



Working Conditions On Maritime Transport: Comparative Survey Between Galician Professionals And Spanish Shipping Companies

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ABSTRACT

The last report on the evolution of maritime workforce published by BIMCO in 2010 places the officers' current deficit in almost 14000. This data shows a trustworthy and growing problem of shortage of qualified personnel to work on board. Nowadays the Spanish shipping companies are reporting an increasing difficulty to recruit Spanish experienced seafarers in the last years. There exists a series of determinant factors in the reduction of the number of persons who follow the maritime career: the slightly attractive image of the merchant marine, the complexity of the seafarer professional career, and the increasing hardness of life on board. The main objective of the present paper is to compare the professionals' opinions about working and living conditions on board and those offered by shipping companies, and desired seafarers' qualifications. The aim is to know the degree of satisfaction of professionals and shipping companies with several aspects of maritime profession. With such a purpose a questionnaire on working and living conditions on board was designed and distributed among graduates from the Higher Technical College of Nautical Science and Marine Engineering from University of A Coruña and Spanish shipping companies. The results were compared and shown that there are important differences between the professionals' expectations and the real employment conditions. This could be the main reason why many professionals decide to abandon their jobs at sea. Job instability, working hours distribution, workload, and work-life balance conditions are problematic areas for professionals. The important difficulties to hire qualified personnel to work on board are the shipping companies' main concern.

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1. Introduction

Approximately 90% of worldwide transport of goods is done by sea and the world fleet has experienced a growth near to 1% per year in the last decade, increasing the labour force demand in the sector. However the last report on worldwide maritime workload evolution published by BIMCO and ISF1 places the officers' current deficit in almost 14000. This data shows a trustworthy and growing problem of shortage of qualified personnel to work on board.

The shortage of trained seafarers has negative consequences for the safety of navigation, and results in gradual lack of staff

with the expertise and experience at the professional level, qualified to perform shore activities related to the maritime domain, such as inspection of ships, surveillance, management, rescue, and pilotage. In view of the seriousness of this information the IMO secretary -general announced the launch of the campaign 'Go to sea!' in November 2008. In this campaign IMO, ILO, ICS/ISF, BIMCO, INTERTANKO, INTERCARGO and ITF co-operated to attract new seafarers to the profession and to keep the in-service seafarers in the Merchant Marine. The campaign also was aimed to make known the nature and scope of the problem of world seafarers shortage, as well as to coordinate the efforts to approach this concerning matter (Mason, 2008; International Maritime Organization, 2008).

Likewise, this problem concerns to the European Union in such a way that in 2006 the European Commission agreed the Communication to the European Parliament, the Council, the

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European Economic and Social Committee and the Committee of the Regions Reassessing entitled 'Regulatory social framework for more and better seafaring jobs in the EU'. This Communication is related to the harmonization, amongst member states, of a common policy towards sea work (European Commission COM, 2007) and presents the several aspects to deal with the aim of improving attractiveness of sea work.

Moreover, in January 2009 the European Commission adopted the Communication on Maritime Transport Strategy, 2009–2018. The Commission highlights the need to support EU world leadership in the maritime transport (it controls 41% of the world fleet in DWT) and the shortage of European seafarers which implies 'the risk of losing the critical mass of human resources that sustains the competitiveness for the European maritime industries in General' (European Commission COM, 2009).

In addition, the European transport Worker's Federation (ETF) shows interest in the difficulties experienced by shipping industry to provide EU nationals with job prospects and the downward trend in the number of European seafarers. In this regard, the ETF carried out during 2010 the project Enhancing recruitment and training in the shipping industry in Europe. The was organized around three thematic workshops in the area of seafarers training and recruitment: how to address skills-gaps and the deficit in the number of European seafarers; enhancing the image of the sector and promoting quality working and living conditions at sea; and how to ensure a better career path and long term prospects in the maritime cluster (European Transport Workers Federation, 2010). Likewise, the European Community Shipowners Association carried out in 2010 a survey with the support of the European Commission, whose results are published under the title: ECSA workshop, Report On The Project On Enhancing Recruitment And Training In The Maritime Sector In Europe. Such a study consisted of a questionnaire prepared and sent to all ECSA members setting out a number of questions concerning views on: the national manpower situation and recent trends, recruitment trends, recruitment methods, maritime cluster job mobility, improved training techniques, examples of good practice and EU co-operative recruitment and training initiatives (European Community Shipowners Association, 2010).

With regard to the Spanish on board workforce, there are not official, public and accurate statistics of Spanish seagoing personnel, neither on foreigners employed on Spanish flagged vessels, nor on how many Spanish seafarers work in non-Spanish flagged ships. In any case the Spanish shipping companies are reporting an increasing difficulty to recruit Spanish experienced seafarers in the last years, especially regarding graduates of engine room department, who disappear of the labour market, in many cases, even before beginning a professional maritime career (Basurko, 2007).

Moreover and in spite of the fact that Nautical Studies have a great tradition in Spain there exists a series of determinant factors in the reduction of the number of students who follow maritime career. We can find among these factors the slightly attractive image of the merchant marine that is offered by the mass media in general, the complexity of the seafarer profes-

sional career, and the increasing hardness of life on board (de la Campa et al., 2014).

The shortage of seafarers in Spain is so problematic that Spanish Government has declared some jobs on board (deck officer, engine room officer, chief engineer and radio-communications engineer) as 'jobs with very difficult filling', allowing shipping companies to employ foreigners to fill these vacancies (Spanish Government, 2016).

In the present article a comparative analysis between the on board living and working conditions perceived by sea professionals and the working and living conditions offered by shipping companies in Spain is carried out. The objective is to establish the gap between the working and living conditions offered by Spanish shipping companies and the working and living conditions desired by Spanish ship officers. This analysis shows the degree of satisfaction and dissatisfaction of both ship officers and shipping companies that could lead to abandon the professional career at sea and the loss of job opportunities on board.

2. Materials and methods

Both quantitative and qualitative research methods were used to reach the objectives previously proposed. The base of this study is the carry out of surveys to Spanish deck and engine officers working on board Spanish flagged ships or ships managed by Spanish shipping companies.

The steps followed for each of the proposed surveys were the next:

1. Determination of target population and sample size.
2. Questionnaire design.
3. Check and distribution of the survey.
4. Data analysis.

Once analysed the data of each sector in a separate way, a comparative analysis of the results between both sectors was performed: ship officers and shipping companies. The research steps for each sector are next detailed.

2.1. Survey Aimed To Shipping Companies

A survey was designed and distributed to the Spanish shippers. The objectives of this survey were to know the undoubtedly important role that shipping companies have on working and living on board conditions, the problems they experience with regard to recruitment of ship officers and the training needs that they notice in these workers.

1. *Determination of target population and sample size.* The target population are the Spanish shipping companies affiliated with ANAVE, The Spanish shipowners association. This Association has 37 full Members and 9 Associate Members representing almost the full Spanish shipping sector. Instead all member were invited to participate, the final sample was shaped by 6 full members (16,2%), 2 associate members (22,2%) and 2 companies that are not members of ANAVE. Due to the low level

of co-operation of shipping companies, the information available at this stage is not sufficient to draw firm conclusions.

2. *Survey design.* The survey aimed at shipping companies was structured in four points:
 - Shipping company: information is needed with regard to the number and type of vessels managed and the kind of navigation (coastal, high sea, etc.)
 - Human Resources management: the main aim of this point is to know if the company is currently having difficulties to recruit personnel.
 - Recruitment Conditions: In this point the employees' contractual benefits offered by the company were established. Also data about the company policies, the company perception on workers training needs, and the skills and qualifications needed for highest level workers is required.
 - On board living conditions: This point establishes the company commitment with several aspects related to living conditions on board.
 This survey has 21 questions but the company could offer information for more than one hundred items due to the existence of multiple questions. The 21-item questionnaire used in this research is shown in detail in Annexe 1.
3. *Survey checking and distribution.* In view of the small number of shippers, all of them were contacted by telephone in order to request their co-operation. The corresponding survey was sent later through e-mail or postal mail. The obtained results are detailed hereinafter.

2.2. Survey Aimed To Ship Officers

The main objective of this survey was to know the current employment situation of Spanish experienced deck and engine officers as well as their perception of working and living conditions on board.

1. *Determination of target population and sample size.* The target population was the graduates of the Higher Technical College of Nautical Science and Marine Engineering of the University of A Coruña, which have completed their studies and obtained their professional qualifications between 1990 and 2010. This population was formed by 951 individuals, 499 of them graduated on Nautical Sciences and 452 graduated on Marine Engineering. The final sample consisted of 136 respondents. 52% of sample was of marine engineering speciality and 48% of nautical sciences.
2. *Survey design.* Key issues of ETF project Enhancing recruitment and training in the shipping industry in Europe, and data of Kahaveci (Kahaveci, 2007) study on port based welfare services for seafarers were taken into account to design the questionnaire used in this study. Such a questionnaire elicited information related to the next four categories:
 - Respondent identification: information on gender, age, speciality, current employment situation and academic qualifications.

Career knowledge and study motivations: this section is aimed to compare their expectations as students and real job conditions.

Current employment Situation: unemployed or jobless, working on board, employed ashore inside the maritime sector, employed ashore out of maritime sector, and retired or unable to work. Each one of these five employment condition options lead to different more detailed questions. Likewise there is series of 19 questions on on-board working and living conditions to be covered by all participants with working at sea experience.

Labour Market: the objective of this section is to know the respondents' expectations in the short and medium term with regard to their job prospects. This survey has 51 questions but ship officers could offer information for more than one hundred items due to the existence of multiple questions. The 51-item questionnaire used in this research is shown in detail in Annexe 2.

3. *Survey checking and distribution.* Data was collected through the web page www.laboramar.es specifically designed to this survey. This web page allows the direct exporting of the information both to Excel and SPSS format files for the later statistical treatment.

3. Results

3.1. Shipping Companies Results

1. *Identification.* 100% of companies are Spanish and manage a total of 189 ships (including special services vessels). The sample includes almost all kinds of vessels: Ferries, fast ferries, oil tankers, gas tankers, chemical tankers, container ships, Ro/Ro, ships, general cargo ships, multipurpose ships, oceanographic vessels, bulkcarriers and rescue ships. Car carriers are not represented in the sample. As for the type of navigation the sample includes all kinds of navigation: coastal navigation, national and international short sea shipping, high sea navigation, regular lines, tramp, etc.

2. *Human resources management.* 90% of respondent companies manage directly their seafarers. 66% of these companies had experienced difficulties for recruiting qualified personnel, and 83,5% of them has difficulties for recruiting deck and engine officers, as well as Captains and Chief Engineers. Only 16,5% has difficulties to recruit engine ratings, usually electricians. Also 16,5% has difficulties to recruit deck ratings. 75% of the companies that are experiencing difficulties for recruiting qualified personnel stated that these difficulties are related to the generational renewal, 50% stated that these difficulties are related to labour market wages and 25% attributed these difficulties to the lack of motivation, problems to find the wished profile and the students? shortage in the Maritime Education and Training Centres.

3. *Recruitment conditions.* In this point shipping companies were asked about employees' contractual benefits, on-board/holiday ratio, company policies, crew training and recruitment criteria. Employees' contractual benefits: 100% of respondent companies declared to offer ongoing training for

their employees. 90% of them offer paid holiday and is in charge of health care contributions. 78% is in charge unemployment and pension contributions. 67% offer short-term promotion. 56% offer the possibility of embarking relatives and job stability. 22% declared to offer employment possibilities of worker’s descendants.

Onboard/holiday ratio. The on board/holiday average ratio in the Spanish shipping companies is 4 months embarked/ 2 months leave. The most extreme cases are 22% of respondents with 1/1 ratio and 11% of them with 5/2 ratio.

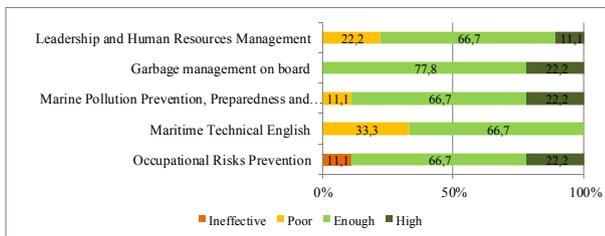
Company policies. 100% of respondents stated to have clearly established policies on Occupational Risks Prevention. 89% declared to have policies on recruitment conditions, equal treatment and non-discrimination and ongoing training. 77,8% of them declared to have policies on job promotion and 66,7% has clearly established policies on work-life balance. Ship officers’ nationality. (Captain, Chief Engineer, deck and engine officers). 100% of respondent companies declared to recruit Spanish ship officers in a general basis. Also officers from Latin America (22,2%), Centre - Europe (11,1%) and Eastern Europe (11,1%) are recruited.

Linguistic, religious and cultural criteria. 55% of respondent companies declared not to follow any linguistic, religious or cultural criteria at the moment of recruiting their crew members. The criterion followed by the rest of the respondents (45%) is in all cases a linguistic one.

Theoretical and practical education and training of Spanish officers (Captain, Chief Engineer, Deck and Engine Officers): 89% of shipping companies stated that Spanish officers have a sufficient and comprehensive theoretical education. The same percentage, 89%, declared that the practical education and training is also sufficient and comprehensive.

Education and training on specific topics. Figure 1 shows the satisfaction of respondent companies with the level of education and training of Spanish officers (Captain, Chief Engineer, Deck and Engine Officer) with regard to specific topics. The average satisfaction is 84,4%. It is necessary to emphasize the percentages of dissatisfaction with education and training on English language (33%) and human resources management (22%).

Figure 1: Companies’ satisfaction with ship officers’ education and training



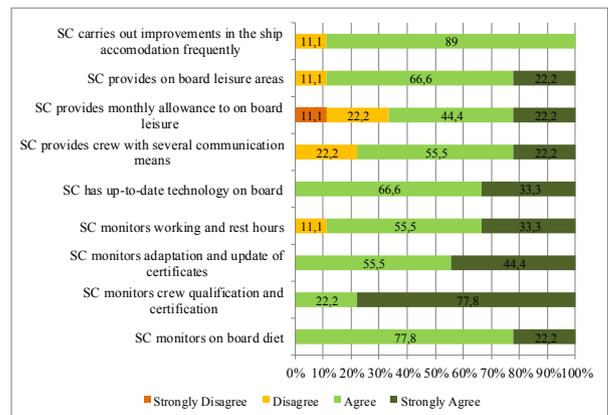
Need to increase the education and training of these crew members in some specific topics: 22,2% of respondent companies stated that it is not necessary to increase the education and training of these crew members. Whereas the 77,7% declared that such increasing is necessary. In addition to the top-

ics described in the previous paragraph it were highlighted the next ones: maritime law, Information Technology, cargo loading and stowage, hoisting equipment and operation, external audits (MOU, Vetting, etc.), ISM and ISPS Codes. Captain’s most important skills to be employed at the company. All companies, 100%, considered that leadership and decision-making skills are the most important ones for their ship’s Captains. 78% considered also very important to have an extensive experience at sea, the so-called good seamanship. 56% considered teamwork skills also very valuable. 30% of respondent companies stated that being a good communicator, to have command skills and to have a good academic background are also important abilities. To be good in bureaucracy, the capacity of self-criticism and be disciplined are scarcely considered important abilities.

Chief engineer’s most important skills to be employed at the company: 89% of respondent companies considered to have an extensive experience: good seamanship as the most important characteristic. 78% considered also teamwork as a very valuable skill. 67% highlighted the decision-making ability. 56% considered that leadership and to have a good academic background are very important skills. 30% considered also very valuable to be disciplined. To be good in bureaucracy, the capacity of self-criticism and command skills are scarcely considered important abilities.

4. On board living conditions. Figure 2 shows the degree of agreement with several statements regarding on board living conditions.

Figure 2: Statements regarding on board living conditions



3.2. Ship Officers Results

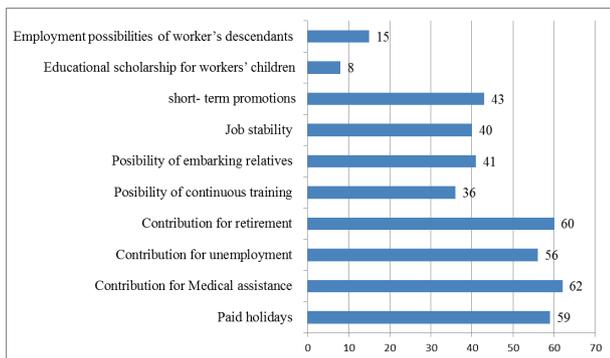
1. Respondent Identification. The sample consists of 136 respondents. 52% of sample are of marine engineering speciality and 48% of nautical sciences. 77% of respondents are male and 23% female. The mean age of sample is 34,93. As for the current employment situation, 28 respondents were unemployed (21%), 30 (22%) were working on board, 41 (30%) were working ashore in maritime sector and 28 (21%) were working ashore out of maritime sector. 1% is retired / unable to work. The sample used in the present study is formed only by those respondents that are currently working on board (30

respondents accounting for 22% of the sample population) and those respondents that worked previously on board (48 respondents). This sector of sample population has 78 respondents (57%). The identification data of these respondents is as follow: Position on board: Captain: 10%, Chief Engineer: 4%, Chief Officer: 26%, Second Officer: 34%, Third Officer: 4%, Cadet: 17%. Kind of navigation: 35% of respondents were engaged in international coastal navigation, 33% in national coasting trade and 26% in high seas navigation. Type of ship: the sample includes almost all kinds of vessels. Flag: 74,3% of respondents were working on board Spanish flagged ships. Number of years of experience on board: 59% had less than 5 years on board experience and 41% had more than 5 years of experience. Employment Situation: 53% of respondents had a temporary contract, and 38% had indefinite or permanent contracts. 9% of workers did not answer this question.

2. Employment conditions.

Wage: 49% of respondents stated their wages were nor low neither high, 23% high, 14% low and 5% very low. None of respondents considered his wage very high. 9% workers did not answer this question. Net monthly wage: 13% < 1500 €; 48% 1500-3000 €; 21% 3000-4000 €; 6% > 4000 €. 12% did not answer. Onboard/holiday ratio: In Spain, the standard on board/holiday ratio is 4/2. 18% of respondents had this standard ratio. 26,9% of respondents had a 1/1 ratio, that could be considered the best one. Employees? contractual benefits: Figure 3 shows the contractual benefits offered by the companies.

Figure 3: Contractual benefits offered by companies



Ship conditions: Figure 4 shows the opinion of respondents with regard to several ship conditions: hull and machinery condition, technological equipment, ergonomics, occupational safety policies, work organization, work and rest hours? distribution and ship route. Workload: being 0 a little workload and 10 too much workload, 25 participants (32%) said they had a mean workload (scoring 5) while 37 (48%) said their workload was high or very high (scoring 8 to 10). Only 1% of respondents said their workload was low (below 5).

Continued hours for sleeping: the importance of this item resides in sleeping is essential for physical and mental health. 41 (52%) participants had less than 8 continued hours for sleeping; this shows that most seafarers have no enough rest time. Average continued sleeping hours is 7.60.

Stress frequency: being 0 never stressed and 10 always stressed, 59(76%) declared a mean-high stress frequency (scoring 5 to 8).

Social and personal life on board: Figure 5 shows the opinion of respondents with regard to several items of social and personal life on board: communication with relatives, internet availability, cabins and personal hygiene facilities, leisure places, number of crew members from a social point of view, turnaround and social environment.

Figure 4: Ship officers' opinion with regard to ship conditions

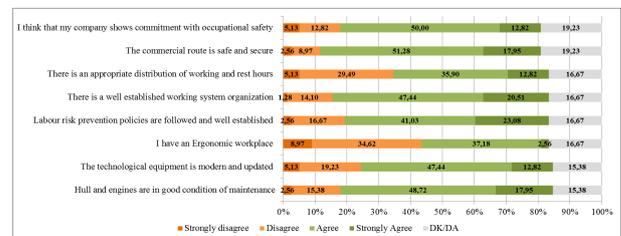
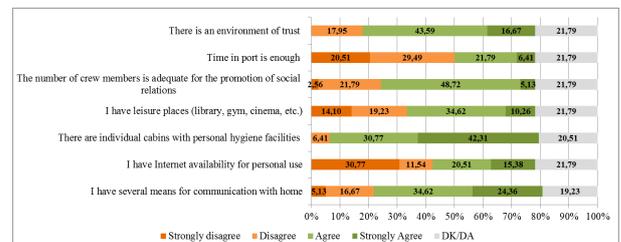


Figure 5: Ship officers' opinion on personal and social life on board



Job satisfaction: Table 1 shows the participants' level of satisfaction with regard to labour conditions offered by the company, ship conditions, workload, personal and social life conditions, crew conditions, and the on board working life. Being 0 absolutely nothing satisfied and 10 completely satisfied, the Table shows maximum and minimum values, mean and standard deviation.

4. Discussion

The results obtained on experience and opinions of ship officers and needs of shipping companies could be compared in two ways: working and living conditions offered by shipping companies can be compared with working and living conditions experienced by ship officers, and also working and living conditions offered by shipping companies can be compared with ship officers most valued working and living conditions.

Table 1: Job satisfaction values

	Minimum Value	Maximum Value	Mean	Standard Deviation
Satisfaction with the labour conditions offered by the company	0	10	5.56	4.74
Satisfaction with the ship condition	0	10	5.94	4.69
Satisfaction with workload	0	10	5.22	4.41
Satisfaction with social and personal life condition	0	9	5.55	4.89
Satisfaction with crew conditions	1	10	5.52	5.53
Satisfaction with on board working life	2	10	5.24	5.72

In view of the low number of answers obtained on the part of the Spanish shipping companies and the low number of respondent ship officers, the first proposed data comparison has to be approached bearing in mind that 30% of respondent ship officers had on board experience in foreign companies. The parameters that we can compare in this section are the employees' contractual benefits offered by the companies, the on-board/holiday rate and the education and training needs.

Figure 6 shows the data comparative study between the employees' contractual benefits offered by the Spanish shipping companies and those that workers are actually enjoying. Minor discrepancies with regard to paid holidays, contribution for medical assistance and the short-term promotion can be observed. However major differences with regard to ongoing training and educational scholarship for workers' children are shown.

Employees' contractual benefits that ship officers considered to be more important were: a competitive wage, paid holidays, job stability, 1/1 onboard/holiday rate and contribution for medical assistance. With regard to wage it is necessary to highlight that only 23% of ship officers stated that their wage was high.

The most profitable onboard/holiday rate from ship officers point of view was 1/1, but it was not the most usual offered rate by the companies (offered only by 22% of shipping companies).

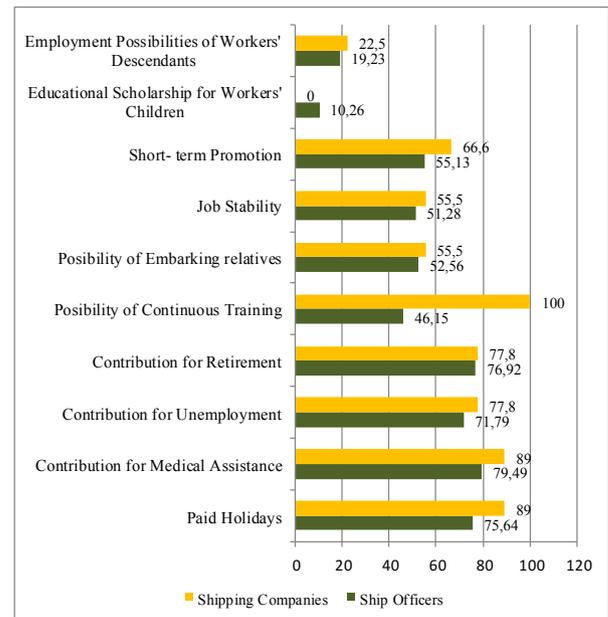
As for the education and training needs both shipping companies and ship officers agree with the need for a most exhaustive training in maritime technical English. Human Resources Management, pollution prevention and occupational risks prevention are topics considered as problematic by the company. To a lesser extent these areas need also reinforcement from the point of view of ship officers. Ship officers give major importance to maritime law and new information and communication technologies.

5. Conclusions

Though later studies will allow to establish more strong conclusions (a similar study with a six times bigger sample is being carried out), it is possible to establish clear trends with regard to satisfaction degree of ship officers with working and living conditions on board offered by the Spanish shipping companies.

Among the positive trends it is interesting to highlight a clear general satisfaction with working and living conditions on board. This point is confirmed by the data on employees' contractual benefits satisfaction, the information on social and personal life conditions, and satisfaction with crew conditions.

Figure 6: Comparative data on contractual benefits



However, among the negative trends it is necessary to emphasize the lack of job instability, the working hours distribution and the workload, the on board social conditions with regard to work-life balance (on board/holiday rate, Internet availability and turnaround) and the stress increasing. With regard to shipping companies an important difficulty for recruiting qualified personnel, especially, Navigation and Engine senior officers is notified.

It is stated a clear trend to consider that the difficulties for recruiting qualified personnel are close related to the lack of generational renewal. Labour marked wages, lack of job stability and the limited opportunities of embarking relatives are emphasized as variables that might influence the generational renewal, but they are weak points that should be improved.

Moreover the lack of clearly established company policies on work-life balance, the lack of on board facilities in order that seafarers could communicate with their relatives and friends (telephone, fax, Internet, etc.) and the lack of professional career path, especially for engine room senior officers, which use to have better job opportunities ashore, are considered weak points.

Furthermore and with regard to the general satisfaction degree of shipping companies with ship officers, it is highlighted that a high percentage of respondent companies stated that Span-

ish ship officers have an appropriate and comprehensive education and training to work efficiently at their vessels. However there are established topics that should be improved in ship officers? education and training.

It seems clear the unanimity in the opinions about the main desirable skills of Captains and Chief Engineers. In general, the main skills are seamanship, decision making, leadership and team-work, though the skills priority is different for each position.

A relation could exist between shipping companies with difficulties to recruit qualified personnel and the working and living conditions they offer. Shipping companies with long campaigns and those with a disadvantageous onboard/holiday rate might have problems to recruit qualified personnel. Likewise, these companies neither might stand out for their working conditions: paid holidays, contribution for medical assistance and retirement, etc, nor for on board the living conditions and questions related to the well-being on board. These companies might be characterized by recruiting foreign crew, may be due to the fact that the offer wages lower than the rest.

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