

## **MANUFACTURING INSECURITY: POST FORDISM AND THE GLOBAL LABOUR MARKET FOR SEAFARERS IN THE MERCHANT NAVY**

Shaun Ruggunan

---

The aim of this article is to expand the scope of maritime security to include conceptualisations of labour market security and insecurity for merchant navy seafarers. The aim is achieved through a review of the literature and empirical fieldwork conducted from 2003 to 2013 on the transformation of the global labour market for seafarers. The concept of labour market security and insecurity is examined through the conceptual lens of Post-Fordism, and the ways in which global Post Fordist practices of shipping companies have manufactured global labour market insecurity for merchant navy seafarers. In particular this article posits that five post Fordist tendencies have shaped global labour markets for seafarers. These are (1) *the delinking of the nation state from labour regulation processes*, (2) *the shift to cheaper labour markets*, (3) *the casualisation of seafaring labour*, (4) *organisational restructuring of shipping companies*, and (5) *the impact of new technologies on labour market security*. These findings have implications for the ways in which we conceive of maritime security beyond its normative criminological understandings.

### **Introduction**

The aim of this article is to broaden the concept of maritime security to include that of labour market security. The article empirically reviews developments in the global labour market for seafarers from the 1970s. It draws on a decade (2003-2013) of empirical and conceptual work that I have engaged in on seafaring labour markets. The review of seafaring labour markets identifies five Post Fordist tendencies precipitated by shipping capital that have contributed to manufacturing insecure labour markets for merchant navy seafarers. These tendencies are (1) *the delinking of the nation state from labour regulation processes*, (2) *the shift to cheaper labour markets*, (3) *the casualisation of seafaring labour*, (4) *organisational restructuring of shipping companies*, and (5) *the impact of new technologies on labour market security*. These findings have implications for the ways in which we theorise maritime labour market security in a globalising world.

### **Conceptual Approach: Secure Fordist Labour Markets**

In order to fully capture the features of post Fordism and its implications for seafaring labour markets, it is important to understand key features of the mode of capitalist regulation that preceded it, that is Fordism. For Standing (1999:7, 2009, 2012) Fordist labour markets in the 20<sup>th</sup> century were defined by five very specific

---

*Address for communication:* **Shaun Ruggunan**, Senior Lecturer of Human Resources Management, School of Management, IT and Governance, University of KwaZulu-Natal, South Africa. Private Bag X54001, Durban, 4000, *E-mail:* [ruggunans@ukzn.ac.za](mailto:ruggunans@ukzn.ac.za)

types of labour market security. The first of these labour market securities is *employment security*. Employment security refers to protection from arbitrary dismissal and the applying of penalties by the state on employers that did arbitrarily fire workers. The second type of security that evolved in the era of market regulation was *job security*. This refers to the idea that a worker's job is protected from excessive deskilling: that is, some form of occupational mobility in the organisation. Thirdly is *work security* which refers to workers' rights to occupational health and safety on the job. Fourthly is *skill reproduction security*. In the Fordist era, employers and the state had to cover the costs of reproducing labour and hence labour's skill. This reproduction takes place through schooling for example. Wages and state subsidies had to cover these costs. Unfortunately the shift to post Fordist ways of organising has eroded labour or skill reproduction security as there is a shift from the family wage and the welfare state to the individual wage and more 'privatised' state. Fifthly is *representation security*. This refers to the relative health of trade unions and workers organizations to represent and advocate the concerns of workers. The rise of the industrial union was a major outcome of the Fordist era and a number of important gains were achieved through collective bargaining. Representation security is on the decline as trade union numbers drop severely, particularly in the West, whilst in countries like Brazil and South Africa the trade union movement remains relatively stable (Standing, 1996; Glyn, 2006, Buhlungu, 2012).

These types of security became the defining features of the Fordist labour market and the subsequent erosion of these securities have produced certain outcomes for labour markets in a post Fordist mode of regulation as demonstrated later in this article.

### **Insecure Post Fordist Labour Markets**

For Harvey (1996, 2014) the shift to 'new times' or post Fordism is very much a shift to a new mode of regulation for capitalism. He terms this new strategy 'flexible accumulation' (Harvey, 1996: 141, 2014). Flexible accumulation strategies were very much a response to what capitalists and some economists saw as the all too rigid accumulation strategies of Fordism (Harvey, 2014; Piketty 2014). The mass production systems, labour markets and commitments of the state were seen as too rigid and because of their rigidities unable to cope with the several economic shocks that characterized the 1970s (Harvey, 1996: 144). Flexible accumulation therefore marked 'a direct confrontation with the rigidities of Fordism' (Harvey, 1996:147, Benner 2002). The key features of this new type of accumulation are firstly a shift to flexible labour processes, secondly the creation of flexible labour markets and thirdly the creation of flexible products and patterns of consumption (Harvey, 1996: 147).

Outcomes of these various features and processes of flexible accumulation are fourfold. Firstly is the increased pace and scale of uneven global development

(Harvey, 2014; Piketty, 2014). This is characterized by new spatial terrains of capitalist investment, the creation of new labour markets and decimation of old (Fordist) labour markets and the creation of new consumer markets. Secondly there are new sectors of production that are thriving in a post Fordist economy. Thirdly there are new ways of providing financial services and fourthly there are much intensified rates of technological, commercial and organizational innovation (Harvey, 2014; Benner, 2002).

### **Post Fordist Features of the Global Labour Market for Seafarers**

#### ***The Delinking of the Nation State from Labour Regulation Processes and the Shift to Cheaper Labour Markets***

The movement of the shipping industry towards Flag of Convenience (FOC) shipping has in many ways produced a unique type of labour market for seafarers. Firstly, the issue of how one conceptualizes the global labour market for seafarers arises. Wu (2004) argues that whilst one may speak of a global labour market for seafarers in the merchant navy, the global labour market for seafarers takes on a very specific meaning in this context. According to Wu and Sampson et al (2005) the definition of the global labour market is related to structures (institutional or otherwise) that govern their employment and recruitment. This would be the key marker between traditional and contemporary seafarers. Therefore whilst both categories of workers may work on international vessels in international waters, it is the latter category that dominates the contemporary labour market. Further, the emergence of the global labour market for seafarers is intertwined with the emergence of FOC shipping (Sampson, 2013).

The importance of distinguishing between global and national seafarers is revealed if we look at the regional supply of national and global seafarers. In terms of total number of seafarers (both national and global) Asia provides half the world total, transition economies 27 per cent and advanced economies 16 per cent. However, when we consider the supply of global seafarers only, this pattern changes significantly. Asia now supplies two-thirds, transition economies 26 per cent, and most importantly perhaps, advanced or traditional maritime countries provide a paltry 5 per cent (Drewry Report, 2013).

The trend of re-crewing with cheaper and hence more flexible crew from the developing world and eastern Europe continued throughout the 1980s (Sampson, 2013). By flexible crew, I refer to the wage flexibility dimension of the labour market. Capital is attracted to ratings that price themselves well below union negotiated wages. In order to secure work, ratings engage 'in a race to the bottom' by reducing the wage level they require to secure work. In order to take advantage of cheaper crews, ships had to register offshore on second registers. By 1986, for example 45 per cent of German-owned ships were registered under Flags of

Convenience. This trend was mainly spearheaded by the need to drive down operating costs. In 1987 Dutch tanker owners were saying that it cost US\$ 1 million a year more to crew a ship with nationals as opposed to cheaper labour. The Danish also acknowledge that they could reduce crewing costs by half by employing cheaper labour. Japan also joined the bandwagon in 1988 when the Japanese Ship Owners Association announced that the cost of crewing Japanese ships with 11 Japanese nationals a year was US\$ 1.5 million a year as opposed to US\$ 0.4 million a year for a south east Asian crew of 22, for the same period of time (ILO, 2001).

The unprecedented shift to hiring labour from the developing world and eastern Europe instead of the traditional maritime nations of Europe has resulted in a drop in the ratings labour pool in the North (Ghosh & Bowles, 2013). The last few years have seen attempts by a number of unions and states to ameliorate the effects of a decreasing labour pool of European ratings. For example, in the United Kingdom labour has lobbied for the British government to offer British ship owners fiscal concessions if they hire British ratings (Brownrigg *et al.*, 2001; Gekara, 2009; Deloitte, 2011; Ruggunan *et al.* 2014). Similar labour lobbies have occurred in Australia (Gosh and Bowles, 2013, Brennan, 2000), Greece (Sambracos, 2001), Germany, France and the European Union (Paixao, 2001). Labour in these Traditional Maritime Nations (and Australia) are growing increasingly frustrated at the monopoly that ratings from the South have in the global labour market for seafarers. All are lobbying for the end of FOC shipping as a means of attracting ships and jobs. Thus, whilst a strong regional labour solidarity exists amongst labour in the global North, global labour solidarity amongst ratings remains fractured (Ruggunan *et al.* 2014).

Workers struggle to keep capital in their communities because doing so increases or protects their standards of living. Ratings of the developing world and eastern Europe are not unwilling pawns, dependent on forces outside their control that disrupt their lives, destroy their traditional livelihoods and create new cleavages in local economies and societies. For example, by law, Filipino ratings have to remit 80 per cent of their wages to their families. Field work done in Manila in 2005 and 2008 showed that how remittances received from migrant labour improve the socio-economic conditions of the families of migrant workers. Ratings from the developing world seeking employment at lower wages than their counterparts in the North are doing so to prevent themselves from becoming marginalised (Ruggunan, 2009, Rodriguez 2005).

The production of a global labour market for seafarers has sharpened the distinction between traditional, pre-FOC seafarers and global seafarers. The key distinction between the traditional and global seafarer has been developed by Wu (2006) in his assessment of Chinese seafarers in the global labour market. Whilst Wu's typology was designed specifically around the transformation of Chinese seafarers from traditional to global seafarers, I find the distinctions between

traditional and global Chinese seafarers can be applied to changes in the seafaring labour market in general.

TABLE1: DISTINCTION BETWEEN TRADITIONAL AND GLOBAL SEAFARERS

<i>Characteristics</i>	<i>Traditional (National)</i>	<i>Global (Flag of Convenience)</i>
• Employment status	State-owned enterprises employees	Freelance seafarers
• Preferred working place	National owned fleet	Foreign owned ship
• Working conditions	National standards	International standards
• Welfare and pay	Low pay, high welfare	High pay, no welfare
• Crew pattern preference	Homogenous	Multi-national crews
• Relation with foreign company	Direct employment	Indirect employment
• Relation with crew members	Equality	Hierarchy
• Loyalty to whom	State-owned enterprise or crew agency	Foreign ship owner
• Career development reference	National counterparts	Foreign counterparts

*Source:* Adapted from Wu (2006:07) and fieldwork.

The typology shown by Table 1 uses nine characteristics of Merchant Navy seafarers and assesses how these characteristics have altered post Flag of Convenience shipping. It provides a summary of the key changes in labour market practices for seafarers pre and post FOC shipping. These characteristics are measures or indicators of change between what Wu (2006) terms Traditional or National seafarers and Global or FOC seafarers. In a sense, the characteristics attributed to Global seafarers are characteristics found in most global flexible jobs in other industries. An exception is the high wages of seafarers (only if they are unionised) as opposed to the low wages of call centre operators or export processing zone operators that work in multinationals. The suggestion is that Global seafarers are part of a transnational neo-liberal dynamic of a shift to more flexible work and working conditions. The most important point for me is that the evidence indicates a decisive and observable shift in the hiring, work, and working conditions for seafarers in the Merchant Navy from pre-1970s practices. I attribute this shift to the characteristics of post Fordist processes of global capitalism.

### ***The Flexibilisation of Seafarers' Work and Labour Markets***

This section draws on my empirical findings in 2008 and 2009 (Ruggunan, 2008, 2009, Ruggunan *et al.*, 2014) that demonstrates that there are five similarities and four differences between seafarers and other flexible workers in the global labour market. The first way in which seafarers are similar to other flexible workers is their reliance on agencies or labour brokers for employment. Filipino seafarers for example rely on agencies for their employment (though this is certainly the case for all seafarers in the new global seafaring supply countries around the world. This was not the case for South African seafarers though there are some attempts

to move in this direction or for British ratings, who are almost non-existent in their employment in global labour market. However given that seafarers from the dominant seafaring supply countries such as the Philippines, rely on labour broking for their employment labour broking is an important process in the formation of seafaring labour markets. Labour broking in the commercial shipping sector is mainly a result of the shift to flexible accumulation strategies of shipping companies, which involve radical changes to the nature of the bureaucracy of shipping companies.

Secondly, seafarers at both the officer and ratings levels rely on prescribed periods of labour contracts. In this sense they are labour contract workers with a degree of overlap with the characteristics of agency and temporary or casual workers. For ratings this often consists of annual contracts though these contracts for ratings can be as little as nine months. For officers this is usually rolled over on an annual basis and generally officers enjoy more stable employment in terms of duration of employment contracts. Ratings are often hired through agencies and, given the surplus of ratings in the labour market, they are considered more expendable. Officers on the other hand tend to be head hunted by crewing managers of shipping companies either through their own networks or via dedicated temporary employment agencies. Given the shortage of officers in the global labour market the conditions of employment and recruitment strategies targeted at officers is different from that targeted at ratings. This speaks to different conditions of security in employment depending on skill level and is a form of *employment insecurity* since both shipping companies and crewing agencies can terminate contracts with minimal difficulties particularly of non-unionized seafarers. This then points to a third issue which is the development of a core, semi-periphery and periphery categorisation of workers depending on skill and need. Officers would occupy the core, ratings the semi-periphery and non-unionised ratings would occupy the periphery. This is in keeping with Webster and Von Holdt's (2005) more general discussion of this phenomenon. The article later examines the role of new technologies that have resulted in a significant reduction in the number of seafarers needed to crew a ship. This is in keeping with the trend for new technologies as a feature of flexible accumulation to reduce the number of workers across most sectors. Fifthly, shipping companies and crewing agencies do not subsidise or pay for the training of ratings and officers. Seafarers are expected to lay out the costs of their own training which has to be globally compliant. This means a massive financial saving for shipping companies who historically have trained seafarers at their own cost. This is part of a global trend to either outsource training or make it an individual responsibility.

However there are some important ways in which unionised merchant navy seafarers differ from other types of flexible workers. Firstly, whilst there is an overwhelming degree of contract employment, seafarers when employed on unionized vessels or when they are unionized themselves enjoy high wages at both

rating and officer levels relative to other types of flexible workers. Given that ratings are often thought of as the working class of the sea, it is remarkable that they enjoy such a high wage rate relative to similar kinds of shore based labour contract and agency workers. There has not been a 'race to the bottom' in terms of wages. This is related to my second point that the globally most commercial seafarers enjoy high levels of representation security, if not at the national level then certainly at the global level. The high levels of representation security have prevented a race to the bottom in terms of working conditions and wage levels. Thirdly, in industries such as the information technology sector in the Silicon Valley, labour brokers can significantly influence compensation levels of workers, seafarers working conditions and compensation levels are regulated globally through global labour bodies such as the International Labour Organisation, the International Maritime Organisation and the International Transport Workers Federation. Thirdly, the rise in temporary work and agency work has been described as the feminization of the global labour market by Benner (2002) and Standing (2013). However the labour in the merchant navy remains almost exclusively male. The global cruise ship industry however has shifted significantly towards the employment of female seafarers, though at the ratings level and not the officer level. Fourthly, perceptions of nationality and ethnicity continue to remain important factors that influence how ship owners, crewing managers and ship managers decide to crew their ships (Ruggunan, 2011). Some nationalities are seen as innate seafarers whilst others are not. The linking of perceived behavioural characteristics to employment is not unique to a post Fordist workplace but has certainly become more pronounced and in some cases institutionalized in crewing agencies. My final point would be to remind the reader that seafarers have historically never enjoyed full time stable employment in the Fordist sense. However there was a direct link between the employer as ship owner and employee with no intermediaries. The key difference for me in the employment of seafarers in the post Fordist era is the introduction of labour market intermediaries in this sector which has effectively institutionalized seafarers' temporary and contract worker status.

For both unionized and non-unionized seafaring labour, particularly ratings, a post Fordist workplace has come to mean that their labour statuses have become more flexible. Seafaring labour can be grouped as temporary workers and agency workers. And there is some overlap between these categories. Seafarers are temporary workers who are agency workers. I have refrained from labelling them as labour contract workers since labour contract workers often have a debt bondage relation between "subcontractors and workers, which leads to exploitative labour and subordinated flexibility, with workers deployed when and where needed and for wages that fluctuate daily or even hourly" (Standing: 1999: 103). Fieldwork conducted since 2002 on British, South African and Filipino seafarers demonstrates that this is not the case for unionized seafarers (Ruggunan, 2011).



Seafarers are temporary workers that are sourced and processed by labour broking agencies. They are not casual workers in that casual workers are workers that are hired without employment security and typically paid on a piece rate basis or for the specific hours for which they are hired. Temporary workers on the other hand tend to be employed for a fixed term or on a rolling basis (Standing, 1999:105). However despite these definitions, there is a considerable degree of overlap amongst these categories when applied to seafarers.

***Organisational Restructuring of Shipping Companies: The Flexible Organization***

The aim of this section is to discuss the emergence of the post Fordist organisation and its consequences for seafarers and their attendant labour markets. Apart from the tendency towards FOC shipping, the second tendency shipping companies engaged in to ensure their commercial success was to change their organisational structures. This was very much in keeping with global post Fordist trends of the time (1980s) to make organisations more flexible. This section argues that organisational restructuring took place in the global shipping industry as a tendency to restructure for increased commercial viability. I contend that three developments were key to the organisational restructuring of the shipping firm. Firstly was the separation of ownership structures from management structures as shippers moved towards third party management or ship management companies, secondly there was a global consolidation of individual shipping firms into massive multinationals through mergers and acquisitions and thirdly there was an organisational shift in business strategy which saw shipping firms expand their commercial interests into other forms of transport or transport logistics businesses. All three of these strategies were geared towards organisational rationality to make their core businesses more profitable.

The flexibility of organisations, Castells (1996:16) argues, is an outcome of the “new technological paradigm on social organisation”. The ability of shipping capital to be flexible in terms of its management of ships was key to the survival of the shipping industry in the 1980s. Flexibility of organisational structure occurs as a distinguishing characteristic of a new system of large-scale capital-labour relations. This new system was the development of the ship management company. It operates within a larger system of capital accumulation.

The crisis in the shipping industry in the 1970s and 1980s due to the combined crises of oil and speculative finance of commercial banks oversupplying the industry, left many ship owners in the traditional maritime nations looking for cost-cutting strategies. Generally, three strategies were pursued. The first of these was to simply abandon the shipping industry. Some companies left the shipping industry to focus on their more profitable subsidiaries. For example the British company Ocean Transport (also known as Blue Funnel) sold its shipping interests and restructured into a logistics company. The second common tactic was to flag



their ships out to “open registers” which allowed them to make significant and immediate labour cost reductions. The third tactic was for ship owners to manage ships for other owners as a means of utilising spare management capacity (Barton, 1999; Brownrigg *et al.*, 2001; Sampson, 2013). For example in 1983, P&O won a contract to manage four tankers owned by one of the Gulf States. This was in addition to the 15 ships it managed for various other companies.

Third party ship management prior to 1970 was practiced in a limited way by the traditional maritime nations, but the scale was incidental. The trend towards third party management resulted in a number of in house management buyouts or the creation of self-sufficient but wholly owned subsidiaries of technical and personnel management services. Many of these commercial activities were facilitated by the mergers and acquisitions that began to characterise the shipping industry in the 1990s.

Again this had a direct impact on the way labour is sourced and valued. Ship owners were looking to cut their overheads, and these new ship management companies promised to do just that by cutting labour costs. By and large, ship owners were unfamiliar with seafaring labour from the South (except India) and trusted the specialist knowledge of the ship management company to deal with this aspect of labour sourcing. In order to keep and renew their contracts, ship management companies had to visibly reduce the cost of running these ships.

As ship management companies have developed and expanded, they have become the world’s largest employers of seafarers. A ship management company is a company that provides a range of services to a shipping company. These services include providing technical ship management, information technology services, offshore maritime services, port and terminal management services and commercial management functions. Crew management may be provided by some management companies, although crew management services are usually a subsidiary of the ship management company. Such is the scale of their labour requirements and their consequent need for efficient organisation (ILO, 14: 2001) that they have collectively become a powerful source of labour market stability. Ship management companies need reliable and predictable labour supply lines in order to function effectively. In order to assure the quality of the seafarers provided, a number of ship management companies initiated their own training programmes for officers and ratings.

By the 1990s ship managers had consolidated in the following areas of the world:

In Europe “ Hamburg, Glasgow, the Isle of Man, Geneva, Piraeus and Cyprus;

In the United States “- in and around New York;

In Asia “ Hong Kong, China, Singapore and Kuala Lumpur.

This consolidation further ensured that ship management companies are also geographically close to the new seafaring labour markets (Cahill, 1999).

The power of ship management companies is enormous and illustrates the global nature of the industry. For example, the Belgian firm Univan, founded in Hong Kong, has a fleet of more than 70 ships flagged to Liberia, Panama, Cyprus, Hong Kong, China and the Bahamas. Of these ships, 30 per cent are owned in Norway, 25 per cent in the United States, 12 per cent in Japan, 12 per cent in India and 5 per cent in the United Kingdom. Crews are mostly Indian (90%) with others from the Philippines and Myanmar (ILO Report, 2001). Another shipping company, Acomarit, employs a wider range of crew, from Russia, India, Poland and the Philippines.

Ship management companies have established deep and personalised networks in the labour supply countries, often reaching into the training institutions of those countries. As the ILO Report (2001: 15) states "...social capital of this kind is not easily accumulated." At the same time, however, the report suggests that an interest in maintaining the status quo of the labour market is no guarantee of its continuation:

"All it would take is one large ship management company to seek the short-term competitive advantage of opting on a large scale for a significantly cheaper source of labour to send competitors off in pursuit."

(ILO Report, 2001: 15)

If this had to happen, the impact would be similar to the scramble by shipping capital towards FOCs in the 1970s. According to Barton (1999), Paixao (2001), Sambracos *et al.* (2001) and Brownrigg *et al.* (2001), the geography of the ship management companies is now firmly established. Its main centres are in northern Europe including the Nordic countries, Greece, south-east Asia (China and Singapore), Japan and the United States, and its main customers are from the same regions. The total seagoing labour force of ship management companies was approximately 50 000 in 1994. Most of this labour was Filipino, Indian and Eastern European (BIMCO Manpower Update Reports: 2001, 2005, 2012). One could argue that the move towards ship management companies is about the enhancing of organisational capacity by preserving economies of scale (Castells, 1996). In many ways, the ship management company is capital's way of overcoming and adapting to the financial rigidities and complexities that the economic crisis provided.

Another movement that increased FOC shipping and the multinational crewing of merchant navy vessels is the increased competition between shipping companies as a result of mergers and acquisitions. Grey (2001: 209) contends that in the shipping industry size clearly matters where scale economies, fierce competition and market share drive shipping competitors to slash labour costs in an effort to stay in business and prevent being bought off. Over the last thirty years, thousands of smaller shipping companies have been run out of business due to their failure to cut operation costs (Barton, 1999; Grey, 2001).

Increasingly the privately owned limited company is becoming extinct. Equity funded and listed companies are the norm when it comes to the ownership of large fleets of bigger and more sophisticated vessels. Throughout the twentieth century there has been a concerted move by shipping capital in the traditional maritime nations to concentrate ship ownership to a few global firms (ILO Report, 2001; Grey, 2001). Now as shipping moves into the twenty-first century, it becomes clear that ship ownership will be concentrated in the hands of a few global corporations. A key implication of this for the labour market for seafarers is that the nature of the employment of seafarers will be influenced significantly by these global corporate giants, since they have consolidated economic and organisational power further through their mergers and acquisitions.

By the end of the 1990s only six global carriers were running containerized shipping (Grey, 2001). This was mainly a result of mergers, take-overs and acquisitions during the 1990s. Three major mergers that took place in the shipping industry in the 1990s were the Wallenius-Wilhelmsen merger in car carriers, the Hoegh-Unicool merger in reefers, and a Stolt-Nielsen purchase of Van Ommeren in the chemical transport sector. The Wallenius-Wilhelmsen merger created a fleet of 80 ships and a 35 per cent market share and Stolt-Nielsen further consolidated its already dominant position (ILO Report, 2001). For example, in 1997 alone the economic consolidation of three major players in the shipping industry took place. Pentow Marine merged with SmitWijts to form SmitPentow Marine in 1997 (Lloyds List Africa Weekly: June 1997), and the Neptune Orient Lines, US\$825 million acquisition of American President Lines (APL) in 1997 (Lloyds List Africa Weekly: June 1997). In 1999 Danish shipping companies AP Moller/Maersk acquired the South African shipping company Safmarine for US\$240 million (Lloyds List Africa Weekly: February 1999). These are just a few examples of the most recent mergers and acquisitions in the global shipping industry. For a more detailed example of this I again turn to Unicorn shipping. Figure 5.2 demonstrates the various ways that Unicorn, as part of the Grindrod Group, has restructured over the decades through a series of mergers and acquisitions. Mergers and acquisitions are historical phenomena as indicated in figure 5.2, which shows a steady trend of mergers from 1921, then in 1936, 1949, and 1967. However, the bulk of the mergers and acquisitions occurred from the late 1960s through to 2001, further demonstrating the escalation of these types of business transactions that are particular tendencies of shipping capital's restructuring project over the last thirty five years.

These trends discussed above have in many different ways been spurred by various processes and pressure of globalization which, as Standing (2012) and Harvey (2014) observe, has increased the concentration of capital whilst decreasing the centralization of labour. In concentrating capital, processes of global capitalism have facilitated the organizational flexibility of firms. This has made workers more

vulnerable and insecure. 'Old fashioned' large firms have traditionally provided workers with a measure of employment, job and wage security. As these type of organizations shift form and purpose in their organizational attempts to make profit, they are no longer as labour intensive. This has profound implications for the global labour market.

### ***The Impact of New Technologies on Labour Market Security***

The purpose of this section is to show how different sectors of the industry employed new technologies to deal with escalating costs of fuel and high labour costs. The industry through its use of different ship types will have different cost saving strategies depending on the operating costs (mainly labour and fuel) of that particular type of vessel. Further, different ship types will require different types of technological innovations to make them more efficient for the trades and markets they serve. The use of new technologies had a profound impact on the industry in terms of reducing crews in conjunction with increasing fuel efficiency and productivity of vessels.

### ***Container Ships and New Technologies***

I limit my discussion to liner ships, the bulk carriers and tankers (bulk liquid vessels). These are the most significant ships in the world's merchant fleet in terms of deadweight tonnage. These three types of ships constitute 78 per cent of the world fleet tonnage (Stopford, 2009; 23).

The main type of vessels that operate within this trade are containerships. These vessels have been the most significantly affected by technological developments within the industry. The development of containerization of cargo as a means of managing the increasing growth of goods to be transported as a result of a growing world economy would revolutionize the liner trade. The development was more than just the development of container units but the computerized control of these units on, around and off the ship. It allowed for a means of distributing goods in a unitized form which made possible a more efficient intermodal transport system which includes rail, road, canal and air transport systems (Branch, 2007: 368). The use of intermodal transport also means that ships now need to call at fewer ports, since the containers can be easily offloaded in record times and transported to other cities or ports or even countries by other modes of transport. For example container ships are now more likely to call at west coast ports of Long Beach and Los Angeles in the USA and have containers due at gulf coast and some east coast ports transported by rail. Some containers are railed as far as Mexico from American west coast ports. Such intermodal transport systems would not be possible without developments in computer and communications technology. The advent of containerization and the subsequent development of an intermodal transport system allowed liner companies a rationale to rationalize their

fleets, significantly reducing the number of ships and seafarers required in their pre containerization fleets (Branch, 2007; Stopford, 2009).

A container ship is, at the risk of oversimplification, 'an open box in which containers can be stacked' (Stopford, 2009: 407). Containers are stacked on top of each other and held in place by hatches which are the width of the ship's hold. The hatches are fitted with cell guides which allow for the containers to be moved into place, loaded and offloaded. The cell guides are computer controlled, allowing for the sophisticated stacking of cargo. Given that a container ship may call at several ports, the cell guide must be programmed to expertly load and offload the appropriate containers at the appropriate ports. Containerisation and the use of cell guides has reduced severely the use of labour both on the ship and on the dock since the labour intensity of the process of loading and offloading has been reduced. Further reducing the number of seafarers and shore based maritime workers is the increasing use of computers whilst at sea. Communication technology has made possible an instant link between container ports and ships at sea. Laborious tasks such as stowage plans, bills of lading and figuring out container terminal layouts can now be almost instantly processed making the time that container ships spend in ports minimal. This allows ship owners maximum use of their vessels and labour as it decreases the 'down time' or unproductive use of the ship (Branch, 2007).

Containerization has also increased the pace at which seafarers have to perform tasks when ships dock at port. The turnaround time aspired to by most shipping companies is now 24 hours. This often means that ships are docking at more ports in shorter periods of time, further contributing to the intensification of work for seafarers. This also has the effect of reducing recreation time for seafarers on shore when their vessels dock. Turnaround times in single digit figures are now the norm for container services.

Container ships are also fuel intensive since they are designed for speed and volume. As container ships get larger they also get faster. For example a feeder containership at 499 TEUs has a speed of 13.8 knots whilst a behemoth Post Panamax ship at over 4 000 TEUs travels at a top speed of 24 knots. Given the need and design for speed and size, the container ship owners were profoundly impacted upon by the various crises of the 1970s. Given the major rise in oil prices the rationalization of fleets through the use of intermodal transport systems and the subsequent reduction in labour and fuel costs was a strategy that made possible the continued profits for liner shipping companies. As technology continues to develop new types of containers are being developed. It is now not uncommon to have container ships transporting food in refrigerated containers and agricultural produce in ventilated containers.

The first way was to employ new technologies is to rationalize costs of fuel for shipping companies. Fuel is an escalating cost in the industry, and new technologies are geared towards making ships of all types more fuel efficient.

Secondly, new technologies were aimed at reducing labour costs through increased automation of the labour process. Labour costs were the most variable of costs to ship owners and cheaper labour could be sourced as opposed to cheaper oil. Not only could cheaper labour be sourced but new technologies meant that less labour was required to crew ships. Further new technologies meant that less skilled (and hence cheaper) labour could crew ships as the labour process became automated. For example modern day vessels no longer require their engine rooms manned at night for example, the extent of automation also means that tasks such as refueling of modern deep sea vessels now require the efforts of one seafarer only as opposed to five or six pre 1975 (Branch, 2007). The top of the range deep sea vessels (across all three shipping trades) can operate efficiently and safely with a crew of 17 (Stopford, 2009: 181) and ship designers are pushing technological frontiers that would allow a crew of ten to safely operate a deep sea vessel. Indeed the size of crews needed to work on certain vessels has been halved (Alderton et al, 1999). Alderton et al in their 1999 report shows how vessels that were previously crewed by 30 seafarers are now crewed by 15 seafarers and in one case a crew was reduced from 22 seafarers to nine. In both cases seafarers reported that despite new technologies on the ship meant to work as labour saving devices, a reduction in crewing levels meant an intensification of work for them. The development of the microchip in the 1970s saw computers introduced onto ships to monitor and control engine room activity. A number of seafaring functions became technologically Taylorised and could be performed by computer aided technology. This led to a reduction in the engine room staff. A second example is that the introduction of electronic distress communications has abolished the position of radio officer. The new technologies involved in the development of more efficient merchant vessels required further reductions of the number of crew required to operate the vessels. In 1991, the Joint Maritime Commission (JMC) recognised that the rise of new maritime technologies has had a significant effect in reducing employment at sea (ILO Report, 2001).

Thirdly, new technologies increased the productivity of new vessels in two ways. The introduction of containerization was the first technological revolution in this respect. Containerization would also make possible the second innovation which was the creation of seamless links between ship and shore transport of all types of cargo (intermodal transport). These innovations have profoundly altered the nature and labour market of the industry.

### **Conclusion**

The purpose of this article was to broaden the concept of maritime security to include an analysis of how seafarer labour market securities and insecurities are manufactured through five interrelated practices by shipping capital. These practices or tendencies of shipping capital are (1) *the delinking of the nation state from*

*labour regulation processes, (2) the shift to cheaper labour markets, (3) the casualization of seafaring labour, (4) organisational restructuring of shipping companies, and (5) the impact of new technologies on labour market security.* These practices have larger implications for the ways in which we understand the reconfigurations of global labour markets. It also broadens the scope of how we conceive of maritime security by extending the idea of security beyond criminological understandings. Further empirical work on how insecure labour markets impact on maritime defence capabilities nationally and globally can draw from the conceptual framework provided in this article.

### *References*

- Alderton, T., Bloor, M., Kahveci, E., Lane, T., Sampson, H., Thomas, M., Winchester, N., Wu, B., & Zhao, M. (2004). *The Global Seafarer: living and working conditions in a globalised Industry*. Geneva, International Labour Organisation.
- Brownrigg, M. (2001). 'Developments in UK shipping: The Tonnage Tax'. *Maritime Policy and Management*, 28, 213-223.
- Barton, J. R. (1999). *Flags of Convenience: Geoeconomics and Regulatory Mimimization*. Tijdschrift voor Economische en Sociale Geografie, 90, 142-155.
- Benner, C. (2002). *Work in the New Economy: Flexible Labour Markets in the Silicon Valley*, Wiley-Blackwell, London.
- BIMCO/ISF (Baltic and International Maritime Council) (2005). *Manpower 2005 Update: The Worldwide Demand for and Supply of Seafarers*, Warwick, University of Warwick.
- BIMCO (Baltic and International Maritime Council) (2010). *The Worldwide Demand for and Supply of Seafarers*. Warwick: UK Institute for Employment Research, University of Warwick.
- Branch, A. (2007). *Elements of Shipping*, Routledge: London.
- Brennan, R. (2000). *Economics: Funny Flags and Australian shipping*. News Weekly.
- Buhlungu, S. & Tshoedi, M. (2012). *COSATU'S Contested Legacy South African Trade Unions in the Second Decade of Democracy*, Pretoria: HSRC Press.
- Cahill (1999). *Death ship scandals*. The Guardian. London.
- Castells, M. (2000). *The Information Age: Economy, Society and Culture: Volume 1, The Rise of the Network Society*. Oxford: Blackwell.
- Drewry Consulting. (2012). *Ship Operating Costs Annual Review and Forecast*. London: Drewry Maritime Research.
- Deloitte. (2011). *An Independent Review of the Economic Requirement for Trained Seafarers in the UK*. In Oxford Economics. London: Oxford.
- de Silva, Ruanthi, Patricia Stanton, and John Stanton. (2011). 'Determinants of Indian sub-continent Officer-seafarer Retention in the Shipping Industry.' *Maritime Policy & Management* no. 38 (6): 633-644.
- Gekara, V. (2009). 'Understanding Attrition in UK maritime Education and Training.' *Globalisation, Societies and Education* no. 7 (2): 217-232.



- Ghosh, S. & Bowles, M. (2013). "Management of Berths at Sea for Seafarer Students." *Australian Journal of Maritime and Ocean Affairs* 5 (1): 11-21.
- Glyn, A. (2006). *Capitalism Unleashed: Finance, Globalization and Welfare*. Oxford University Press. New York.
- Grey, M. (2001). 'Minnows and Sharks: Survival of the Fittest'. *Maritime Policy and Management*, 28, 209-212.
- Harvey, D. (1996). *The Limits to Capital*, Oxford, Blackwell.
- Harvey, D. (2014). *The 17 Contradictions of Capitalism*, London School of Economics and Political Science, 2 April 2014.
- International Labour Organisation (2001). *The Impact on Seafarers' Living and Working Conditions of Changes in the Structure of the Shipping Industry*. Report for Discussion at the 29th Session of the Joint Maritime Commission. Geneva, International Labour Organisation.
- Paixao, A. C., & Marlow, P. B. (2001). 'A Review of the European Union Shipping Policy'. *Maritime Policy and Management*, 28, 187-198.
- Piketty, T. (2014). *Capitalism in the 21<sup>st</sup> Century*, Cambridge: Belknap Press.
- Rodriguez, R. (2005). *The Labor Brokering State: The Philippine State and the Globalization of Philippine Citizen-Workers*. *Sociology*. Berkeley, University of California, Berkeley.
- Ruggunan, S. (2005). "Rough Seas for South African Seafarers in the Merchant Navy: The Global is the Local." *Transformation: Critical Perspectives on Southern Africa* no. 58 (1): 66-80.
- Ruggunan, S. (2008). "Accumulation Strategies in the Merchant Navy and its Impact on Seafaring Labour Markets." *Loyola Journal of Social Sciences* 22 (2): 185-211.
- Ruggunan, S. (2009). *Global Transformation of the Contemporary Labour Market for Merchant Navy Seafarers: Case Studies of Filipino, South African and British Seafaring Labour Markets*. Industrial, Organisational and Labour Studies, University of KwaZulu-Natal, Durban, South Africa. Unpublished Phd thesis.
- Ruggunan, S. (2011). *The Global Labour Market for Filipino and South African Seafarers in the Merchant Navy*. *South African Journal of Sociology* 42 (1), 78-95.
- Ruggunan, S.; Gosh, S. & Bowles, M. (2014). *Reviewing Human Resources Development Strategies of Merchant Navy Seafarers in South Africa and Australia*. International Association of Maritime Universities 25<sup>th</sup> Annual General Meeting, Launceston, Australia (Forthcoming: October 2014).
- Sampson, H. (2013). *'International Seafarers and Transnationalism in the Twenty-first Century'*, Manchester University Press (MUP).
- Sambracos, E., & Tsiaparikou, J. (2001). *Sea-going Labour and Greek Owned Fleet: A Major Aspect of Fleet Competitiveness*. *Maritime Policy and Management*, 28, 55-69.
- Standing, G. (1999). *Global Labour Flexibility: Seeking Distributive Justice*. London. Macmillan.
- Standing, G. (2009). *Work After Globalization: Building Occupational Citizenship*. Cheltenham, UK and Northampton, MA, Edward Elgar.
- Standing, G. (2012). "Beware the Lens of low-wage Labor" [Review of *Low-Wage Work in the Wealthy World*], *Contemporary Sociology: A Journal of Reviews*, Vol. 41, No. 4, July 2012, pp. 453-455.

- Stopford, M. (2009). *Maritime Economics*, Routledge: London.
- Wu, B. (2004). *Transgration of Chinese Seafarers in Economic Transition. An Institutional Perspective on Mobility.*, Seafarer International Research Centre, University of Cardiff.
- Wu, B. (2006). *Transformation from Traditional to Global Seafarers: An Assessment of Chinese Seafarers in the Global Labour Market.* Shenzhen International Maritime Forum. Shenzhen, China.