

## The analysis of the competency issues of crew on offshore support vessel

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**Keywords:** OSV; competency certificate; navigation area; gross tonnage; main propulsion power.

**Abstract.** The offshore support vessel (OSV) can significantly accelerate the development process of offshore oil resource by providing a variety of professional services. But the crew still expose some issues on competency certificate, which will affect the normal operation of the vessel. Through analyzing the causes of these issues by studying collected data and relevant conventions, this paper proposes to change the level of the navigation area and amend the standard of deck department seafarers' competency level in order to solve the competency issues.

### 1. Introduction.

Offshore support vessel (OSV) is an important tool in the exploration of offshore oil, which can provide a variety of support such as anchor handling, towing, positioning, material supply, guardian, fire control, personnel carrying, remotely operated vehicles (ROV) support and testing [1]. With the enhancement of the offshore oil resources exploitation ability, the exploitation activities are going into the deep water area and the ultra-deep water area, and the type of OSV is also being subdivided gradually [2]. All of these not only put forward new requirements on the design and the construction of OSV, but also higher requirements on the crews' competency ability to operate the ship and its ancillary equipment. However the OSV crew in China still have some competency certificate issues which are urgent to be solved.

### 2. The Competency Certificate Issues of OSV Crew

The competency certificate is an important proof of competency level of the crew, indicating that the crew has sufficient ability to operate the ship and its equipment. It can be divided into coastal waters and unrestricted waters according to the level of the navigation area, also can be divided into different classes according to the level of the gross tonnage and the main propulsion power of the service vessel.

**TABLE 1.** The level of competency certificate.

The level of the navigation area	The level of the service vessel		
Unrestricted navigation area	First class	Second class	
Coastal navigation area	First class	Second class	Third class

#### 2.1 The level of navigation area dropped

The OSV in China is mainly involved in the coastal waters. So even though the design and construction of the OSV meet the requirements of CCS about the world-wide ship, China's OSV often chooses the coastal navigation area when applied the classification of ship, so as the "Certificate of Nationality of Ship" and "Minimum Safe Manning Certificate". Only when the OSV

needs to perform overseas assignment, then apply for a temporary minimum safe manning certificate in unrestricted navigation area.

However after the new crew management system was put into operation in 2013, the system judges the OSV is the vessel operating in the coastal waters according to the navigation area level of the "Certificate of Nationality of Ship" and "Minimum Safe Manning Certificate", which makes the crew on OSV unable to maintain or apply for the unrestricted navigation area competency certificate. All of these lead a decline in the navigation area level of crew competency certificate.

## **2.2 The deck department seafarers unable to hold the first-class certificate**

After the new crew management system put into operation, the OSV is no longer regarded as tug. This means the system automatically chooses the gross tonnage instead of the main propulsion power of the vessel as the judgment standard of the competency level of the deck department seafarers. According to 11 Rule Chapter II Article VII, the competency certificate level of the captain and pilot services on the general cargo ship is determined by the gross tonnage of the ship whether more than 3000 ton [3]. However, due to the special functional requirements of OSV, it's usually has a large power but small gross tonnage, which is usually less than 3000 ton. Therefore the deck department seafarers are unable to maintain or apply for the first-class competency certificate.

## **3. The Effects of Competency Certificate Issues Of Crew**

### **3.1 Unable to perform unrestricted waters assignments**

Because the navigation area level of the crew competency certificate delinks, the offshore service companies do not have enough high level deck department seafarers to perform overseas assignments for failing to meet the mandatory requirements of the minimum manning of ship. Even if a small number of seafarers still hold the unrestricted navigation certificate are not satisfied for hold the second-class certificate. However, with the enhancement of the oil exploitation ability of China's oil service company, those companies have extended market in other countries or regions shown as table below. Once the OSVs unable to perform overseas assignments, huge economic losses will be caused, subsequently, the development of the offshore industry will also be affect.

**TABLE 2.** The overseas markets of offshore service companies

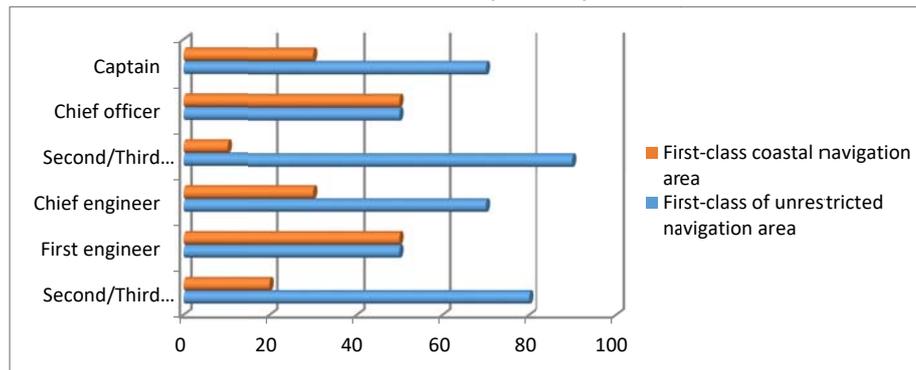
<b>Region</b>	<b>Country</b>	<b>Number of assignments</b>
the East Asia	Korea	Five
the Southeast Asia	Indonesia, Myanmar, Thailand	Seven
the Middle East	Qatar, Saudi Arabia	Two

### **3.2 Led a decline in the crew operating ability and incidents**

There will be a large number of seafarers need to improve their competency certificate in the next two years. According to the table.3, the crew of OSV in China mostly hold the first-class certificate of unrestricted navigation area. Unable to maintain or apply for high-level competency certificate will not only suppress the enthusiasm of crew, but also fail to attract high-level maritime

talent to work on the OSVs, which will lead to a decline of the crew operating ability .

**TABLE 3.** The statistics of competency certificate of crew



With the OSV function continuously enhanced, a number of professional equipment is equipped with the ship. The crew should have sufficient capacity to safely operate the ship and its equipment, or it will cause safety accidents. It can be seen from the table 4 below that human factors is an important cause of ship accidents. The OSV crew also must be able to solve problems after the accident. All of these put forward more strict requirements for the crew's competence ability.

**TABLE 4.** The accidents analysis of OSV

Type	Reason	Related equipment
Electrical fault	The PCS system of main engine inspired alarm, failing to control remotely	The PCS system of main engine
Mechanical fault	The oil mist concentration in crankcase is too high to activate alarm, the main engine is protective stopped	The crankcase of main engine
Human error	The watch keeping is not carefully, leading to the collision of ships and offshore platform	The dereliction of duty

Therefore, it is necessary to solve the issues of crew's competency certificate, smoothing the crew's career path and promoting the healthy development of the offshore oil industry.

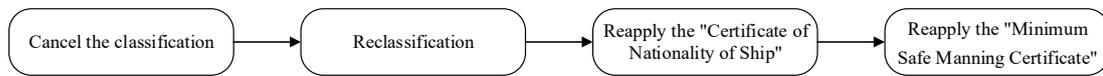
#### 4. The Solution of Issues

##### 4.1 Change the level of OSV navigation area

According to the relevant regulation of Rules for Classification of Sea-going Steel Ships, the classification of ship means that the CCS admits the hull and equipment comply with the relevant requirements. The ship class will be canceled when the owner submits an application in accordance with the regulations.. When the ship reapply for classification again, the CCS will inspects the ship according to the age and the original class of the ship. If the survey shows that the ship is in good condition and complies with the requirements of the CCS code, the CCS will resume its original class or other class as required [4].

The OSV in China meets the requirements of CCS about the unrestricted navigation area ship in the design and construction stages, but considering mainly working in the coastal area, most OSV chooses the coastal navigation area when applying for the classification. As a result, the OSVs are fell into coastal area operating vessel according to the new crew management system. Therefore

change the level of navigation area of OSV can prevent the decline of the level of competency certificate. The specific process as shown in the figure below.



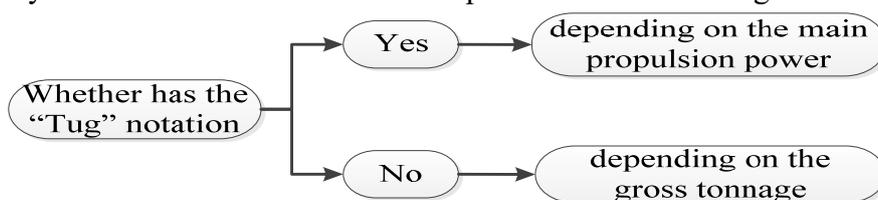
**FIGURE. 1** The process of change the level of navigation area of ship

Firstly, apply to the CCS for cancelling the classification of the OSV, then apply to the reclassification, submitting the documents according to the requirements of CCS about the world-wide ships. Thirdly, reapply to the unrestricted waters Certificate of Nationality of Ship and the Minimum Safe Manning Certificate of Ship to meet the requirements of the new crew management system [5]. This will make the crew continue to hold the competency certificate in unrestricted navigation areas. Therefore

#### 4.2 Amend the judgment standard of deck department seafarers’ competency level

According to the requirements of 11 Rule, the “Tug” is special ship, the criteria to judge the competency certificate level of deck department seafarers on it is the main propulsion power I, while the seafarers of general cargo ship on the basis of gross tonnage. The OSV such as AHTS requires towing capability to towing the platform or other offshore installation when necessary, which means OSVs have to meet the special requirements of “Rules for Classification of Sea-going Steel Ships” on tug. And according to the requirements of its regulations about type notations, if the OSC’s towing function can fully comply with the Chapter 10 of Part Two, the notation “Tug” can be attached to it ..

Therefore we should firstly figure out whether the OSV has a “Tug” notation when judge the level of competency certificate of deck department seafarers. If the ship has the “Tug” notation, then judges the level of competency is determined by the main propulsion power. Otherwise the gross tonnage maybe taken into consideration. The process is shown as Figure. 2.



**FIGURE. 2** The judgment process of the competency certificate level for deck department seafarers.

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