

# A Study on the Improvement of Maritime Education Program in Korea

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Abstract : In 2010 Manila Conference, the revised STCW (International Convention on Standards of Training, Certification and Watch-keeping for Seafarers) of IMO recalled that a large percentage of maritime casualties and pollution incidents are caused by human error. Therefore, education and training improvement will play important role to reduce maritime casualties. From this, we focus on improving safety during sailing through upgrading the education and training for Korean cadets by updating maritime education and training program. In terms of a maritime education program from some of the maritime universities in the world such as United States Merchant Maritime Academy(USMMA) Philippine Merchant Marine Academy(PMMA), are compared to the Maritime University in Korea. As a result, we suggest an effective education system.

Key Words : Maritime Casualty, Human error, Maritime education, IMO Model Course

**요 약** : 1990년대 후반 IMO 해양사고 조사실시 결과(A.21/884-9)에 따르면 해양사고 원인요소에 Human Elements가 크게 관련된다. 이런 관점에서 STCW Code A.에 의한 해기사의 요건에 따른 교육과정의 재 점검과 함께 교과과정의 운영시스템에 대한 분석이 필요하다. 이를 위하여 USMMA, PMMA를 중심으로 한 해기 교육기관의 교육내용을 우리나라 해기사 교육기관과 비교 분석한다. 본 연구의 결과로 해양사고 감소 및 예방을 위한 개선된 해기사 교육 시스템을 제안한다

**핵심용어** : 해양사고, 인적요인, 해기교육, IMO 모델코스

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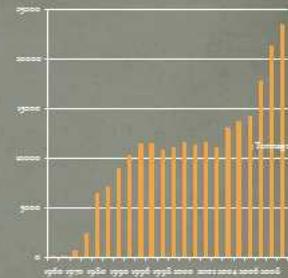
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## Maritime Transportation Development

After Korean War, registered tonnage of Korean fleet was 86,321G/T. Less than 30% of cargoes were carried by national flag vessels. In 2010, Korean shipping companies operate 44million DWT, which is the 5<sup>th</sup> in the world.



<Figure 1> Tonnage of Korean Shipping Companies

### Background

- Maritime Transportation Role
- Maritime Transportation Development
- Maritime Casualty

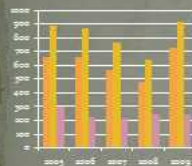
### Content

- Requirement of the Korea maritime education and training from the "Manila Amendments" in 2010
- Focus on analyzing and comparing the Maritime University in Korea with some Maritime Education Program Model over the world such as: USMMA, PMMA to produce more well-trained seafarers for developing Korea Shipping industry.
- Suggest the effective maritime transportation education program with strong maritime traditions and advance base on IMO model course standards

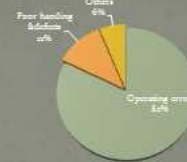
### Conclusion

- Improve processes for operating ships and managing business operations
- Improve English Ability
- Improve training systems
- Teamwork

## Maritime Casualty



<Figure 2> on board Korea marine accidents 2005-2009



<Figure 3> Causes of marine accidents

- The maritime casualty rate is still high.
- More than 80% of accident of ships are rooted by human errors

- Operating errors: Sailing readiness deficiency, Insufficiency of hydrographic investigation, Straying of designated course, Negligence of fixing ship's position, Inappropriate maneuvering, Negligence of lookout, watch-keeping, Neglecting safety working rules

## Maritime Transportation Role

- Around 90% world trade is carried by the international Shipping Industry.
- In Korea 98.4% import and export of good over the world carried by shipping

<Table 1> - Korea Throughout Cargo

(Unit: 000 G/T, %)

Type of Transport	2007	2008	2009	A percentage change	The tonnage rate of 2008	The tonnage rate of 2009	A percentage change
Airport	2,877	2,438	2,308	-16.1	24	20	-16.7
Port	201,878	188,788	189,742	-6.3	184,022	187,734	14.8
Total	204,755	191,226	192,050	-6.3	184,046	187,754	14.8

According to: Korea Trade Statistic Service

## Content

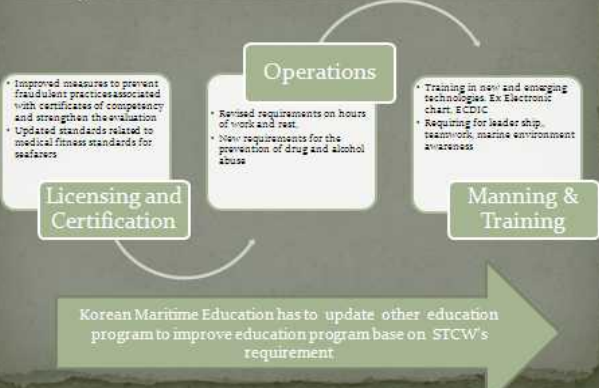
To reduce maritime casualty we focus on improving safety during sailing through upgrading the education and training for Korean cadets by updating maritime education and training program

Demonstrate new strategies (requirement) of the Korea maritime education and training from the "Manila Amendments" in 2010

Focus on analyzing and comparing the Maritime University in Korea with some Maritime Education Program Model over the world such as: USMMA, PMMA to produce more well-trained seafarers for developing Korea Shipping industry.

Suggest the effective maritime transportation education program with strong maritime traditions and advance base on IMO model course standards.

## New Requirement of the Korea maritime education and training from the "Manila Amendments STCW" in 2010



## United States Merchant Marine Academy (USMMA)



- Freshman (fourth class) year learn the quality of endurance, how to perform under pressure, and most importantly, how to successfully manage time.
- Sophomore (third class) year and Junior (second class) year, midshipmen are sent to sea for practical shipboard training to learn the value of self-reliance and initiative as they gain firsthand experience in the mariner's environment.
- Senior (First class) year, they fine tune the skills learned in the classroom and at sea as they prepare to enter the professional world.
- The United States Merchant Marine Academy (also known as USMMA or Kings Point) is one of the five United States service academies. It is charged with training officers for the United States Merchant Marine, branches of the military, or the transportation industry.
- Established: 1942
- Admin. staff: 150
- Undergraduates: 900

## Mokpo National Maritime University



- The Freshman (First year) and Sophomore (Second year) were provided basic knowledge and skill related on marine safety, navigation instrument.
- The Junior (Third Year) and Senior (Fourth Year) were practiced onboard to train seaman skills.
- The Senior (Four Year) advance safety training, navigational instruments practice, navigation systems.
- One of top maritime universities in Korea.
- Established: 1950
- Admin. staff: 93
- Undergraduates: 800

## Philippine Merchant Marine Academy (PMMA)



- In the first year (4CL), the second year (3CL) midshipmen learn basic knowledge and skill to prepare for training on board, such as
- In the third year (2 CL-Ship-boarding Training), cadets have opportunity to use a ship as sea-going laboratory and submit them through correspondence
- In the fourth year (1 CL), prepare knowledge and skill to be ready go on board
- The Philippine Merchant Marine Academy stands as one of the oldest and most illustrious institutions in the Philippines today.
- Established: April 23, 1850
- Admin. staff:
- Undergraduates:

## Analyzing and comparing the Maritime University in Korea with Maritime Education Program Model's USMMA, PMMA

### Similarities



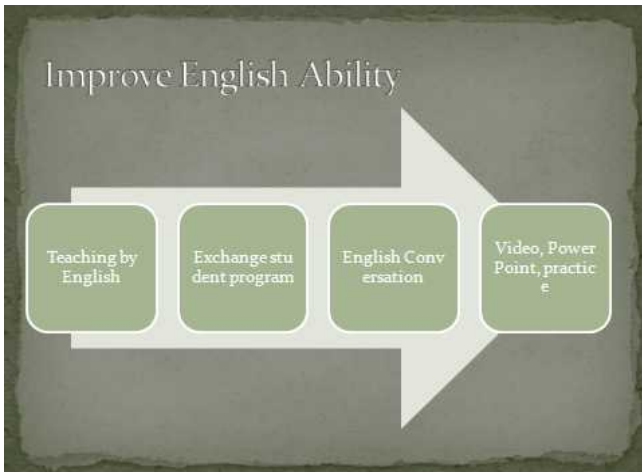
- All of subject institution were designed base on STCW model course standards

### Differences

- USMMA emphasizing on educating ship's administration, personnel management.
- PMMA concentrate on developing leadership, teamwork, training institution and 90% subjects teach by English
- MMU concentrate on educating technology, computer and navigational instrument, engineering navigation

## Suggest the effective maritime transportation education program





### Improve Training System

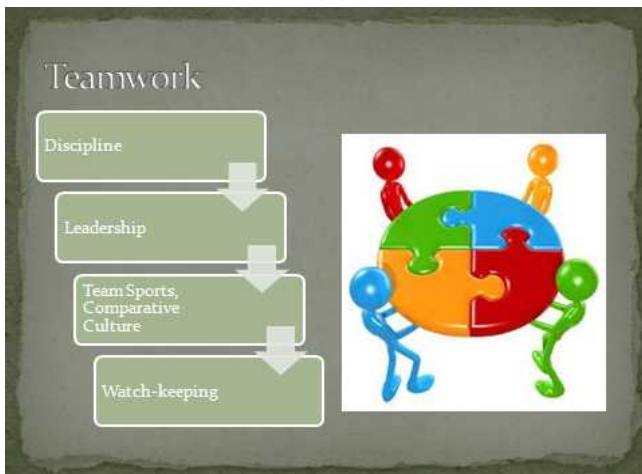
**Simulator-training:**

- Ship-handling & Maneuvering Comprehensive Evaluation & Assessment
- Cargo Handling & Stowage: Non-dangerous cargo or Dangerous cargo

**Training onboard:**

- Go to shipping company vessel to train.
- Practice on University training ship



- ### Conclusion
- Base on STCW code, USMMA & PMMA Maritime Education Program offer the greatest opportunity for improving MMU's Maritime Education Program.
  - Give some suggestion to upgrade student ability, such as: Training, management, teamwork...




**Thank you for your attending**