# PART 1: GROWTH OF A SOUTH AFRICAN MARITIME TRANSPORT INDUSTRY

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### LIST OF ACRONYMS

BEE	Black Economic Empowerment
BPO	Business process offshoring
BRIC	Brazil Russia India China
CIF	Cost Insurance Freight
DTI	Department of Trade and Industry
dwt	Dead Weight Tonnage
EIS	Environmental impact study
EMIA	Export Market and Investment Assistance
FET	Further Educational Training
FOB	Free on board
FOC	Flag-of convenience
GMDSS	Global Maritime Distress System
GT	Gross Tonne
IDZ	Industrial Development Zone
ILO	International Labour Organisation
IMO	International Maritime Organisation
IPAP	Industry Policy Action Plan
ITF	International Transport Workers Federation
LISCR	Liberian International Ship & Corporate Registry
MSC	Mediterranean Shipping Company
NQF	National Qualifications Framework
NVOCC	Non-vessel owning common carrier
OACL	Ocean Africa Container Lines
ROCE	Return on capital employed
RoD	Record of Decision
SAAFF	South African Association of Freight Forwarders
SAECS	South Africa-Europe Container Service
SAMSA	South Africa Maritime Safety Authority
SAMTRA	South Africa Maritime Training Academy
SAGOA	South African Oil and Gas Alliance
SAQA	South African Qualifications Authority
SETA	Sector Education and Training Authority
SRF	Ship recycling facility
STCW	Standards of Training, Certification and Watchkeeping
TETA	Transport Education & Training Authority
TEU	Twenty Foot Equivalent Unit
TOR	Terms of Reference
UK	United Kingdom
ULBC	Ultra large bulk carrier
UNCTAD	United Nations Conference on Trade and Development
USA	United States of America
VLCS	Very large container ship
VLCC	Very large crude carrier
VLOC	Very large ore carrier

#### Notes:

- 1. The term cargo has been used in this document to mean goods carried by sea, including containers, whether laden or empty, unless otherwise specified.
- 2. The term "deepsea" has been used to describe liner companies operating inter-continentally in order to distinguish those companies from coastal shipping, as the coastal ship owner on the South African coast is also a liner company; the term "deepsea" has been used by Transnet for many years to make the same distinction.

# 1 Growth of a South African Maritime Transport Industry

### 1.1 Scope and aim of the paper

The purpose of this part of the study is to provide an overview of transport and transport services in the maritime industry of South Africa, insofar as there are issues of policy that enable government measures to promote the creation of decent jobs and arrest the loss of jobs through the off shoring of work. Part 4 of the overall assignment of work of which the preparation of this report is part deals with the nature and formulation of measures and their implementation as well as measures to be avoided in the public interest.

# 1.2 Overview of the South African Maritime Transport Sector

The maritime transport *per se* on which South Africa's foreign trade is largely dependent does not constitute a sector of the national economy that contributes to any measurable extent to the Gross Domestic Product. Stated more bluntly, South Africa no longer has a domestic maritime transport sector with significant inputs and outputs in the economy or with a performance that can be rated. No cargo-carrying ships are entered in the South African Ship Register, while many of the services that support the operation of ships trading to South Africa and that were formerly provided in the country are now delivered offshore. However, Grindrod Ltd is a South African company which through offshore subsidiaries owns, charters and operates a large fleet of ships trading internationally.

Grindrod has a long history through its antecedents of ship owning, ship operation and maritime culture in South Africa. Its Island View Shipping division owns, charters and operates a large fleet of bulk carriers from handy to Cape size ships trading to South Africa and in cross trades worldwide. The fleet currently carries some 16 million tonnes of cargo annually. Although located in Durban between 1976 and 2005, Island View Shipping has since been moved to Singapore. Unicorn Shipping, which is also a division of Grindrod and has now been consolidated with Island View Shipping, operated ships on the South African coast for many years since the early 1930's, but has been relocated to London and now operates a fleet of modern chemical and product tankers internationally. Grindrod also has a share with A.P. Moller (Maersk Line) in Ocean Africa Container Lines, which owns and operates ships providing feeder services for the ocean carriers serving South Africa as well as other transport on the southern African coast, as described in section 0. Although most of Grindrod's substantial shipping business is conducted offshore, numerous subsidiary companies within the group provide extensive freight and logistics services throughout South Africa and other territories in the region.

Besides Grindrod Shipping, several other South African enterprises located offshore operate a few ships in the bulk trades while capacity on a coastal ship apparently operated from Durban, but registered in St. John, has very recently been on offer in addition to the services of OACL. The large foreign-owned liner companies serving South Africa each maintain a substantial presence in South Arica insofar as front-office contact with customers is essential for their business and for the purposes of ship operations and cargo planning when the offshore location of those functions is impractical or unproductive. Bulk shipping is served by a few ship broking firms located in the country, but most ship charters are arranged overseas as South Africa's bulk exports are ordinarily sold f.o.b and imports are purchased c.i.f.

Cargo handling and marine services in the ports as well as cargo and other maritime related services provided locally comprise what is generally now regarded as the maritime transport sector, although port operations are industrial activities rather than transport, while cargo services are rendered within the branch of the services industry that includes freight forwarding and consolidation, procurement, warehousing, distribution, supply chain management and associated tasks as well as the supply of road transport.

Ship repair is mainly an onshore industrial activity, although some work is undertaken at sea. In South African ports, many of the ships repaired comprise local and foreign fishing trawlers and harbour, research and patrol vessels as well as rigs and craft employed in offshore oil and gas exploration, apart from commercial ships (mainly at Durban). The current business of ship repair is thus largely dependent on fishing and on work on non-trading vessels, as well as trading vessels, while damage to cargo ships caused by the severe weather and sea currents off the south-east coast is an opportunistic source of lucrative income from repair work.

Shipbuilding in South Africa has declined to a minor industrial industry with the occasional construction of harbour craft and trawlers being undertaken in the shipyards at Durban. No ship breaking is allowed in South African ports.

# 1.3 Contribution of maritime services sector to the National Economy

As the contribution to the national economy of maritime transport *per se* and its supporting services is negligible, port operations and cargo and related maritime services comprise the sectors currently of importance when assessing the prospects for growth and employment in what is loosely regarded as South Africa's maritime transport industry. Only the inputs and outputs of port operations can be measured in order to estimate the net contribution of that industry to the national economy and to identify trends or changes. Cargo and related maritime services are interwoven with services concerned with freight forwarding and consolidation, procurement, warehousing, packaging and processing, distribution supply chain management and associated tasks, rendering identification for the purpose of measuring inputs and outputs infeasible. However, to the extent that cargo and related maritime services stem from the import and export of cargo by sea, port statistics of cargo handled at the ports provide a measure of the economic activity generated by those services.

One problem with the use of the statistics of the cargo throughput at the ports as an indicator of economic activity is that the information comprises tonnages of bulk cargo and numbers of containers expressed in TEUs ("twenty foot equivalent units") in order to allow for the mix of twenty and forty foot long containers. Although empty containers are identified in the data, no allowance is made for containers of other dimensions, e.g. containers of forty-five feet and high cube containers that carry more cargo than containers of the standard sizes. Furthermore, bulk cargo is often loaded into containers that otherwise would be transported as empty. Consequently, the average weight of a TEU based on a survey in any period does not provide an accurate factor from which to derive the tonnage of containerised cargo in any other period. Nevertheless, such erroneous conversions are often made in order to compare the throughput of cargo between South African ports and over different periods, sometimes without even allowing for empties or seasonal fluctuations in the average weight of the containers.

Statistics of the monetary values of imports and exports are derived from customs declarations and are contained in official publications, but such values vary with exchange rates and are dependent on the correctness of the valuations. Conversion of the values declared for containerised goods into tonnages by using a factor based on sampling is too unreliable for general application.

On the heroic assumption that the errors in the conversion of port statistics and the conclusions derived are sufficiently consistent for the purposes of comparison, Table 1.1 to Table 1.5 have been prepared in order to reflect changes indicative of the economic activity in the cargo services industry during the five year period from 2006 to 2010. Each table shows the cargo and container throughput at South African ports for imports and exports, excluding empties and containers transhipped to and from coastal vessels, as well as the total tonnages of cargo after conversion of the containerised loads. The weight of the containers in the tables was calculated by applying the assumption of 9 and 11.5 tonnes for import and export containers respectively. Percentage changes in the overall volume of cargo in succeeding years are shown in Figure 1.1. Those changes probably indicate the

trend in economic activity in the cargo services and maritime industry with some lag, although it must be mentioned that the activity correlates with the number of consignments rather than the tonnages or weight of the throughput. However, consignment sizes (or parcels of freight) tend to remain fairly consistent or increase only gradually.

The lack of accurate statistics with which to measure and evaluate the contribution of cargo and maritime-related services to the national economy is an administrative omission attributable to the lack of a maritime culture in business and government in South Africa.

Apart from information that Transnet can supply on employment in port operations, statistics that enable employment to be determined at the privately-operated terminals in the ports, through which most of South Africa's cargo moves, and in the rendering of cargo and other maritime-related services, are also lacking. It is, of course, difficult to estimate the equivalent number of jobs in the supply of such services without industry surveys, because of the fragmentation of the employment.

	RICHARDS	DURBAN	EAST	PORT	MOSSEL	CAPE	SALDANHA	TOTAL	
	BAY		LONDON	ELIZABETH	BAY	TOWN			
IMPORTS									
BULK CARGO	5 820 568	28 422 689	158 715	405 995	383 094	2 090 434	3 705 178	40 986 673	
BREAKBULK CARGO	130 917	4 306 142	260 451	579 284	3 041	208 692	-	5 488 527	
CONTAINERS (TEUs)	874	738 823	14 550	173 872	-	182 763	-	1 110 882	
CONTAINERS (Tonnes)	7 866	6 649 407	130 950	1 564 848	-	1 644 867	-	9 997 938	
Total imports	5 959 351	39 378 238	550 116	2 550 127	386 135	3 943 993	3 705 178	56 473 138	
			EXPC	RTS					
BULK CARGO	75 075 617	4 838 063	87 970	2 686 937	217 534	509 511	28 233 075	111 648 707	
BREAKBULK CARGO	4 803 308	3 510 821	106 224	477 666	-	333 694	1 065 799	10 297 512	
CONTAINERS (TEUs)	2 582	490 010	12 173	54 043	-	206 621	-	765 429	
CONTAINERS (Tonnes)	29 693	5 635 115	139 990	621 495	-	2 376 142	-	8 802 434	
Total exports	79 908 618	13 983 999	334 184	3 786 098	217 534	3 219 347	29 298 874	130 748 653	
TOTAL CARGO HANDLED	85 867 969	53 362 237	884 300	6 336 225	603 669	7 163 340	33 004 052	187 221 791	

Table 1.1: Summary of cargo handled at South African Ports, 2006

	RICHARDS	DURBAN	EAST	PORT	MOSSEL	CAPE	SALDANHA	TOTAL		
	BAY		LONDON	ELIZABETH	BAY	TOWN				
IMPORTS										
BULK CARGO	5 661 100	27 951 926	305 384	426 965	675 918	2 211 362	3 744 708	40 977 363		
BREAKBULK CARGO	171 764	4 280 315	460 219	641 167	75	100 031	1 567	5 655 138		
CONTAINERS (TEUs)	695	857 595	19 270	177 104	-	196 193	-	1 250 857		
CONTAINERS (Tonnes)	6 255	7 718 355	173 430	1 593 936	-	1 765 737	-	11 257 713		
Total imports	5 839 119	39 950 596	939 033	2 662 068	675 993	4 077 130	3 746 275	57 890 214		
		- -	EXPC	RTS		·	- -			
BULK CARGO	74 103 777	3 745 617	27 411	3 041 168	194 971	388 981	30 902 093	112 404 018		
BREAKBULK CARGO	4 306 060	3 075 766	63 789	487 907	-	299 123	976 660	9 209 305		
CONTAINERS (TEUs)	2 288	578 142	3 110	64 413	-	216 892	-	864 845		
CONTAINERS (Tonnes)	26 312	6 648 633	35 765	740 750	-	2 494 258	-	9 945 718		
Total exports	78 436 149	13 470 016	126 965	4 269 825	194 971	3 182 362	31 878 753	131 559 041		
TOTAL CARGO HANDLED	84 275 268	53 420 612	1 065 998	6 931 893	870 964	7 259 492	35 625 028	189 449 255		

Table 1.2: Summary of cargo handled at South African Ports, 2007

	RICHARDS	DURBAN	EAST	PORT	MOSSEL	CAPE	SALDANHA	TOTAL	
	BAY		LONDON	ELIZABETH	BAY	TOWN			
IMPORTS									
BULK CARGO	6 052 297	27 461 588	113 627	212 654	706 312	1 657 553	11 253 962	47 457 993	
BREAKBULK CARGO	70 945	3 043 232	380 519	354 410	(846)	83 664	47 087	3 979 011	
CONTAINERS (TEUs)	746	839 755	24 419	175 776	-	187 380	-	1 228 076	
CONTAINERS (Tonnes)	6 714	7 557 795	219 771	1 581 984	-	1 686 420	-	11 052 684	
Total imports	6 129 956	38 062 615	713 917	2 149 048	705 466	3 427 637	11 301 049	62 489 688	
			EXPO	ORTS					
BULK CARGO	73 910 899	5 575 803	226 509	3 420 285	168 422	209 146	32 126 053	115 637 117	
BREAKBULK CARGO	4 097 733	3 021 716	399 073	550 079	-	163 850	659 258	8 891 709	
CONTAINERS (TEUs)	4 991	668 689	2 241	74 618	-	251 432	-	1 001 971	
CONTAINERS (Tonnes)	57 397	7 689 924	25 772	858 107	-	2 891 468	-	11 522 667	
Total exports	78 066 029	16 287 443	651 354	4 828 471	168 422	3 264 464	32 785 311	136 051 493	
TOTAL CARGO HANDLED	84 195 985	54 350 058	1 365 271	6 977 519	873 888	6 692 101	44 086 360	198 541 181	

Table 1.3: Summary of cargo handled at South African Ports, 2008

	RICHARDS	DURBAN	EAST	NGQURA	PORT	MOSSEL	CAPE	SALDANHA	TOTAL	
	BAY		LONDON		ELIZABETH	BAY	TOWN			
	IMPORTS									
BULK CARGO	4 194 997	25 219 583	78 979	-	226 915	646 967	1 327 581	9 562 481	41 257 503	
BREAKBULK CARGO	151 624	2 129 061	120 414	720	378 828	-	49 590	32 606	2 862 843	
CONTAINERS (TEUs)	694	724 980	19 584	36 560	109 449	-	346 091	-	1 237 358	
CONTAINERS (Tonnes)	6 246	6 524 820	176 256	329 040	985 041	-	3 114 819	-	11 136 222	
Total imports	4 352 867	33 873 464	375 649	329 760	1 590 784	646 967	4 491 990	9 595 087	55 256 568	
				EXPORTS						
BULK CARGO	68 977 878	5 653 512	358 043	-	2 786 778	129 991	195 215	43 641 414	121 742 831	
BREAKBULK CARGO	3 971 752	2 355 519	305 067	-	371 565	-	263 634	547 097	7 814 634	
CONTAINERS (TEUs)	2 239	583 618	1 458	10 116	112 710	-	352 270	-	1 062 411	
CONTAINERS (Tonnes)	25 749	6 711 607	16 767	116 334	1 296 165	-	4 051 105	-	12 217 727	
Total exports	72 975 379	14 720 638	679 877	116 334	4 454 508	129 991	4 509 954	44 188 511	141 775 192	
TOTAL CARGO HANDLED	77 328 246	48 594 102	1 055 526	446 094	6 045 292	776 958	9 001 944	53 783 598	197 031 760	

#### Table 1.4: Summary of cargo handled at South African Ports, 2009

	RICHARDS	DURBAN	EAST	NGQURA	PORT	MOSSEL	CAPE	SALDANHA	TOTAL
	BAY		LONDON		ELIZABETH	BAY	TOWN		
				IMPORTS					
BULK CARGO	5 602 813	27 807 874	102 797	-	246 608	636 049	1 713 146	4 732 262	40 841 549
BREAKBULK CARGO	141 530	3 052 391	184 275	-	638 566	-	43 175	32 939	4 092 876
CONTAINERS (TEUs)	1 248	903 525	26 438	42 195	71 592	-	178 582	-	1 223 580
CONTAINERS (Tonnes)	11 232	8 131 725	237 942	379 755	644 328	-	1 607 238	-	11 012 220
Total imports	5 755 575	38 991 990	525 014	379 755	1 529 502	636 049	3 363 559	4 765 201	55 946 645
				EXPORTS					
BULK CARGO	74 986 229	5 639 425	105 419	-	4 117 418	149 042	284 764	47 411 297	132 693 594
BREAKBULK CARGO	3 981 335	2 797 966	353 622	-	829 004	-	313 239	624 921	8 900 087
CONTAINERS (TEUs)	11 209	637 568	1 664	31 934	39 349	-	235 640	-	957 364
CONTAINERS (Tonnes)	128 904	7 332 032	19 136	367 241	452 514	-	2 709 860	-	11 009 686
Total exports	79 096 468	15 769 423	478 177	367 241	5 398 936	149 042	3 307 863	48 036 218	152 603 367
TOTAL CARGO HANDLED	84 852 043	54 761 413	1 003 191	746 996	6 928 438	785 091	6 671 422	52 801 419	208 550 012

#### Table 1.5: Summary of cargo handled at South African Ports, 2010

Figure 1.1: Percentage changes in imports and exports in comparison with the preceding year



As will be observed from Table 1.1 to Table 1.5 and Figure 1.1, imports declined drastically in 2009 and recovered to positive growth in 2010, but well below the trend in previous years and far below the unsustainable surge in 2008. The dip in imports in 2009 and partial recovery in 2010 was entirely in keeping world trends as explained in section 0. In contrast, the growth in exports continued unabated in keeping with the demand for commodities by the Chinese economy, which was hardly affected by the financial crisis in the developed economies.

# 1.4 Effect of the international crisis on South Africa's maritime transport services industry

In Figure 1.2 the growth of world income and the volume of imports for the period 2002 to 2010 and projected to 2012 are shown. South African imports (and its economy) mirrored this effect of the financial crisis in the developed countries as reflected in Tables 1.4, 1.5 and 1.6.

Figure 1.3 shows the volume and dollar value of world exports over the same period, but the dip and recovery illustrated were not experienced in South Africa largely because its trade in commodities with China remained unaffected by the financial crisis in the developed countries.





Source: United Nations 2011, World Economic Situation and Prospects 2011.



Figure 1.3: Growth of the Volume and Dollar Value of World Exports, 2002-2012

In Figure 1.4, the percentage change in the world's gross product from 2004 to 2009 and projected to 2012 is illustrated. South Africa's economy seems to be following the trend quite closely. Figure 1.5 illustrates the projected recovery from the 2009 recession of economies in various states of development. The histograms shown in the figure indicate that the recession and recovery of the South African economy has so far followed the pattern of that of the developed economies rather than the pattern of either the economies in transition or the developing economies. This is also the pattern of economic activity experienced in South Africa's maritime services sector.

Source: United Nations 2011, World Economic Situation and Prospects 2011.



Figure 1.4: Percentage change in World's Gross product, 2004-2012





Source: United Nations 2011, World Economic Situation and Prospects 2011.

In Table 1.6 statistics are shown of the growth in world trade, shipping fleets, container ships

and TEUs carried and in Figure 1.6, the growth in the world's container traffic is related to the growth in the world's GDP. This figure reflects the decline in international maritime activity as a consequence of the recent international financial crisis and recession in many countries. The consequences for the liner trade have been drastic, not merely because of the decline in cargo offering, which, in fact, increased quite quickly again on the East – West trade route, but because the rate of exponential growth of the market projected by the industry was far too optimistic and has not been realised. In consequence, over tonnaging through the deployment of new ships resulted in capacity equivalent to the conveyance of 1.5 million TEUs annually remaining idle for some time, which was insufficient to prevent rates dropping to levels unsustainable for the viability of the liner companies. During the past year, 140 newly built container ships have been delivered by shipyards, while at least 80 ships remain idle. The oversupply of capacity is likely to continue for the foreseeable future, despite the cancellation of orders for new ships, the postponement of delivery dates of ships being built and widespread slow steaming to increase utilisation time (and save fuel costs). As the rates on the main East-West route were forced to near marginal cost, huge losses were recorded by the major liner companies and alliances, as indicated in Figure 1.7. Most of these companies recovered their profitability in 2010 through drastic cost-saving measures that are likely to have enduring consequences in the liner trade.

Year	Total Fleet Size (`000)	Percentage Container Ships of total fleet	Total DWT (mil)	TEU (mil)
1990	629 676.0	3.5 %	22,03	64
2000	793 770.8	8 %	63,50	185
2009	1 192 317.2	13.6 %	162,15	473
2010	1 276 137.2	13.3 %	169,73	495

#### Table 1.6: Global trade volumes

Source: UNCTAD 2010, Review of maritime transport



Figure 1.6: World container traffic vs GDP

Source: World GDP data from the IMF World Economic Outlook 2010, Container Handling Growth data reported from Drewry



Figure 1.7: Container shipping lines financial performance, 2009

Source: Drewry 2010. The global container port industry - implications for Africa?

Charter rates in the bulk trades and container rates also declined drastically and the effect was compounded by the over tonnaging attributable to the expectations created by the rapid growth in the economy of China before the crisis. The Baltic Dry Index fell by 93% and Cape size vessels that were fetching US\$ 25 000 per day dropped to US\$10 000 per day, while container rates for TEUs on the Asia-Europe route fell from US\$1400 to US\$350 during

2009. Charter rates recovered when it became apparent that the Chinese economy had largely evaded the financial fallout and that the country's demand for commodities would continue more or less unabated.

As the African economies also largely escaped the recession in the developed economies and the demand for commodities by China continued, their foreign trade was maintained. Liner companies specializing in serving Africa with small liners, such as Safmarine, have weathered the crisis quite well, although that company as well as the other liner companies serving South Africa evidently did sustain financial losses during 2009/10, necessitating cost saving measures.

The export of bulk from South Africa, especially coal, iron ore and manganese proceeds largely in terms of long term contracts that cushion decreases in demand. With the continued demand by China, the trade has been sustained, as indicated by the percentages in Table 1.6.

The measures by the liner companies to reduce costs have resulted in changes in service logistics in order to save on shipping operations and in staff reduction by way of retrenchment, attrition, dismissals and early retirement schemes and through the off shoring of functions to branches in countries with lower personnel costs, as well as in fuel saving by 'slow steaming' and in the customary curtailment of expenses on training, travel, entertainment and sponsorships. With branches worldwide, efficient telecommunications and the internet, liner companies are able to offshore functions not requiring personal contact with clients to branches in countries where wages are lower, without outsourcing, which can minimise much of the outlay otherwise necessary on infrastructure and training. Most of the off shoring is arranged in a manner that avoids alerting customers to the removal of services on which they rely (e.g. documentation, cargo tracking, services provided telephonically and on websites) to distant countries and avoids staff concerns about job security. The consequence in South Africa of off shoring has been a reduction in jobs and the practice continues.

It should be appreciated that secrecy in the liner trade has been traditional since the formation of liner conferences at the end of the 19th century. Despite the efforts of the United States Government and the European Union to destroy or at least regulate the conference system, liner conferences continue to function and are in the nature of cartels even if the liner owners pretend otherwise. The South Africa- Europe Conference has been in existence for the past hundred years since the conclusion of the first Ocean Freight Agreement with the Government and was one of the few conferences in the world to receive formal recognition. Although the agreement was allowed to lapse some ten years ago, conferences still function on the routes between South Africa and Europe, the Far East and North America, although not all liner companies on the routes belong to each conference. One essential feature of the conferences is to co-ordinate schedules of services and port calls. With the conferences still in place and the ownership of the liner companies controlled largely by families of long standing, insight of the finances of the companies and their inner workings is not easily obtained.

In Table 1.7, particulars are shown of all the liner companies trading to South Africa. Most of these are small or their South African trade is small and the market is dominated by the three

largest, i.e Maersk Line/Safmarine, MOL and MSC. As a result of the recession in South Africa, several ships were withdrawn, ports skipped and schedules changed in order to accommodate "slow steaming" and reduce fuel consumption. It was previously possible to describe the ships employed by the many of the companies and their capacities as well as the schedules and ports of call in the main strings of the conferences. Not all such information is still readily available from published sources and it seems that market volatility and the disruption in container flows in the past two to three years have obliged the liner companies to raise the utilisation of their ships by frequent adaptations to sailings, transhipment arrangements and the employment of vessels.

Abvr.	Line	Cpt	PE	Ngqura	EL	DBN	Rbay
ASL	Angola South Line	•					
CHL	CHL Shipping BV (Netherlands)	•	•			•	
CMA	CMA-CGM (Shipping Agencies)					•	
CNT	Conti Lines (Portco SA)					•	
CSA	Canada States Africa Line (Mitt Cotts)	•					
CSC	China Shipping Container Lines					•	
CSV	CSAV (CSAV Group Agencies SA)	•				•	
COS	Cosren (Cosren)	•				•	
DAL	Deutsche Afrika Linien (DAL Agency)	•	•			•	
EAS	East Asiatic Shipping Maritime Agencies (Thailand)					•	
EMC	Evergreen Marine Corp	•				•	
GAL	GAL Shipping					•	
GRB	Gearbulk					•	
GSL	Gold Star Line Ltd					•	
HLC	Hapag – Lloyd	•	•			•	
HOEG H	Hoegh Autoliners (Voigt Shipping)		•		•	•	
HSD	Hamburg Sud South Africa		•			•	
HSL	H Stinnes Linien (Diamond Shipping)	•	•			•	
HUA	Shanghai Hai Hua Shipping Co Ltd		•		•	•	
KLI	K.Line Shipping SA	•				•	
LMC	Ignazio Messina (Ignazio Messina)	•				•	
LTI	Laemthong International Lines (Bangkok)	•	•			٠	
MAC	Macs (King & Sons)	•			•	•	•
MBA	Maruba (Alpha Shipping)	•				•	
MIS	MIS Shipping Ltd	•				•	
MSC	Mediterranean Shipping Co. (MSC)	•	•	•		•	
MSK	Maersk Line	•	•			•	•
MOL	Mitsui Osk Lines (Mitsui Osk Lines)	•	•	•		•	
MUR	MUR Shipping					•	
NDS	Nile Dutch Africa Line B.V.	•				٠	
NYK	Nippon Yusen Kaisha Line (Mitchell Cotts Maritime)					•	

#### Table 1.7: Liner companies trading to South Africa

OAC	Ocean Africa Container Line (Ocean Africa)	•	٠	٠	٠	
PIL	Pacific International Line - (Foreshore Shipping)	•			•	
SAF	Safmarine (Safmarine)	•	•		•	•
SCO	Sea Consortium (Bridge Shipping)				•	
SMU	Samudera Shipping Line				•	
STS	Stella Shipping (Stella)				•	
TSA	Transatlantic (Mitchell Cotts)	•	•		•	
UAF	United Africa Feeder Lines				•	
UNG	Unigear (Gearbulk)				•	
WWL	Wallenius (Wilhelmsen Ships Service)		•		•	
ZIM	Zimstar (Zim Southern Africa)				•	

Note: Some of the firms are NVOCC.

# 1.5 Role of coastal shipping and transhipment in the logistics of South African transport

Coastal shipping is at a substantial disadvantage in the market for domestic transport. Gauteng is the main market and centre of production in the country and its location far inland requires the predominance of South African freight to move overland to or from the port cities. No rational consignor would send freight from Gauteng to any port or port city via another port or in the reverse direction in order to use coastal shipping. Such routing does occur, however, usually with imported containers when required by the feedering logistics of the liner companies, but cargo owners are averse to transhipment because it lengthens transit time and adds to inventory costs. Furthermore, domestic freight moving between port cities will not be consigned by coastal shipping when the charges for overland transport to the port of departure and from port of destination plus triple loading and offloading costs and the sea freight exceed the comparative charge for direct transport by road haulage - which will usually be so because road haulers will quote accordingly. In any event, coastal shipping is unable to compete with the transit times and unit costs of road haulage over short distances in the range of ports from Port Elizabeth to Richards Bay.

The only domestic route by sea on which coastal shipping can compete with road transport is between Durban and Cape Town and then only with the transport of bulk freight when the physical capacity required for the cargo exceeds the capacity that road vehicles can practically provide or when the scale economies of the ships employed outweigh port charges and the transport of the cargo to and from the ports. In practice, that applies, for example, to sugar in bulk loaded at the sugar terminal in the Port of Durban for the fruit canning industry at Cape Town.

Feeder services, which are integral to the logistics and economics of liner operation account for most of the transhipments (of containers) in South African ports. Not all the containers transhipped to or from feeder services are carried by coastal shipping, as feedering is also undertaken with deepsea ocean liners. For example, containers are sometimes transhipped from large liners at container terminals for onward carriage by smaller ocean liners, equipped with gantry cranes, to feeder non-container ports. Coastal shipping is also employed in regional trade although that market is small and not growing. Part 2 of this report deals fully with coastal and regional shipping.

More than 25% of all containers carried worldwide are empty and liner companies each have logistical schemes for minimising the costs of their movement, which are not readily disclosed to competitors. These schemes necessarily involve transhipment and feedering. For example, empty containers resulting from a substantial imbalance in cargo flows might be feedered from several ports to a single port for clearance by a large container ship with low unit costs, or the tactic might be to carry empties on every voyage in the non-ruling direction so as prevent an accumulation of empty containers at any location and to raise their utilisation. Some 22% of the containers transhipped at South African ports during 2010 were empty and 5% of all the containers handled.

Apart from the transhipment of containers for feedering purposes and movement of empties, containers are also transhipped at South African ports in the service of other ports in Africa

on the west and east coasts, although the numbers are small. There has been much speculation about the scope for a South African port serving as a hub for traffic for the Far East with spokes to South America and West Africa, but those destinations justify or will justify direct services as the Brazilian market is much larger than that of South Africa while the West African market is potentially larger and is in any event efficiently served through transhipment at Mediterranean hubs and at Walvis Bay. The number of containers transhipped at South African ports during the past five years is shown in Table 1.8 and the estimated number transhipped for foreign ports is mentioned in a footnote. Transhipment as a potential new maritime transport industry is fully dealt with in Part 3.

# Table 1.8: Number of laden containers landed at South African ports for transhipment,2006 – 2010

2006	2007	2008	2009	2010
264 125	256 498	286 107	382 900	361 013

Source: Transnet National Ports Authority

Notes:

i. Empty returns transhipped mainly to the Far East are excluded from the table

ii. Of the containers landed in 2008, some 109 530 were shipped regionally to the east and west coasts of Africa, excluding Walvis Bay, and 29 059 (received mainly from Angola) were shipped to destinations on other continents; the remainder were shipped to other South African ports and Walvis Bay.

# 1.6 Measures to promote the development of the maritime transport industry and job creation

Despite allegiance by the international community to a free market in world shipping, protectionism and many overt and indirect inducements by governments to promote development and job creation in their national shipping industries continue to exist. The measures are tantamount to subsidisation, however designed and provided, and the arguments concerning the distortion caused in the shipping market and resultant inefficiency in resource utilisation all apply. Yet many countries still persist with such measures in their national interest, especially those in the developed world that advocate unfettered markets to the developing countries. Little purpose is served by recounting the theory, as the merits of inducements to promote national maritime development and employment need to be analysed in each circumstance by quantifying and evaluating the socio-economic benefits and costs in a pragmatic manner. Such detailed evaluation cannot be undertaken within the scope of this paper, but the worthwhileness of doing so, taking account of social and economic realities in South Africa as pre-conditions are assessed as issues of maritime policy in the following sections.

#### 1.6.1 Improvement of the South African Ship Register

The Ship Registration Act No. 58 of 1998 was intended to improve the friendliness of the South African Ship Register, but has evidently not done so.

Not only have no cargo ships since been attracted to the national flag, but the cargo ships then on the register have been withdrawn. An even more friendly Ship Register is now proposed in the belief that it will induce the re-development of a vibrant shipping industry and create both seafaring jobs and related maritime jobs. However, the terms and conditions of ship registration are only part of a package of legislative amendments, regulations and concessions that might render flagging in South Africa attractive to ship owners and charterers of bareboats.

The prospects for successfully introducing all the measures in the package depend upon government policy and the co-operation of organised labour. One long standing disadvantage of ship registration in South Africa is the priority accorded claims for debt incurred against ship mortgages as the mortgagee is ranked after a supplier of ship necessaries in terms of the Admiralty Jurisdiction Regulation Act No. 105 of 1983, in contrast to the contrary ranking in most other countries. Finance for South African ships against mortgages is thus difficult to obtain. Although this drawback was understood before the adoption of the present Ship Registration Act and an amendment to the Admiralty Jurisdiction Regulation Act prepared, the adverse ranking of claims against ship mortgages remains. In its present form and with a unique provision for the arrest of sister ships, the latter act is more friendly to the legal fraternity than to potential South African ship owners and their financiers.

#### 1.6.2 Tonnage tax

Another measure on which great store is placed to encourage ship ownership in South Africa is the introduction of a tonnage tax in line with many other countries, in particular the Netherlands. Although the tonnage tax can be adjusted to return only a nominal amount of tax, it remains a tax, whereas ships registered under a flag of convenience escape tax altogether, apart from registration fees. A tonnage tax regime in South Africa is nevertheless an essential feature of the package of measures intended to promote the re-development of the South African shipping industry.

In most of the countries that offer ship owners and operators the choice of being taxed on the tonnage that their ships can carry rather than realised profits, the intention has been to induce owners of ships registered nationally not to flag out and to motivate the repatriation of ships already flagged out. Those intentions have partially succeeded in some countries with large investments in shipping, but there is no evidence that it has attracted registrations by new domestic investors or foreigners. The motivation and features of the proposed tonnage tax in South Africa are best described in in the Discussion Document on the South African Tonnage Tax Proposal (18 July 2008) prepared by the National Treasury.

#### 1.6.3 Open registry

The opening of the South African Ship register to all comers would serve no purpose unless their beneficial owners and operators are exempted from tax (except for registration fees) and are allowed to employ multi-national crews, in which event the South African flag would surely be declared a flag of convenience by the Fair Practices Committee of the International Transport Workers Federation (ITF), of transport workers unions. Ships then registered under the flag could be subject to boycott action in world ports unless the owners or operators employ crews under the ITF Standard Collective Agreement that stipulates conditions of employment and minimum wages. Many ship owners and operators who benefit from the fiscal advantages of open registries have been willing to conclude the ITF Standard Collective Agreement, but have means of getting around the conditions. The agreements are enforced by measures ranging from legal action to action by national unions in ports and their success seems to be a matter of opinion differing between the employers and the ITF.

At present, some 32 countries have been declared flags-of-convenience by the ITF's Fair Practices Committee (a joint committee of ITF seafarers' and dockers' unions), which runs the ITF campaign against FOCs, as listed in Table 1.9. With the exception of several second registers, for example, the German International Ship Register, none of these registers are maintained by countries comparable to South Africa in development or international status. Furthermore, there seems to be little or no prospect that ships under the South African flag would be exempted entirely from taxation or freedom granted to their owners or operators to employ foreigners at wages less than those for comparable jobs in South Africa or at ITF wage rates, which are above those in South Africa<sup>1</sup>.

<sup>&</sup>lt;sup>1</sup>An able seaman should receive a basic monthly wage of between R9 000 and R10 000 and a fitter between R10 000 and R11 000.

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Antigua and Barbuda	Equatorial Guinea	Mauritius
Bahamas	French International Ship	Mongolia
	Register (FIS)	
Barbados	German International Ship	Netherlands Antilles
	Register (GIS)	
Belize	Georgia	North Korea
Bermuda (UK)	Gibraltar (UK)	Panama
Bolivia	Honduras	Sao Tome and Príncipe
Burma	Jamaica	St Vincent
Cambodia	Lebanon	Sri Lanka
Cayman Islands	Liberia	Tonga
Comoros	Malta	Vanuatu
Cyprus	Marshall Islands (USA)	

#### Table 1.9: Current registries listed as FOCs

Source: http://www.itfseafarers.org/foc-registries.cfm

Most of the ships in the international shipping industry now trade under flags-of-convenience and it has become exceedingly difficult for owners and operators of nationally flagged ships to compete in the open market.

The conversion of the South African Ship register to an open register in order to develop a maritime transport sector is thus a controversial measure. With that in place there could be no going back, but the likelihood of the consequences being nationally acceptable is remote. An alternative is to devise a second register with only some of the features of open registers, but without any ships on the existing register, the main purpose of a second register, which is to retain national registration and encourage the repatriation of ships flagged out, would not apply. A second register for South Africa is unlikely to attract new registrations unless its features match those of the countries lending their flags for ship owning convenience.

Those countries usually have no labour legislation that impose conditions on maritime employment or that restrict the employment of seafarers to nationals or labour unions that could enforce minimum wages. Such freedom in the employment of seafarers constitutes the major attraction of open registries, apart from tax avoidance, and is the criterion usually adopted by the ITF for declaring open registries flags-of-convenience in pursuance of its fair practices campaign. In principle, although not necessarily in practice, a seafaring job under a flag–of-convenience can conflict with the notion of a decent job as there is often exploitation that is difficult to prevent even under the watchfulness of the ITF inspectors in ports.

The ITF is not able to intervene in the employment of national seafarers on nationally flagged ships, as that is the responsibility of the affiliated national unions Thus wage agreements between nationally-flagged ship owners or operators and national unions remain a domestic matter. Foreign ship owners and operators taking account of the high rate of unemployment have often offered to bring their ships to South Africa in the expectation of being able to employ seafarers at low wage rates and have been disappointed to learn otherwise when confronted with the attitude of the seafarers unions. The reluctance of the unions to compromise on the standard ITF scale for wages in international shipping has undoubtedly

been an effective constraint on foreign investment in shipping under the South African flag and one reason why ships beneficially-owned and operated by South Africans are registered elsewhere, although that is not readily acknowledged. It should be mentioned in this context that notwithstanding the absence of a tonnage tax in South Africa and any specific tax dispensation for profits from shipping operations, owners and operators of the cargo ships formerly on the South African Ship Register largely escaped tax through accelerated depreciation allowances, which to some extent required them to trade in ships in order to maintain the benefit. Taxation was thus not a major deterrent to national registration.

The prospect of employing large numbers of South African seafarers on foreign ships at wages that they are presumed to be willing to accept individually, has long been of interest to ship owners and operators, especially as wage rates have risen in the countries that traditionally supply seafarers for international shipping, such as the Philippines. Although those seafarers are employed on ships under flags–of-convenience and their conditions of employment are protected by the ITF Fair Practices Campaign, insofar as that is feasible, the practice could not continue without the acquiescence of the seafarers unions in the Philippines. With the large number of seafarers so employed, those unions exert a strong influence on the campaigns of the ITF, and the level of the wages actually paid.

Some fifteen years' ago, the prospect for training and similarly employing South African seafarers was discussed (by the author of this section) with the Secretary-General of the ITF and chairman of the Fair Practices Campaign, in London, and their response confirmed that the scheme would be vigorously opposed through international labour action. The attitude of the local unions was consistent with this response, as obviously any scheme to bring in large numbers of seafarers at lower wages into the international market for shipping threatens the livelihood of those employed at standard rates and, through competition, could reduce seafaring jobs to below the appellation of 'decent'. While the prospect of so creating employment continues to be suggested in South Africa and by foreign ship owners and operators, it compromises the notion of decent jobs and other non-negotiable aspects of South Africans from Natal (as then) were employed on British ships, but were eventually dismissed on the insistence of the seafarers' unions in the United Kingdom on the grounds that the livelihood of their members was at stake.

Another aspect concerning the recruitment of South African seafarers is their HIV-status, as routine testing beforehand is precluded by section 7(2) of the Employment Equity Act, unless deemed justifiable by a labour court in terms of section 50(4) of the Act. Significant numbers of seafarers are not likely to be employed on national or foreign ships without HIV clearance. No purpose will be served by speculating in this paper on whether a solution can be found, but the problem needs to be resolved if any package of measures to promote a shipping industry in South Africa for the purpose of job creation is to succeed.

In summary, it is evident that neither the opening of the South African Ship Register nor other measures to improve its friendliness are likely to succeed without resolution of the labour issues, which the social and economic development attained in South Africa seems to preclude, in contrast to the development of the countries that allow flagging for 'convenience'.

The proposal for the adoption of a ship registry regime similar to that of Greece is dealt with in Part 4.

#### 1.6.4 Balance of payments

The principal motivation of the Government for the development of a national fleet of cargo ships has always been to improve the Balance of Payments by saving the foreign exchange required for the payments by South African cargo owners to foreigners for shipping or, more importantly, to earn foreign exchange, especially on the export of South Africa's bulk commodities. The amount involved is huge as South Africa's foreign maritime trade accounts for some 3 to 4 % of the tonne-miles of world trade. At present, virtually all South African bulk exports are sold f.o.b and bulk imports purchased c.i.f, which enable the foreign buyers and sellers to arrange the shipping. There is consequently little or no demand by South African exporters and importers for bulk shipping, which is one reason for the lack of a domestic maritime transport industry. A reversal of the terms under which cargo is usually imported or exported will be necessary in South Africa if national ownership of a fleet of ships for that purpose is to be achieved.

The estimated net effect on the Balance of Payments of the operation of such a fleet carrying South African cargo, after taking into account the foreign costs of acquiring and operating the ships as well as the expenditure by the ships and crew in foreign ports, will not necessarily be favourable as it depends upon foreign inputs included in the calculations as well as ruling rates for freight and foreign exchange. The estimated net effect will invariably be favourable on the assumption that the ships could be built locally (without foreign inputs that ruin the advantage so gained) and that South African crews could be employed at national wage rates.

Although the Balance of Payment criterion for possessing and operating a national fleet of ships is still valid, it is somewhat out of date insofar as the assessment of the net economic effect is much more complex because of the manner in which the production of international shipping has become globally disaggregated. The concept of South African investors owning ships mortgaged and registered in South Africa and managed, operated and crewed by South Africans in order to carry South African cargo is now far-fetched or simplistic. A more probable arrangement is having South African companies participate in multi-national ownership of ships mortgaged in other countries and registered under flags-of-convenience and under the management of foreign firms employing multi-national crews, or in business ventures in shipping that finance ship mortgages (given a favourable ranking of claims, if in South Africa), manage ships irrespective of nationality, trade with ships on time and voyage charter, acquire and trade in ships themselves through demise charters, and in many other maritime enterprises with different features. None of these ventures which all involve foreign transactions can readily be evaluated in order to assess their net effect on the Balance of Payments and whether State assistance to promote a maritime transport industry would be justified. Shipowning as an industry in South Africa is more fully dealt with in Part 4 of this study.

#### 1.6.5 Cabotage

The term cabotage is sometimes misunderstood. In the context of freight shipping, it means the transport of cargo between the ports of a country in a ship registered in another country. In many countries worldwide, the right of cabotage is restricted to transport in domestic ships. Such restrictions constitute protectionism with the consequence of raising domestic transport costs because of the distortionary effects in the market. Nevertheless, it is believed in the countries that restrict cabotage, (for example, the USA), to be justified if the local industry and employment so created are sufficiently overriding of the consequences of the resultant income re-distribution. In terms of the quantified and evaluated social benefits and costs, it is doubtful whether the restriction of cabotage to domestic carriers is ever worthwhile, but where shipping between the islands of a country or across channels is essential in the public interest, cabotage restriction in order to ensure the sustainability of services might be indispensable.

Restricting cabotage on the South African coast to domestic ships might destroy the business of the existing coastal carrier (OACL), whose ships are registered offshore and probably could not be brought to the South African Ship Register without cost penalties and without the inclusion of coastal shipping in the tonnage tax regime (which is presently not the intention). Otherwise, cabotage could be restricted to ships whose part ownership is genuinely linked to South Africa, as it might be insufficient to allow cabotage only to ships beneficially owned by South Africans in view of the share of Maersk Line in the ownership of OACL.

Most of the containers carried by sea between South African ports comprise feeder cargo transhipped to or from ocean liners on different loops. Such a logistical arrangement enables fast deepsea services to one or more container ports by large liners and the service of the other ports by the transhipment of containers to or from liners on other loops, usually in the same conference or to the coastal shipping provided primarily to Maersk Line/Safmarine by OACL. Whether such feeder traffic properly constitutes cabotage is questionable, but feedering could be avoided through direct services to and from most of the ports or transhipment offshore should cabotage be restricted to national ships. The outcome is likely to be the ruin of the financial viability of domestic coastal shipping and result in the demise of the existing carrier. Furthermore, freight charges are likely to rise inasmuch as direct services will reduce the economies of scale achieved by consolidating container flows on the services to and from the container ports, while the frequencies of the services might have to be reduced as a result of more direct services and lower volumes The prospect of creating viable business opportunities for coastal shipping through cabotage restriction is thus doubtful. Cabotage restrictions and the consequences are fully dealt with in Parts 2 and 4 of this report.

#### 1.6.6 Protectionism and BEE

The Maritime Transport and Services BEE strategy aims to promote a substantial "increase in the number of SA flagged vessels and develop shipping companies that are globally competitive, not only in trade between South Africa and the rest of the world". The parallel aim is to promote the participation of previously disadvantaged communities in South Africa's maritime industry in accordance with targeted percentages, the percentage for local-based operations in the capital and services sectors being 25.1, subject to review every 2.5 years.

The definition of a South African ship for the purposes of the strategy is a South African owned ship that is wholly owned by South African residents or South African nationals or

operated solely by South African residents or nationals and ships on bareboat charter to South African nationals. According to the strategy, a South African ship does not and should not necessarily refer only to a South African registered ship, or a ship flying the South African flag.

This somewhat tortuous definition and the reference in the scorecard of the strategy to localbased operations in the capital and services sectors, instead of ship ownership, indicates the difficulty experienced when endeavouring to set a meaningful target for black participation in the supply of shipping. In fact, ship ownership is often difficult to determine or trace, while the concepts of national shipping or nationally-owned shipping are being rendered obsolete through the globalisation of the supply of shipping. "Beneficial ownership", which is the term commonly used in shipping terminology to locate the nationality of a ship, might be shareholding in a bank that owns a ship on bareboat charter, while the "beneficial operation" of the ship might reside in the charterer or in the shareholders in a multi-national logistics company employing ships in maritime supply chains. Such complexity in the ownership or beneficial ownership and the use of ships is becoming more common and renders attempts to measure the financial participation of national groups in maritime business misleading or meaningless.

Although most of the traditional maritime countries with depleted ship registers (because of flagging-out) have attempted to rebuild their merchant fleets by creating more favourable conditions for ship registration, such as second registers and tonnage taxes, success has been elusive and often temporary. The production factors required for the supply of shipping must be sourced globally in order to compete, while the purpose of repatriating ships is to promote the use of local inputs and so save foreign exchange. However, outsourcing is unavoidable for business survival in the global economy.

South Africa is not a traditional maritime country despite its economic dependence on maritime trade, which is physically enabled almost entirely by foreign providers of shipping. Measures to promote the South African Ship Register must start from scratch as there are no commercial ocean-going ships to repatriate or South African shipping companies engaged in international trade that are likely to be induced to use the local register. Even with the implementation of a tonnage tax, amendments to the Admiralty Jurisdiction Registration Act, 1983, and Insolvency Act 1936, and other steps to render shipping under the South African flag financially beneficial, there are compelling reasons why the prospects for success are dim. The reasons concern the employment of seafarers and the policies of local labour unions affiliated to the International Transport Federation as well as ship finance and the risk propensity of local banks, inexperience in maritime entrepreneurship, traditional terms of trade and other matters that cannot be adequately explained within the scope of this study.

In the circumstances in which there is no South African shipping to protect, the need for protectionist measures does not arise, but the prospect of such measures is a matter of interest for intending maritime entrepreneurs. Although protectionism raises the cost of shipping and reduces world trade and international welfare, virtually all countries indulge in some form of direct or indirect protection in order to increase their share in the supply of international shipping, even if the market is then smaller. Among protagonists of the free market that nevertheless directly protect their national shipping from competition, is the USA. Whatever purpose that still serves, the proper economic motivation for protectionism should

be founded in the net savings in foreign exchange, as reflected in the balance of payments of the country. The primary purpose cannot be to protect vested interests or promote sectional economic empowerment unless the concomitant outcome improves the balance of payments, or the national cost could be excessive in comparison with the benefits from alternative measures for achieving the ostensible political aim.

The methods of protecting existing maritime undertakings and new entrants are numerous and range from indirect subsidization to direct cargo reservation and flag preference in ports. Some of the measures such as public training schemes can reduce the cost of entry into many branches of the maritime industry, while other measures can target only ship owning and operation. The following comments are confined to the latter.

Shipbuilding subsidies to reduce the price of ships to local entrepreneurs in South Africa are not a serious proposition as ships are no longer built locally and the national benefits are far less than the benefits than can be derived by purchasing ships from subsidized shipyards overseas. Shipbuilding is subject to economic cycles and the scale that could be achieved in South Africa is not conducive to surviving cyclic downturns and the creation of 'decent' permanent jobs. More substantive employment can ensue from the investment of the subsidy amounts in other industries. Direct government grants are more efficient for assisting ship acquisition if that is considered being in the public interest and also direct operating subsidies. The latter would be indispensable for "national" ships competing for world trade, as such ships could not do so on the basis of cost efficiency, notwithstanding any of the measures proposed for rendering the South African Ship Register more friendly. It needs to be added that government assistance for national shipping ventures with ships registered under flags of convenience crewed by foreigners in order to reduce costs would constitute intervention in the market, which would (i) surely result in retaliatory action (ii) raise the cost of South African foreign trade if the ships trade to South African ports, (iii) be difficult to administer, (iv) be contrary to the maritime policy that has served South Africa well for many years, and (v) surely be politically unacceptable.

The Maritime Transport and Services BEE Strategy undoubtedly adopts the best approach to empowerment by providing for black participation in the many aspects of the maritime industry without proposing ship ownership and operation outright. However, it aims to increase the number of South African-flagged ships (from nil) and develop South African shipping companies that are globally competitive with a 25,1% BEE empowerment target in five years from the adoption of the strategy, which remains unrealistic whatever government intervention is instituted. South Africa's success in the shipping industry will be achieved only through maritime entrepreneurship, which is generally lacking at present, irrespective of protection, as that could only be of marginal assistance and should be omitted in the interest of achieving competitive efficiency in an international market. That South Africa needs such entrepreneurship cannot be called into question and the primary objective of government intervention should undoubtedly be to promote maritime awareness and competency in every aspect of the industry in order to encourage new entrants.

# 1.7 Ship repair, ship breaking and ship building

#### 1.7.1 Ship repair

The demand for ship repair stems largely from the pre-planned or scheduled maintenance required by ship owners to ensure the seaworthiness of their ships in accordance with IMO regulations and to maintain their operating efficiency and earning capacities. However, five-yearly class inspections, requiring drydocking, will seldom be arranged without repairs being undertaken. "Repairs" in this context include descaling, painting and other maintenance necessitating dry work. Repairs to the rigs employed in the petroleum and gas exploration industry requiring wet work are considered towards the end of this section.

As drydocks in many ports worldwide are considered to be durable public infrastructure, their use is priced at marginal cost in order to promote their utilisation and gain the socioeconomic benefits stemming from the labour intensive nature of ship repair. It should be borne in mind that most commercial ports worldwide are municipal or regional ports integrated into local government, which is able to adapt the supply of port infrastructure and facilities to the demand by ship owners and operators (and importers and exporters) that best promotes development in the hinterland of the ports. Local authorities with responsibility for ports in many countries have thus been able to encourage the local establishment of port-dependant industries on a vast scale through tangible support measures.

South African ship repairers have never benefited from similar arrangements, as Transnet has always charged substantial fees for drydock use, but nevertheless regards the drydocks as assets that do not yield adequate returns. It is now in the process of alienating the docks, including the syncrolifts, to private undertakings that seemingly will be consortia of ship repairers. One problem with the process is that the drydocks have not been adequately maintained for many years and require refurbishment at costs that the new owners or concessionaires will not be able to recover in the competitive ship repair market. As Transnet has included depreciation allowances for the drydocks in both the fees for drydock use and the composition of port charges since their construction, the contention by ship repairers is that they should be refurbished by Transnet before disposal.

The ship repair industry creates substantial employment and is labour-intensive once the infrastructure needed for dry docking is in place. As that infrastructure has an exceedingly long physical life at comparatively low maintenance costs, the marginal costs of operation are also low and the economic costs of ship repair thus comprise largely the opportunity costs of the labour required and, to a lesser extent, the opportunity costs of the material and equipment inputs. Furthermore, employment in the industry involves a variety of vocations spread throughout firms concerned with marine, mechanical and electrical engineering, ship design and architecture, electronics, hydraulics, refrigeration, air-conditioning, welding, cleaning, painting, fire fighting and many other tasks. Supplies required by the industry include steel, fastenings, paint, equipment of many kinds and various types of materials. The type of employment and variety of supplies needed results in the diffusion of the economic benefits throughout the local economy and creates opportunities for participation in the benefits among small and medium, as well as large enterprises. Ship repair is consequently an industry which lends itself to black economic empowerment at the levels most needed in South Africa. The ship repair industry is also an export industry that earns net foreign

exchange, notwithstanding the import of some equipment and materials. The effect on the balance of payments of ship repair is invariably favourable in contrast to shipbuilding.

The market for ship repair worldwide is segmented according to the purpose for which ships are used, the types and sizes of ships and geographic areas or the routes plied, and ship repairers tend to focus on segments in which they have advantages of comparative cost and/or infrastructure and equipment. Generally, Cape size bulk carriers and Post-Panamax container ships are serviced in docks in Asia and tankers above the Afromax size in the Middle East, while the European ship repairers provide specialised repair services for smaller ships in niche markets. Ship repairers elsewhere compete in segments of the remainder of the market. The main factors that are likely to dominate the global market for ship repair in the next few years are:

- Increasingly strict enforcement of vessel standards by charterers and regulators and through Port State Control;
- Intensified competition from low cost shiprepairers in the Far East, especially China and East Mediterranean, including the Black Sea;
- Overcapacity of shiprepair facilities and highly competitive pricing;
- Mergers and amalgamations by established shiprepairers intent on capturing niche markets;
- The phasing out of single-hull tankers by 2015.

An important consideration for ship repairers in South Africa is that the market for the repair of trading ships tends to be disaggregated into partial markets defined by the geography of trading routes. In principle, ship owners operating on those routes will seek repair work at their usual ports of call depending on the facilities available and be motivated in their choice by the price of the repairs, including the use of docks, subject to positioning costs and the net loss of income while the ship is out of service (i.e. the opportunity cost of the repairs). Those considerations largely confine the market for repair work on commercial ships to regular callers, although there is no correlation between the number of ships calling at a port and the demand for ship repair at that port. This is obvious when it is borne in mind that the dimensions of the regular calling ships might exceed the dimensional capacities of the available drydocks, but the lack of correlation also applies when only ships capable of being drydocked at the port are taken into account.

Nevertheless, the market for dry work on commercial ships at a port must be found among the ships calling at the port, unless the local ship repairers have sufficiently low costs to compete worldwide, which do not apply in the South African ship repair industry. Generally, pricing by South African ship repairers is below pricing in northern Europe and Scandinavia, the USA, the Mediterranean and Japan, above pricing in China, South Korea, Indonesia, Singapore and the Middle East, but on a par with pricing in the Baltic, Russia, Turkey and the Balkans depending on the fluctuations in the value of the Rand.

Ships that could be included in the target market for ship repair in South Africa's largest drydock (Sturrock Drydock at Cape Town), which is the only local drydock of sufficient size to enable international competition for repair work, are containerships of Panamax size (approximate capacity: 3000 TEU), handy size (2000 TEU) and feeder ships (500 – 1000 TEU), bulk carriers of Panamax size (60 000 to 80 000 dwt) and handy size (40 000 to 60

000 dwt) and Panamax and small tankers (60 000dwt). Unfortunately Cape Town is not normally a terminal port for containerships, while the bulk carriers regularly loading and tankers offloading at Saldanha are mostly ULBC and VLCC and thus too big for repair in the Sturrock Drydock. Apart from ships needing routine drydocking, the treacherous weather and sea conditions off the south coast sometimes cause damage to large ships and enable opportunistic contracts for lucrative ship repair to be concluded. However, efficient marketing and scheduling of the use of the Sturrock Drydock for routine work would render it unavailable for such purposes. At present, the availability of the dock at short notice is fortuitous.

Durban is a terminal port for shipping services and is better located on trade routes to compete for the routine maintenance of cargo ships than Cape Town. The port is equipped with a medium size drydock, several floating docks (one privately owned), slipways and repair quays. Ship repairers in the port can undertake an extensive range of repairs and have the advantage of being able to call on local firms specializing in virtually every aspect of industrial maintenance and repair. Up to four cargo ships per month on average are repaired in the Prince Edward graving dock while numerous other craft are repaired at the other facilities. The industry is nevertheless subject to fluctuations in the demand as well as intense competition by ship repairers elsewhere. Repair work by the Durban ship repairers is also carried out in the smaller drydock at East London.

Of the many commercial ships that pass around the South African coast without calling at any of its ports or that call at other ports in southern Africa, few are routinely repaired in South Africa and the prospects for increasing such business depend upon the competitive abilities of the ship repairers and the pricing or management of the drydocks. The same argument applies to the repair of foreign fishing vessels operating in the seas off southern Africa, but not based at any of its ports. While trading ships operated by owners in the regions where repair costs are higher than in South Africa necessarily comprise the main target market for the repair of large ships, most of those ships for which the Sturrock is suitable pass through the Suez Canal rather than around South Africa, while Cape size ships are generally too large, although the Sturrock Drydock is a large dock.

Whether unsatisfied or latent demand exists for shiprepair requiring the use of South African drydocks is not evident, as the outcome of unsuccessful negotiations by individual ship repairers has not been researched. Thus, the number and value of the otherwise assured contracts for commercial ship repairs lost on account of the unavailability of capacity in South African drydocks (or the loss of potential income from ship repair) remains unknown.

As mentioned in section 1.7, many of the ships repaired in South Africa are fishing vessels, most of which are locally owned. Other locally-owned vessels repaired are harbour craft and research ships. Repair work on these ships does not bring in foreign exchange. Repair of foreign fishing vessels is sometimes undertaken, but the owners prefer the repair work to be undertaken in home ports in order to avoid crew expenses while the vessels are unproductive. Most of the foreign income from ship repair is forthcoming from the opportunistic emergency repair of passing cargo ships and from the repair of oil rigs and their supporting craft.

Repair work, including rehabilitation, of the drilling platforms used in the petroleum and gas exploration industry is usually undertaken at repair quays and at moorings. Such repair includes wet work and is of a specialised nature. As the market for the repair of the platforms and their attendant craft is international and highly competitive, ship repairers are reluctant to disclose details of their contracts with the drilling rig owners or the features of the work. Most of the repair work on drilling rigs in South Africa is undertaken in the Port of Cape Town, but rigs have been repaired at Saldanha and in the Port of Ngqura, although the environmental RoD for the latter port does not specifically allow repair work.

In view of the scope of the market for the repair of the drilling rigs of the petroleum and gas exploration companies, several schemes for custom designed infrastructure or docks have been devised, one of which provided for a massive dock swallowing the Sturrock Drydock and the yacht basin at Cape Town. However, the opportunity cost of the land that the facility would occupy far exceeds the value of its use for ship repair and, as the operation of the facility itself as an independent venture could not be expected to yield a return for investors in common with similar docks elsewhere, the project did not proceed Transnet has since allocated A-berth in the Duncan Dock for the repair of drilling rigs, which provides the repairers with a facility dedicated to the purpose and that can be developed for the specialised work required.

Although schemes are afoot to equip ports on the west coast of Africa and nearer the drilling sites with the facilities for repairing rigs, repairers at Cape Town enjoy the advantage of the many firms in the city that employ technicians able to provide the variety of skilled work needed on the rigs, which contain much of the equipment needed to drive small cities. The oil rig repair business at Cape Town is thus likely to grow while the repairers can rely on the agglomeration of maintenance and repair industries near the port in order to achieve the competitive pricing of their work.

Some 250 exploratory and development wells are likely to be drilled in the seabed over the next five years, more than half of which will be drilled in deep water off the coast of West Africa. At present, the following numbers of drilling rigs are in operation off this coast: 13 off the coast of Gabon, 4 off the Nigerian coast and 7 off the coast of Angola. The rigs are of different design based on different technologies and the contract costs of their operation vary between R1,5 and R4 million per day, which indicates the worth of their time while out of service under repair. These drilling rigs or platforms and their attendant craft constitute a target market for South African repairers, apart from the offshore production platforms and attendant craft in South African waters.

As ship repair is an industrial rather than a transport activity, measures that might assist the ship repairers to develop their capacities and create new jobs must be considered in conjunction with all the other measures intended to promote secondary industry. Although labour-intensive, employment in ship repair fluctuates with the work flow as determined by repair contracts and the business does not warrant special dispensation over other sectors of industry. The scope and development of capacity for ship repair also depends upon the allocation of infrastructure (drydocks, floating docks, syncrolifts, slipways, repair quays) in the ports, as decided by Transnet, which has acquired virtual autonomy in such port operational matters.

Figure 1.8: Durban based floating dock, Eldock\*



\*Privately owned

#### 1.7.2 Ship breaking

Ship breaking or ship dismantling, which is descriptively a more accurate term, or ship recycling, which is more a embracing term that includes work outside the breaker's yard, is highly labour intensive and at present takes place almost exclusively on the tidal beaches of Bangladesh, India and Pakistan under conditions inimical to the health of the workers and the environment. A few ships are dismantled at docks in China and in Turkey under much better conditions and in the USA and Europe. The number of ships dismantled each year varies considerably according to the demand for shipping and results in wide fluctuations in the number of jobs in the industry. For example, as a consequence of the recent decline in shipping attributed to recession in the economies of the developing countries, the number of ships dismantled increased from approximately 300 in 2007 providing 1.7 million tonnes of recycled steel, to 450 in 2008 providing 5.7 million tonnes of metal.

Ships sold for dismantling are usually priced at the value of the steel content, which currently can yield R200 million for a VLCC (very large crude carrier), and the dismantling will be carried out wherever the owner or intermediate buyer of the scrapped ship obtains the best price for the work. That will almost always be on the tidal beaches of southern Asia where low breaking costs are achieved through exploitation of the workers and disregard for the environment.

The worldwide condemnation of the dire consequences for the workers from the hazardous materials encountered and the inhalation of the toxins released during the breaking process and other ill-effects have resulted in numerous investigations, meetings, conferences, conventions, protocols and agreements (among others, at least 11 international trade agreements, 7 international guidelines and 32 ILO conventions) as well as intervention by ship owning nations aimed at regulating the conditions under which ships are dismantled. These efforts have recently culminated in the Hong Kong International Convention) accepted in May, 2009 under the auspices of the International Maritime Organisation (IMO), which will come into force in 2015, if a sufficient number of countries ratify the convention beforehand. The result, hopefully, will be proper international control of the industry by 2020. In the

meantime, there is little prospect for establishing a ship dismantling facility in South Africa without observing all the employment and environmental conditions that comply with the IMO requirements as well as those of the European Union. (Ships for dismantling are regarded as noxious waste by the European Union and can be exported or sold by European owners only in terms of the Basel Convention on the Control of Interboundary Movements of Hazardous Wastes and their Disposal). Ship recycling with proper control of the conditions of work and the environmental risks is known as 'green ship recycling' in the industry. Lloyds provides a "green passport" specifying the hazardous content of a ship to be dismantled. (Some of the hazardous materials in such content are mercury, polychlorinated biphenyls, chlorofluorocarbons, lead cadmium, tributyl tin, halogens, solvents, asbestos, residual fuel, radioactive substances, oil and oil mixtures.)

It is not known whether South Africa will ratify the Ship Recycling Convention and adopt its provisions through national legislation, but presumably it will do so. If so, an opportunity is now created for the establishment of a green ship recycling facility in South Africa that can be in the market when the present dismantling industry located on the southern Asian beaches is brought under IMO control. Already several responsible ship owners have instituted their own arrangements for green ship recycling. Maersk Line is joined in a project with firms in China to establish a ship recycling facility using drydocks, while Japanese owners are assisting with the provision of protective equipment to ship breakers on the beaches of Bangladesh. As green ship recycling is far more costly because of the infrastructure, equipment and protection of humans and the physical environment required than breaking on the beaches, it is only through the refusal of ship owners to collaborate or connive in the beach breaking and their acceptance of lower prices for their ships that green ship recyclers will be able to compete before proper international control eventually comes into effect.

Environmentally safe or green ship recycling can be carried out in drydocks, but apart from the refusal of Transnet to allow such work in South African ports, all South African drydocks are required for ship repair. (See section 1.7.1). Furthermore, all the drydocks are located in close proximity to urban areas and the risks to inhabitants from the toxins released during the cutting processes would (or should) be perceived as unacceptable whatever safeguards are provided. Fully enclosing the docks would probably be too costly for the purpose, although that should in any event be done in order reduce the health risks for workers, visitors and residents in port precincts caused by repair work.

The only port that is suitably located away from urban areas for ship recycling seems to be the Port of Ngqura at Coega, but the environmental RoD for the port does not specify ship repair nor ship recycling as a permissible port activity. Transnet has allowed ship repair to be undertaken in the port, but the Environmental Monitoring Committee overseeing the development at Coega has threatened the issue of a non-compliance certificate if such work continues. Another EIS specifically for ship recycling would require public participation in an expensive re-assessment study. These difficulties confronting potential investors in green ship recycling ventures in South Africa even before they are able to assess the business prospects of success constitute a deterrent to such enterprises. Nevertheless, many jobs requiring limited skills and training could be created through the development of ship recycling undertakings in South Africa and so replace inhumane by decent work, rather than displace workers elsewhere. There is currently a fully researched proposal by private investors to undertake green ship recycling in a South African harbour, but which cannot be pursued because of the refusal by Transnet to allow ship breaking in any of the ports under its jurisdiction. The scheme involves the employment of unique infrastructure and equipment and initially some 200 new jobs would be created. The proposed establishment of green ship recycling facilities as a new job-creating industry in South Africa is dealt with more fully in Part 4.

#### 1.7.3 Ship building

Ships of some 5000 dwt have been built in South Africa for foreign owners, requiring the direct and indirect employment of up, to 3 000 persons. However, the financial dispensation that rendered the building contracts worthwhile to the shipbuilders (subsidies of 25%) were unsustainable because the public interest was better served by their alternative application, in the view of the financial authorities. It should be borne in mind that subsidization of shipbuilding for foreign customers, in fact, subsidizes foreign ship owners at the cost of local taxpayers.

Shipbuilding subsidies or similar forms of subvention are still afforded in other countries, although on a far reduced scale than several decades ago, and the complex issues at stake need to be investigated before conclusions about their merits for South Africa can be reached. That requires the opportunity cost or resource cost of building ships locally to be compared with the foreign exchange that would be earned if the ships were sold overseas, or saved if bought locally. If the net gain in foreign exchange would be substantial, then subsidies amounting to less than the difference between the resource cost of building the ships, many of the inputs that have to be shadow-priced comprise imported machinery, electronic equipment and components that cannot be manufactured locally, which could amount to a foreign cost almost equivalent to the price of a complete ship purchased from a subsidized shipyard in the Far East.

Subsidies usually take the form of building grants or construction loans repayable at low interest rates and might be paid to shipyards on the premise that shipbuilding is an infant industry, which can attain financial viability eventually. Countries that do so are in effect subsidizing foreign purchasers of the ships produced.

There is no prospect of viable shipbuilding in South Africa that could compete with shipbuilding in the Far East or Eastern Europe or with shipbuilding by subsidized shipyards elsewhere, as the costs of local materials and labour are in excess of similar inputs in the Far East countries in which competing shipyards are located, while those countries are also the cheapest source of the machinery and equipment needed. Very substantial subsidies would have to be forthcoming to enable South African shipyards to re-enter the international shipbuilding industry.

There are still active shipyards in South Africa, but apart from yachts for foreign buyers, only trawlers, harbour craft and non-commercial vessels for local customers have been built in recent years. In view of the availability of infrastructure and the technical competence to build small ships in South Africa, the savings in foreign exchange that could be achieved when

building for the local market and the jobs that would be created, it will be worthwhile to investigate the prospects for a sustained local market for such shipbuilding (i.e. for small non-commercial ships used locally) and the net benefits for the economy if public assistance were to be provided. The results should establish whether the frequently-heard contention that shipbuilding should be undertaken in South Africa in order to create jobs is really worthwhile in the public interest. In all the previous studies undertaken in support of local shipbuilding, subsidies were invariably found to be indispensable, but better applied in other industries.

# 1.8 Industrial Development Zones

The establishment of industrial development zones (IDZ) adjacent to ports has created opportunities for the establishment of enterprises dependent on imports or exports by sea and especially for industries that process imports for export. All the features of the zones and the incentives offered to concerns willing to accept their location as well as their success so far are fully dealt with in literature provided by the Department of Trade and Industries and the managements of the zones and need not be dealt with in this paper. In the context of maritime transport development, it is worthwhile considering the benefits that can be derived from their location and whether the transport services on which their development depends are adequate.

Inasmuch as most of the imports or exports or both of the undertakings attracted to the IDZs are likely to comprise containerised cargo, their locations adjacent to the Ports of East London, Ngqura and Richard's Bay are not ideal, as neither East London nor Richard's Bay are equipped with container terminals, while Ngqura is not served by all the liners companies trading to South Africa. The import or export business of the undertakings located in the IDZs thus depends to some extent on feeding by coastal shipping or way porting by liners and by overland transport, which extends the transit time of the cargo and raises costs. For example, firms in the IDZ at East London serving the automotive manufacturing industry need to rely on coastal services from Port Elizabeth for containerised imports of parts, while the IDZ at Richard's Bay, which as yet is undeveloped, will presumably have to rely on the overland transport of containers to and from Durban in the absence of frequent liner or coastal feeder services. The Port of Ngqura has yet to be included in the regular loops of all the liner companies, which will depend upon the development of the IDZ rather than the other way round.

The drawback of locating an IDZ where development is desired rather where it would thrive is illustrated by the proposal to site an IDZ near the Port of Saldanha, which is a bulk port accommodating large carriers of petroleum and iron ore. Containerised cargo will need to be carried to and from Cape Town by road transport, so raising the transport costs of location in the IDZ and increasing road traffic. Liners will not call at both ports, especially for small quantities traffic and in view of the high cost of port calls at South African ports (which are among the highest in the world), could not compete with road transport. Similarly, the transport of containers by coastal shipping between Cape Town and Saldanha, Port Elizabeth and Ngqura and Durban and Richard's Bay in competition with road haulage will not be worthwhile if the charges for port calls, transhipment, seafreight and the inventory costs of transit time are taken into account.

The existing three IDZs consequently need to be served by efficient overland supply chains as well as coastal feeder services to container ports (which to some extent defeats the purpose of their location adjacent to ports). However, the Provincial Growth and Development Plans, Provincial Land Transport Frameworks and Integrated Transport Plans of the local authorities do not specifically recognise either dependence of the economies of the communities for which they provide on their maritime supply chains, nor the linking of the IDZs into these supply chains. The plans and strategies, for example, do not contain particulars of the maritime supply chains serving import and export industries or the intermediate processing industries of imports and exports, nor the transport and terminal infrastructural needs, structural problems that hamper their performance and public intervention that could contribute to solutions to problems.

Intermediate processing (including assemblage, minor modification, re-packing, re-labelling and sorting) of imports, exports and re-exports is responsible for much employment in the vicinity of the nearby hinterland of ports worldwide and can be promoted through the provision of infrastructure and facilities that enable reliable and efficient supply chains through the ports to be established. Such industries are labour-intensive and include small firms. Their promotion, with the prospect of creating more jobs than usually result from public planning and investment to attract large secondary industries, requires the micro-planning of supply chain links that minimize the transport costs of their location.

There are many specific examples of undertakings dependant on maritime supply chains that need to be encouraged through integrated planning by provincial and local authorities, with the involvement of liner operators, port authorities, terminal operators, freight carriers, traffic managers, communications and power providers and others. There is no need in this paper to describe all the difficulties currently experienced by small firms endeavouring to structure just-in-time maritime supply chains when dealing individually with numerous link providers (e.g. liner companies separately from the cargo handlers in the ports and the port authorities as well as separately from the providers of rail and road transport) and public authorities. In contrast, firms in Europe can deal with only the liner companies that provide road, rail and marine transport as well as cargo handling at inland terminals and in the ports

Part 4 contains proposal for improving the maritime supply chains that serve the IDZs.

# 1.9 Maritime Training

There are many institutions in South Africa providing education in maritime affairs and training in the skills needed in the maritime industry. These institutions include universities offering tuition for degrees in maritime economics at all levels; academies and schools of education and training for seafarers, marine engineers, marine artisans and maritime service providers; and in-house training units of undertakings in the maritime sector. Not all the training comprises tuition in accredited courses, as some undertakings train workers for their specific purpose in order to employ them at short notice on contract work, which leaves them semi-qualified when the contract is completed, while some courses do not need to be accredited within the NQF.

Two institutions by way of example are described in this section, both of which provide training in essential skills needed in the maritime industry through accredited courses. These are the South African Maritime Training Academy (SAMTRA) which is a registered non-profit making company located at Simonstown and the South African Maritime School and Transport College, which is a private institution located at Durban. Apart from these two institutions, other recognised institutions include:

- Unit for Maritime Studies, University of Stellenbosch
- Unit for Maritime Studies, University of KwaZulu-Natal
- Unicorn Marine Training School, Durban
- Cape Peninsula University of Technology and the Durban University of Technology, which are the recognised public institutions offering courses accredited by SAMSA for the training of seafarers
- Project Maritime Training, which was established in 2002 to provide maritime training on the West Coast of South Africa, mainly for the youth of fishing communities
- Northlink College in the Western Cape, which is a FET Institution that has taken over the Training Centre for Seamen and the Wingfield Technical College for training marine engineers
- Transnet National Ports Authority School of Ports
- The South African Coastguard Training Institute at Saldanha, which is in a start-up phase
- Secondary schools: Four secondary schools offer maritime subjects for matriculation.

There are also various maritime associations that provide course material for training and that conduct examinations for qualifications recognized in the industry, such as the Institute for Chartered Shipbrokers and the South African Association of Freight Forwarders (SAAFF). Training in sea rescue and salvage is undertaken by the firm Smit Amandla.

The variety of educational and training courses available in maritime affairs and vocations in the maritime industry is extensive and concerns maritime policy-making and public administration, maritime business, seafaring, maritime logistics and cargo matters, marine services in ports, marine engineering, commercial sea fishing, hazardous cargo handling, marine and coastal environmental control, offshore installations, maritime communications, maritime weather forecasting, marine and port safety, ship finance and management and many other maritime topics, with a multitude of modules. SAMTRA and the South African Maritime School and Transport College provide selected courses rather than representative courses and both institutions provide specific training for the personnel of clients.

#### **SAMTRA**

SAMTRA is a maritime training academy that focuses on the provision of simulator-based training to world-class standards for deck officers and in refrigeration and marine engineering. It also offers selected non-simulator courses for ships' officers, including company specific courses and provides administration services to a number of companies that require assistance in the management of training programmes for cadets and ratings. SAMTRA is accredited by SAMSA and other authorities overseas and the qualifications obtained through its training programmes are recognised worldwide. The training facilities at the academy include deck, engine room and GMDSS simulation equipment designed in Denmark, Germany and Norway that was financed through donations made by several shipping companies. The instructors are qualified ex-sea going personnel, which enables the knowledge transfer to learners to be tempered by their experience.

Many of the courses provided by SAMTRA extend from five to ten working days. The courses are accredited by the South African Maritime Safety Authority (SAMSA) established in terms of Act 5 of 1998 to administer the Merchant Shipping Act, which incorporates STCW95 specifying the qualifications required by seafarers. A selection of the courses offered is as follows:

Course names	Course modules	
Deck officer training	<ul> <li>Bridge watch keeping</li> <li>Crisis and emergency management</li> <li>GMDSS course (Global Maritime Distress and Safety System)</li> <li>Steering simulation and lookout duties</li> <li>Radar navigation at operational level</li> </ul>	
Engine Room Training	<ul> <li>Engine room plant familiarization</li> <li>Engine room watch keeping</li> <li>MARPOL (marine pollution)</li> </ul>	
Non-simulator courses	<ul> <li>Dangerous goods course</li> <li>Paint technology course</li> <li>Introduction to shipping</li> </ul>	
Refrigeration	<ul><li>General refrigeration</li><li>Refrigeration operations</li><li>Refrigeration technology</li></ul>	

SAMSA itself takes a very active interest in the training of seafarers and the placement of cadets on ships in order to qualify in watchkeeping and arranges annually for a fresh intake.

#### THE SOUTH AFRICAN MARITIME SCHOOL AND TRANSPORT COLLEGE

The South African Maritime School and Transport College is an altogether different type of institution as it concentrates on training for shore-based maritime vocations according to SAQA unit standards through courses conducted in the mornings throughout the year from March to March over four semesters. Most of the material used not only seeks to expand the learner's knowledge in a particular career direction, but also to improve linguistic and numerical abilities and there is a graded system of advancement from one unit standard to the next. Units are recognised within the National Qualifications Framework (NQF). The campus of the school is situated at the Point Waterfront development in Durban.

Among the courses currently offered at the school are the following:

- (i) A one year course leading to a Skills Certificate in Shipping Practice for which a matriculation (NQF4) is required at entry. The course is intended to qualify learners for employment by ship agencies and many of the firms dependent on port-related business. Successful candidates will be knowledgeable in port operations, ships' husbandry, maritime geography, ship construction and lifting gear, international trade, marine risk and insurance, legal principles applied to shipping and the liner trades or occupational health and safety in the maritime sector.
- (ii) Shipping practice and ship operations
- (iii) Ports and distribution
- (iv) Transport matters
- (v) Cargo handling
- (vi) Freight-handling logistics: This is a diploma course designed for learners who have completed the courses in shipping, customs and cargo handling or have at least five years related experience, and extends over eighteen months. Instruction is given by professional persons in the industry and school tutors.

Many of the courses offered could be conducted at FET colleges.

Both SAMTRA and the South African Maritime School and Transport College fulfil an essential need for training in the maritime industry in addition to the other training institutions, several of which tend to specialize, for example, in port requirements (e.g. pilotage and tug mastering), fisheries exploitation, qualifications of ratings and maritime professional services. The School and Transport College was started in 1986 to fulfil the need at that time for training at Durban in maritime vocations, while SAMTRA was established at the instigation of shipping companies to provide for the training of their cadets and ship's officers after efforts through the Maritime Industries Training Board, created by the industry to induce public funding for the establishment of a national maritime training academy, did not succeed. It is important to bear in mind that these private institutions were established to fulfil an evident need for training

The need for coaching and mentoring in order to supplement education and training and to promote maritime transport culture and entrepreneurship in South Africa is considered in Part 4.

# 1.10 Off shoring

Off shoring has been mentioned in section 0 as a cost-saving measure by employers in maritime transport and services sectors that contributes to job depletion in South Africa and the loss to the economy of the multiplier effect of the salaries and wages of those who otherwise would have been locally employed. It is an anomaly that South Africa, as a developing country, is losing jobs through off shoring to other developing countries whereas the maritime experience gained by South Africans over many years should enable jobs to be acquired in that manner.

As all the liner companies presently serving South Africa are foreign-owned and operate worldwide, only operational functions that that concern services to from the region in which South Africa is situated would in any event be located in the country, as well as the commercial cargo services that require personal contact with customers. While there might be other compelling reasons for moving operational functions such as crewing to the region from which crews are drawn, the primary motivation for off shoring functions that otherwise could remain is cost saving on both infrastructure and employment. Examples of functions that can and have been relocated for that purpose are as follows:

- Documentation- related functions for exports such as bills of lading capture
- Documentation- related functions for imports such as issuing arrival notifications
- Quotation of freight charges
- Invoicing
- Application of information technology and programming
- Call centre functions and online support
- Cargo booking
- Preparation of vessel load lists
- · Various finance and accounting processes
- Administrative support
- All manual or tedious backroom tasks
- Vessel and container tracking
- Crewing

These functions are not all off shored in their entirety as some tasks that necessitate actual contact with customers are retained in South Africa.

The main advantages and disadvantages of off shoring are believed to be the following:

Advantages	Disadvantages
Costs savings, particularly in labour and	Job losses in the country from which the
infrastructure	functions are removed
Availability of large talent pools in the	Loss of direct control of the off shored
countries of off shoring	functions
Availability of advanced skills in the countries	Lack of local customer focus if too many key
of off shoring , which have large numbers of	processes are off shored
university graduates with expertise in various	
fields	

Fast turnaround times in dealing with customers because of the zones of time difference that enable work to proceed over 24 hours	Risks of breach of confidentiality
Saving of office space and equipment	Inferior output if measures are not taken to monitor performance, as the need to repeat work in the home country defeats the purpose of off shoring
	Political unrest or natural disasters that pose risks to performance require contingency plans to be in place

The benefits and disbenefits of off shoring for both the home and foreign countries have been extensively dealt with in academic literature, especially in the United States, which has lost hundreds of thousands of jobs through off shoring and continues to do so. Although measures have been instituted to counteract the practice, which obviously results in discontent in communities in which unemployment is consequently high, the view of many authorities is that those displaced should be retrained for employment in jobs requiring higher skills, so uplifting the skills level of the domestic workforce. Such an attitude is undoubtedly misplaced in South Africa. However, the topic cannot be pursued adequately in this study in order to examine the appropriate remedial measures, except to observe that inducements to retain functions in the country similar to those provided by the Government to attract off shoring from abroad seem to be the best option. The countries to which maritime transport and transport services are presently being off shored worldwide, are India, Russia and China, which are South Africa's partners in BRICS, and the Phillippines, all with cost structures below those in South Africa and a greater availability of skills. This topic is also dealt with in Part 4 where proposals are made.

# 1.11 Public interventions to promote maritime transport and services development

When considering public interventions in the maritime transport industry in order to promote its development nationally and create jobs, it should be borne in mind that the industry is largely footloose and functions in a market that is essentially free. Furthermore, major participants in the market have long been successful at countering or evading unilateral interventions in their businesses, even by the governments of countries with dominating economic power. Regulation of the industry has necessarily required the adoption of international conventions or treaties that the participating countries are willing to enforce.

Even the UNCTAD Code on Liner Conferences intended to help developing nations to create their own shipping fleets has not succeeded, while interventions by economically weak nations to promote national shipping themselves through cargo reservation and flag discrimination have invariably been counter-productive by raising shipping costs to the detriment of their economies, without achieving their purpose. There is consequently little prospect of successful intervention by the Government to impose conditions for the transport of cargoes to or from the South Africa that will achieve the development of a national fleet of ships or maritime transport capacity, while the alternative policy of non-intervention and reliance on competition in the market will continue to ensure that the country is served by frequent, cheap and efficient shipping services. Those services have come about through the acceptance by the Government of the of the liner conferences for many years in terms of the Ocean Freight Agreement, which hardly constituted intervention.

Among exporters and importers relying on efficient supply chains, the South African fruit growers, for example, have benefited from the fast and reliable refrigerated cargo services by SAECS for very many years. When the fruit cargo was containerised in 1977, the change required technical and organisational innovation in collaboration with the administration of the ports, and the smoothness of the switchover was unique worldwide in its success. Customers of the liner conferences serving South Africa have collectively never been sufficiently dissatisfied with the quality or pricing of the services to demand intervention and the attempts to form and maintain powerful statutory shippers' councils have never really achieved their purpose.

The policy of non-intervention in shipping by the Government can also be regarded as a measure to raise employment, as the quality and pricing of the cargo shipping serving the country has enabled many enterprises in agriculture, mining and secondary industry to be set up and carry on business, and the savings in total shipping costs attributed to competitive and efficient liner services have undoubtedly afforded greater economic activity and created jobs. It should be borne in mind that the promotion of economic growth is a common aim of the liner companies and the Government as more economic activity in the country increases the business of the companies.

As explained in section 1.6.6, the notion of a fleet of nationally-owned and crewed ships carrying national cargoes is no longer tenable. The production of international shipping has become globally disaggregated according to the comparative costs of the inputs into which the supply can be divided. Thus some countries have the institutions and legal regimes that

favour specialization in ship finance, others through a combination of infrastructure, skilled labour and materials production have become adept at shipbuilding, while the international registration of ships and their management, operation and crewing, repair and dismantling are all services or tasks that can be located in different countries. Many of the tasks required in the commercial exploitation of the ships, including the logistics of their use (such as the preparation of sailing schedules and allocation of cargo space), marketing and sale of capacity, documentation of cargo and liaison with customers, in their many facets, can be distributed among different countries according to the efficiencies so achieved.

The infrastructure, communication systems, materials and human resources needed to specialize in most of those disaggregated functions in the supply of shipping and shipping services are available in South Africa and there is no impediment to their location in this country, apart from comparative costs. That those costs are high or too high is evident from the off shoring that has occurred. Yet the existence of a large cargo services industry in the country should enable the retention of many of the functions off shored or likely to be off shored and to attract functions from elsewhere, through the economies of scale, expanded skills application and experience that have the effect of reducing costs. The reason why that is not occurring or not noticeably occurring, is probably attributable to the lack of maritime business awareness, which coaching and mentoring might remedy. This topic is pursued in Part 4.

Participants in the maritime and maritime transport industry are traditionally apprehensive of Government intervention in their business affairs and direct regulatory measures intended to assist the industry to retain and gain business are unlikely to be welcomed, especially as regulations tend to inhibit business and do not create jobs. But much scope exists for promoting the development of the industry through improvements to its business environment in the form of the adaptation of legislation, adoption of international conventions, improvement of physical access, supply chain infrastructure and communications and the facilitation of official documentation requirements and procedures, as well as through incentives and tuition, coaching and mentoring in maritime business and culture. (See Part 4.)

Although much of the discussion in this paper in accordance with the brief has concerned South African ownership and registration of ships as a prerequisite to the re-emergence of a domestic maritime transport industry, that is unnecessary for entrepreneurship in the market for the shipment of South African cargoes. There is no need for South Africans either to own ships or for ships to be registered under the South African flag in order to compete for the carriage of South Africa's substantial volume of bulk exports and imports, as ships can be chartered for the purpose (and have been for many years). Similarly, container operators, who could be freight forwarders, can (and do) compete with liner operators by purchasing slots on container vessels and function as virtual liner companies or non-vessel owning common carriers (NVOCC). Maritime transport business is so conducted on a large scale in several countries without any ships on their national registers. Why South African ship operators choose to locate their businesses offshore and why more NVOCC selling slots are not active in the country are issues that cannot be dealt with in the scope of this paper, but the opportunities for such business are dealt with in Part 4.