When the factory wanted to increase its productivity, more workers in the Cleaning Section are hired in order to have workers work in two shifts. The factory has set up transportation welfare for workers on a daily basis in every production section since June 2002. Workers in nearby provinces get to work via factory-hired truck. Workers in the flat of the National Housing Department get 5 converted trucks. Workers that live in the same province as the factory do not have to

pay for transportation, but workers in nearby provinces are given 30 bahts per person per day. If they require more, they have to pay for themselves.

Vehicles that the factory provides for management level employees and office workers are vans and pickup trucks with covered truck bed and seating. Workers that want to get on the factory provided vehicles must have their names sent to the Personnel Management Section by their chief in order to be eligible for the provided transportation. If they do not have their names sent in, they cannot use the provided vehicles. Workers must get on the vehicles at the factory. The provided vehicles do not stop to pickup workers on the way.

5.2.8.7.3 Other Welfare

1) Uniforms and related equipment are divided according to the level of workers. Management level employees are each given fabric enough to tailor two uniforms along with a cap. The time the fabric is given is not certain. Sometimes it's given every year, sometimes it's every other year. Lower-level workers are not given any uniform. They have to buy uniforms from the Personnel Management Section or at a shop in front of the factory.

Other equipment must be purchased by workers. They include knives and cutters. The knives cost 30 bahts each. Workers are not allowed to take knives outside of the factory. After work, they must store their knives in the factory. Once they resign, the factory would give back the knives. Workers in the Labeling Section must buy their own cutters. If any worker is to help out in the Labeling Section, they can use the factory's cutters that have no handle. Workers must use a piece of cloth or paper to hold the blades. Gloves are provided to workers that require the use of them such as the Raw Fish-Precooking Section and the Cleaning Section. The factory provides 3 pairs of gloves to each worker each month. If the gloves are torn before the end of the month, the workers must purchase new pairs.

2) Foods are not provided, but places to have meals are set to the side of the factory. There are 17 tables with 3 wash basins. There is a drinking water tank in the cafeteria. Each section also has a drinking water tank. Housekeepers in each section are responsible for preparing the drinking water. They would put ice and water into the tank, and would wash the glasses and refill the water.

3) Restrooms locate in three places around the plants. The first is at the unloading zone in front of the factory with about 6 rooms. Workers in the Unloading Section are responsible for cleaning the restrooms. The second location is beside the factory near the sewage well with 20 rooms. Housekeepers are responsible for cleaning the rest rooms in this location. Workers that use this restroom include those in the Labeling and Warehouse Section, the Blister Pack Section, and the Raw Fish Section. The third location is behind the factory with 20 rooms. Housekeepers are also responsible for cleaning these rooms. Workers that use this restroom include those in the Precooking Section, the Cleaning Section, the Cat Food Section, the Retort Section, the Quality Assurance Section, and the Pouch Section. Workers see that there are not enough restrooms, especially if they use the restrooms at the same time, they would have to wait a long time.

4) Before the factory did not give bonuses, but gave money out during Chinese New Year that workers receive once a year. In 2002, the factory gives out bonuses only to employees on a monthly basis at the rate of half a month salary.

5) The factory provides welfare on medical by providing a first-aid room. There is a nurse in the room with no doctor. There are a total of 6 nurses in the factory, who will take turn to work one person each shift. Before the first-aid room was open from Monday to Saturday in two shifts. Each shift lasted 8 hours. The first shift was from 8:00 a.m. to 4:00 p.m. The second shift was from 4:00 p.m. to 11:00 p.m. or 5:00 p.m. to 12:00 p.m. The factory gave freedom to nurses in what time they would come in, at 4:00 p.m. or at 5:00 p.m. On 5 January 2000, the factory arranged for the first-aid room to be opened three shifts a day by increasing the third shift from 00.00 a.m. to 07.00 a.m. And on 28 July 2002, the first-aid room also started to open one shift on Sunday from 00.00 to 07.00 a.m. This is due to the increase number of accidents to workers in the Raw Fish- Precooking Section. Thus, the first-aid room is now open from Monday to Sunday.

Regulations in using the first-aid room require that the ill or injured workers notify the chief, who in turn have to write a form transferring the workers to the first-aid room. Any worker with no form, the nurse would ask the worker to return and get the form before arranging for any medicines.

Any worker that is diagnosed to be untreatable by the nurse, the Personnel Management Section would be notified. Transportation would be arranged to take that worker to a hospital under social security. If the worker has no social security, he or she would be taken to the nearby public hospital.

If the worker is injured from an accident during work and the nurse cannot give treatment, the Personnel Management Section would issue a compensation document for the worker to receive treatment at a private hospital.

Other than this, If workers become ill or injured other than during work, the factory does provide transportation to the hospital. The workers must present their personal ID cards at the Personnel Management Section, which would issue a form transferring the workers to the first-aid room. Beside medical welfare provided to workers in the factory, the factory also provides medical welfare to those living around the factory as well. These people can receive medicines from the first-aid room. If they cannot be treated by the nurse, transportation would be provided to take them to a hospital.

5) Recreational area is not provided by the factory since all spaces are put to maximum uses. Workers would just gather around to talk around the food stalls in front of the factory. Workers living in the nearby flats would walk back to their rooms. At the same time, the factory does arrange an area for visitors with sofas and newspapers. Visitors are served with water and coffee. This visitor lounge is not allowed for workers to use.

From the above discussion, it can be seen that the labor process of the canned tuna factory is composed of two components, the labor process and the work organization. These components are created to control the labor, allowing the factory to fleece maximum labor efforts. Both the labor process and the work organization have caused accidents and health problems to labor that will be discussed in the following chapter.

CHAPTER VI

ACCIDENTS AND HEALTH PROBLEMS

IN INDUSTRIAL FACTORY

In this chapter, the researcher intended to present the occurred accidental situation and health problems in the factory by mentioning about the occurred accidental situation in the industrial factory, types of accidents, accidents in different working sections, the appearance of injury, the severity of the accidents and the interval of the accident occurrence.

The health problems occurred with the labors in the industrial factory were headache, faint, dizzy, vomiting, stress, back pain, waist pain, wrist pain, shoulder pain, arm pain, leg pain, swollen leg, itchy hashes, peptic ulcer, eye injection and the cystitis the details about accidents and health problems were as the following :

6.1 Accidents Occurred in Industrial Factory

6.1.1 Situation of Accidents Occurred

Accident situations from working in the industrial factory were from the two sources: accident statistics collected by the factory safety officials and accident statistics collected at the nursing room of the factory as the followed details:

6.1.1.1 The statistics of accidents occurred from working collected by the factory safety officials

The statistics of accidents occurred from working collected by the factory safety officials. From the study of accident statistics between 1999 – 2002, it was found that in 2002 the highest numbers of accidents were 52 but in 2001 and 1999 there were close numbers 35 and 34 incidents respectively. In the year 2000, the least numbers of accidents were 28 incidents as shown in Table 6.

Table 7 Number of Workplace Accidents in 1999 – 2002

Accidents	1999	2000	2001	2002	Total
Cutting / Wounding	7	3	3	5	18
Being bumped	14	11	12	20	57
Eye injection from articles and chemical Substance	3	5	3	4	15
Burns from exposure to hot object	-	4	2	-	6
Being nipped	4	3	8	10	25
Being pierced	5	1	-	5	11
Falling	-	1	-	8	9
Injured by falling object	-	-	2	-	2
Electric shock	1	-	-	1	2
Total	34	28	35	52	149

Source: Factory Safety Officials

The type of the highest numbers of accidents occurred in 1990 – 2002 were being bumped. It was the highest statistic because it was very serious. After being strongly bumped, the symptoms would be bruised, swollen, painful, dislocate and fracture bones. Such accidents could not be cured by the nurse at the factory. Accordingly, the personnel officers needed to transfer the labor to the hospital. The later of the accidents were from being nipped, cutting or wounding, and the eye injection from materials and chemical substance respectively. The accidents occurred the least were from falling materials, and electric shock.

The accident records done by the factory safety officials were different from the nurse's records. It was because the records done by the factory safety officials were for the medical fee and for receiving the compensation from the workmen's compensation fund. For the labor below 18 years old, the factory didn't claim from the workmen's compensation fund when they had accidents, but the factory would be responsible for all the expenses according to the law of labor welfare. It was determined that the labors under 18 years old were not allowed to work with machinery.

6.1.1.2 The statistics of accidents collected by nurse

It was found that the statistics of accidents recorded by the nurse in the factory from 1999 – 2002 were increased every year. It could be seen that in 1999 there were 95 incidents and in 2000 there were 182 incidents. It was increased about 1.9 times from the year 1999. Then, in 2001 there were 410 incidents which were increased from 2000 about 2.3 times. In the year 2002, the highest numbers of accidents were 529 incidents. It was increased from the year 2001 for 1.3 times and from the year 1999 for 5.6 times as shown in Table 7

Table 8 Number of Workplace Accidents 1999 – 2002

Accidents	1999	2000	2001	2002	Total
Cutting / Wounding	35	72	167	201	475
Being bumped	23	40	96	147	306
Eye injection from articles and chemical substance	14	21	44	53	132
Burns from exposure to hot object	10	17	21	36	84
Being nipped	4	11	27	37	79
Being pierced	5	7	22	33	67
Falling	4	10	19	15	48
Injured by falling object	-	2	13	7	22
Electric shock	-	2	1	-	3
Total	95	182	410	529	1,216

Source: Nursing Room

When comparing the statistics of accidents at work recorded by the safety officials with the statistics of accidents recorded by nursing officials, it was found that the statistics recorded by the safety officials were lower than the statistics recorded by the nursing officials. In 1999, the statistics of accidents recorded by the safety officials were 34 incidents. In the meanwhile, the statistics of accidents recorded by the nursing officials were 95 incidents. The record of accidents by the safety officials was 2.8 times lower. In 2000, the statistics of accidents recorded by the safety officials were 28 incidents when the statistics of accidents recorded by the nursing officials were

182 incidents. The record done by the safety officials were 6.5 times lower. In 2001, the statistics of accidents recorded by the safety officials were 30 incidents while the statistics of accidents recorded by the nursing officials were 410 incidents. The records of accidents done by the safety officials were 13.7 times lower than the records from the nursing officials.

In the year 2002 the statistics of accidents recorded by the safety officials were 53 incidents while the statistics of accidents recorded by the nursing officials were 529 incidents. The records from the safety officials were 10 times lower than the records from the nursing officials.

It could be concluded that the situation of accidents occurred from the work in the factory were increased every year. The lowest numbers of accidents were in the year 1999 and continuously increased until the highest numbers were in 2002. These showed that the labors in this factory did not have working safety.

6.1.2 Types of Accidents in the Factory

From 1999 – 2002 the accidents could be divided into 9 types as follows:

6.1.2.1 Cutting Wounding

The cutting and wounding were from knives, cans, screens, irons, trays, glue and boxes. This type of accidents occurred the most every year from the year 1999 to 2002. However, in 2002, this type of accidents was 201 incidents. (from the total accidents in 2002). It was about 38%

6.1.2.2 Being bumped

Being bumped was from irons, screens, lorry, pieces of ice, tables, woods, cans, plastic and trays. From the statistics of accidents during 1999 and 2002, this type of accidents occurred in the second level. In 2002, there were 147 incidents which were about 27.79%.

6.1.2.3 Eye injection from the material and chemical substance.

The eye injection from such things were from fish, water used in cleaning fish splashing into eyes, dust from boxes, pieces of iron from the welding, chemical substance used to erase the code and cleaning solution. From the statistics between

1999 to 2002, this type of accidents occurred in the third level. In the year 2002, there were 53 incidents about 10.02%.

6.1.2.4 Being nipped

These types of accidents were from the belts, doors, and carts. There were 37 incidents of the accidents about 6.99%.

6.1.2.5 Burns from exposure to hot objects

The hot objects were from exhaust pipes, and boiling water. There were 36 incidents of the accidents which were about 6.80%.

6.1.2.6 Being pierced

This could be from fish bones, iron, wood or stepping on nails. There were 33 incidents of accidents about 6.24%.

6.1.2.7 Falling

This type of accident was from slippery, falling into the channel, pipe, and palate. There were 15 incidents of accidents about 2.84%.

6.1.2.8 Falling materials

Falling materials such as the fish falling and bumping. There were 7 incidents of accidents about 1.32%.

6.1.2.9 Electric shock

In 2000 and 2001, It was found that the electric shock occurred once a year. In 2002, there would not be any accidents in the nursing room.

Table 9 Number and Percentage of Workplace Accidents in Factory from January - December 2002 classified by types

No.	Accident Type	Incidents	Percentage
1	Cutting /Wounding	201	38.0
2	Being bumped	174	27.8
3	Eye injection from material and chemical Substance	53	10.0
4	Being nipped	37	7.0
5	Burns from exposure to hot object	36	6.8
6	Being pierced	33	6.3

Table9 Number and Percentage of Workplace Accidents in Factory from January - December 2002 classified by types (cont.)

No.	Accident Type	Incidents	Percentage
7	Falling	15	2.8
8	Injured by falling object	7	1.3
	Total	529	100.0

Source: Nursing Room

It could be concluded that from the year 1999 – 2002 there were accidents in the industrial factory. It was found that No. 1 – 3 accidents were cutting / wounding, being bumped and eye injection from material and chemical substance respectively. The accidents from being nipped happened in the fourth order during the year 2001 and 2002. The accidents occurrence the least were the accidents from the electric shock. Besides, there were accidents from working. There were also some small wounding which did not get any cure from the nursing room.

6.1.3 Time and the Occurrence of the Accidents

In the study about time and the occurrence of the accidents classified by the service time of the nursing room could be divided into three periods: the first period was from 8:01 a.m. to 4:00 p.m., the second period was from 4:01 p.m. to 12:00 p.m., and the third period was from 0:01 a.m. to 8:00 a.m. From the statistics of accidents occurred and received the medical care at the nursing room. It was found that the accidents happened the most in the first period. There were 271 incidents of accidents. It was about 51.23%. The second periods there were 172 incidents of accidents. It was about 32.51%. There were the least accidents about 86 incidents which could be about 16.26%. During the first period, it was the rush hours for working and there were strict rules from the administration section. The relation between time and accident occurrence could be shown in details in Table 10

Table 10 Number and Percentage of Workplace Accidents from January – December 2002 Classified by Time

Time	Incidents	Percentage
8:01 a.m. – 4:00 p.m.	271	51.23
4: 01 – 9:00 p.m.	172	32.51
0 :01 – 8:00 a.m.	86	16.26
Total	529	100.00

Source: Nursing Room at the Factory

6.1.4 The Characteristics of injury

The characteristics of injury from the statistics at the nursing room. The majority of wounds were lacerated wounds about 46.12%. The latter were superficial wounds about 20.42%, contusion about 18.33%, fracture bones about 0.76% and others about 14.37%. The majority of labors who had accidents received the medical care at the nursing room of the factory. There were only 1.2% were transferred to the hospital. However, the statistics of injury recorded by the safety officials were big sizes of wounds which needed to be stitched. Sometimes, there were muscle injuries and ligament. The labors who had severe injury and fracture bones for 6 times and one time of dislocation.

The severity of accidents recorded by the safety officials, it was found that the majority of injured labors had big sizes of wounds and they needed to be stitched. Sometimes, there were such severe injuries that the muscles and the ligament got injured. The labors who got severe injury with fracture bones for 6 incidents and dislocation for 1 time. The labors who got severe injury and had to stop working. The labors who had to take more than 3 days off from work were 20 incidents about 38.46%. On the other hand, the labors who took less than 3 days off were the same numbers as the labors who never take off from work. There were 16 incidents about 30.77%

The majority of labors who had little injury would take care of themselves. They would not come to the nursing room. They would continue working. For instance, the labors who were cut with can, would only wash their hands off at the basin. Then, they would dry the wound with cloth or tissue and cover the wound with

the plaster. When the labors got cut with knives, they would cover the wound with pieces of fish until the blood stopped. Then, they washed off at the basin and continued working. The reasons they did not come to the nursing room, they would have to waste their time from work and they could not finish the work as the determined goals.

6.1.5 Accidents in Different Sections

The accidents occurred in different sections. The section with the most accidents was the packing can section. There were about 104 incidents about 19.66%. The latter sections were the labeling section and the warehouse section with 96 incidents of accidents about 18.15%. The third level sections were raw fish and precooked fish with 87 incidents of accidents about 16.44%. The fourth level section was the cleaning with 76 incidents of accidents about 14.37%. The fifth level was the maintenance section with 41 incidents of accidents about 7.75%. The sixth level was the quality control section (QC) with 34 incidents of accidents about 6.43%. The seventh level was the support section with 20 incidents of accidents about 3.97%. The eighth level was the blister pack section with 19 incidents of accidents about 3.59%. The ninth level was the retort section with 17 incidents of accidents about 3.21%. The tenth level was the pouch section with 14 incidents of accidents about 2.65%. The eleventh level was the seammer section with 12 episodes of accidents about 2.27%. The section with the least accidents was the office section with 8 incidents of accidents about 1.51%. (Table 11)

Table 11 Workplace Accidents from January – December, 2002 Classified by Sections

Level	Sections	Number of Labors in section	Number of Accidents	Percentage of Accidents	Percentage of labors in sections
1	Packing Can	370	104	19.66	28.11
2	Labeling& warehouse	308	96	18.15	31.17
3	Raw and Precooked fish	173	87	16.44	50.29
4	Cleaning	873	76	14.37	8.73

Table 11 Workplace Accidents from January – December, 2002 Classified by Sections
(cont.)

Level	Sections	Number of Labors in section	Number of Accidents	Percentage of Accidents	Percentage of labors in sections
5	Maintenance	62	41	7.75	66.13
6	QC	153	34	6.43	22.22
7	Support	52	21	3.97	40.38
8	Blister pack	59	19	3.59	32.20
9	Retort	44	17	3.21	38.64
10	Pouch	110	14	2.65	12.73
11	Seammer	22	12	2.27	54.55
12	Office	59	8	1.51	13.56
	Total	2,169	529	100.00	24.39

Source: Nursing Room at the Factory

The process of working which was divided into different sections caused different types of accidents because the characteristics of working process in each section were not the same. The labors in the packing section worked with the machinery and filling the fish into the cans caused the accidents from can cutting the most. The latter was being bumped and burns from exposure to hot object. In the labeling section and the warehouse section were the work with knives, glue for labels and boxes, and on the belts. These could cause the most cutting and wounding. The latter was being bumped and being nipped by the belts, as the details shown in Table 12

Table 12 Accidents Occurred in the year 2002 Classified by Sections and Levels

Sections	Level	Type of Accidents	Number of accidents
Packing Can	1	Cutting / Wounding	57
	2	Being bumped	22
	3	Burns from exposure to hot	8
Labeling & Warehouse	1	Cutting / Wounding	42
	2	Being bumped	25
	3	Being nipped	11
Raw & Precooked Fish	1	Being bumped	29
	2	Cutting / Wounding	13
Cleansing		Being pierced	13
	1	Being bumped	30
	2	Cutting / Wounding	28
Maintenance	3	Eye infection with material & Chemical Substance	9
	1	Eye infection with material & Chemical Substance	10
	2	Being bumped	9
QC		Burns from exposure to hot object	9
	1	Cutting / Wounding	15
	2	Being bumped	8
Support	3	Burns from exposure to hot object	6
	1	Cutting / Wounding	7
	2	Eye infection with material & Chemical Substance	6
Blister pack	3	Being nipped	4
	1	Cutting / Wounding	11
	2	Being bumped	5
Retort	1	Being bumped	9
	2	Cutting / Wounding	6

Table 12 Accidents Occurred in the year 2002 Classified by Sections and Levels
(cont.)

Sections	Level	Type of Accidents	Number of accidents
Pouch	1	Cutting / Wounding	8
	2	Eye infection with material & Chemical Substance	4
Seammer	1	Cutting / Wounding	6
	2	Being bumped	5
Office	1	Cutting / Wounding	5
	2	Being nipped	2

Source: Nursing Room at the Factory

Accidents occurred in different sections

6.1.5.1 Accidents in raw and precooked fish

In the section of raw and precooked fish was the section to provide raw materials ready for the process of packing. There were 87 incidents of accidents which could be classified as accidents from piercing fish bones, mud splashing into the eyes, accidents from fish bumping, overlying fish, accidents from boiling water of the lifting truck, being cut by chains, being cut by irons and the accidents from the bumping of the fish lorry.

6.1.5.1.1 Fish bones piercing

The accidents happened the most in the raw fish section were the piercing of the breast fins and the tail fins. The labors might say that fish bones piercing. When the labors transfer the fish from the truck or from the container to the belts, they would be pierced by the tail fins.

After being pierced by the fish bones, the labors would take care of themselves first. They thought it was not a severe accident. They might have some pain and they only asked for the relieving pain medicine from their friends or from their leaders. If their friends or their leader did not have medicine they would ask for some medicine to relief pain from the nursing room. If there were some fines or fish tail piercing and staying inside, they would take them out by themselves with biting

teeth and pulled them out. If they could not do it by themselves, they would ask their friends to do it. After they try to take care of themselves, the fins would come out, then, they would go to the nursing room at the factory. If the nurse could not handle that the labors would be transferred to the personnel section and to the hospital for the medical care.

The result of trying to take care of themselves by pulling out the fish bones which cause the inflammation. The wound got so swollen that the labors could not work. Sometimes, they decided to take off from work. Sometimes, they would come to the nursing room and the medical certificates were given to them for their days off. The labors who had to stop working would not get paid. They would not be able to get their hours paid and their over time payment.

6.1.5.1.2 Mud splashed into Eyes

The accidents from mud splashed into the eyes were from selecting the sizes of the fish. The labors who were standing of the belt would get splashed by the mud the most often. They were standing very close to the labors throwing the fish from the truck to the belt.

For self – care, the labors who got splashed with mud into their eyes, mostly tried to take care of themselves first by washing their eyes off with clean water. They thought that it was not a severe accident so they did not get the medical care at the nursing room.

6.1.5.1.3 Being bumped by the fish and being lied on the top by the fish.

The accidents from being bumped and lied over by the fish were from transferring the fish. The labor had to be on the truck or the container truck. Then, they threw the fish on to the belt or sometimes, the fish tanks on the top might fall on their shins, and lie on the feet. The labors sometimes were bumped on their heads and chest by the fish.

After being bumped, the labors who did not any wounds, would continue working. Some might take care of themselves by using the balm during their break. If the being bumped and had the wounds and bled, the labor would take care of themselves by trying to squeezing the blood out. If they had some pain, they would

ask for some medicine to relief the pain. If they had the severe pain, they would go to see the doctor.

6.1.5.1.4 Being scalded by the steam from the lifting truck

The accidents from being scalded by the steam from the small goods (transporting truck with two pieces of iron bars sticking out to lift things) were from the driving of the labors. When they opened the lid of the steam pot while it was still hot, there was some steam diving and scalded their arms and their legs.

For the self – care, the labors being scalded by the steam, would come for the medical care at the nursing room. This kind of accident was rather severe. Some had to stop working for about 5 days.

6.1.5.1.5 Being cut by chains

The accidents from being cut by chains when moving the screen up and down, the labors in the precooked fish section would put the fish in the order of sizes and weight while they were working, they threw their hands and grabbing the chains and were cut by the chains. However, this kind of accidents was a few.

The accidents which were severe when tearing the flesh, the bones at the end of the fingers were broken. The personnel would send the labors to the hospital for the medical care by using the workmen's compensation fund. When there were the accidents, the labors might have to stop working for 3 weeks.

6.1.5.1.6 Being cut by the iron

The accidents from being cut by the iron precooked happened to the labors who worked in the fish section. The ones who pulled the fish screens and the ones who put the fish in the order on to the screen, might be cut by the irons.

The severity from this kind of accidents was considered as not so sever, the labors only got the scratches. The majority of the labors did not take care of themselves. They would continue working. If there were some lacerated wound, the labors would go to the nursing room. Then, they could get back to work.

6.1.5.1.7 Being bumped by the fish lorry

The accidents from being bumped by the fish lorry would occur in the precooked fish section when the labors pulling the screens in and out of the precooked fish container.

The labors would do the self – care when the accidents were severe. The mild injury such as bruises and pain, the labors would take care of themselves by taking the medicine to relief pain. For the sever pain such as very painful, swollen and could not walk, the labors would get the medical care at the nursing room. If the nursing room could not handle such problems, the personnel officers would transfer the patients to the hospital by using the returning fund.

6.1.5.2 Accident in the Cleaning Fish Section

The accidents in the cleaning fish section tended not to be severe. The labors could take care of themselves. They would not go to the nursing room. Accordingly, the statistics of accidents in the nursing room were rather low. The accidents from the cleaning fish bones, slippery and falling down, being cut by the screen, being cut by the trays, being cut by knives, being knocked down by lorry. The details in this kind of accidents were as follows:

6.1.5.2.1 Being pierced by fish bones

The accidents of being pierced by fish bones in the cleaning fish section occurred while the labors were working in the cleaning skin process. While they were cleaning the skin, they might carry the knives close to the end of the knives. That could cause being pierced by the fish bone. The labors were often pierced by the fish bones.

6.1.5.2.2 Being cut by the screen

The accidents from being cut by the screen occurred when the labors pulling the fish screens to the table where the heads of the fish would b e broken off. The labors could get cut while they were pulling out the screens too far in order to carry the fish and put them in the trays.

After being cut by the screen, the labors would take care of themselves according to the severity of injury. If the cutting from the screen was small, and the wound slightly bled, the labors would put the bandage on the wound. If the cutting from the screen was severe, there was a lot of blood coming out, the labors would get the medical care at the nursing room.

6.1.5.2.3 Hands being cut by Trays

The labors who cleaned the skins and the blood tended to get cut by the trays. The accidents were from the labors hurrying to take the trays off the pile to place under for the fish skin, fish blood and fish.

The labors would take care of themselves when there was severity of the injury. When the labors found the slight injury, a little bleeding, the labors would let it stop bleeding by itself. Some labors would use the bandage to cover the wounds.

6.1.5.2.4 Being cut by the knives

The accidents from being cut by the knives in the cleaning fish section occurred when the labors cleaned the skin and the blood. However, the statistics of the labors using the nursing room were low because the injury was not severe. So, they did not come to the nursing room for the medical care.

After being cut by the knives, the labors would take care of themselves. They would not go to the nursing room. Some took care of themselves by putting the fish on the wounds. The saltiness of the fish would make the blood stop. After that they would continue working. Some only washed off their hands with the pipe water and squeezed the blood out.

6.1.5.2.5 Being knocked by the fish lorry

The accidents from being knocked by the fish lorry in the clean fish section often occurred when there were many labors in the narrow space. This kind of accidents could occurred to everyone in the clean fish section. Sometimes, the labors stood in one place could be hit by friends when delivering the fish and pulling the fish lorry. Sometimes, when the labors were standing away from the clean fish section, they still could be hit by the fish lorry.

The accidents could be both severe and not severe, when the labors got hit but not so severe, they would not take care of themselves. They would continue working. If the labors had severe pain such as very painful, very swollen, the labors would come to get the medical care at the nursing room. Some of the labors who had severe injuries had to stop working.

6.1.5.3 Accidents in the Packing Can Section

The accidents in the packing can section often occurred with severity, the labors accident working in the packing can section was very dangerous because the labors had to work with the equipment and machinery. The accidents in this section were being cut by the cans, hands got stuck in the machines, being nipped by the belts, slipped and fell, being hit by the lorry and getting heated from the steam pipes as the following details:

6.1.5.3.1 Being cut by Cans

The accidents from being cut by cans were the accidents happened the most with the labors in the packing can section especially with the labors who weighed the fish and the labors who inspected the seam of the cans. They would get cut from the cans the most. Some labors got cut by the cans very often, within 2 months their hands would get cut until they were riddled.

The majority of the labors thought that being cut by the cans was not the accident. The accidents were defined according to the severity of the injuries. If there was little injury or scratches or little bleeding, the labors thought those were not accidents. If they were severe injuries, had a lot of bleeding from the wound until the labors could not stop bleeding and receive the medical care from the nursing room. The labors would call such injuries “accidents”

When there were injuries from being cut by cans, the labors took care of themselves by washing their blood off in the basin in the section. Then, dried the wound with cloth (hand towels). After that they put the bandages on the wounds. Some bought the bandages for the wound when being cut by the cans. Some used the bandages from the nursing room and they were kept in the section. They, then, wore the gloves so that they could continue working.

Some labors took care of themselves like the others did. For example, they covered the wound with salt for about 5 minutes. After that they washed off with fresh water. Even though covering the wound with salt was rather painful, the labors had to be patient.

A large number of the labors who were cut by the cans did not get the medical care at the nursing room with the reasons that they did not want to waste their time. The supervisors would not let them go to the nursing room. The supervisors

thought they were little injury. If they put on the bandages, they would stop the bleeding.

6.1.5.3.2 Hands got into the Scam Machine

The accidents of putting the hands into the scam machines occurred with the labors in the packing can section when they were on duty washing the sealing machine. When the labors and friends washed the sealing machine, a friend would turn the lid sealing machine, the other could get the hand into the machine.

When there were accidents from the hand getting into the lid sealing machine, the accidents were very sever. There were a lot of tearing and the bleeding. Accordingly, the labors got the medical care at the nursing room. If the injuries were so severe that they could not be cured, the nurses would form the personnel section and the patients would be transferred to be cured at the hospital with the support of the workmen's compensation fund.

6.1.5.3.3 Being Nipped by the Belts

The accidents from being nipped by the belts often occurred with the labors working with the packing can machines. The accidents occurred while the labors were working or washing the filling machines. The accidents were severe with lacerated wound and fracture bones. Such accidents wasted the working time.

When there were accidents from being nipped by the belts, the supervisors would ask the mechanic to pull back the belts so that the hands would be out of the belts. After that the supervisors would take the patients to the nursing room. If the nurses checked and found that they could not take care of such injuries, they would inform the personnel section to transfer the patients to the hospital by refunding from the workmen's compensation fund.

6.1.5.3.4 Slipping and Falling

The accidents from slipping and falling often occurred with the labors working at the end of the packing can tracks. The areas at the end of the tracks were dirty with pieces of fish and oil and made the labor slip and fall.

The labors took care of themselves according to the severity of the accidents. The labors who slipped and fell did not get severe injuries such as bruises and little searches. The labor would not take care of those injuries. However, the labors with severe injuries such as painful symptom, swollen feet, could hardly walked

or could not walk would get the medical care at the nursing room. The majority of the labors thought such accidents were not so severe that they needed the medical care.

6.1.5.3.5 Being Hit by the Fish Lorry

The accidents from being hit by the fish lorry occurred during the time that the machines were out of order. The labors had to use the lorry to carry the bad fish from the track. That made the area too narrow to work. Accordingly, the labors were hit by the lorries.

The accidents were not so severe only some bruises. The labors were very patient and continued working with out receiving the medical care at the nursing room.

6.1.5.3.6 Hands Got in The Fish Cutting Machine

The accidents when the hands getting into the fish cutting machine could occur near the finishing time at work. It was the time to clean the machines. The labors used the sponges to scratch the chains. Then, the hands could move along the chains and get into the fish cutting machines. The ring fingers could get injured.

When the labors had the accidents of putting the hands into the fish cutting machines, they would call for their supervisors so that their supervisors would take the labors to the nursing room. Their friends would try to use the water hose to wash off the fingers to see the wounds. Their co – workers did not think that the accidents would be severe. After checking the wound, they wondered if the bones at the end of the fingers were broken. So, they informed the safety officers in order to transfer the labors who got injured to the hospital by refunding the workmen's compensation fund. After the doctor gave the patients some stitches and put the aluminum cast, the patients had to take off from work about 20 days.

6.1.5.3.7 Being hurt from the Exhaust Pipe

The accidents from the exhaust pipe in the packing can section occurred with the labors who worked with filling some other factors and the labors who worked with the lid sealing machines. Some of the labors got injured by the exhaust pipe while they were cleaning the machines even though the machines might be operated.

The labors would take care of themselves according to the characteristics of the injuries. For instance, some of the labors got little injury and had

some pain. They would not take care of themselves. However, the labors who had big and sever injuries would get the medical care from the nurses at the industrial factory.

6.1.5.4 Accidents in Labeling and Warehouse Sections

6.1.5.4.1 Being bumped

The accidents from being bumped the container by occurred with the labors in the transferring the products at the harbor. When the labors put the goods in the container trucks, they would close the container lockers. If the containers were old, the labors had to push very hard. The iron could bump their eyebrows and injure them.

When the labors got injured, they would let them recover naturally if the injury was small. If it was the severe injury with lacerated wound and continuously bled, the co – workers might use the ash from the cigarette cover the wound. Then, the labors would be taken to the nursing room.

6.1.5.4.2 Being bumped by Black Plastics

The accidents from being bumped by black plastics occurred with the labors in the transfer goods section of the harbor. Transferring the goods in the container had to be lifted by the Volk lift and pushed the palate into the container cabinet. The black plastic pieces were used between the two palates in order to prevent the damage of the goods. After that there were 4 labors to carry fish can boxes inside the container to the outside. When the labors put all of the palates, they would put the plastics underneath but the plastics could fall and bump their chests.

When there were accidents from the bumping of the black plastics, the labors would go to the nursing room for the medical care. Then, they went back to continue their work.

6.1.5.4.3 Being Cut by the Screen

The accidents from being cut by the screen occurred with the labors who pulling the screens of fish to the labors in the other sections to clean the cans. The factory let the labors in the maintenance section make the screens for pulling the fish in the factory in order to save some expenses and have the fish screens as needed. However, the mechanics who were not skillful in doing the welding, the fish screens had some cracking of the iron. As a result the labors' fingers got cut from such cracked irons.

When the labors got cut by the fish screens, they would get the medical care at the nursing room because the wound bled a lot and the labors could not stop the bleeding by themselves.

6.1.5.4.4 Being Nipped by the Fish Screens

The accidents from being nipped by the fish screens occurred with the labors who cleaned the lids and the bottom of the cans. The labors in the labeling section had to put the fish screen straight to the iron bars. After that the labors would sweep all of the fish can in each shelf onto the belts. When the labors push the screen to prevent the falling of the cans, the labors got nipped by the screens.

When there were accidents from being nipped by the screens, the labors could not take care of themselves, they did not take care themselves. They still continued working although the labors had severe pain. They were afraid to ask their supervisors to go to the nursing room by saying that the pain was not so severe. If the supervisors knew in advance, the labors would not be allowed to work over time. The labors would lose some income. When the labors went home, they took care of themselves by using the pain balm and taking the paracetamol to relieve the pain. When they got more pain and their fingers became swollen, the labors still could not ask the supervisor for a permission to go to the nursing room until their co – workers saw that and suggested them to get the transfer form from the supervisors. Then, the labors would inform their supervisor. The supervisor wrote a transfer form for the labors to get the medical care at the nursing room. After the nurse checked and found that the labors' fingers were very red and swollen, the nursing section would transfer the patients to the personnel section to transfer the patients for the medical care at the hospital by refunding from the workmen's compensation fund. The labors had to take 3 days off from work.

6.1.5.4.5 Being pressed by the Hand Lifts

The accidents from being pressed by the hand lifts occurred with the labors who used the hand lifts pulling the goods palate from the end of the labeling track to wait for the Volk lift to carry them to the warehouse afterwards.

The labors who had the accidents from being pressed by hand lifts would care themselves by using the balm.

6.1.5.4.6 Being Pressed by the Fish Arranging Machines

The accidents from the press of the fish arranging machines occurred with the labors in the labeling section. Those labors had the functions of clean the faces of the canned fish. They had to work with hydraulic machines could press their legs. For the frequency of these accidents. It happened frequently. Every labor who had to clean the faces of the fish was pressed by such machines.

When the labors were pressed by the hydraulic machines, they would consider whether the accidents were severe or not severe. If there were small injuries, scratches, the labors would do nothing with such accidents. If there were severe accidents, deeply nipped, swollen feet and numbed legs, the labors would cure themselves by using liquid medicine. When the injuries did not get any better. There were some swollen symptoms, they, then, would go to the nursing room for the medical care.

6.1.5.4.7 Hands Getting into the Belts

The accidents when the hands getting into the belts occurred in the labeling section while the labors were shoveling the fish. The accidents often occurred during the time of changing the screens of canned fish from the former screens to the new ones to get the labels. The labors would sweep the fish from the belts to the winding plates. Because the labors were afraid that the canned fish might fall off and the cans would be bashed in. The labors swept the fish so quickly that their hands got into the belts.

When there were accidents, the factory would transfer the labors to the hospital by refunding the workmen's compensation fund. When the doctor gave a medical guarantee for the labors to stop working for 22 days. The factory would give the labors who had the accident full pay. Actually the workmen's compensation fund would pay for 60%.

In the conclusion, the accidents occurred during the working in the industrial factory were from 2 sources: the statistics of accidents in working recorded at the nursing room and the statistics of accidents recorded by the factory safety personnel. The statistics of accidents in those 2 sources were not equal. The statistics of accidents recorded at the nursing room were more than the ones recorded by the safety personnel. It was because the safety personnel would record only the accidents

when the labors were transferred to the hospital for the medical care. The expenses for the medical care would be paid by the refunding of the workmen's compensation fund. If the labors were under 18 years, the factory was responsible for the medical expenses.

The types of accidents from being cut and being wounded occurred the most. The latter were the accidents from being bumped, infection by materials and chemical substances, being nipped and falling. The accident occurred the least was the electric shock.

The section that had the accidents the most was the packing can section. The latter were the sections of labeling, warehouse, raw fish and precooked fish. The accidents occurred the least in the office.

When considering time and the occurrence of the accidents, the times that there were the most accidents were from 8.01 a.m. to 4.00 p.m. The latter was from 4.01 p.m. to 12.00 p.m. and from 00.01 a.m. to 8.00 a.m. was the least number of accidents.

The characteristics of the injuries that the labors had and come to the nursing room for the medical care were little injuries. After receiving the stitches, the labors could get back to work. The labors with the severe injuries were transferred to the hospital by the safety personnel. The patients had to stop working.

From the details about the accidents, it could be seen that there were a lot of accidents from working. As a result, the researcher needed to find out the causes of the accidents. The researcher could also showed the relation between the labors process and the accidents from working in the following chapter

6.2 Health Problems with Working

6.2.1 Headache Problems

The headache problems of the labors were from different causes such as not having enough sleep and from bad smell of chemical substances.

a. Causes

6.2.1.1 The causes of headache symptom occurred from not having enough sleep. The labors started to work at 7.00 a.m. and did the overtime work until 10.00

p.m. After working, they had to do the washing, and the ironing and went to bed about 11.00 or 12.00 p.m. For the labors whose houses were far away from the factory. They had to spend a long time before reaching their homes. They could have only 2 – 3 hours of rest. When they had to start working, they had the headache symptom.

6.2.1.2 The causes of the headache symptom were from bad smell of the chemical substances. The chemicals used in the mixer of canned fish for animals would spread all over. The labors who got the smell from the chemicals. Besides, in the labeling section, alcohol would hurt their noses and had the headache symptom.

6.2.1.3 The causes of the headache symptom were from the stress in working. The labors had the stresses from the supervisors complaining. Some labors had very severe headache that they almost fell.

b. Management of headache

When the labors had the headache symptom, the labor tried to avoid things that made them have headache. For instance, if they had a headache from bad smell of the chemicals, the labors would walk to the end of the tracks. The labors would take the pills to relieve the pain from the nursing room and the clinic.

6.2.2 Fatigue

The tired symptom was from the overtime working which the labors were forced to do. The rush hours of working and working with a lot of energy were the causes of fatigue.

a. Causes

6.2.2.1 The causes that made the labors tired were to be forced to do the overtime work for a long time and continuously working over time for several days. The labors started to get tired since they worked for a half day. The labors felt more tired when they continued working over time. When they stopped working, the labors were more tired than usual. The labors were so tired that they did not want to walk home. They would like to call for the motorcycle to take them to their room. Some of the labors were so weak that they had hanging symptom.

6.2.2.2 The causes that made the labors tired when working in the rushing time. The labors had to throw the fish from the truck to belt within an hour and a half.

6.2.2.3 The causes that made the labors who had to work with heavy loads. The examples were from the labors who worked in the labeling section. The labors

had to lift the paper on the canned fish. Then, the hand lift was used to pull the palate in order to wait for the Volk lift to keep in the warehouse.

b. Management

While the labors were working, there would be the management when they got tired. They had to continue working until they stopped working. When they returned to their room. They would lie down without having baths. After resting for a while, the labors would get up and took baths.

After the labors tried to manage the tiresome with a rest, the labors would manage their tiresome with the injection of tonic at the clinic and the labors would get the chemical salt into the blood vein at the sanitation station.

For the young labors, when they got tired, they resigned. In contrast, the labors with the families had to be patient and continued working even though they were tired. In other factories, they would not take the labors who were no longer young.

6.2.3 Being Fainted

a. Causes

6.2.3.1 The causes of being fainted were from working over time. After work, they did not have enough time to rest. They had to get up very early. They had to be patient to work in the morning. If they stopped working, they would lose their income. Some of the labors' houses were far away. They had to travel from home to work for about 2 hours. When they left the job at 12.00 p.m., they would get home about 2.00 p.m. When they arrived at home, they did not have time to rest. They had to cook, and took a bath. Then, they would be ready to get on the bus and came to work again. When they arrived at the factory, they would be dizzied, and be fainted.

6.2.3.2 The causes of being fainted were from not be able to adjust themselves to get along with the working environment. The atmosphere inside the factory was very hot. The ventilation was not good. The place was too narrow. The labors had to stand while they were working until they got fainted.

b. Management

When the labors got fainted, their co – workers would support them so that they would not fall and broke their heads. The result of trying to help friends, the ones who did that got hurt instead. The supervisors would tell them to sit and relax at the

secretary desk. For the ones who had more symptoms would be carried to the nursing room.

6.2.4 Being Dizzied and Vomiting

a. Causes

The causes of being dizzied and vomiting were from the fishy smell of fish including looking at the belts moving all the time.

b. Management

When the labors felt dizzied and vomited while they were working, they would inform the supervisors so that the supervisors would write a transfer form for the medical care at the nursing room in the factory.

6.2.5 Stress

a. Causes

6.2.5.1. Stress from work

The stress could occur from friends trying to find fault. Besides, the labors could be scolded and forced by the former labors.

6.2.5.2 Stress from Environment

The stress could occur when the working environment was not appropriate. The sound from the machines was very loud and the weather was very hot.

b. Result

The stress made the labors have such severe headache that their heads would be broken. The labors would be contracted. They were soaked with a lot of sweat. Some labors were so that they lost about 10 kilograms.

c. Management of stress

When the labors were stress, they would share with their roommates. Sometimes, they released the stress by having some fun with friends. Some were stress from work and had some headache. They had to take the pills to relief the pain. Some said that they had to take pills every day. Some had to carry the pills in their pockets.

6.2.6 Back Pain and Waist Ache

a. Causes

6.2.6.1 The causes of back ache were from the working characteristics when the labors had to work continuously for a long time. Particularly, the labors in the raw fish section, they had to bend their bodies while throwing the fish from the

truck. It was the limitation of time, the labors were determined to throw the fish from a truck within an hour and a half. The labors had to work very quickly and had to keep working with the same position for an hour and a half. The result of doing that was the back ache.

6.2.6.2 The back ache and waist ache were from standing for a long time. They would have more pain when working over time.

6.2.6.3 The back ache could be from lifting heavy things. The labors said they had to lift a basin of fish with 20 – 30 kilograms all day. They would start having some pain after working or 3 – 4 hours.

6.2.6.4 The waist ache was from a lot of work and a rush in doing the work.

b. Management

When the labors had back ache, they would stand with putting their bodies to the front. They were patient and continued working. If they could not bear the pain, they would ask for the pills to relief the pain from the nursing room. When they went home, they would use the pillow to support where they had the pain. Some would take the paracetamol. Some took the pickled medicine about 10 baht per day. Some use the medicine to massage where it had some pain.

If the labors had severe pain in the back, the factory would transfer the labors to the hospital with the refunding from the workmen's compensation fund.

6.2.7 Wrist Ache

a. Causes

6.2.7.1 The causes of the wrist ache were from contracting arms to clean the fish for a long time. The factory determined that the labors had to clean 50 fish up. The supervisor would count the clean fish bones. If the labors could do less than the requirement, the supervisors would force them to do faster as the setting goal. Because the labors had to do the work as the goal, they had to contract their arms all the time until they had the wrist ache.

6.2.7.2 The wrist ache from lifting the trays was because there were not enough trays for the fish. When the labors push the trays, everyone would try to lift the trays so that there would be trays to put the fish. Each labor would try to lift as many trays as possible. The trays in one row must be lifted within 10 minutes. The labors, therefore, had to lift the trays frequently.

b. Management

When the labors had wrist ache, they still kept working. If they could not bear the pain, they would go to the nursing room for medical care. They could get some pills and the medicine to massage. When he labors took the pills and massage, they felt better. When the labors ran out of the medicine, they would have the pain again. If the labors use their wrists a lot, there would be some lumps swelling on the back of the hands or on the wrists.

6.2.8 Shoulder and Arm Ache

a. Causes

6.2.8.1 The causes of shoulder and arm ache were from the repetition of continuous working for a long time such as weighing the fish, contraction the arms to clean fish and lifting the fish trays.

6.2.8.2 The causes of arm ache were from the force to work from the supervisors. The supervisors would set the goal of cleaning fish. The labors had to clean the fish as fast as possible so that they could work for the over time. Such work caused the pain in the shoulders and arms.

6.2.8.3 The causes of shoulder and arm ache were from the expansion of working time in each day. The factory also changed the holidays for the labors. The labors had to work continuously for 14 days without having any days off. The labors had to work repetitively and longer. Even though they had more pain in the shoulder and arms, the labors still kept working continuously.

6.2.8.4 The causes of arm ache were from the raw materials which were too heavy for the strength of the body could take. For instance, the fish that the labors had to clean weighed about 4 – 5 kilograms. The labors had to lift the whole fish on their arms to clean the skin and they also had to lift about one fourth on the arm to clean the blood track. These made the labors have pain in the arms from contracting their arms to receive the weight of the fish.

b. Period of Time

The period of time that the labors started to have arm ache when they worked for 2 – 3 hours. Some of the labors did not have arm ache while they were working but they would feel the pain at night.

c. Management

When the labors had some pain, they had to bear the pain and continuously work. If they had severe pain, they would take the pills of relief the pain. The labors believed that the pain was from the muscular fatigues. Therefore, the labors had to massage to release the muscle fatigues and the pain decreased. The labors did not have to take the pills. When the labors had to work until late and did not have time to massage to release the muscular fatigues. Then, they had to take some pills which they thought would not be good for their bodies but they had to take them so that they could continue working. If they could not bear the pain, they would stop working and gave the factory medical certification.

6.2.9 Leg Ache

a. Causes

6.2.9.1 The causes of leg ache were form standing still all-day without moving to other places. These caused the leg pain of the labors and both of calves. The time to start the pain was after working for 3 – 4 hours. Sometimes, the labors had to stand from 8:00 a.m. to 11:00 p.m. The over time working mad the legs more painful. The labors who were new to the work would have leg ache every day. There were some bruises on the legs. When the labors worked for on year but they still had leg pain. However, the pain was less than the beginning of working.

6.2.9.2 The leg pain could be from working in a hurry. The supervisor would force the labor to work quickly all the time especially, the labors who worked in the second shift. There could be more work than the first shift. If there were about 120 tons. The first shift might do for 10 tons but the second shift would do 110 tons. Accordingly, the labors would be forced to do the work ass the goals. As a result, the labors would have leg ache and they could not lift their legs up.

b. Management

When the labors had leg pain during the working time, they had to stand like that. What they could do only taking turn standing on each leg. Doing that did not help to get rid of the pain. Some of the labors would walk to get water to drink. When they went back home, they would use the balm to relieve the pain, take the pill such as paracetamol, and buy the pill to release the muscles. Some labors lifted their legs on

the wall to relieve the leg pain. Some labors would sit for a while to relax. Then, the pain disappeared.

6.2.10 Swollen Legs

a. Causes

The causes of swollen legs were from working without movement and standing to work at on place for a long time. The expansion of working time from normal could also cause the swollen legs. The swollen symptom would disappear when the labors took a rest. However, the legs would become swollen again when the labors had to stand and did the work. Some had such swollen legs that they could not take off their boots. Their friends had to help them. The swollen symptom would decrease when the body could adjust itself.

b. Management

When the labors had swollen legs and did not take any medicine or do any massage because they got home very late. When they got home, they went to bed right away. If the labors stopped working, the swollen symptom would disappear. When the labors started to work again, their legs would again get swollen. Some labors would their legs against the wall to reduce the swollen symptom.

6.2.11 Rashes

a. Causes

6.2.11.1 The causes of rashes were from the inappropriate working atmosphere. The factory was rather narrow and there were too crowded labors. Owing to inappropriate working spaces and equipment to reduce the heat. Such causes made the labors got wet from the sweating and rashes.

6.2.11.2 The causes of rashes were from working that labor would touch fish, fish blood, and fish stomach. The labors who worked in precooked section and cleaning section tended to rash the most. The supervisor had not allowed labors wore the gloves because of the rhythms of worker would slowly.

6.2.11.3 The causes of rashes were allergic to substance such as paper, box, alcohol, oil for cleaned canned tuna. The labors who worked in labeling and warehouse section tended to rash the most.

b. Management

When the labors had rashes and fever, they would take some pills to reduce the fever. If the symptom did not get any better, they would come to the nursing room for medical care, clinics or hospitals.

6.2.12 Peptic Ulcer

a. Causes

6.2.12.1 The causes of having the peptic ulcer were from the intermittent time to eat. Some days, the labors had a break at 10: 00 a.m. sometimes, they would not have a break until 12: 00 a.m. or 2:00 p.m. When it was the time for a break, the labors needed to eat spicy food. Accordingly, they had some stomach ache and some wounds in the stomach.

6.2.12.2 Some other causes could be from the job description. For example, the labors had to work at night shift. After work, the labors would be very tired. They went to bed without eating any food. They had only one meal which was dinner before they came to work.

b. Management

When the labors got peptic ulcer, they would come to the nursing room for the medical care. Some would keep the medicine in their locker. If they had a stomach ache while they were working, they would take the medicine that they brought.

6.2.13 Eye Injection

a. Causes

The causes of the eye injection were from folding the boxes which had a lot of dust. When the labors folded the boxes, the dust would get into their eyes. Those made the labors have eye injection.

b. Management

When the labors had eye injection, they would go to the clinic or hospitals for the medical care.

6.2.14 Cystitis

a. Causes

The causes of cystitis were from the speed up for the goal of the production. The labor had to hold their urine. If they went to the toilet, they would not be able to do the work as the goal of production. Sometimes, the supervisors were

keeping their eyes on the doors of the clean fish room. They would not allow the labors to go to the toilets so that the labors could finish the work. When the labors had to hold their urine so often that there was some blood coming out with their urine.

b. Management

The causes of having cystitis were taken care by the labors themselves by buying some kinds of medicine to expel the urine. Sometimes, they would go to the clinic. Sometimes, they would come to the nursing room for the medical care.

It could be seen that the problems, the accidents and the health problems occurred in the industrial factory were different according to the processes of canned tuna production. In the next chapter, the researcher would do the analysis on the labor processes which were the causes of health problems and accidents from working in the industrial factory.

CHAPTER VII

LABOR PROCESS AND ACCIDENTS

The competition of canned tuna industrial investigation with the target of opening the market share under the ISO influenced the process of production and the management of production organization to organize the production process to serve such goal. Accordingly, the labor process and the organization of production had to have specific models as mentioned in chapter 5 and chapter 6. There were continuous process, high timing competition, organization with hierarchy, working regulations and discipline setting, policy setting, labor placement, working motivation and welfare system. All of those were used as means to control the working of the labors. Such factors could cause the health problems especially the problems of working accidents. In this chapter the labor process and the accidents would be described in details as follows :

7.1 Fostering policy and the occurring of labors' accidents

In fostering the policy of working, the supervisors would foster the labors to work neatly and qualitatively as the saying of the labors that :

“The supervisors tell us to work neatly and quickly.”

As a result, the labors would come to work very early. Before working, the labors would provide equipment and machines to be clean and neat. When they could see some untidy things such as dirt or water left in the belt and if the fish failed into the belt, the fish would be dirty. The labors would use their hands wipe of the water and the hands could get into the belts as shown.

“The supervisor tells me to do things neatly. Whatever I will do, must be tidy. When I see the water, I tried to get it out. When the belt is on, the fish could get in and smashed. It would be very ugly. So I try to make it try. There is a small space near the head of the rolling. When I put my hand to sweep the water, my hand would get into the rolling. Then, my left wrist would bend in.”

When there was any accidents, the supervisors would blame on the labors that the labors did the work which was not their duties, that caused the accidents as the labors mentioned that :

“The supervisors says that it is not our duties. They have just said that it is our duties. Things will come out by it self. It can cause band effect towards the factory because we are under 18 years old.”

The policy fostering was to make sure that the labors could do qualitative work. When the supervisor fostered that working would not cause the disaster to the products, it motivated the labors to push the screen to match the bars so that the canned fish would not drop out the screen. That caused the accidents of being nipped by the screen. It could be seen the saying :

“ I think the fish would fall off. The fish would fall down. After the fish fall off the screen, they would be bashed. I will push the screen in. I don't know that my co-workers will lift them too. I have to stand and had a waist ache. My co-workers don't even know what I am standing for. When I see that my co-workers turn away, I put my hands to push the screen to be straight to the lock which the top bar. If it did not fit with the bar, the fish will fall down. When the fish fall off, the supervisors will complain that today too many fish fall off. When the supervisors are complaining, my co-worker will turn to me and I will be nipped by the screen again.

7.2 Safety management and the occurrence of the accidents

The factory would set up the safety committee which was composed of 15 personnel. There were the personnel manager as a chairman, 2 professional safety officers, managers from different sections, 1 chief from each division, 1 representative from each division. All of these representatives already had permanent duties. As a result, they did not pay any interest in working. It could be seen that since 2002, there were only 2 meetings.

“Before this, there were meetings more often. Lately, Miss Da was not free. So, there were not many meetings.”

Among three factory safety officers, two of them were professional safety officers. They were trained on safety for 180 hours. One was the basic safety officers. These safety officers were permanent officers. Accordingly, they did not pay any full attention.

“Focusing on the safety, their work would not be effective. It could cause the trouble.”

The labor training on working safety, there were the chief in the seammer section, he was trained in the packing section about the cooperation working with machines and the awareness of accidents. In 2002, there was no training about working safety. There was only the orientation for the new employees about rules and regulations. For the chiefs were trained on the steps in working but there were no advice about the danger in working.

“I have never been trained for a long time. Before this, there were more training than this. Lately, there were not many training. Besides, Odd was very busy. So there were no meetings.”

“When starting to work, the supervisors never tells us that it is dangerous. No one knows about it. The ones who work together don't know either. I used to be in the

packing section. I would tell the new ones where is dangerous. I would tell them every things.”

“There is only on seminar. The seminar did not relate to the safety. It took half a day for that seminar, they did nothing only applying for the ATM card and had the urine test for the drugs.”

“Remember that the topic on safety was not mentioned at all. As a result, whatever would happen, the ones who got it had to accept it.”

“That’s right. This was not about the safety at all.”

The factory did not have equipment to prevent danger. The labors who were on the line of production did not have equipment to prevent the sound of the machine. The factory would give the equipment to prevent the machine sound only for the retort division. In other divisions such as packing section, the employees had to buy the equipment to prevent sounds by themselves.

The factory did not see the importance of working safety. There were no equipment to prevent all kinds of danger. There were no training on the safety for the labors. Accordingly the employees did not know about the danger of the equipment and machine and that was the cause of accidents.

7.3 Structural management of production organization with steps of production and accident occurrence

The principles of structural management with steps of production was used to control the work so that the work would get to the goal and serve the policy of highest benefit. The characteristics of personnel selling of this type was to promote the persons for positions and authority respectively. The persons in the high positions would have authority to control the ones in the lower positions and the persons in the lower positions had to listen to and follow the command of the persons in the higher position.

It could be seen that the management of the organization respectively. The ones who were in the higher positions would accelerate the subordinators to work

toward the goal. The subordinate had to work so fast that they become sick and had accidents. Therefore, in the raw fish section, the supervisors were accelerated from the division manager and the ones who came for the supervision. The chief division had to accelerate the lower labors to work until they felt painful and the urinary bladder was injected by the fish bones.

“They would come to tell us to hurry also. We had to hurry in order to be in time. The day that we could work fast, the supervisors would be happy and smiled. When the subordinates could not do it the supervisors would ask why they couldn't do it. For instant, Kun Mor was asked to control the work, the manager would ask Kun Mor. Then, Kun Mor would complain the subordinators because he kid not know who to complain. The boss would complain downwards as the big fish would eat the small fish. The ones who were compared as small fish would not know what to eat and did not know who to be complained. When we could not do the work, it depended on the condition at work such as the fish were not good and that made it difficult to clean the fish. When it's time to get the fish, there would be about ten thousand fish for big fish. However, for the smaller fish there would be about 100,000 fish but the same weight as the bigger fish. The labors had to hold the fish with both hands one fish for each hand. Starting from the small fish until their waist hurt. There were still some fish left and it took about 2 hours to take down 89 and 79 tons. For the big fish, it would take about one hour and 10 minutes or one hour and 20 minutes if possible. Sometimes, I felt that I used to be able to do it with little time. Now, I can't do it. I did not know what to say. When the supervisors look at the fish and saw that the fish were small. The truck before had big fish about 3 - 4 kilograms. For the small fish, they were about 1.8 kilograms or tow kilograms. When there were small fish, even the ones who were responsible for taking the fish down, kid not want to stay for too long on the truck. They were stiff. They were not allowed to go or even to go to the toilet wouldn't be allowed.”

7.4 Work discipline and accident occurrence

The factory set up the group of personnel as the factory representatives such as the production managers, supervisors, and chiefs to control the working of the labors with equipment and machines to modify tuna into canned tuna. In order to make the work successful and reached the setting goal, the factory constructed different discipline to support the authority of these representatives from the factory. That made the lower labors submitted to the authority of the chief. Working disciplines which were set had the importance towards the control of labors in the low level. There were different disciplines particularly the discipline about everyone doing according to the superior command or the factory strictly. The labors had to follow the working regulations and be interested in the announcement and command of the factory. Such disciplines issued to support the chief's authority. There fore, the chiefs had authority to determine any labors to do any functions. According to one of the disciplines that all labors had to be ready at all time. They would be pleased to do as being told, to transfer or exchange functions as the factory required. The labor would not do any other things besides their functions or do any improper things against their functions.

The issued disciplined made the labors in the low level accepted the being taken advantages from the labors in working process. Those disciplines were that every employees had to be on duty according to their functions and the work assigned to do with full capacity. They would be industrious, sincere. They would not take the others into trouble or cause the disaster to the company. During the working hours, the employees would not do their private business. Everyone worked with intention, industry, unity, support with and cooperation. They would not interfere other divisions. The employees were not to be late for work or neglect their duties or be absent from work too often. There could cause the disaster to the production or the outcome of the company. The employees were not allowed to go to work late or not be punctual when it was time to change the shift. The employees who agreed with the superior to work overtime or during the holidays, had to do according to such agreement. The employees were not allowed to tease each other during working hours or work passively with the intention to delay the work and cause the disaster to the company. The employees would not do the work slowly. As a result, every employee had to accept the advantage taking in the labor process.

Moreover, the factory constructed the discipline for the employees to surrender towards the labor system which took advantages from the labors. Those disciplines were that the employees would not support the annuity, the employees were not allowed to put up all signs, documents, have meetings, discussion or deliver other printed materials which were not provided by the company. Besides, the employees were forbidden to destroy all announcement, command whether by crossing out, tearing, transferring, adding, changing, making up, correcting, or cutting or similarly to such characteristics without any permission. It was forbidden that the employees would join any kinds of strike against the labor acts announcement command or laws. The labors would not do anything to call for their own advantages.

Besides, the factory had some discipline to promote the authority of the chiefs so that the labors would not be against the company according to the discipline that the labors were not allowed to have rebellious conducts to the commanding officers or be aggressive and insulted the commanding officers because of being unsatisfied with the commands or suggestions or advice. It included the discipline of being forbidden to neglect or disobey the commanding officers legal commands or the requirement about working in the factory. The employees who disobeyed the regulations or avoid doing them, were judged as disciplinary mistakes. They would be punished according to the disciplines and the characteristics of such mistakes. At first, it was the verbal warning. The second time was the written warning. The third time, the wages would be cut and the fourth time the employees were ordered to stop working without pay. The most serious disciplinary punishment was to end the hirement.

The disciplines were not only used to control the labors in the low level, the factory also constructed the disciplines to control the working in the administrative level. It was shown in the discipline that chiefs and all commanding officers had to be responsible for the employees under their control to follow the disciplines strictly and regularly. When one of the employees did not follow any of the disciplines, the chief had to report as soon as possible to the manager. If the chief did not report or tried to conceal such fault, the chief would be judged as the co - doer on that fault. As a result, the chief had to control the employee in the low level seriously. Consequently, the

factory would get the complete advantage from taking advantages from the labors without any opposition or resistance from the labors.

The rules, regulations, time of working, the bread during the work, the control of working, setting time for break in the working process caused the labor to have insufficient time to eat. They had to take turns to eat so that the process of production would be continuous. The labors had to work very hard including the time before eating was longer, made the labors very hungry and weak. When they had to work with their chiefs, they would not know the rhythm of doing the work. That could cause the accidents of being says some words along the way :

“Men pushed the carts. It was hard work. It was hard work. When we met hard work. Tired to push the fish. It more fish, more push. Push all day. Never stop until getting red noses every day. They look swinging because of being exhausted. When getting to the sleeping place, they would sleep without taking a bath. After sleeping, they could take a bath. Their legs were very weak”

“It begins but I am weak. I am hungry. I would like to eat rice. It is time to eat. I am with the chief. Only two of us. The other two are eating. The chief help me push the carts. He pushes in the back I push in the front. When it's time to turn, I pull the carts and hit the poles.”

7.5 Scientific management with occurrence of accidents

The scientific management was brought to control the process of production so that the steps in labor process could be controlled and the working styles of the labors would also be controlled :

- 1) Construct the new knowledge in the administrative groups such as the factory manager, department managers, different division managers so that they could control the working of the labor in the low level. The knowledge related to the working process were steps and process in the process of changing the raw materials into the machine made products. The administrators would organize all of the knowledge for the process of producing conned tuna.

The knowledge synthesized by the administrators only. The administrators would design for the labors to do the job. Such knowledge was the scientific management which could lead to the sharing of work. It could effect health problems in working.

2) In sharing the work of labors, there were two groups : the group with intelligence and the group with labor. The group with intelligence were factory manager, department managers and supervisors who were responsible for organizational management, setting the policy, working target, working standards, command, control and evaluation of the labor in the low level would mane the labors physically work very hard.

The working model was to assign the supervisors and the chiefs to control the working of the labors in the low level including the production acceleration as the determined goal. Consequently, the labors had to do the physical work very hard. The labors did not have any power to control their own work.

“It’s rush work. How many fish have you caught? Don’t you know? It’s up to what could be said. Our chief is our boss. They can criticize every section. After observing, it can be seen that some hurried working with the fish. Some put the fish in and out the container slowly. Everyone faced different problems. Sometimes, the boss complained us and left. For an hour and a half was a little too long. We could not take that. Sometimes the fish dropped on us. If we could jump away, we would not be hurt. If we could not jump away, we could hurt our ribs. They hit us very hard and very loudly.”

“The chief who looked after the door of the cleaning room. After cleaning the fish and the skin, the ones who cleaned the skin to clean the blood off. The ones who were cleaning the skin did not have time to go to the toilets. After finishing the skin, they wanted to go to the toilet, the chief was standing and would not allow them to go to the toilet. They had to return to the tables for cleaning the fish. Oh! I need to go to the toilet but they would not let me go. I had to continue the fight and be patient to clean the fish until all the work is finished. Then, it is the time to finish the work.”

In the packing section, there were the goal set by the administration that within one hour, the 100 boxes of fish had to be contained. When there were some orders, the administrators had to calculate how many boxes could be made per an hour. Then, the command would be sent to the chief to control that the word would be as the stated goals. Consequently, the chief would seriously control working and accelerate the word as the goals. It could be seen from the working's saying as follows:

“From the total of the production we would be told how many boxes we needed to do. The word in each day might not be the some. It depended on the orders coming in because the rotating of the fish would not be the same. However, there should be 100 boxes per hour. If there were not enough fish, there could be some exceptions. One day about 1,500 boxes were needed and it took about 10 hours. If we could produce 100 boxes or 120 boxes or 118 boxes, If there were no repairmen of the machines, The work could be done quickly. If there were some repairmen, it would be slow.”

When there were accidents, the labors finished packing the fish, the chief would tell them to clean the machines so that the labors, could pack the fish from other machines. When the labors cannot do the work according to the setting goals, the chief would hurry them to clean the machines within half an hour After that the labors would pack the fish in the other machines. The labors would clean the scammer machines which could be done by 3 people. Actually there was one personnel to clean the scammer and washed within 45 minutes. When the labors helped on each side rapidly, they did not use any signs which could cause the accidents and the scammer machine could nip their hands.

“That day at 7 o'clock after washing the machines, they had to continue to other machines and change the other labors off the machines. One was cleaning the machines. The other one would turn the machines. Another one was washing on this side. Each one could not see each other. The hands got into the machines. We were told to work until 9 o'clock. It was only half an hour for the labors to wash. They were

afraid that it wouldn't be enough time. If they were not in a hurry. There were so many people to do the job. One did the washing and one did the turning. The hands got into the machine. Actually, washing by oneself, it would take about an hour or over half an hour. In fact, it was better to wash by oneself. It might be slow and took about an hour.”

Besides the goal of the production, the labors in the packing section had to pick up 5-6 cans at a time. then, they weigh the cans very quickly so that the chiefs would not complain. The labors had the opinions.

“When lifting 5-6 cans, we had to them on our side so we did not have to do again and again. When the fish were moved along the tracks, we had to pick up the fish and weigh them quickly. If there were not enough fish, we could be scolded. The average was about 100 boxes per an hour. There would be someone checking on the retort. After an hour, it was necessary to check the total within an hour, The chief also asked how many the labors could make in an hour. The chief told the labors to weigh quickly. Otherwise, the fish would be gone before getting 100 Cans. Most of the labors got cut from the cans.”

“The can cut almost every day more than 10 times. The labors were very careless. and tired. That made the labors catch the rim of the cans. Because the belt kept moving and the labors had to get hold of the cans. The work needed to be done quickly. What even, they had to day, had to be in a hurry”

3) The study time and the gesture in working were taken into the consideration of work controlling by the factory so that the labors could do the work for the factory as much as possible. For instance, in the cooked section. The factory made a study on how to put the fish in the slanted position. The heads of the fish would be aside from the labors. The tails of the fish would be on the left of the labors. Besides, the factory determined the positions of working for the labors. The labors who cut to open the stomach of the fish and took the inside out. Everyone had to hold the knives with the right hand. The ones who could use the left hand better, had to practice using the right

hand to hold the knife to take the inside of the fish out. If anyone could not cut to open the stomach of the fish and took the inside out with the right hand. Such labors would be transferred to do other functions instead.

“To cut open the stomach of the fish. I have done this for 3 days, I am not used to it. I am a left handed person. When they ask to use right hand, I try to use right hand. When the chief told me to use the right hand. I had to use the right hand. The others can do it, you can do it, too. I used to do it before when there were not enough labors. I would help them with the hand that was not quite skillful. I had to train for about one month.”

The labors with left handed and had to try to take the inside of the fish out with right hand. which could cause the accidents. The knife cut the fingers, because the labors are not used to it. The labors had to work according to the speed of the belt. As a result, the labors hands were cut as the saying

Take the inside the fish out. Use this left hand. Cut with this hand (the right hand hold the knife. It caused the accidents because the belt went so fast. When putting the fish too thick, the fish would stick together. We had to take the inside out. Three persons who took the inside out. Some did not want to work for the O.T. Yesterday was Sunday, some worked as hard as possible. If they put in the thick row, we had to work fast to catch up the work. If they put the fish in the thin layer, the hands would not get cut.

The working time for each section was differently determined. The Labors in the fresh fish section had to empty the fish one truck for one hour and thirty minutes. In the cooked fish section, the labors had to do the 10 ton fish within an hour. However, the labors in the cleaning section had to clean the fish according to the goal. If any labors did not do as the target, they would be scolded by the chiefs.

The examples of the labors in the fresh fish section had to use labors in working intensively. The positions in catching fish were to bend down to catch the fish with one hand per one fish. Then, throw the fish on the belt so that the labors could select the sizes of the fish.

“If the fish had tails, the tails would be caught with two hands. It made the work go slowly. Using two hands the work would be slow. If one hand per one fish, it would take more than one hour and a half per one truck. It might still take about 3 hours. It should not be at night. It should take more than an hour to empty one truck. If the small fish it would take more time. If the fish were big, it would be a little faster.

“The chief would keep the time. They try to hurry. Otherwise, it wouldn't be in time with the others. It needed to be done at the certain time. Adding the water to increase the temperature of the fish. In the cooked room, the inside was waiting and the outside was rushing. When any fish were told to be done now, the labors had to hurry and do it. Which day the labors could do as the chief wanted, they would be happy. The days that the labors could not do the work, the chief would complain. Big boss would complain the chiefs and the chiefs would complain the labors. The labors could not complain any body. The big boss usually made a complaint like big fish eat small fish. Then the small fish did not know what to eat or complain when the fish bones pierced in the hands.”

“The meetings which the supervisors thought were often about once a month. Most of the time, the meetings were about the work. When there were some changes in working, there would be a call for meeting. Sometimes, it could not be done as before, the chiefs would call us and warned us to hurry or ask what the reason was and why it was so slow. It was too slow. Sometimes, it could not be done. Sometimes, it was from the new ones. Some could do the work better than the others. Some could do it slowly. If they could do it. It would be easier. Sometimes, it depends on the new workers. If the labors knew how to do the work, it would be only to speed up. If the new ones were not quite skillful, they would be like the car which cannot accelerate it. The bones also pierced in. Some new ones worked for 2 days and quit the job.”

“Had to be patient. When having the stomach ache, needed to go the toilet. We did not want the chief to complain again and again. Try to finish the work because the work was kept by the time. The ones who work in the evening would like to work in the day time because during the day time, there were less fish and it would not have to hurry so much. The labors could work easily. When the labors had to work hard, they

got so tired and felt hopeless. Even they were accelerated and complained, the labors felt uncomfortable and could not do good work when, the labors needed to use the toilet and they did not have time to go. The labors had to twist the body and the work wouldn't come out well.”

Cooked fish section

The working process in the cooked fish section. The factory conducted a study on the working process. The labors would work according to the speed of the belt. The fish would be flowed along the belt into the track to be taken the inside out. Before doing that, the labors had to put the fish by turning the heads in the same direction. If the belt turned very fast, the labors had to put the fish in order very fast, too. The working of the labors would be controlled by the supervisors and the chiefs. If the fish could not be put in time, the chief would complain. As a result, the labors had to work in a rush and caused the water and the blood being splashed to the labors.

“Sodiumbicarbonate with fish blood. Fish blood and residue would splash to the labors. We had to wash it off and had no time to dry it. We could not get down from the track to dry it because we were still washing the fish. If there were the ones who took of the inside of the fish, the end of the track would be stopped and wasted the time. The chief would complain. The chief would not allow to stop so often. So we had to take the inside of the fish out. If we were splashed, we could only wash off and continued working. There were three or four on each side. Sometimes, there were new labors, who did not know much about the work. When the new ones could not do the work, the chief would try to rush and keep the time on working by calculating by the pail per minutes.

“The chief or supervisors would keep eyes on our working. If it was not in time, they would complain. When putting the fish in order, the water used to clean the fish would splash. Putting the fish by leaving the tails along the tracks. When we catch the fish, we had to do it in a hurry. The tracks will continue turning. We still had to it very quickly. The water that got into the eyes was not clean. It could inject the eyes. It happened today because the fish were big and had wide tails. When the fish were

lifted, they would get across the track and splash to the edge of the tracks. They shown be thrown in the same direction. It would be easier for the one to take the inside out of the fish. We would only put them in order. If we do it faster, it would splash up. It was necessary to catch up the co - workers who were waiting to take the inside out of the fish.”

Cleaning fish section

In this section, the labors would be used intensively. The administrators would set the goal of cleaning the fish according to the sizes of the fish. For the middle size fish, the labors should be able to clean 7 - 8 kilograms of fish per hour. For the large size of fish, the labors should be able to clean 10 kilograms up. The procedure to reach the goal could be done by weighing the fish each labor would clean. After an hour, the chief would check which labor could do less. If anyone could clean less them the goal, the chief would tell them to speed up to reach the goal. If the labors could not do as the goal, they would be forced not to work over time.

“The work which needed to be done fast was to clean the fish. It was the most execrator. When it did not turn out as the goal, the administrators would force us not to work over time. Some who did not to work, they would be glad. For the ones who wanted to work would be disappointed. When they could not do it, they had tried their best. They did not know what to do. Nobody would like to be scolded. We thought that we worked as fast as we could do. We still could not get away from the scolding. Nobody would like to be scolded. Cleaning fish and get the weight. The goal was 10 kilograms up. The middle size was 7 - 8 kilograms. For large size, it would be 10 kilograms up 17, 18, 12 , 13 as being set as the goal.”

From the labors being accelerated to meet the goal, the labors faced health problems. The blood came out with their urine. The labors had to clean the fish and gain more weight. They were afraid that they would not be able to get the weight as required. They would be scolded. The labors had to hold the urine until the urinary bladder got the injection (Cystitis). The labors would have some blood in the urine.

“Hurry to clean the fish once more. Work all day all night. Never stop. Try to hurry as fast as possible. When it was time to rush, the blood would come out with the urine. When we needed to go to the toilet, we could not do that. We were afraid that we could not get the weight as we wanted. We had to hold our urine. The doctor asked if we held our urine. The doctor asked if we held our urine. The doctor told us not to do that. Whenever, we felt like going to the toilet, we should go. Don’t wait. We afraid to be scolded. We tried to do things so that we wouldn’t be scolded. We tried to do the work. Nobody would be slow on the work. They were the employees who cleaned the fish. If the fish were not enough for the machines, the chief would accelerate again and again. We tried to use the most energy we had.”

The control from the chief that there was a lot of work. Everyone had to work all the time without any stops. Doing that made the labors very tired and exhausted.

“Tired when the work was in a rush. We were very tired but couldn’t stop. We had to bear that. Very tired. Would like to die. Would like to die for a little short time. Then, get up again. It was impossible. It couldn’t stop. So, continue working. Working here for a while. Not sure, how long we could take. Stiff all over.”

Labeling section and warehouse

In this Labeling section and warehouse, the scientific management was used to control working. The labors had to do the work in the same positions. They felt stiff and cause some accidents. For the work sharing, the labors were required to do specific work. Working in the labeling section, the chief would determine the work in each day. The work being assigned to do were selecting the fish and dry the fish. The labors had to do the work again and again. Besides, the organizing of the work was not appropriate. The labors had to bend down and up to pick up the paper to put on the palate. That caused the labors waist and shoulder ache.

“Talking about ache and stiff. Waist ache. Maybe the others did not have any waist ache. Waist and right shoulder ache from picking up the paper. Putting the paper

in the palate. This was to roast and dry fish when they were full the palate. Then, put the fish in the turning plate. My friends had to do that and had some pain. When picking up the paper below by bending down and up. When the paper was low, we would feel the pain. There was not much paper left. Nobody brought the paper. I had very severe pain in the waist but could not complain. Continue working. Right! I had some pain and felt stiff. The accident could occur because being stiff. It could be. I had to stand because of having such pain. I kept thinking about the pain. I had a waist ache. My friends did not know what the problem was. So, they told me not to turn my back. Then, I turned the other way, I got hurt. I did not know that my friends were going to lift it and I put my hands in and got hurt.”

Moreover, working in such a rush way to reach the goal, cause so much stiff that it caused the accidents. The administrator determined the amount of work each day such as dry the canned fish 1 palate within 30 minutes. The labors had to be accelerated by the chief to do the work. Working very quickly, the labors felt more stiff. They started to have some pain since 10 o'clock in the morning and had more and more pain until having the accident.

“A lot! Rush work. When the fish came slowly. We did the work slowly. In the morning, we were in a hurry too, but in the afternoon we did faster. Saturday afternoon, we were in a hurry. When the fish were pulled to us to dry them, we had to try to finish them. On Saturday, the work was more accelerated than other days. We did as fast as we could. Afraid that it wouldn't be in time. Sometimes, we careless because we were in such a hurry to fill up the palate. My friends also told me to do it quickly. The chief told me to do it quickly. I tried to turn the fish over again and again very quickly (turn over the canned fish)

“In the morning, it was not quite in such a hurry. It started to hurry in the afternoon about after 4 o'clock. The chief would say that there were more fish. Then, the labors pulls a lot of fish screens. The chief told us to work as fast as possible for today. By 8 o'clock in the evening. Eight o'clock. After drying the fish for the cats. Then dry the fish for Canada. I said that it would be a lot of overtime but my friends

told me to hurry. Dry the fish for Canada (canned fish for Canada) so that it would reach the goal. If dry all of them and filled up the palate about half an hour. The time was set. Full palate had to be done within half an hour. The chief also set the time too. Every palate. After finishing, it would be written when it was done. My friends would write how many hours and minutes the work for each screen done and when the palate was filled. We tried to finish it soon. If it was late, the chief would say that today not much only 8 - 9 palates. If it took 30 minutes for on palate, the chief would smile. It we roast the fish quickly. They would soon be all finished and we wanted to finish them soon.”

“The pain started since 2 o'clock in the afternoon. Then 3 o'clock more and more pain. I tried to walk to get a drink of water. Then, wrap the palate with the plastic. While wrapping the palate, I had some pain. My friends wondered why I was frustrated so often. I told them nothing. I tried not to let them know about the problems. I had to stand and got the pain especially waist ache. My friends did not know that so they told me not to turn and they lift the screen up so that they could roast the fish better and did not have to bend down. When they turn, the bar on the screen was at the same place and my hands got nipped.”

7.6 Working over time and the occurrence of accidents

When the factory had the highest goal of gaining the most benefit, there were more orders. The regular working hours were not enough to produce the products as the orders. Consequently, in order to be able to produce products as the setting goal, the factory expanded the working hours.

“Had overtime every day. The packing section had more overtime than other sections on the fifth Day, I worker for six and a half hours. On the sixth day, I worked for six hours. On the third day, I worked for seven hours and a half. On the fourth day I worked for five and half hours. Last week, I worked for 70-76 hours.”

The characteristics of working over time was the working over the required time. Every labor in the low level was required to do the over time. The chief would

not allow the labors to leave their work as the usual hours. The labors could ask to leave the work not very often. They could be excused when it was necessary. Some labors were sick and asked to stop working when it was complete load. However, the chief would not allow to leave the job. The labors would be excused when they were so sick they could not stand to work any longer.

“We could not leave the job so often. (Finish work as full time) Once in a while, we could ask for a leave. The chief would not get the over time.”

“Oh! Sometimes, it was 7:30. Then stayed until one or two o'clock. Some, we very tired but still could not leave the work.

“Really sick. Some were very sick. I would not be able to work. Then, we did the overtime. When we were very tired and wanted to do so.”

Very sick. Could not do the work but could not leave the work. The chief would not allow us to leave the job. Some had swollen legs and asked to leave. It was still very difficult.

“Asking to leave, they would not allow to leave. It was for the over time, but we were very tired and sleepy. When we felt like that, we did not want anything. Arms and legs were so stiff, we would like to sleep but they would not allow to go out. If there were 1 or 2 going out from 12 labors, there would be 10 left.”

The majority of the labors wanted to do the overtime because everyone had a lot of expenses. The wages they received was rather low and only enough for food. As a result, they needed to get more income. The labors, the before, accepted the overtime. When the factory expanded the working hours, everyone was required to work for the over time. If the labors asked to leave as the regular hours, they would be complained. If the labors asked to leave without doing the overtime so often. The chief would tell them to leave the job as these sayings :

“No good. No overtime. The wage for each week would be 2,400 - 2,500. It was not enough for the expenses. The expenses was very high. The income was not enough. Nothing could be saved.

“Not enough. Not enough to eat. It was very little. If there was no overtime, each week, would get very little. It was not enough for the expenses.”

“Working full time, how much was it? Eight hours. It was not good. If working only full time, there was no money to be saved. It was not enough to use. Each had to pay for a room. It would be all gone. It was 1,300 per week. There would not be much left. When working full time, the room was about 1,30. If the full time was 2,000 per week, after paying for the room, there was not much left. One would spend on the food. husband and wife. Then, there was nothing to be saved. Now, we still could not save any.”

“The overtime money would be for some food to eat with rice. The income for each day was for saving. The overtime money was for the living.”

“Having money would be better than having no overtime. Before this, I have never had money to spend as comfortably as this time. Now, there was some being sent to the family.”

“That’s what to do. The wage was for the room. The overtime was for a daughter. When staying by myself, I had to pay a lot. When two work together. Each week, we could get quite a lot. Every week never be absent.”

“The working control of the overtime was in the order of steps. The supervisors would warn the chief who neglected the labors in the low level. The labors who could not do the overtime would have to resign from the work.”

“They called to tell that one needed to be retired if he could not do the overtime because there was a lot of work. Once in a long time, we could leave the work. If we leave the work so often, the chief would call to give a warning. The supervisor also called the chief and said that the subordinates leave the work so often.”

The result of working for the overtime, the labors had less time to relax. That affected physical health. The body was weak and lost the weight.

“Lost so much weight. Friends asked why getting so thin. Sometimes, there was a lot of overtime, the weight was down to 44 or 41 kilograms. Usually, the weight was about 46 kilograms and kept going down. If there was no overtime and worked only for full time, the weight would be a little over 45 kilograms. It was because we had enough rest. When there was a lot of overtime, there was no time to rest.”

Besides, standing for a long time made the labors have the problems. Their legs got swollen.

“Stood every day. Ten hours a day. Before getting back, the legs were swollen. They were very swollen. Took off for one day, it would be better. When standing again, the legs would get swollen.

When managing the swollen legs, the labors did not manage anything. When working so late that they did not have time. After leaving the work, it was time to rest.

“Would not do anything. No time to do anything. By the time leaving the work it was about 10 to 11 o'clock. It was the bed time about midnight. Sometimes, it was one o'clock. By the time to get to sleep, it was two o'clock. As soon as getting back from work, we would go right to bed. In the morning had to go again.”

Therefore, when the labors could bear the being taken advantages on laboring, it was to depend on coffee.

“Not enough sleep. Wanted to sleep more. When feeling stiff. It was like not having enough sleep. It was time to have coffee again in the morning. Having coffee every day. Three times a day : breakfast, lunch and dinner. Formerly, I didn't drink coffee. Just started having when working here.

“Getting sleepy and had coffee. If wanting to have coffee, it would be during the break. If wanting to go out, it was impossible. During the working time, we could not go out.”

Some labors could not finish drinking coffee, they would mix some milk with coffee instead. The labor would drink milk with coffee taste on the day after leaving the job. If they leave job early, they would not drink milk with coffee taste.

“Drink a bag of milk. Never drink coffee. Only drink a bag of milk. Every morning I drink coffee milk. In the morning I would not eat rice, I would drink a bag of milk with coffee taste. At home, I eat rice. Usually, I never bought milk because did not feel sleepy and did not do anything. Some days, I did not eat. If on Monday, I did not eat because having a lot of sleep. Monday, I did not eat but ate on Tuesday Wednesday and Thursday. Had one bag of milk. Had to get rid of sleepiness. The day that we leave early. We would not eat.”

Being against the compulsory of doing the overtime by not coming to work or leaving the work before the time as the sayings of the labors :

“Could hardly stand and had to bear it. If we did not want to stand, we would like to use a lot of energy. The simplest way was not to go. If we went and we didn't come out when asking the chief. Pee Da (the leader) used to ask to go out but was not allowed to go.”

“In the morning of the first 2 - 3 days, we would work hard with all capacity. I helped at the warehouse until one o'clock. On the second day, I helped at the warehouse until one o'clock and two o'clock, I asked for a leave but I was not allowed. So, I decided to get away. On the second day, I asked to leave around 10 o'clock. They would not let me go. I went away again. That day, they did not stop working until 3 o'clock in the morning. Who could take that? We were still new. Asking to leave but would not be allowed. I have never been out. Whenever I asked for it, I would never be allowed.”

When the labors had to work continuously, they did not get enough rest and cause the physical health as follows :

1) Doing' the overtime continuously, made the labors had not enough rest and would be sleepy while they were working.

“Sometimes, the vein in the brain could be broken. That’s why we felt sleepy but in our heart, we could always do it. That night that I had an accidents, we were weighing the fish. The other workers said why I did not let the pail go. Weighed again and again. Never let it go. Could be day dreaming. Sleep. But could still weigh the fish.”

“It was like a sudden sensation.”

“When it was time to get to work and we got so sleepy. Why it was not sleepy when we were in this room. While we were working, it was very noisy but still was about to sleep. But it could be accepted that it was very tired. Keep yawning, we would not be able to put the fish in time. The machine could still run and put the fish in a pair at a time. We could put the fish in time. I did not want to know anything else.”

“Samai slept soundlessly. If sleeping like this, they would not know how to put the heads of the fish but get the weight.”

2) Be fainted

The labors who did not have enough rest, would get fainted when entering the work.

“Yesterday, the support boy got fainted. It was about 3 o’clock to get off work every day. After sleeping and getting back to work again at 11 : 30. The support boy could not eat rice. He had coffee and got fainted.”

3) The labors were very weak

“Started to work at 6 : 30 in the morning and leave the work at 3 in the morning. Went to sleep at 3 : 30. Slept for an hour and a half. Then got up. It was very tired. Sometimes, it would be a very tired period. So tired that we had to take the motorcycle to the room. After leaving the work, we were still very weak. There would be sometimes that we would run out of energy. Then, in the morning, it was time to work again.

“tired. Stayed up for the overtime everyday. Didn't have enough rest. Had very little sleep because in the morning, I had to get up very early. We had to get to work at 7 : 30. When getting at 6 o'clock, we left the work at 10 to 11 o'clock. Then, slept about midnight. Leaving the work at 10 o'clock. Did some washing and went to bed at 11 o'clock. Then, getting up at 7 o'clock. When one got up, everyone had to get up (in the morning). Even though, one did not want to get up. One got up and had a headache when getting to work because of going to bed late.”

4) The Labors had illness.

The factory hurried to produce as many products as possible. Before having long holidays such as New Year, Songkran, the factory would let the labors stop working so that they could go back to their home towns. The factory would set the labors to work on Sundays instead. The labors had to work continuously for several days. They had to work every other Sunday. The labors did not have enough rest. The body was very weak. They got sick with flu. As a result, they had to stop working for several days.

“In this last month, before having some days off, we had a flu and had to take 4 days off. We did not have enough rest. By the time getting home, it was midnight and got to sleep at one. Then, got up at 4 and started to work. We had to sleep on the bus. It made us weak because it was not like sleeping at home. After being like that, we could not take it and were knocked out.

“O.T. 4 hours or 4 hours and a half. It was very late. Even though we had Sunday off. For example, we worked for two weeks and then having the day off. Only one day, the body still did not have enough rest. The ones who worked on the trucks

took turn taking days off. All month, the labors took turns having the days off. When we could not go, we had to sleep at home and asked for the medication certificate for such a permission.”

Consequently, working over time could cause physical problems as mentioned before. The working efficiency could decrease. The labors could have day dreaming, the brain would not function, which could cause the accidents of putting the hands into the machine. It could be seen from the following sayings :

“From Monday to midnight every night. It was very late. Just thought of one o'clock every night. All week, we had to get out of work at one o'clock. After work, I had to do some cooking, taking a bath, eating and singing until 2 o'clock. Before, I could get to sleep it would take about half an hour. So it was about 2 : 30 every night for weeks and weeks. Started working at 7 : 30 or 8 : 00. Just imagined. Slept 2 - 3 hours. My eyes could get the feeling of without sleep. My brain would not work. Getting dizzy. If I did not concentrate, I would be out of mind. If I didn't get unorganized how my hands would get into the machines. We did not sleep. It was about an arm apart. How the hands could get into the machines. One hand cleaned and on hand put the water. But while working, the mind was thinking about tomorrow started working and would not make it clean. Because of not having enough sleep, the hands would get into the machine. I had to pull them out.”

Beside the expansion of working time, the labors did not have time to take care of their health. When the labors were sick, they could not get to see the doctor. For instance, the symptom of knotted blood veins, the labors had to hurry to finish the work so that they could have time to see the doctor. Such a hurry caused the accident of the hands getting into the belt.

“The knotted blood veins. The doctor set an appointment once. Then, another appointment. Within a month, the doctor wanted to see again. I planned to get off at 5 but nobody could be in charge. So, I had to work until 6 : 30 and would go after that.

But, we had to get off at 7 o'clock. I had to go at 6 : 30. If I had to go at 7, it would be in time for the doctor."

"At 6 : 30, It was almost time to get off work, still did not go. The doctor set the appointment for me but I still could not go. It was about the knotted blood veins. The doctor set the appointment once and the appointment would be another time. It would be one month. I wanted to go out at 5. Nobody did the work. I could not leave the work. So, I would go at 6 : 30. The time to leave work was at 7 o'clock. If I went at 7 o'clock, It I would not in time for the doctor. The doctor could leave the clinic before. About 6 : 10 when the hands got into the machines but I did not look at the watch. It was approximately after 6 o'clock.

7.7 Replacement labors and the occurrence of accidents

The replacement was a tool for the factory capital to press the labors in the labor process. The labors would be divided into groups of using intelligence and groups of labors with energy. The labors in the low level would do the work easily. They could use only physical energy. The time for training would not be so long. The labors without knowledge could also do these kinds of work.

As a result, there were labors who started to work and left the factory very often. The labors with young ages would be in and out more than the labors with higher ages.

"Some of the labors could not take hard work. They worked for 3 - 4 days. Then, they quit. They were not as patient as the older ones. We still could be patient but the younger ones could not. However, the factory wanted the teenagers. They did not want the old ones. The young ones were not patient. Sometimes, they worked for two days. Some started to work and got fainted. They had to stand but they never stood like this before. They could not take not only being accelerated but also scolded while they were cleaning the fish."

While the labors without knowledge could work in the factory because the factory did not determine the qualification of the labors. If the labors were healthy. They could use their physical energy intensively. They would be considered.

“having no knowledge. Have never studied. Being so poor. Being born in the country side. Could finish only grade 4. Couldn't write. Everyone could only read. English! Don't say anything about English. Only memorize some of the English words. In the section that used only the energy, did not need to use much intelligence. Did not use much brain. If we were not sick, we could do the work. If using the brain, we could not do the work. For the work, it was only to remember the sizes of the fish and the kinds of fish. The sizes and weighs would be from here to there. Try to remember the sizes according to the kind of the fish. That was all.”

The factory did not identify the characteristics of labors. The characteristics of labors. The labors with higher ages could do the work. The older labors had no other choices. They had to bear the labor pressure.

“I just knew when I got old. I worked for over 10 years. Even I knew I still had to work here because there was no age limitation. Whenever people work, there was the age limitation. Sewing was also age limited. If I can take it, I would continue doing it unless. I would be expelled. If we can bear it, it would be all right. We used to do harder than this. Our physical energy could take it or not. Could our bodies take this?”

7.8 Employment system and the occurrence of accidents

1) Monthly Employed System was the system used by the factory with the group of administrators such as managers in different sections and chiefs. The monthly employee would get higher salary than the labors in the low level. There were some promotion, bonus so that this group of employees would do the work for the factory. In labor controlling the labors in the low level were required to work fully for the factory. Besides, this group of employees had the stability in working. They would not

be easily released. If the factory wanted to end the contract, the factory had to pay for the compensation for this group of employees.

2) Daily Employment System was the system used with the labors in the low level. The labors would get the wages equal to the low wage required by law. The wage would only be enough for living. The labors would have enough for living such as eating cheap food, living in the cheap room and had to work hard ad to sell the labors to the employers.

The daily employment system could make the factory computes the discipline in working of the labors in the low level. If the labors were against or did not follow the working discipline, the labors would be pressed easily to leave the job. Besides, the daily employment system would pay employment system would pay only enough for the living. That made the labors pressed on using their own labors by expanding the time of working longer than before.

7.9 Working motivation and working accidents

The factory created the working motivation so that it would be accepted in the labor process. The labors would cooperate in pressing the working energy in order to exchange with the price and little benefit given by the factory. For example, the factory provided some prizes for outstanding employees, industrious allowance for the labors working continuously for 4 months without any kinds of absence. The reason was that the employees would work continuously in order to reduce the waste in the production process.

Moreover, the bonus paid by month was the motivation the factory used with administrative level so that they could control the labors in the low level to work towards the goal. The supervisors, the chief would have some ideals working for the factory to take advantage from the labors in the low level.

7.10 Welfare system and the occurrence of accidents

The welfare system was used as a tool of the factory to control the work of the labors. The factory provided the welfare to motivate the administrative groups by providing transportation and the labors in the low level would be the minibus or unair conditioned bus for the employees who live faraway from the factory. The factory was responsible for half price and the other half the labors had to pay by themselves.

For the accommodation welfare, the factory rent a townhouse for te supervisors and higher. The administrators with families could rent the house and refund about 1,000 baht a month. The chief and the daily employees, the factory rent a dormitory near the factory and the private dormitory by national real estate. The labors could pay cheap rent including the water supply and the electricity. However, there were not many rooms. Therefore, they were not enough for the labors. They had to rent other dormitory not so far from the factory. Those dormitories had people from different careers. They had different working schedules. The labors who worked in the second shift would leave work at 8 : 00 o'clock in the morning. They had to sleep during the day time. When the labor had a break, went to relax in the room, talked and turned on the radio very loudly. The other labors could not sleep. They could get enough rest. When the labors started at 8 : 00 p.m., at 2 : 00 a.m. they would feel sleepy. There could be accidents with the knives because of insufficient rest. They could be seen :

“Slept in the room but not fully sleep. Now the dormitory was full. Formerly, I stayed a the dormitory of national real estate and there was a transportation. I was cut once by knives. I was very sleep. It was about 2 o'clock or 2 : 30 in the morning and playing at the dorm. So it was difficult to get to sleep. While they were cutting the fish and felt dizzy. The chief wondered that. The woman was sleepy. The chief laughed. Say it frankly that you were sleepy! Because you did not feel sleepy every day. Even we not sleepy, we could get cut. The other day, a man in the same section got cut. One day, I might get it, too and I really got it.”

The labors mentioned that the accidents from knives could happen in the evening when the fish were slippery. The accidents from knives actually happened very late because the labors got sleepy.

“It was late when there were accidents. However, in the evening, it was because the slippery knives and caught the knives.”

The welfare on nursing care and annual health exam. The factory provided the annual health exam as required by law. The labors did not have to have an x - ray outside the factory. That could waste the working time. There were some labors who got the x - ray. The school expanded the working time which made the labors in the low level had no opportunity to get the examination at the hospital. When the labors could get the medicine and returned to work in a very short time.

Moreover, the regulation of getting a certified paper from the chief before receiving the services. If they were afraid to ask, they had to bear the pressure without receiving any primary care.

“I had a stomach ache last night. Asked for a certified paper. The chief did not give it to me yet. The chief said the doctor had gone about 10 o’clock in the evening. Asked for the certified paper so often. Could only asked for the medicine. One went to see the doctor. Another one asked for anti pain medicine. Did not want to go. If could bear the pain, I would bear it. The symptom was not so serious that I needed to see the doctor. Friends asked for pills. I asked some pills from friends. The pills were to anti pain. It would feel better after taking them”

7.11 Raw material condition and working accidents

The raw material brought for the production was slippery from the frozen condition. The incomplete condition of raw material would cause danger for the labors in the low level. The labors in fresh fish section would be pierced by fish bones. The accidents could occur during the working time.

“The accident happened all the time. However, it depended on fish. If good fish, there were less accidents. Bad fish, the tails were broken. When throwing them, they could slip off the hands and before we would let the fish go, the bone could pierce the hands.”

7.12 Slippery working environment

Precooked fish section

In the precooked fish section, the floor was wet with fish oil and water from the fish. The floor was very slippery. When pulling the carts which were very nearly, there could be accidents. The fish could fall on the labors' feet.

“The wheels of the carts would be did the legs. Normally, we could pull out from the lift. When pulling, it would slide to hurt the legs. Two workers should pull the carts. One could not do it because the fish were very heavy about 500 kilograms up including the weight of the cart. It's difficult to tell because the accidents could happen any time. Even we did not intend to do that. During these 2 - 3 months, the labors had broken fingers. It was a dangerous job. Pulling the cart had to do very strongly. When the fish were big. If there were fewer fish it would be easily pulled.”

“Yes. Today on the legs. The other day pulling carts out the freezing room. It was slippery. If it was not cleaned it would be very slippery. There was a lot of oil and wet all the time. When falling, the fish would slide over. It was difficult to push them. They would slide. The fish cart had wheels which con go freely.”

Packing section

In packing the fish, there was some oil. The oil could drop on the floor and cause the slippery accidents. Even the floor would be cleaned often, it was still slippery.

“The Machine No.6, at the end of the tracks, it was slippery. The other parts were also slippery. However, the end of the tracks were very slippery.”

“They clean the track very often, but it was still slippery. It might be from the oil.”

“I fell once. It was slippery. At that machine. The chief ran to hold me. Fortunately, I did not fall on anything. I carried the tray. When walking up and slide. The fish did not fall. If the fish fall on my head, they would break my head. On the same day QC slipped. Nam told me that Q.C. slipped and got dirty.

Cleaning fish section

The floor in the area of cleaning the skin, was very wet with fish skins and the oil from the fish. Although the chief provided the labors to clean the floor. The floor was wet all the time and the labors had to bring the trays to the cleaning fish skins. As they did things in such a hurry and did not see the cart. When the labors saw the cart, they try to stay away from it in a sudden. Then, they fell and slide.

In line of working, washing the trays and the trays were put on the head of the tracks. The tray could slip and fall. In the area 5 where they were cleaning the skin near the freezing room and we had to work in that area. So it was wet all the time.

It was slipper. When taking the fish cart out, I walked and tried to stay away from the cart. They push the cart and did not see me. I was carrying the trays because the tray section was not in time. There were not only the heads of the fish. The one who worked on the line also came. When they pushed the cart. So I tried to walk away but only two step. They, I fall on my back.

7.13 A case study on working accidents from labor process

The researcher presented a case study on working accidents to show that the accidents did not occur from the carelessness but form the labor process which determined different conditions for the labors to get involved with such risks until the accidents occurred as the followings:

Case Study 1: Leela Saranram

Labeling Section

Leela Saranrom is female labor of 40 years, thin, tall and dark skin. Her hometown is Pitsnukok. She has been married for 24 years. She has 1 son. After being married, Leela worked on farms with her husband. Leela and her husband did not have their own land. They had to rent about 10 – 20 raise by paying the rent with rice.

“Rent 10 to 20 raise. That time the rent was rice for 10 raise would be about a cart of raise such as one cart (one gwian is equal to 100 pail) 20 raise. They asked for 2 carts.”

Working in the field depended on the weather. If there is rain, the product would be more. If it is dry, the product would be less. The farming could be done once a year.

“For 10 raise we couldn’t get 3 carts. Sometimes more than 3 carts but they are the field for the water from the sky. If it rains, we could get good rice. If there is a draught we couldn’t get good rice. We do the farming once a year.”

Working on the farm needed a lot of investment on fertilizers, medicine. If there were some worms, there will be a need on spraying those worms. It needed a lot of medicine which cost a lot of investment. There were some expenses on labors working in the fields, plowing. The income was not enough for the investment. Leela had some debt. After doing the farming, she had to pay for the debt. Then, she had to get the new loan. The loan had to be paid by rice in a pail.

“Think that how much for each month. Some for the fertilizer, for medicine. We had to hire some people to plant rice and to plow. We tried to grow rice by ourselves. The expenses for fertilizer was 3,000 baht, for the medicine was 1,000 baht. In giving the medicine, it depended on less or more. If more, they would continue to be in debt. It was like after working, it was never enough. Being in debt every time. Never gain any benefit.

For a whole year, we could work for 20 raise and could get 3 to 4 carts of rice. Keep one cart to eat. If we could get 5 cart, we could sell 4 carts. That time the rice was 2,000 baht per cart.”

“It was not enough. Sometimes, we got in debt. Working in the fields since marriage. Didn’t get any benefit. Never, Only be in debt 2,000, 3,000 or 5,000 baht. For the new year, we had to pay for the old .one and start to be in debt again. We have been continuously in debt. Part of it was from the loan for farming under the condition of giving interest as rice about one pail or two pails. Sometimes, we owed 3,000 to 5,000. The capitalists were in the area. They would buy the green rice and take the rice as the profit. When it was time, the capitalist would ask for rice. If the loan was 5,000 baht the profit would 2 pails of rice, about 2 pails. One cart was 1,000 baht about 20 pails. Supposing that we borrow 3,000 baht which was about 60 pails. Only the interest could be calculated with the percentage of rice. How much was the cart of rice? How much did we borrow. Then, they would measure the rice.”

The living in Pittsanuloke, Leela told that she was in a trouble. Only worked on the farm. After the harvesting, she did not know what to do. She had to wait for the next time. She had tried to rent the land for growing tapioca but the price was very low. Life was very difficult.

“When we were in the country side, it was very difficult. Now we have enough for living. Sometimes, e did not have money to deposit but we were not starving. Sometime, we did not have anything. We were not rich people like the others. We could find crabs and fish to eat and sell 150 baht. When it was the time to work in the fields, we did not know what to do. When we did not do anything but waited to work in the fields. If we did not work in the field, we would not have money to rent the land. We sued to rent. This year growing the tapioca was 2 – 3 baht. The price was down. It was a draught. When we grew the tapioca the price was down to 60, 90, and 80 stangs per kilogram. For one ton, it would be 700 – 800 baht. How much was the investment?”

“The way of Living of Leela in Pittanulok was not only working on the farms but there was nothing to do. There were no factories in the village. There was no

money to start some business. There was some work to do such as being hired to dig up the tapioca. Such employment was only in the season.”

“There was no other job beside farming. There were no factories. Doing the business, we did not have the money. What could we sell? When we asked for a loan, they would not let us because we did not have any thing. We could be hired to do some work in different houses. Digging up the tapioca in the season. If finishing working on the farm, then that was all.”

Employment Process in the Factory

When working on the farms, the farmers were in debt. There was no money for doing the business. Friends advised Leela to come to work in the factory by saying that Leela was still young and the income was good.

“Friends advised. So go ahead. Work at the factory. Still young age. At first, some friends were placed there. Now, they left. They said that the wage was one hundred and eighty – five per day.”

Leela started to work at this factory on November 6, 1991 in the clean fish section. The factory hired Leela as a daily employee with the wage of 90 baht and 10 baht for a shift. The total was 100 baht per day. The cheap wage made the labors have safe ways of living. Leela had to send more than half of her salary to her husband and her child in Pitsanulok as she said :

“I came on November 6, 1991 and worked in the clean fish section. I was suggested that in the cleaning section I could get 90 baht and 10 baht for the shift. That made 100 baht altogether. I did not want to be placed but more money. Was it right? That’s right. I preferred being in the cleaning fish room. When I applied for it, I could get the job in the cleaning fish room but in the night shift and could make 100 baht per day. The first time, I received 900 baht. You didn’t work the whole week, didn’t you? How many days did I work? That time I got 900 baht for about 9 days. There was no overtime. The time to leave the job was 2 o’clock in the morning. I sent

500 baht to my child and saved 400 baht for myself. That time, I could buy ready – made curry 5 baht a bag. I bought 5 baht. I could eat 2 times because I started the late night and when I came back from work I could eat it again. When I got up in the afternoon, I bought some curry again. In the evening, before I started to work, I could find the food to eat in front of the factory. It was rice with curry. It was 7 baht a plate. The break time was 8 o'clock in the evening. There was no rice. I had to find some dessert to eat. Sometimes, I was hungry for rice, or noodles. I would eat noodles. It depends.”

After Leela worked for 2 years. She told her husband to move from their hometown to work in the same factory. Her husband did not rent the land. Their house was closed. Some valuables were left with relatives.

Leela's husband started working in the factory by working in the lifting section. The replacement was the recommended system. Leela asked her chief to recommend her husband to work in the factory because the majority of factories would hire female employees. At the beginning, the factory paid Leela's husband daily. After that Leela's husband could drive Folk Lift, the factory hired him monthly. Being a Folk Lift driver, Leela's husband could earn 5,100 baht a month.

When the labeling section lacked of the labors, Leela helped in that section. In 1998. Leela liked to work in this section and found that she was older so she asked to move to the labeling but the chief did not let her more. He wanted her to work in the cleaning fish section. Leela decided to quit the job as she said:

“Help this section. Asking to transfer to this section but they would not let me do that. So I decided to quit. At first, they would not allow me to resign. I told them that I got older. I decided to quit.”

After Leela left her job for 1 month, she came to apply for the work in this factory again because there was a regulation that the one who left the job could come back after one month. This time the chief of the labeling section recommended.

“Leave the job for one month and applied again. When applying for the job, I talked to Mr. Ko who was the chief of the labeling section. Mr. Do asked the supervisor to let me work in the labeling section.”

Working in the labeling section, Leela was responsible for drying the fish. When the fish in the cans entered into the labeling section, it was necessary to clean the fish.

“Dry the fish that were brought to do that. They were the fish just produced. After drying the others would do again to make sure that the front of the fish were clean.”

Working Accidents

When Leela worked in the cleaning fish section, she never had any accident from work. When she transferred to work in the labeling section, she had working accidents several times. However, when asking Leela how many times of accidents she got? She said that there were only 2 times. Leela called the accidents according to the severity of the accidents. She said she several times of accident.

First Accident

In 2001 Leela had an accident from the labeling machine pierced into her hand while she was controlling the machine to close the box. The co – workers who had to collect the cans and put them on the palate went to the toilet. The fish cans were moved along the iron were about to fall off the track. Leela saw that she ran to hold the fish cans so that the cans would not fall on to the floor and the cans would be damaged. From this rush, Leela was pierced by the labeling machines.

“Never! Since working here, got pierced by the machine to close the lids of the cans.”

“Last time, I got an accident from the machine closing the lids. To close the lids of the boxes. The fish would fall. Running to hold them up with hands and got hurt on the nails. The nails were broken and bleeding. Only took care of the wounds.

The cut was not so deep. I used my hands to hold them up and the lids got into my hands.

If I did not hold them up. Usually, I do not hold them up like that. When the fish came box after box, we could only catch the boxes. When they were coming along, we did not have time to see them. When we looked up, the boxes were coming. Then we had to run to protect the fish boxes not to fall down. If 4 boxes fell down, there would be a lot of disaster. The 12 oz. fish cans were big. When we let the fish go, we did not see who were collecting the boxes were not there. They went to the toilet. We could stand in place of them was that right?"

The Latest Accident:

The latest accident was the thumb sucked in the turning plate while working in the labeling dry fish section. While the canned fish were flowing along the turning plate and Leela had to sweep the fish into the palate as this saying:

"These are the fish from the screen. From the screen, then would be down to the turning plate. As soon as the fish were onto the palate, I would do from the turning plate into the palate. The paper needed to be put down. Someone had to do it. There were 4 people. I was the one who swept the fish. A friend would pick up the paper. After finishing sweeping the fish, the fish would be put together and cleaned the front of the fish with cloth mixed with alcohol. While we were sweeping the fish, we had to press the corners of the cans, we had to seal the ream of the cans. Was that right? Pressing the seal mad us very stiff along the ankles and wrists. We had to do it by using the force and had to put up very hard into the tray. If doing it slowly, the fish would be all over the tray because the fish would be flowed all the time. The top had the turning plate again. Then, dropping the fish into the screen. So in the turning plate, we had to do it once on twice. Was that right?"

Causes of Accidents:

The causes of accidents were from the goal setting by the administrating. That was to finish a palates within 4 hours. The labors had to record the beginning time of

drying the front of the fish and the finishing time of doing that. The labors had to do the work in the rush intervals as this saying:

“In one plate, we had to do for the total. For instance, one palate needed to be done within half an hour. If it could not be done, the chief would complain that the total was dropped down. Each section had to have the total such as for half a day, 9 palate should be done. If finishing only 8, it would be less. Yesterday, 9 palates were done. If each day about 9 palates or ten even not quite full, the chiefs would not complain. They were satisfied.”

The day that had an accident, 9 palates were done but in a rush manner. The work was in a hurry every 24 hours. The reason to be in a hurry was the large amount of fish. The goal had been set how many boxes needed to be done. The average of one palate was about 88 boxes. In an hour, we could finish 2 palates. Then, 88 times 2 equals 160 or 170. Another palate was about 40. So we could make 200 and above. The lowest number would be 200 boxes within an hour. About 200 boxes or above would be dried.

Be quick. Had to be done very quickly. When the fish were flowing. If they dropped down, we would be complied. We had to think how many cans and how many lid of the cans and how much was the total? The chief would talk like this. So we had to be very careful. When the fish were coming, two of us had to put hands together when one was on the other side. One turning plate, we had to sweep the fish once or twice. If 10 times, it would fill up the palate slowly. The most proper times would be twice. The friend on the other side and I would the hands together and waited approximately half of the turning plate, then press the hands to put the fish into the trays. For the second time we did all of the fish. When they were all. After finishing them, the one on the top would let the fish on to the turning plate again. There would be fish on the turning plate all the time as shown in the saying:

“Be rushed! Because of the fish. Check the time. Before we would be up on palate, we needed to check what time it was. When we filled up the palate, what time

it was. We had to check by ourselves. Friends also helped to check and helped to work. It was like working together. Be in a hurry and helped each other. We could mark the time ourselves, too.”

The working control was done by the chiefs. They would investigate that within an hour how much work the Labors could do. If the labors could not reach the goal, they would be complained by the chiefs. There were steps in working control. The supervisor would report the manager and present at the meeting. Such controls effected the working rhythm. They had to work in a hurry and caused the accidents as the labor saying:

“Then the chief would look at the time recorded in the book. To see the code fish when they were dried and when to finish. Then, the second code would start and finish at what time. For example, the first code was at 7 o'clock and if about 1,200 fish were done. What time was it? After that they would calculate how many boxes could be done within an hour. And how many palates could regularly they do.”

“If we could not do it, we would not do it. The chief would complain any way. Hurry up. Today, we did not have a lot of fish. The ones who worked up there, tried to keep the records, too. The manager, the supervisors, they had to be sure to get good record. They would ask a labor how many thousand of fish had been done. The labor would say that about 7 thousand or 8 thousand. They would get to work at 7 o'clock. To complete one round, it was about 3 : 30 and how many were left. After about how many fish were left. They went to the meeting at 3 : 30. They would leave the meeting early. If there were a lot fish left; They would get out of the meeting room at 4 : 30 and let the labors take a break for half an hour before the evening shift.”

The labors believe that accidents occurred from working in such a hurry that they got the accidents. The labors said that they had tried to work carefully because they had seen friends got this kind of accidents before.

“It was a little too high. It was high. There was a switch on and off. The turning would be turning all the time. If we did not turn it off it would continue turning. Last night, I on the left side, friends were on the right. Friends had the switches. We did not know when we could get hurt. We would try to be careful. In the morning, my friend got the accidents at the little finger. It was a small finger, it was not difficult to pull it out of the machine.”

“About 7 : 30, it was the time to get more fish, wasn't it? Friends were not all there. Actually, the machine on the top, there would be 4 people. One would go and get the paper, but there were only 3. Then, on my side, I was by myself. The fish would be all over. I could not do all that by myself. I was in a hurry. One hand to gather the fish. Another hand would help trying to put the fish in the palate. Putting in the palate while the plate was still turning. There was the connection from the floor. This connection was good, wasn't it? There was a hole. We thought we wouldn't get caught because we were very careful about it but we got hurt several time.”

“Because we worked too fast, didn't we? The part that we were careful, we tried to be careful as much as possible. Still, there was an accident. We were afraid that the fish might fall off. We did not want to waste anything. We hurried to do it and our hand got into the machine.”

Leela said that she had the accidents at this point 7 times.

“We used to get caught at this point 7 – 8 times. Friends who were standing at the same machine would get caught. Was it hurt? We got hurt because it was the thumb. It was big. We could not take it out. So when we had to sweep, We had to sue the other hand to help. By doing that the fish and the hand could get into that hole. As soon as we know that we tried to take our hand out. They could come out. We told our friend to turn the switch off. Then, we tried to pull our hands out.”

“I, myself, got hurt 7 – 8 times. This was the eighth times. I had 4 stitches. It was the thumb and we had to be careful. When we were working they should be talking about work. Were we careless? We tried to be very careful. Unfortunately, there were too many fish. When the plate was turning, the fish could fall off. We did

not want that to happen. So we tried to hold them by putting our hands in and the hands got into the machine. We did not know how it could happen. As soon as they got in, I tried to pull them out as soon as possible”

Leela told us that everyone who worked at this point got the accidents.

“We got it so often. Almost everyone who was standing there. Not only me who got hurt. Last were, someone got hurt at the little finger. Only the skin came off. Yesterday, another one got hurt but only black skin. Everyone had it all.”

“Almost everyone got hurt. Yesterday the other one got it. The ones who were on the other side would get it.”

Management of Accidents:

When the labors had the accidents from working but they did not have severe pain only some scratches, they would not inform their chief.

“We could pull it out every time. It was difficult to say. It could be small or large spaces. Only the fingers got into it and rubbed it. It did not hurt. We did not have to do anything. Did not have to go to see the doctor. We did nothing about it.”

“We did not tell anyone. We didn’t get any pain and we did not have to inform about the repairmen of the machines. For instance, we did not have to tell about improving the machine. We did not get hurt only the black scratch. Most of them would be at the little finger. The hole was bigger than the little finger. After it got in. Then, we pull them out. Everything was all right. So I did not tell the chief about it. It could be our fault that we did not inform them. It should not be.”

When there was severe pain after having the accidents. It bled a lot. Then, the labor informed the chief and get the medical care at the nursing room.

“When we got the accident, we wrapped it up and ran. The cloth used was the cloth for drying the fish. This cloth was supposed to be clean because it was washed

before. We used the one beside us. We could not find anything else. So, we used that cloth. The blood was still dripping. I got that piece of cloth and ran. When the chief saw that. He told Leela to go ahead and the certified paper would be sent after wards. So I ran to the nursing room.”

In conclusion, the accidents from working were managed step by step. The highest controller was the manager who set the goal of labeling the boxes about 200 boxes within an hour. Then, the manager told the supervisors to control the chief and the chief to the labors in the low level. They had to get to the target. Then, the chief would report the manager the result at work at about 3 : 30. The labors had to hurry to do the work. Beside trying to reach the goal, they had tried to avoid wasting the products. For example, the canned fish would not have the marks. When the canned fish flow along the belt, the labors would be afraid that they could drop down. They used their hand to support then so that the canned fish would fall into the palate. Then, the thumbs were pulled into the track between the turning plate and the belt.

Case Study 2: Mr. Somsak

Raw Fish Section

Mr. Somsak was a male labor of 40 years. He was the medium size with dark skin. He finished grade 4. His home town was Surin. He's married and had on son.

Somsak used to be a volunteer soldier for 10 years. After that he work as a rubber cutting in the south for one month. To cut the rubber, he had to get up around midnight or one o'clock and worked until 7 : 00 to 8 : 00 o'clock. After that we put the rubber into pieces until about 11 o'clock or one o'clock in the afternoon. Then, he could eat. Somsak could not stand this job because he did not have enough sleep. If it rained we could work, the income was very low.

“My life had not been through may other things. When I was young. I help my parents working in the fields. Then I went away to be volunteer for over 10 years. After leaving the military, someone took me to work with the rubber in the south. The job was harder than before. I got the old rubber trees. I had to look up to cut them. It

was difficult. I had to get up around midnight to do the job. Sometimes, it was one o'clock in the morning to start and worked until 7 – 8 hours. By the time, we could get everything ready it was 11 o'clock. Almost 12 o'clock, we could eat rice. There were two people working within a week. We could make 1,000 baht. The average each one could make less than 100 baht. It was not worth sleepless.”

Somsak intended to work in the fields or in the gardens but he did not have money. He decided to stay at home. His wife and his son started to work at this factory before Somsak for one year. His wife came to this factory because she was persuaded by friends that the income was good. There were a lot of labors working in this factory. There were about 10 labors from each village.

Somsak said that he came to work in this factory because he needs some money to buy a piece of land to make gardens and to raise animals.

“There was nothing. I would take this for a while. Then, I would resign to go home and find a piece of land to grow vegetables to send to the market. My body could not take any more hard work. When getting old, I was weak. I would like to have a cow a buffalo. When I had some more money, I would buy 3 – 4 cows to raise some calves for sale.”

Somsak had little knowledge. He finished only grade 4 and had to work in the fresh fish section. Somsak worked in the cleaning fish for 1 year. In this section, there was no need to use knowledge only physical strength. Now, Somsak worked in the fresh fish section for 1 year as his saying:

“No knowledge. Never had light work since I was born. Never learned any thing. Being poor. I was born in the country side. Finished only grade 4. Couldn't write. Today, only could read. For the difficult word, I could not read, especially English. I had to memorize it.”

“In the section that need some knowledge, I could not do it. Could use only physical strength. Did to need to use the head. Did not use the brain. When we were not sick. We could do it. If used the head, slow brain would not be able to do it. For

the work, there was nothing much. Only remember the sizes and the weight of the fish. I had to remember it like singing a song. Remember only the verse and rhythm and each part. Remember the shapes of the fish. What kinds of fish. Then, screen the fish by sizes. Only remember the sizes of the fish. The work was so so. When the fish were gone, I did something else in stead.”

Labor Process and Health Problems

The labor process which the labors transfer the fish. They would go up to the ten wheel truck or the container. When bending up and down putting the fish down, made Somsak had the health problem. That was backache. Somsak looked at this problem of backache as a normal one.

“Stiff and stiff. Have backache and waist ache which were normal. When we finished, we could get down and stood up. Stretch the back and the feeling stiff would disappear. When bending to work to put down the fish, the backache like the farmers bending to work all the time. It was normal for working. It was like eating rice. The tongue and teeth could bite each other all the time.”

“Working for a while. Then stop. Did not know how long we could bear it. It was so stiff.”

Accidents

Somsak had the accidents in working several times. The accidents were from being pierced by fish bones, being pressed from falling fish and being splashed by the mud getting into the eyes. The details were as follows:

1. Being Pierced by Fish Bones

Every labor who put down the fish would be pierced by the fish bones. The labors see that working in the fresh fish section, they would being pierced by the fish bones. It was normal and the habit of the labors working and being pierced by the fish bones.

“Only bones or bigger piece. All three of the worker got pierced. One cried. Then, the other cried. What was that? It was being pierced by the fish bones.”

“There was nothing in the accident. It was being pierced by the fish bones but that was all right. It was normal. If we did not get pierced, it would not be the fresh fish section.”

“Just a little. Being pierced by bones is the normal thing. We got it every night. Several labors. Taking turns being pierced.”

“Being pierced every night. One cried. Then, another cried up. It was a normal thing.”

Causes of accidents:

1) The conditions of raw materials such as tuna were not so fresh. The fish tails were very soft and easily to be torn off. When the labors hold the fish tails to throw them, they were pierced by the bones from the fish tails. Somsak said that accident happened every night.

“Being pierced every night. Everyone takes turns to being pierced. It depended on the condition of the fish. If the fish were kept for a long time, they would be soft and easily to be torn. If new fish, it was easier to handle them. It was easy to put them down. If the old fish kept in the freezer for a long time until they were out of shape. When they were approached to the air before reaching us, the fish would be very soft. The fish tails were caught when picking them up and down on the boats several times. Being caught for several time. Being caught for several time, by the time to get to us, the fish were very soft. Sometimes, when we tried to lift them up, the body of the fish slide off the hands and fell on the floor. We could throw only the tails. If there were tails, we could hold up on each hand but when holding the fish tails, two hands were used. That could make it drop down. Some fish had flat tails. After being caught again and again, the tails would be gone. We had to lift up the whole fish about 3 – 4 kilograms and 5 kilograms. It was very heavy and the tail was very slippery. The fish still dropped off the hands and the hands were pierces by the bones from the tail.”

“If the fish were in good condition, it was easy to get hold on the tails. Once in a while, we would find soft fish. We would have a headache but everyone could not get away from it. Some nights. For instance, Friday night, the fish were in good condition. The fish would be at the certain time. It could be from the ship. If the ship took a long time, the fish would be in the ship for a long time. When reaching the freezer and the fish were kept in the freezer before getting to the factory. The fish were caught several times both up and down old fish and new fish.”

2) The causes of accidents were from the organization management step by step. The labors had the interval to work in a rush manner. If the labor could not do the work, they would be complained. Consequently, the labors worked so fast that they were pierced by the bones.

“The chief would keep the time. They had to hurry, too. The fish would not be in time. It was a certain time to work with the fish. For instance, this time to be dissolved in the water, to be in the steamed room. The inside was waiting, while the outside was in a hurry. If it was easy to put down the fish especially with new fish, we would be able to do it in time. If there were certain fish needed to be done at the certain time, we had to do it in a hurry. If we could do as they needed, they would smile. If the labors could not do the work, they would be complained. Once someone had to control the work. The labors could not do it. Big boss would complain the controller. Then, the controller had to complain the labors. The labors did not have any one to complain. The boss would complain from the top down. It was like big fish eating small fish. Then, the ones who were like small fish didn't complain anybody. Being in such a hurry and being pierced by the bones. When we were asked to do in a hurry, if we could not do it. We got some kinds of feelings, too.”

“At the meeting when the supervisors and the chiefs had the meeting once a month. Sometimes, the meeting was about the job. When the job needed to be changed, they called for a meeting. The meeting was to let everyone know. Sometimes, the labors could not do the work as required, we would be called for a warning. They would tell us to be in a hurry and asked what the causes were. Why was

it late? If it was too late, the chief and the supervisors would also be complained. Sometimes, we could not do it. Sometimes, it depended on the new ones and the old ones. If someone did not know how to do the work, it could be slow. If they know the work when we said about hurrying, it was all right. For the ones who did not know, even though we would like to be in a hurry, they could not do it. The new labors could not be compared to the new car. For new cars, they could be rushed up but new labors could not be accelerated because they still did not know the work. Try to hurry. Then, they would be pierced by the bones. Some worked for one or two days and left the job.”

Management of accidents:

The management of labors pierced by fish bones was that the labors tried to take the bones out by themselves. They would use their teeth to bite the bones and pulled them out as the saying:

“Being pierced by the bones. Had to take the gloves off to pull out the bones. The ones which we could see, could be taken out by ourselves. Sometimes, we had to bite with our teeth. I used to take them out myself. From this side to the other side. Then, pull it out. Didn’t leave it like that. It could cause the pain. I decided to sue my mouth, bit it on one side and pull it out quickly.”

If the labors did not pull the fish bones out, they had to bear the pain until the work was over. Then, they could go to the nursing room.

“I went to the nursing room if it was very serious. If it couldn’t be taken out, I had to go to see the doctor. After pulling it out, the wound needed to be cleaned and asked for the anti pain medicine.”

“Sometimes, I did that. After putting down the fish for half a truck. Being pierced by the fish bones, I had to wait until the work was over. Then, I went to see the doctor.”

2. The Mud Splashed into the Eyes

The accidents from the mud splashed into the eyes of the labors who screened the fish by sizes. The labor standing first at the belt would be splashed by the mud into their eyes.

Causes of Accidents:

Accidents were from dirty raw materials and muddy fish. When it was time to hurry to work, the labors threw the fish heavily and made the mud splashed into Somsak's eyes since he was the first one at the track. The factory did not pay much attention on the prevention of the accidents of the mud splashed into the eyes. The labors did not have glasses or other equipment to prevent the mud splashed into the eyes.

“When looking at the condition of the fish. They were very soft and muddy. It was like the fish from the shore and from the truck. When finishing putting the fish down, it was all dirty. Yesterday, I had eye infection but I had to put the fish down. When holding the fish, they were very muddy and the mud splashed into the eyes. When they were throwing the fish, I was waiting to catch the fish at the top of the tracks. The first one standing there was close to the space that the fish would be thrown and splashed.”

Every labor in this area would get the mud into the eyes.

“Very often. Almost everyone. When we had to stand waiting to change shift. Couldn't stand at one place? Somsak said that he was very careful so that the mud would not get into the eyes. However, the mud still got into his eyes.”

“Be careful all the time. Had to keep an eye on it. They did not intend to do it but the fish got splashed with mud getting into the eyes.”

The management when the mud splashed into the eyes:

“Fingering the eyes. If the mud got into the eyes, should wash off with clean water. Eye infection.”

3. Being hit by the Fish

“Sometimes got hit by the fish. Jump away in time, would not be hit. If could not jump away, would be hit.”

The Severe of the Hit:

“Sometimes, could hardly breathe. The ribs were about broken. Sometimes, being hit very hard and loudly. Never can tell when to be hit like that.”

Causes of Accidents:

The accidents were from being rushed from the chiefs. If the labors could not finish the work as required, they would be complained. The tuna were frozen. When they were transported by the 10 wheel trucks without the control of the temperature, after taking out the cloth covering them, the weather outside was hot, the fish started melted. When pulling the first fish, the other fish would slide down and cause the accident of hitting by the fish.

“The work was accreted. Catch fish for a long time. Still did not know what to do. The chief would say whatever he would like to say. He is the boss. He could criticize every section.”

“Everyone had to do the same way. Actually, the fish would not be so slippery. It would not be so bad. Because the fish were slippery and we got hurt. Sometimes, we knew but we could not stay away from it. We could see it but didn't have time to stay away. Sometimes, the fish were so big over 10 kilograms or 20 kilograms. When the fish slide down. Try to stay away from this and fell down. The other fish were seen for several days. A few days ago, the small fish and the big fish. One was pulled. The other could fall down. The third and the fourth fish would fall over the others. They also fell on the hands. One hit the legs. The other hit the shin. Then, we slide and fell down. Even though we could see the fish, there was not enough time to stay and got

hurt. Still, we had to bear the pain. Sometime, we needed to take some of the blood out.

Management of accidents:

The labors viewed the accidents as normal things. It was unavoidable.

“No. We would get hurt anyway.”

“Accidents were some little things like nature. The nature was like Songkran, throwing water to eat other and got wet. Did not want to get wet but got wet. It was the traditional work of our own.”

“Similar to live in the house beside the road. Sleeping in the house, the bus could run into it. Overtime often that I heard the bus running into the house in Korat, the way from Korat, from Soong Nern, from the train. From Korat to Bangkok, the road was high and had to cross the railway. The bus went like flying and fell onto the roof. Fortunately, it did not fall over the people. Otherwise, they would be killed.”

As a result, the labor had to realize that working could cause some injury. When having the injury, they had to bear it. If getting so much pain, they could go to see the doctor at the nursing room.

“Prepare our hearts for it. Working sometimes could get hurt. Sometimes could be small injury. If it was severe pain, we would ask for anti pain medicine.”

“Be patient. If we could bear it, we could stay. Normally, we could get hurt. Being in the house still got hurt.”

Prevention :

The prevention was to leave such burden the labors themselves. The labors would say that the factory could not help them. They had to be very careful and looked after themselves by being very careful while they were working.

“That was to prevent it by being careful.”

“Which one we could be careful. Then, we would be careful.”

When asking the factory what it would do. The answer was that the factory could not help them. The labors themselves had to do it as this saying:

“Could not do it. Could not help. The labors had to be aware of themselves. Know that was the accidents and could get hurt.”

Case Study 3: Mrs. Somsri

Precooked Fish Section

Somesri was years old. Her hometown was Sukhothai. She finished grade. She was married but divorced. She had one daughter and one son. Somsri and her husband worked in the fields. Working in the fields needed a lot of money. Such as to high the tractor to plough the land. If cost baht per rai. Then, we had to high the worker to get the rice up in the barn. All of the expense was about 10,000 baht and more. Somsri was in debt at the cooperative organization for 12,000 baht.

“A lot of investment. Only the ploughing, it was 400 baht per rai. Do it in one day. About 10 rais. It cost 400 baht per rai. Bring 400 baht time 4, it would be over 4,000 baht. By the time to get everything done, it would be over 10,000 baht. The plowing, the stocking would be all more than 10,000 baht. Did not have much rice to sell but a lot of investment. While talking about it, I had to owe the cooperative organization. Oh! Working on the farm or in the field, I would be in debt.”

After Somsri stopped working in the fields, she worked in the construction in the suburb of Bangkok until she could pay the debt for doing the farming as her saying:

“Working in the construction for 2 weeks only, I could pay off the debt for 12,000 baht. Doing the construction work for two weeks, I could pay off a debt 12,000 baht. If I stayed at home I would never be able to pay off the debt. Only doing the

construction for 2 weeks. Working 2 persons with my husband. At that time the economics was good. For two person, we could make 400 baht per day. Asking for a loan from the cooperative bank, we had not paid it back”

“There were people working at the construction had a loan from the cooperative bank. Thinking of selling the rice to pay off the debt, it was very difficult. Most of the workers at the construction, got the money and wanted to build their own home, Staying at the construction, we did not have to pay for water, electricity. We only worked hard. Use a lot of energy. No other expenses on water or electricity. The company was responsible for it including the room.”

When there was the economics withdrawn, Somsri and her husband did not work at the construction. They went back home and worked in the corn field in Sukhothai. Her husband went to work in a foreign country. After that for 1 year, Somsri got divorced with her husband and took care of the 2 children. She let her nephew rent the land and asked for rice for the rent in the proportion of 2 : 1.

Process of Getting into Factory Labors

Somsri enter to working the canned fish section by her cousin. Her cousin told Somsri that this factory gave good wages and had some overtime as Somsri said :

“The people in the same area in my hometown had picked up my cousin to come to work here first. They said good wages and had some overtime. After working, they would have some money. The ones who could bring more people to work, could get the fare. At that time, they were looking for some more workers.”

Somsri first started in the clean fish section. She worked for 3 months. Then, she was retired and went back to work in the fields for about one month. The, she applied for the job at the factory again. The second time, Somsri could work in the cooked fish section. At the beginning she had to pick up the bladders taken out from the fish stomach. All the fish bladders kept at the factory would be brought to sell. After that Somsri was transferred to the stomach cutting section. When there were

some accidents such as being cut by knives, the chiefs would let Somsri work in the fish transporting section. Somsri said :

“The first time, I collected the fish bladders. After collecting the fish bladders, I was transferred to the fish stomach cutting section. I had the accidents hurting my hands. So, they let me work at the fish transporting section. The ones who worked in this section before already went home. It was difficult to find someone who knows what we really wanted. The ones who would pour down the fish would drop the fish if they never did the work before. One fish was about 20 kilograms. Just imagine how it would be. Therefore, they had some curtain while they were pouring the fish.”

Pouring down the fish cause some water from the fish splashing all over the labors.

“The tent could prevent some splashing water. Over there it was very hot. The curtain would prevent the water pouring down to the workers. The water would be splashed all over. It was a hard work. Could not wear a cap. It was very dirty in that area. When it got dirty, we had to take off the cap or the helmet. We could not put it back because it got dirty from the water splashing while pouring down the fish.”

Cutting stomach to take out the inside of the fish was hard work. From 90 tons per night to 150 tons and made the labors have hand ache.

“They were very tired when cutting the stomach open. There were some tracks. Two open the fish stomachs and two to put them in order. The ones who cut open would stand at the top of the tracks. One for each side. About 150 tons. There would be two labors. There were 4 labors to take the inside out.”

“There were 150 tons per night. Whether it was heavy or not. It was 150 tons. Before this, there were 90. Now, there were 150 tons. About 90 tons, it was plenty already. So 150 tons and with the frozen fish, it was very difficult to take the inside out. Sometime, we had to try to make them soft by hitting them on the table. They

were still very hard. The ones who had to take the inside of the fish stomach out, their hands would bend with the cold and because it such a hard work. For instance, the cod fish was very heavy. Their hands would be freezing when taking the inside out. They had to use a lot of energy. The fish were very hard. The labors sometimes complained when they were lying in their room and got some pain in their hands.”

“Have some pain on the arms. Hands were very hard. When cutting open the fish stomach, the hands would be very painful. Have some pain every day. We had to do the work all night. Hands were very stressed e specially on the right hand side. If we did not have to do the work, the hands would not be so painful.”

The care of the labor when having some pain. The labors would go to the clinic to get some medicine to eat and to massage as this saying.

“The medicine to release pain and the medicine to anti pain. Have to see the doctor. The doctor would have some medicine to anti – pain and to reduce the injection.”

Accidents

The accidents occurred to Somsri was the accidents with being cut by knives.

The accidents with being cut by knives was from the welfare to have rooms at the factory which would not be enough. The labors had to rent very cheap rooms. When friends in the same dormitory made loud noise. Somsri could not sleep. She did not have enough rest. So when she started to work in the second shift, she would be so sleepy. Somsri had some coffee to freshen up. Still she was so sleepy that she got cut with the knives.

“Was it related? The dormitory was all filled up. Formerly, I stayed at Sre – Fa Dormitory of the National Real Estate. There were transportation to go back and forth for work. That day, she was very sleepy. When the children were running and chasing each other, he brother scolded them. Could not sleep because the children kept walking and making noises. We came back to our room but couldn’t get enough sleep.

Could not sleep in the day time. Try to sleep during the day time. We left work at 8 o'clock in the morning and started to work at 8 o'clock in the evening."

"During the day time, we could not get some sleep because there was a lot of teenagers. They kept walking and making noises. We could not sleep. We sleep during the day time. It was all right to sleep during the day time. But, we did not get used to it. It was not like at night time. Sleeping during the day time. It was all right but we could still hear things. So we could not sleep soundlessly."

"Could not sleep. When working, we were very sleepy. Fell asleep without closing eyes. It was about 2 : 30 when I got the accident because I was very sleepy. The chief said that I might fall asleep while my eyes were still open. The chief knew that and laughed. Having the sleepiness. Sometimes, I could see 2 or 3 fish (laugh). Feeling sleepy but no places to change. It was specific place. Cutting the fish and got cut by knives."

The accidents were from the large amount of work. Formerly, the labors had to work with 90 tons of fish. Later, the amount of fish was increased to 150 tons per night. Accordingly the factory set the goal of production that the labors had to cut open the fish stomach 12 tons per hour. The labors who had to put the fish in order, had to put the fish very closed. The labors of 50 years old and had to work in the second shift, they threw the fish to hit Somsri. Then, Somsri was cut with the knives.

"About 150 tons per night. Oh! Have to put very close to each other. It had to be done continuously. About 5 minutes, pour out 10 tons. Take the inside of the fish out, the fresh fish. Have to be in rush. Otherwise, we could not do for 150 tons. During the day time, we could do about 30 - 40 tons. In the past we could do about 90 tons. Now, the requirement was 150 tons."

"Oh. Very fast. If whoever did not work fast. They would not cut the fish. They had to be on the top of the tracks. They had to cut open the fish very quickly. About 150 tons. Two people work at the night time. Two people did the cutting for 5 minute for 10 tons."

“About 2 o’clock. We were very hurry. Very hurry since midnight. Very, very hurry. Be afraid that we would not reach the goal. Have to hurry. They told Janpen to put the fish in the thick rows. Janpan was also sleepy, she put the fish and put the hand, too. She did that alternatively. Then, the knives cut her hands. In short, Janpen was also rows but she was old about 50 years old. As soon as she started to work, she would put the fish in order. She started to work before us. Even though she was sleepy, she could still do the work because she got used to it. When she was sleepy. It could make you feel sleepy while working on the tracks. The sound of the lift could also make you sleepy and the flowing of the fish made you want to sleep.”

Even though the labors had to be very careful all the time while they were working, there were some accidents because the labors had to work along the belt. The chief controlled working and would not let the belt to stop. Being rush, the labors got cut by knives.

“It was careless. When did not focus it could happen. It was difficult to prevent it. Be careful but still making errors. On the tracks, it had to be quick. The tracks hardly stopped. Could not stop. It had to be very quick. For the tracks to be stopped. The chief would say to leave the t racks. Try to put the fish in thick rows so that we did not have to stop the tracks. Be energetic! And be quick! One tank was about 200 – 300 kilograms could be done within 5 minutes. It was just a very short time. How many tons could be done within an hour? About 12 to 13 tons. One hour we could do about 12 tons. Just think! One hours we could do 12 tons.”

The accidents with cutting by knives happened very often. However, the labors did not get cured at the nursing rooms. They gave the reasons that the injury was not so severe. There were only little scratches.

“It was late when they had accidents. Mostly, the accidents happened in the evening were from the slippery knives. The slippery knives could hurt the hands.

Sometimes, they got cut but did not go to see the doctor. Some other night they had the accidents, too. Only little cuts. They did not go to see the doctor.”

In conclusion, Somsri got cut from the increment of the production up to 150 tons per day. The factory, therefore, increased the cutting of the fish stomach. Formerly about 10 tons per kilograms or 12 tons. Including, the control of working continuously by the chief, every labor had to work on the belt very quickly, Besides, the welfare provided by the factory was not enough. Somsri had to rent very cheap dormitory near the factory. Friends living in the same dormitory made so much noise. When Somsri started to work in the second shift, she was sleep and got cut by knives. The friends who put the fish in order were at the old age. When the old ones had to do the work in a rush manner, they were in a hurry and the fish hit Somsri until the knives cut Somsri.

Case Study 4: Jarunee

Packing Section

Jarunee was 38 years old. Her hometown was Surathanee. She finish grade 9. She was divorced. She had 2 children one son and one daughter. Grandparents looked after her son but for her daughter, Jarunee took care of her by herself. Now, her daughter studied in upper secondary level with high expenses. Jarunee had to work at the factory and paid for her daughter expense for school.

Accident

Hands getting into the machine connecting the cans. The middle finger was cut, the nail came out and the finger bones were broken.

Causes:

The causes of the accidents were that they had to do the overtime continuously for several days. The labors got the symptoms of the brain could not function. The eyes were unfocused.

“Late every night. Every night for the whole week. From Monday until midnight. One o'clock every night. Started to work at 7 : 30 or 8 o'clock. Sleep for 2 -

3 hours. We did not sleep. We could forget things easily. When it was getting late. The symptoms of feeling out of mind and could not concentrate. The symptoms would show more and more.”

When Juranee saw the new worker wash the machines but not clean. She would use the hose to spray to clean again. She used the sponge to clean it. At the same time. I was thinking that the chief would scold him because the machine was not clean. Having little rest for several days since Monday, she was absent minded and the fingers got into the pressing machines (the bars connecting the cans) as Juranee said :

“This machine, the new worker washed the machine but he did not clean it. It was still dirty. We had to rub it again. When turning on the machine and tried to spray with some water. It could be seen that it needed to clean more. While doing that, I was a little out of mind. I did not really know when it could happen, the machine got on the hose. I would try to pull it out. It was very difficult to be taken out.”

“We did not have enough sleep. When I had to think about something. I tended to forget about it. My eyes were not close but my brain was not organized. Just imagine, if I was not absent minded, only two foot apart my hand could get into the machine. How could it happen? My hands got into the machine. The machine was where it was. It did not move toward us. We moved towards the machine.”

Management of Accidents:

The chief took Jaranee to the nursing room. The nurse cleaned the wound and closed the wound. The security officer took Jaranee to the hospital by using the refunding scholarship. When the doctor did the x – ray, it was found that the finger bones were broken. After the doctor gave some stitches at the end of the fingers with aluminum, the labor had to stop working for 20 days.

In conclusion the accidents happened to Jaranee were from the acceleration of the factory production and the overtime every day from Monday. The labors had to start working since 7 : 30 and finished about 1 : 00 or 2 : 00 in the morning. After work, they had to wash clothes, find something to eat. By the time they get to sleep was about 2 : 00 o'clock. The labors had only 2 – 3 hours to rest. When the labors

cleaned the filling machines of the canned fish. The labors lost consciousness and had the accidents with the fingers getting into the machine connecting the cans, the injury until losing nails and broken bones including wasting the working time.

Case Study 5: Kingkaew

Clean Fish Section

Kingkaew, a 16 years old. She had one sister. She was the oldest daughter. Her hometown was Ratchaburi. She finished grade 6. She would like to continue her education in secondary level but her parents did not have the money to support her. Her mother had a heart disease but her father was hired to sell things in the open market. However, father did not support Kingkaew. She had to resign from the school. Then, she applied to work in the factory to support the factory and supported the younger sister studying in the fourth grade.

Accidents from Fish Carriage

Causes

1.1 The causes of accidents were from the expansion of factory production from 140 tons to 150 tons but did not expand the area of the production. When the first shift and the second shift labors worked at the same time, the space was too narrow. The labors would be hit by the fish carriage.

“But I was there several days. Was there for a month. Then, I was transferred to screen the fish bones. There were 4 people working. At that time, I was not transferred fish carriage. I was still there. I had to screen the fish for a long time. There were many people working. That time it was not narrow. There were enough spaces to walk. I did not transport the stomach of the fish. Now, there were more people working. There was not enough spaced to clean fish. Then, they moved the cat fish and the fish stomach including the small fish. The space was very narrow.”

“It was the long row. It was the long table in line. There were tables put together. When there were carriages in the back of the people. People could pick up the fish. I was the one to pick out the bones, the small fish at the table. I worked at the table. I had to walk to the other side to keep the bones. While weighing the bones, I

had to turn and the fish carriage. My arms were in the bending position and were hit by the fish carriage.”

1.2 Causes of accidents were from the organizational management step by step. The control from the top manager, the chief accelerated the labors in the low level. The labors had to select the small fish.

“Screening the small fish very quickly. If we could not do as fast as they wanted, they would satire and made us feel angry. Some had to cry because the chief complained. The chief could be scolded by the supervisor. The ones with higher position would complain and got red eyes like crying. We should intend to do the work. Don’t talk to each other.”

“Screening the small fish by hours. One hour, we should get 20 kilograms. If we could not get 20 kilograms, all of the small fish would be all over because there were several tracks. On one line about 6 to 8 labors screened the bones. There would be 2 lines but one table, on the long table. One pouring on this side and the other on the other side. On one table, it would not be in time. Sometimes, the screening labors tried to do the work in a hurry but the chief calculated the weight. It would be about 20 kilograms per hour. When the chief scolded, the labors did the work as fast as possible. This hour could get 20 kilograms. In another hors it would not be 20 kilograms, the chief would be so serious. We could not let the small fish be all over. If they could not get 20 kilograms, the chief did not rally wanted to scold the labors but wanted to see the work flowing. When the small fish were not all over, they would be relaxed. The chief, sometimes, were uncomfortable. Did not want to scold the subordinates. If the chief would not scold at the labors, the small fish would be all over. We had to understand them. We had to do our best. However, it was still all over. What could we do?”

The chief accelerated the work to get done as fast as possible because there were a lot of cleaning fish all day. If we did not do the work quickly. They would be in stock. We would not be able to finish it in time. Cleaning fish was done hour by hour.

We had to screen the small fish in time for the cleaning fish. If we did not do the work in time for the cleaning fish. We would be in the dangerous situation. The cleaning fish had to be in time for the machine. There were so many small fish. Formerly, there were 2 trucks. Now, there were 3 – 4 trucks. Why was it like this?

“Hurry! The fish would be all over. I had to screen fish by tray but the other would be the carriage. I had to put them on the table. They were the screened bones, the meat and the bones. It was like throwing away but it was not because the meat was with me. I would go and collect from the table. Then taking the bones out one more time. The bones, the skin would be taken out. While I was walking, my arm was bending and carried the tray. On the back of me got stuck because the others also collected the fish. They were also weighing the fish and hit my back with a heavy sound.”

Management of Accidents:

The chief said strongly that we did not do the work carefully and made the carriage hit the back.

“The chief would made a complain on me. The chief did not scold the others. The chief asked how it happened. The chief said why didn’t work carefully. When working, it was necessary to look back first. If I did not look, I would probably get hit since the first day. The first day, the carriage would only go back and forth. I had to hide this side and that side. Trying to get away until I had a headache. Unfortunately, yesterday was the day I thought I might get hit. I was the one who take the fish for the screening. I had to do until I could collect all of the fish. When all of fish were collected, I had to pick up some under the table so that I would not get hit.”

The chief wrote a certified paper for me to have the medical care at the nursing room. The doctor checked and found that my elbow was a little swollen but the bones were not broken. Jarunee had 2 days off.

It could be seen that the accidents from being hit by the fish carriage were from two factors: the expansion of the production but no expansion of the working area making the spaces narrow, and the working organization step by step. The chief would accelerate working. The labors had to screen sizes of fish 20 kilograms per hour. Working in such a hurry manner could cause accidents.

Form all 5 case studies, the majority of accidents found in the organization with step by step. The chain of command would be from the manager, supervisor and chief. Working by the policy and the goal of the manager. Then, the supervisors and the chief control and accelerate the work from the labors in the low level. The labors had to work so quickly that they lacked the carefulness. There were also some supportive factors such as the raw material condition and environment. For the raw materials it was that the tuna were dirty with mud. The frozen tuna dissolved made them slippery. The environment was from the narrow spaces. The floor was slippery. Those factors caused accidents. Beside, the expansion of working time made the labor lack of consciousness and caused the accidents as well.

In conclusion, the labor process and working organization in the factory were the causes of accidents from working. The working process had important factors such as production process with intensive physical energy. Working with production belts could control the work of labors together with working organization. There were the following factors: policy setting, production goal, organization of production step by step, working disciplines and regulations, recruitment, placement, overtime working motivation and welfare. Such factors were brought by the factory to control the working of the labor. These could make the factory have the most advantages on the labors and also caused the problems of health and accidents as well.

CHAPTER VIII

CONCLUSION, DISCUSSION AND RECOMMENDATION

8.1 Conclusion

The purpose of this research was to study the relation between the accidents of the labors with the labor process in the industrial factory of canned tuna fish. The factory was located in Bangkok boundary. The methodology used in this research was the qualitative research conducted by observing the general condition of the labor process, having general conversation between the labors and administrators, general interview with safety officers and in – depth interview with the labors in the low level. Those labors had the accidents from working and received the medical care at the nursing room in the factory. After that the data would be analyzed according to the content. The results of the search were as follows:

8.1.1 The Accident Situation from Working in the Industrial Factory of Canned Tuna Fish

The statistics of accidents were from 2 sources: statistics recorded by the safety officers and the statistics recorded by the nursing officers. The statistics of accidents from 2 sources were different. The safety officers would record the accidents when the patients were transferred to the hospitals. The expenses could be refunded from the workmen's compensation fund. The nursing officers would record every case who came for the medical care at the nursing room at the factory. Therefore, the statistics of accidents recorded by the nursing officers were more than the accidents recorded by the safety officers. In the year 1999, the statistics of accidents recorded by the safety officers were 34 incidents while the statistics of accidents recorded by the nursing officers were 95 incidents which was lower about 2.8 times. In the year 2000, the statistics of accidents recorded by the safety officers were 28 incidents while the statistics of accidents recorded by the nursing officers were 182 incidents which were lower to 6.5 times. In the year 2001, the statistics of accidents recorded by the safety officer were 30 incidents, while the statistics of accidents recorded by the nursing

officers were 410 incidents which were lower to 13.7 times. In the year 2002, the statistics of accidents recorded by the safety officers were 53 incidents while the statistics of accidents recorded by the nursing officers were 529 incidents which were lower to 10 times.

In 2002, the accidents could be classified into 8 types. The first rank of the accidents was cutting / wounding. There were 201 incidents about 38%. The second rank of accidents was being bumped. There were 147 incidents about 27.79%. The third rank of accidents was eye injection from materials and chemical substance. There were 53 incidents about 10.02%. The fourth rank of the accidents was being nipped. There were 37 incidents about 6.99%. The fifth rank of the accidents was being heated. There were 36 incidents about 6.80%. The sixth rank of the accidents was being pierced. There were 33 incidents about 6.24%. The seventh rank of accidents was falling. There were 15 incidents about 2.84%. The eighth rank of the accidents was being hurt by the falling materials. There were 7 incidents about 1.32%.

Time and Accidents

From the statistics of accident occurred and received the medical care at the nursing room, it was found that the accidents occurred the most in the first period (8:01 a.m. to 4: 00 p.m.). There were 271 incidents about 51.23%. The latter was the period between 4:01 to 12:00 p.m. There were 172 incidents about 32.51%. The accidents happened the least was in the third period of 00:01 a.m. to 8:00 a.m. There were 86 incidents about 16.26%. The period of 8:01 to 4:00 p.m. was the rush hours for work and there were very strict control.

The accidents in different sections

The section which the accidents occurred the most was the packing can. There were 104 incidents about 19.66%. The latter was the labeling section and warehouse. There were 96 incidents about 18.15%. The third rank was the raw fish and precooked fish section. There were 87 incidents about 16.44%. The fourth rank was clean fish section. There were 76 incidents about 14.37%. The fifth rank was the maintenance section. There were 41 incidents about 7.75%. The sixth rank was the quality control section (QC). There were 34 incidents about 6.43%. The seventh rank was the service section. There were 21 incidents about 3.97%. The eighth rank was the blister pack section. There were 19 incidents about 3.59%. The ninth rank was the retort section.

There were 17 incidents about 3.21%. The tenth rank was the pouch section. There were 14 incidents about 2.65%. The eleventh rank was the seammer section. There were 12 incidents about 2.27%. The sections which there were the least accidents were the office section. There were about 8 incidents about 1.51%.

8.1.2 Characteristics of Labor Processes in Industrial Factory

The labor processes was composed of 2 parts: the labor processes and working organization. The labor processes were about raw materials, division of working sections. The raw materials used in the production were tuna fish which were imported from foreign countries. The tuna fish were frozen and transported in the container with the air condition to control the temperature of fish with stability. The transportation used was the truck which the temperature of the fish would continuously increase. It was impossible to maintain the perfect raw materials. When dividing jobs into different sections such as the precooked section, packing can section and the labeling and warehouse section, all of the work had to be done according to the rhythm of the production belt. In the clean fish section, the labors would work with the equipment was a knife. Besides, there was the working environment provided by the factory capital.

The working organization was the organization with the hierarchy. There was the manager director was the highest immediate superior. The second rank was composed of the director of working performance, the section managers, supervisors and chiefs in different sections, the fostering of working policy, controlling and scientific working determined by the administrators on the goals of production. The personnel organization was composed of recruiting, selecting of labors, hiring, evaluating, creating the motivation in working, working discipline and safety management. These factors were determined by the factory capital in order to control the working of the labors.

8.1.3 The labor process in producing the canned tuna fish had the relation with accidents from working.

The labor process of converting tuna fish into the production of canned tuna fish. There were the working division such as the step of production. It was the work with intensive labors. The labors had to do the work continuously on the belts of production and be controlled by the machines. They were also controlled by the

working organization with hierarchy, working disciplines, scientific management and personnel management. These were the causes of accidents at work in the industry factory of canned tuna fish production.

8.3.1 The labor process controlled by belt production system and the process of working with intensive labors and equipment caused different kinds of accidents. The sections controlled by belt system were packing can section, labeling section and warehouse, raw fish and precooked fish section. There were a lot of accidents and severe ones. The section with intensive manual labors and work with knives was the cleaning fish section which the accidents were not severe.

The packing can section was the section where the labors worked with packing can machines with the belt system in transporting raw materials according to the working steps. The accidents occurred the most in this section were that the labors were cut by cans, controlled by belt system. If the belts transporting a lot of fish and running quickly, the labors would have to hurry to do the work to catch up the moving of the belts. Then, there would be some accidents.

The labeling and warehouse section was the section where the labors were controlled by the production belt system. These made the labors hurried to do the work as quickly as they could in every step of the machines. As a result, there were accidents at work.

In raw fish and precooked fish section, the labors were controlled by the belt system and timing. The labors had to catch the fish from the truck and put them on the belt continuously. Actually, the tuna fish in the truck were rather soft and the fish tails could be torn easily. When the labors had to pull the fish by holding one tail in each hand. The tails could be torn and pierced into the labors' hands. When the labors had to throw the fish at the head of the tracks, the mud from the fish could splashed into the labors' eyes. Besides, the labors were controlled by timing, they had to work very quickly. For instance, there was time control when dissolving the fish water. The time control was also used when putting the fish in the precooked cabinet and then taking the fish out to reduce the temperature very quickly. Such processes made the labors hurry to do the work. By doing that the lorry could bump the labors. They could also be cut by the screens and be lain on the top by the iron on the feet etc.

The cleaning fish section was the section which used the intensive manual labors with knives to clean the skin and the blood. The accidents could occurred by being cut by knives, being pierced by fish bone and being wounded by tray. While the labors were working, It was very crowded when they had to stand working together. Then, they were bumped. The accidents in this section were not so sever. Accordingly, the labors would take care of themselves. This made the record of accident statistics was rather low than the reality.

8.3.2 Working organization could cause the accidents at work. The working organization would support the labor process for the intensive work. The organization of the production in each section in the factory would be the working control according to the hierarchy of administration. The labors would be determined to work in the higher rank. They could control the work of the lower rank. The ranks of working control were in the series from high to low. The ones who were in the higher ranks were composed of the manager director, the manager of performance, the managers of different sections, supervisors and chiefs of work. The labor in the low level did not have any power to control their own work. The low labors would be forced and controlled to do the work intensively by the supervisors and the chiefs of work. The supervisors and the chiefs had been assigned and controlled by the managers. This kind of structural organization was that the low labors were forced to do the over valued production as much as they could. As a result, the low labors had to work so quickly that there were accidents at work.

For the safety management, there was the establishment of safety committee management as required by laws. The committees were promoted by the full time officers. The committee would pay more attention to the routine work. Therefore, they did not have time for the meeting, training, preventing and solving accident problems. The labors, then, did not know about the danger from work. The labors had to work in the inappropriate environment and danger which could lead to the accidents at work.

The fostering working policy with quality, would not cause any disadvantage toward the company. Therefore, the labors who found that any processes could damage the products, they would hurry to take the products as quickly as possible. By doing that, the labors could have some accidents at work.

The determining working disciplines were the means to control the labors' working. Such working regulations and discipline were written for the administrators to use to control low labors' working. There were different kinds of punishment such as verbal warning, written warning cut down the wages, stop working without pay, no longer hired without any refunding money. Accordingly, the low labors had to perform as their chiefs ordered so strictly that there were accidents at work.

For the scientific management, the factory applied the scientific management to control the low labors' working in order to increase the surplus values for the factory as much as possible. The labors were divided into 2 level: the managing level and the low level. The managing level would do more work with brain while the low level would do the work with intensive physical human labor power. The managing labors would set the goal of the production and increase the goal of the production. For instance the goal of the production would be increased from 120 tons to 140 tons. Recently, the factory had the goal of production 150 tons per day. The labors had more work to do. They had to do the work so quickly that the work would reach the goal. As a result, there were accidents at work for the labors.

The recruitment, employment, and welfare were the tools of factory capitals in controlling the low level labors. For the employment, the managing level would hire monthly and for the welfare there would be factory buses, housing and the refunding for the rent. Such welfare made the labors have loyalty to the factory and the control of low level labors to do the surplus values for the factory. At the some time, the daily hired labors, there were mini buses for the transportation and the crowded rooms for them to stay because there were not enough rooms for them. Some of the labors had to rent some cheap rooms near the factory. When their roommate made loud noises, they could not sleep. When they had to work in the night shift, they would be sleepy and caused the accidents at work.

Besides, the wages the labors received were enough only for their living. They could not save any money for starting other private jobs when the factory expanded the business. In order to reduce the cost of more employment, the more welfare was provided. The labors had to accept that by working over time. Then, they

did not have enough rest. There were some health problems, fatigue, headache, dizziness, lack of consciousness which caused the accidents at work.

In conclusion, the accidents at work were from labor process with belt working system. The structural organization did force the labor to work with quick pace and repetition. Such causes made the accidents occur to the low labors.

8.2 Discussion

8.2.1 The organizational system had the unequal mankind relation. There were the divisions of labors into managing level labors and low level labors. The managing level labors made the low level labors view the accidents in the factory as normal events. All kinds of working could cause accidents and the labors could not avoid them. Accidents were parts of working activities. The labors needed to accept the reality. They had to be careful while they were working. However, the labors believed that the accidents could be decreased if they had more experiences in working. Moreover, the organization provided the nursing room in order to prevent the argument within the organization. The labors thought it was the results of their actions and they had to bear the pain. The reward was the over time work and the over time payment.

8.2.2 Under the traditional capitalism of the production process with the control system with production belt and use of physical human labor power, it did not only hurt the labors minds but also caused the annuity of the labors. Again, the labors got physical injuries. The labors could be injured from the accidents at work. The control with belt production and the rush of working intervals from the working chiefs made the labors do the work repetitively and continuously. The labors got the alienation which Karl Marx classified the alienation into 4 patterns: 1) the alienation with production process; 2) the alienation with all of the production; 3) the alienation with co – workers and 4) the alienation with self – humanity (Ollman, 1976:133-152)

1) The alienation with production process

The labors had to change their self production process in agricultural way to the industrial production system with working systems. There were divisions of work in different sections. The factory capital determined how to do the work. At the

same time, the labors had to work in order to get paid. As a result, the labors had to be under the control of machinery which the belt conveying system was used to determine working characteristics and working timing including the working decision. Such factors could cause the accidents for labors at work.

2) The alienation with all of the production

When the labors entered the production system determined by the factory fund, the labors would receive the wages as the employers specified. That was the wages enough for their survival but not for saving in case of stop working. Accordingly, the labors had to spend more time working in such production process. They did not have private time. They had less time to rest. In contrast, the labors became poorer and no power. The labors had the alienation with the production they created. When the labors were forced to do the over time work for a long time, they did not have enough rest. The labors would lose their consciousness until there were accidents at work.

3) The alienation from co – workers

The working system in the industrial factory had the strict control, reduced the private time talking among friend while they were working. They had to work competitively, be in the factory environment, lack of communication with outsider and lack of information from outside. Such evidences distracted the relationship among friends, families, or communities. Then, the labors became stressed. They would do only the work. The chiefs ordered them to do. They ignored the surroundings and did not communicate among co – workers. There were no signals among them. Those could cause the accidents at work.

4) The alienation from self humanity

The production process was focused on the quantity and working characteristics were blocked from the creation of the labors. That was because the labors had to follow the negations and plans seriously determined by the employers with no argument. Moreover, the labors needed to adjust self – working style to get along with belt production system. The labors were reduced the self valves to the machinery without emotion, feeling and needs. These caused the differences in self reality. The labors had to suffer working through the belt production system. They had to work with belt production which was specified by speed and timing of the labors.

With the speed required by the factory and also the quantity of work, the labors had to push themselves as quickly as the machines. They had a continuous and long period of work without any rest like a machine. As a result, the labors were fatigue and stressed from work. Then, the accidents from work occurred.

8.2.3 The record on the statistics of accidents should be on the clear and real statistics so that the administrators could realize the severity of accidents which could be led to the prevention and the solution of accidents problems. Form the past, the statistics of accidents reported by the safety officers were 10 times less than the statistics of accidents reported by the nursing officers. It could be because the safety officers only recorded the statistics of accidents when the labors were transferred to the hospital and refunding was from the workmen's compensation fund. Therefore, the statistics of accidents were less than the numbers of real accidents. The factory did not realize the large numbers of accidents which really occurred. They, then, did not have any policies to prevent accidents for labors. The labors had to take care of themselves while they were working so that the accidents would not occurred with themselves.

8.2.4 Even though the ideas of division of work among male and female were not the main point, it was found in the study that the division of work in the factory was up to gender. The employers believed that women were obedient and easy to control. The majority of the women were assigned to do the work which was sophisticated. It would be the work need to be done by hands. Women could do the detailed work, repetitive work and active work. Women were patient. The types work for women were cleaning fish, weighing fish, cleaning cans and mixing substances. These types of work needed the patience and neatness of labors. The male labors did the work with a lot of energy such as weight lifting, pulling the screens and transporting the fish. These kinds of jobs did not stay still. There were some more movements than the female labors. Therefore, there should further research on sharing work between male and female.

8.3 Recommendation

8.3.1. Labors

8.3.1.1 Labors need to have groups in order to have strength to call for the claims or the negotiation and the establishment of union of labors in the factory. That could make the labor have participation in processing different activities of the factory. The participation in setting the labor process was to decrease health problems and accident problems from working.

8.3.1.2 Labors should realize the danger from accidents. They should not view the accidents as normal activities simultaneously occurred with working.

8.3.1.3 Labors should have team working in order to coordinate and have the working time which was related. Besides, they should care for their co – workers, have more conversation to create working atmosphere and decrease frustration.

8.3.2. Factory and Organization

8.3.2.1 There should be some adjustment about working organization, working system by letting the labors to participate in specifying self – working. The labors could have freedom to work. They would not be forced to work quickly continuously and long period. There should be the decreasing of the differences from work which could lead to the problems of accidents.

8.3.2.2 The factory should realize the severity of accidents in the factory. There should be a clear and real record a statistics of accidents from working. There should be certain aims to prevent and solve accident problems occurred in the factory.

8.3.2.3 There should be safety officers in charge of these problems. The environment in working should be provided. There should also be training on awareness in accident prevention so that the labors would realize the danger in working, prevent the accidents, find the causes of accidents and correct the mistakes including being the representative of labors to call for labor safety.

8.3.2.4 The factory should provide working environment for health such as labors can sit while working, the environment during the working period is not slimy and there should be good ventilation. There weather should not be too hot. There should be the reduction of dust and noise inside the factory.

8.3.2.5 The factory should fix all of the working equipment for the working safety. The damaged equipment should be repaired immediately. The fast production did not mean to use damaged equipment. The labors do not need to use such damaged equipment. For example, when the screens were damaged, they need to be repaired into good condition before they will be used again. There should be some equipment to help the labors to do the work so they will not be so tired.

8.3.2.6 There should be more roles of nurses in the factory to participate in finding the causes of accidents, the nurses participate in solving health problems and accidents from work. For instance, the nurses know about the production process, working characteristics, and working environment. The nurses take part in examining the working condition which has a risk toward the occurrence of accidents. The labors participate in the investigation of the accidental occurrence and the recommend the way to solve problems and the prevent accidents. In creating the accident reporting system, the nurse will report the accidents to the committee of safety.

8.3.3 State

8.3.3.1 The state should have role in promoting and developing life quality of the labors by using the investigation. The randomized sampling should be used in the investigation. It should be informed in advance when to investigate the factory. If the factory is informed in advance, the data will not be real. In order that, the capitalists will not take advantage on the labors. There will not be working over time for such a long time that the labors do not have enough rest. The labors can, therefore, have health problems, headache symptom and fatigue until there are some accidents. There will be the control so that there will not be ill – treated on children and women.

8.3.3.2 In the policy level, there should be the improvement of laws and criteria to control health and safety at work which is new and gives the real concrete results.

8.3.3.3 The labors will be provided the knowledge about rights and benefits including receiving the supports when the labors are taken advantage.

8.4 Suggestions for future research

For broadening the scope of this study into other aspects of work related to the labor process, further researches are suggested as follows.

8.4.1 A study on accidents at work in the other industrial sectors for comparison of labor process with the cannery factory.

8.4.2 A further research to study the injured workers resulted from working accidents in terms of their quality of life, potential living adaptation in the society, and suffering consequences in various aspects.

8.4.3 A study, by the in-dept interview method, through the workers' living quality by emphasizing their health problems in which related to the labor process for suggesting the improvement of labor process.

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บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

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เพื่อป้องกันการติดต่อโรคของสมาชิกในครัวเรือนผู้ป่วยวัณโรค. วิทยานิพนธ์ปริญญา

พยาบาลศาสตรมหาบัณฑิต, สาขาวิชาการพยาบาลอนามัยชุมชน บัณฑิตวิทยาลัย

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แหล่งอำนาจควบคุมทางสุขภาพกับพฤติกรรมความปลอดภัยของคนงานในอุตสาหกรรม
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APPENDIX

Guideline of the in - depth interview

1. General Information of Employee

A1 General Information of Employee

Definition General Information of Employee is defined as the population and social characteristic, for example, gender, age, education, status, income, work experience, period of work experience and residence.

Study method Inquiry, Quantitative interview

Guiding Questions of qualitative interview for employee

What is your current age?

What is your academic level? Are you studying any additional course?

What is your current status? If you get married, are you staying with your family? Are your husband or your wife and children (if any) staying with you in this city or other province?

After work, do you have any family duty or house work? How much is your load?

How long you have spent time with your family per day/week/month?

Where is your birth place?

What is your family occupation? Do you own or rent the land? If renting, how much do you pay for it? What do you do to the land? Please specify each area (if any) and the person who is making use of the land and its productivity.

What is agricultural income?

What are your work experiences before working in this plant? Please specify place(s), the duration of each place and what is the reason of change from old place?

Why don't you work for your home business? Why don't you choose to work in your province?

How do you get to work into this plant? Who is the one recommended you?

How long have you worked for this plant? What are your departments that you have ever worked for? Please specify the duration of each department your have ever worked for. What is the reason of change from previous department?

What is your current department you are working for? What is your responsibility? How long have you been in this? Who taught you the skill?

What is your cumulative period of work experience?

How much is your salary? Monthly or daily? Would this be sufficient to your expenses? Do you have to support financially to your family at your home town?

What is your current residence? Renting or owning house or staying with relatives or staying at dormitory provided by Plant.

How far from your place to Plant? How do you travel?

2. Information of general health problem and Information of accident during work at industrial plant?

Definition General health of Employee is defined as the condition and sickness including behavior plan of health care, illness treatment.

Definition Accident during work is defined as any injury which impact to any part of body and mind while working in industrial plant. The occurrence must be unexpected, intended and pre-planned.

Study method Observation and record in-depth interview with employee

B1 Guiding Questions of qualitative interview to employee

During one year time, have you ever been sick or ill? Please specify the disease. How often? How did you manage your sickness or illness?

Comparing your ill condition between pre-entrance to work life in this plant, do you find the difference? Please specify, how?

Have you ever felt stressful during work? What does you feel so? Please specify, how? How did you manage the stress?

Have you ever felt fatigued during or after work? At what part of your body? How long did it last? How did you manage the fatigue?

Have you ever had accident during work? How many times? What is the frequency?

What cause accident to you at each time? Please specify the characteristic of accident (clamped, hit, cut, crashed, material dropped on to, chemical contact, heat contact)

At which part of body that was impacted from accident?

Please specify the appearance (scratch, cut, broken, part lost).

What is the severity of accident? (leave taking, how many day(s)?, pass away?, or deformed?)

While having the accident, which department are you working for? Individual or cooperative task? Sequential task or at-a-time task?

Please specify the time of each accident.

In your opinion, what is the cause of each accident?

What did you do when the accident happened?

How did the plant manage that accident?

Did you receive the compensation from that accident?

How will you protect yourself from the next accident?

Does plant provide any protection? Please specify, how?

B2 Guiding Questions of qualitative interview for Management staff, safety staff, Supervisor and nurse.

Has accident occurred in plant? How often?

What are the causes of each accident? What is the characteristic of accident?

At which department that accident occurred?

Which department has showed the highest number of accident?

What did the cause of accident?

Did any responsible person investigate the cause? Please specify, how?

Could you specify the period that accidents have occurred the most?

How is the severity? What is the most severe accident?

Could you find the difference of the severity when accident occurred at different period?

How did the accident impact the employee?

What did you do to the accident?

Does the plant has the Policy about the Protection on accident? Please specify, how?

After the accident, is the Policy changed? Which topic?

3. Labor Process

Definition Labor Process is defined as the method and process which employee works with machine to make change to raw material to product. This contains specific characteristic and sequential steps to process. The Labor Process comprises of raw material, machines using in process, including the condition of plant, activity of employee working with machine, and production organization for systematic process.

3.1 General condition of plant

Definition General Condition of Plant is the history of Plant from the past to present the geographical location, physical condition of plant, internal condition of building, working area management, tools management, Operating machine, internal environment of plant, eg. Temperature, the wet surface, air circulation, light, noise, dust, machine vibration, softy systems.

Study method Observation and record the plant environment and community surrounded, qualitative interview to management staffs, safety staff, Supervisor and employee.

Study tools Observation form and record, qualitative questions

C1 Guiding questions of qualitative interview to management staff

Could you tell about the history of this plant from past to present?

How old is this plant? Why did you choose this location?

Who is the plant owner? Does this plant has international joint venture?

Who is the partnership?

Since the foundation, is there any change in machine model? Please specify the reasons.

What are the products of this plant? Any governmental support? Please specify, how?

Where is the product marker? Domestic or International?

Please specify the Policy implemented to manage the employee?

Is there any policy about protection on accident? Please specify, how?

C2 Guiding questions of qualitative interview to safety staff, supervisor and employee

Do you know how old this plant is? How many have management staff been in this plant?

How is the general condition of this plant? Air condition, light intensity of working area.

Is the air circulation system good? Working area contains too much dust? Or too wet?

Does the machine sound too noisy? Too much vibration?

Is the working area too small? Is the machine appropriate to you?

Is there any protection for accident?

Is there any governmental officer coming in for giving seminar about safety?

Since you have been in working in this plant, have you ever asked for the profit/advantage for your employee? How many times? How are the results?

3.2 Production Process

Definition Production Process is defined as the sequential processes of making product, starting from the raw material to be input and with machine and working employee till finishing to the end product. This would require the building, working area management, etc.

Study method Observation and record the production process, qualitative interview

Tools Observation form and record, qualitative questions

D1 Guiding questions of qualitative interview to management staff

What are the products of this plant? What are the raw materials?

What is your plant's productivity? Where is your market?

How many departments does this plant have? What are they? How is the management of each department?

How are the processes?

How is the machine operating? How does the machine like? Who control the machine?

Is the machine equipped with safety protection? How is the safety controlled?

Who defined the plant's goal?

How is the employee defined to work? Shiftly? How many shifts? For each shift, what is the period? Is there any over time work? How many hours? How often? Which department?

D2 Guiding questions of qualitative interview to safety staff, Supervisor and employee

What are the products of this plant? What are the raw materials?

What is your Plant's productivity? Where is the product market?

How many departments? What are they?

At which department you are working for? What is your responsibility?

How are the processes?

How is the machine operating? Who control the machine? Are you a part of team to define the operation of machine?

Is the speed of machine relative to operating time? If not, how does it relate?

Is the machine equipped with safety protection? What are they? Does the machine sound too noisy? Too much vibration?

Who defined the Plant's goal? Are you a part of this? If yes, please specify?

Are you working shiftly? How many shifts are they? What is the period of each shift?

Is there any over time work? How often? How many hours a day? Who defined this?

What do you think about your working environment? (in term of heat, air circulation, noise, dust, humidity, wetness, coldness)

Do you think that the equipment you are using, is appropriate to your work?

Please specify, how? Should there be any change on this?

3.3 Management of production organization

Definition Management of production organization is defined as the management pattern to employee, concerning on the supervisory level. This is to form specific work to receive the highest productivity from labor, for example, manage working team, disciplinary specification, welfare systems.

Study method Observation and record, qualitative interview

Study tools Record form and qualitative questions

3.3.1 The decision of work

E1 Guiding questions of qualitative interview to safety staff, Supervisor, employee

How many department does this plant have? How are the job functions divided? What is the responsibility of each employee in each department? Is the responsibility specially defined? Is there any change? Who defined is?

What is the method used to divide the employee to work for each department?

Who take care of each department?

How is the organization of each department? How is it supervised?

Is there any job training? Who is the trainer? What are the topics?

How often? When?

E2 Guiding questions of qualitative interview to safety staff, supervisor, employee

How many department does this plant have? How the task is divided?

What is your department and your responsibility?

How is your department organization? Who is your supervisor? How is the supervision?

Is there any job rotation between departments? Who manage the change?

How is the method?

How close of your relationship between your colleagues and? Any quarrel with your colleague or supervisor?

3.3.2 Disciplinary specification

E3 Guiding question of qualitative interview to management staff and employee

How is the working discipline? What are the topics?

How is the rule for employee being in or out of plant? How is the disciplinary action to whom being late or lazy?

Is there any disciplinary action to whom cannot meet the Plant's goal? Please specify, how?

How is the incentive system to your employee?

What is the reward or privilege, if any?

Is there the assessment on the employee? How is the promotion or salary increase?

3.3.3 Welfare system

E4 Guiding questions of qualitative interview to management staff

What are the welfare that company provide for employee?

What is your opinion about the employee's sickness or health problem?

Where is hospital that employee goes for cure/treatment? How do they do?

Does the employee enter to the social insurance?

Does the company provide nursing room for employee? What is the reason of doing this? Since the company has provided the nursing room, is the work performance better? Is there the rule to be in this service?

Is there the annual check-up for employee?

Is there any accommodation provided for employee? Free of charge or rental free required?

E5 Guiding questions of interview to safety staff, supervisor and employee

How are the welfare provided to employee?

Does the company provide accommodation for employee? If yes, is it enough for all employee? How many employee per a room? Free of charge? If not, how much employee has to pay for?

How is the company far from your place? Is there any company bus service? If so, please specify time?

Does the company provide foods for employee? What are they?

Is the toilet/ drinking water provided sufficiently? Convenient ?

Is there any medicine for employee? How often have you been to nursing service?

Have you ever form the team asking for welfare from company? How did you proceed? How is the result?

E6 Guiding question of qualitative interview to company nurse

What are your responsibility in term of health service to employee?

Has the medicine been provided sufficiently? What are they?

What did the company recommend you to work in nursing room?

What are your opinion to the managerial support to treatment of company?

Do you record the sickness of employee? Please specify, how? What sickness have you found most from employee? And how did you treat them? What are the health consult given to sick employee?

3.4 Movements in work

Definition Movements in work is defined as the actions in work of each employee controlled by organizational management system to have specific actions. This will result in the movement during working of parts of body, for example, to stand all day long, to sit all day long, to bend up and down to lift the things all day long, to have only hand all day long, and etc.

Study method Observation and record, qualitative interview

Study tools Observation form and qualitative interview

F1 guiding questions of qualitative interview to safety staff, Supervisor, and employee

When do start and finish your work?

In a day, how long do you have to work? Do you work shiftly or over time?

What are your responsibility? What part of body you use most in work?

Do you need to rush your responsible task?

Is there any competition among groups of worker?

Do you need to meet the Plant's goal?

Do you need to rush yourself while working with machine? How does the machine control your work?

How is your task defined and controlled? How does your Supervisor control your task? Who check the quality and quantity of work?

4. Labor Process and accident Problem

Definition Labor Process and accident Problem is defined as the relationship among the composition of labor process in general of company, Process, Production organization, and the movement in work in different patterns, This may result in the accident to employee in industrial Plant.

Study method Qualitative interview

Study tools Guiding of qualitative question

4.1 General condition of Plant

G1 Guiding questions of qualitative interview to safety staff, supervisor and employee

Does air circulation of Plant impact to employee's health? Please specify, how? Does this impact to accident while working?

Is the light intensity in Plant sufficient? Does this barrier your work? Please specify, how? Is this the cause during your work?

Does noise pollute your health? Please specify, how?

Is the position of machine is appropriate? Please specify, how? Does this risk to have accident?

4.2 Production Process

G2 Guiding questions of qualitative interview to safety staff, supervisor and employee

Are the raw materials proper to production? Please specify, how? Too humid?, Too wet? Too slippery? Does this barrier your work? Please specify, how? Have you ever had accident from the raw material? Please specify, how?

Does the Plant's goal defined rush your work? Please specify, how? Do you feel stressful with your work to meet the Plant's goal? Please specify, how? Do you lose your concentration to work in this condition? Do you feel fatigue? Have you ever find any accident since you have rushed in working? Please specify, how? How often? What is the period different?

Do you put more force to work with the machine? How long for that? Does this impact to your health? Does this cause you feel fatigue? At which part of your body? Does this reduce your work performance? Does this cause the accident?

Do the steps of machine impact your health? Please specify, how? Does this cause the stress? Does this cause the fatigue?

Does shift work impact your daily life? (In term of sleep, relaxation, eating, family time) Does this impact to your health? Please specify, how?

Period of breaks (eating, going to restroom) Does this impact to your health? Please specify, how?

Does overtime impact to your health? Please specify, how? Does this cause you feel stressful? Do you have enough sleep? Feeling frustrated? Dizzy? Headache? Throwing up? Fatigue? Tired? Have you ever had the accident after overtime work? Do you think overtime work is the cause of accident?

4.3 Management of production organization

G3 Guiding questions of qualitative interview to safety staff, supervisor, and employee

Do you feel to the Plant's policy? Do you feel inconvenient in working from the policy?

Does supervision system make you feel dependent to make the decision?

How is your relationship between your supervisor and you? How do you feel about this? Do you have stress on this?

How is your relationship between your colleagues and you? (cooperative work, competitive work, conflict) Do you stress on this?

How do you feel to the rule defined? Are you comfortable with those?

Has the reward or disciplinary action stressed you?

Does Health service (nursing room service) make your health better? Does this cause to your better working performance?

4.4 Movements

G4 Guiding questions of qualitative interview to safety staff, supervisor and employee

Have the movements during work cause you ache?

What position cause you ache?

What part of your body feel ache the most? Most often part? Has your muscle pain?

Does the ache impact to your work? Please specify, how? Does this cause the accident?



Observation Form and Record of Typical Production in Industrial Factory

Observation topics	Result of observation and audit
Labor Process	
1. Working environment	
1.1 Physical condition of building, height, and strength of building	
1.2 Entrance-Exit	
1.3 Working area, Height of ceiling, building surface	
1.4 Walkway	
1.5 Location of machine	
1.6 Machine guard	
1.7 Temperature, air circulation, humidity and wetness	
1.8 Light intensity	
1.9 Noise and vibration of machine	
1.10 Dust and dangerous substance in work	
1.11 System and equipment of fire protection	
2. Working environment (Social aspect)	
2.1 Relationship between owner and employee	
2.2 Relationship between supervisor and employee	
2.3 Relationship between colleague and employee	

Observation topics	Result of observation and audit
2.4 Social Welfare eg. Sick leave, maternity leave, Treatment, Canteen, Restrooms, News distribution, Training management	
3. Production Process	
3.1 Operating machine, production line	
3.2 Task defined and control	
3.3 Appropriation of equipment and tools for work	
3.4 Working hours per day	
3.5 Loading of work	
4. Working actions of employee	
4.1 Actions of employee	
4.2 Period of continuous work	
4.3 Repeated work and movement of part of body	
4.4 Match of movement between employee and machine	
5. Health welfare	
5.1 General condition of nursing room	
5.2 Medicine in nursing room	
5.3 Treatment in nursing room	
5.4 Management in accident	

Employee Information Questionnaire

Part 1. General Information

1. Name – Family Name
2. Age years
3. Weightkg., Height cm.
4. Education level
5. Job condition Daily Monthly, salaryBaht/month
6. Residence Staying with family Staying with relative
 Rent the house, rentalBaht/month
 Dormitory provide by company
 Others, please specify
7. You travel to company by
 Time spent for travel hour(s)min(s)

Part 2. Working Information

1. Your department is.....,duration of workyearsmonths
2. Work experience/History of experience at other company (if any)
 Job function duration
3. Are you working SHIFTLY?
 Yes, shift start finish
 No.
4. How often do you have overtime work?
 Everyday 1 – 3 days per week
 3 – 4 days per week Not often No overtime work
5. Has your work to be working with machine?
 No.
 Yes, please specify the type of machine

6. What is your action during work?
- Mostly in SITTING position
 - Mostly in STANDING position
 - Both in Sitting and standing Position
 - Lift heavy things
 - Push or Pull things
 - Bend down/up to lift things
 - Others, please specify
7. Are you satisfied with your current job?
- At most
 - Most
 - Medium
 - Less
 - At least
8. After work, do you have house work or other job?
- Yes, please specify the job
 - No.

Part 3. Health and Accident Information

1. In the past year, have you ever been sick?
- Yes.
 - No.
2. In the past year, have you ever stress during work?
- Yes, cause is
 - No.
3. How does the stress impact you?
- Headache
 - Dizzy
 - Throwing up
 - Tired
 - Others, please specify
4. In the past year, have you ever felt muscle ache?
- Yes.
 - No.
5. If you ever feel pain at your muscle, please specify part(s) that feel ache?
- Neck
 - Shoulder
 - Upper back
 - Upper hand
 - Lower hand
 - Elbow
 - Hand and wrist
 - Waist
 - Bottom and hip
 - Top of the thigh
 - Knee
 - Calf
 - Foot and ankle
 - Others, please specify

6. Most cause of ache is from?
 - Work in STANDING position all the time
 - Work in SITTIGN position all the time
 - Load things onto shoulder
 - Push or pull things
 - House work
 - Others, please specify
7. How often of ache has happened to you?
 - Everyday Every week
 - Every month Once a while
8. Have you ever had accident?
 - Yes. No.
9. How often have you had accident in the past year?
 - 1 – 2 times 3 – 5 times
 - 5 – 10 times More than 10 times
10. Which part of your body which had accident? Please specify
11. The severity of accident
 - Scratch Cut wound Ligament broken/torn
 - Bone broken, please specify
 - Deformity, please specify part
12. From that accident, you
 - Perform work as usual Take leave forday(s)
 - Compensated Baht Unable to work since then

BIOGRAPHY

NAME	Miss.Jittirat Booranaprapruck
DATE OF BIRTH	16 March 1969
PLACE OF BIRTH	Nakhonpathom, Thailand
INSTITUTIONS ATTENDED	<p>Bangkok Collage of Nursing, 1992 : Diploma in Nursing Science</p> <p>Ramkhamhaeng University, 1998 : Bachelor of Business Administration (General Management)</p> <p>Mahidol University, 2003 : Master of Art (Medical and Health Social Science)</p>
POSITIONS & OFFICE	<p>Sampran Hospital, Nakhonpathom, Thailand</p> <p>Position : Nurse</p> <p>Tel. 034-311021</p> <p>E-mail: Jittiratb@hotmail.com</p>
HOME ADDRESS	<p>67 M.2 Tambon Lumpaya, Ampur Maung, Nakhonpathom, Thailand</p>