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ECONOMIC COMMITTEE

THE SOVIET MERCHANT FLEET

Note by the Chairman

Attached for the Committee's review and comments is a draft report entitled "The Soviet Merchant Fleet". The report results from the experts' meeting of 15-16 December 1977 and draws in particular on materials and information presented at that meeting, as well as materials previously submitted by the Economic Directorate and the US and UK Delegations.

2. In view of the 15 March deadline for transmission of the report to the Council Members, it would be appreciated if review could be completed for Committee discussion by 2 March.

(Signed) J. BILLY

This document includes 3 Annexes

NATO
1110 Brussels

N A T O C O N F I D E N T I A L

THE SOVIET MERCHANT FLEET

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THE SOVIET MERCHANT FLEET

INTRODUCTION

This report examines the economic and strategic implications of the Soviet merchant fleet for the Alliance. In so doing, it describes the fleet's present size, quality, and rate of growth, and anticipated future development. It then examines the fleet's current role in fulfilling its three principle objectives - economic, military, and political. The way in which its commercial operating procedures threaten Western economic interests is explored as well as is the current and anticipated Western response. Finally, after a brief look at the complementary river and fishing fleets, the report draws conclusions assessing the fleet as an economic and strategic instrument, and points out the fleet's own commercial and strategic weaknesses.

I. DESCRIPTION

Size

At the beginning of October 1977, the Soviet merchant fleet, excluding fishing and fishing support vessels (1), totalled 1,686 ships having a combined capacity of 16.9 million deadweight tons (DWT). In terms of capacity, it ranked tenth in the workd, just after the U.S. active merchant fleet; and in terms of number of ships it ranked fifth, after Liberia, Greece, Panama, and Japan. Its ships thus have considerebly smaller average capacity than those of other leading world shipping nations - ten thousand DWT per ship, as opposed to the world average of around 25 thousand DWT. As a result, the USSR merchant fleet accounts for less than 3 percent of total world tonnage (2).

2. The fleet consists of a variety of vessel types and categories (3). The liner fleet - general cargo, roll-on/roll-off (ro-ro), and container ships - accounts for around 40 percent of total tonnage and is the largest single component of the Soviet merchant fleet. Modern ro-ro and container ships occupy only a small portion of the liner fleet - less than 2 percent of total merchant fleet tonnage, or around 300 thousand DWT. Timber carriers, specialized cargo ships which are also sometimes used by the Soviets for the carriage of general purpose freight, account for an additional 12 percent of total Soviet merchant tonnage.

(1) This discussion excludes Soviet fishing ships and cargo or tanker ships subordinated to fishing fleets, which are considered separately later in the paper.

(2) Among world leaders in merchant shipping tonnage (excluding fishing and fishing support vessels) are Japan (9.9% of the world total), the United Kingdom (8.5%), Greece (8.2%), and Norway (7.7%). Liberia, having the world's largest fleet capacity (24.6%) and Panama, with just under 5 % of world capacity, rank high because of their large "flag of convenience" fleets, owned by US, Greek, overseas Chinese, and other foreign firms. US companies, for instance, have more than 30 million DWT of the total Liberian capacity of 154 million DWT, and close to 5 million DWT of the 31-million-ton Panamanian capacity.

(3) For tabular statistical summary, see Table 1, Annex I. For clarification as to ship categorization, see Annex II : "Terminology".

3. The second largest element of the Soviet merchant fleet, tankers (mainly crude oil carriers), account for 36 percent of total tonnage, or 6.1 million DWT. Around 12 percent of the remaining merchant fleet tonnage is represented by carriers for goods in bulk - principally bauxite and other ores, coal, and grain. This category includes combination oil/bulk carriers - presently four ships totalling 364 thousand DWT. Passenger ships make up the balance of the fleet (approximately 1 percent).

Quality

4. Long-standing qualitative deficiencies afflict the fleet's principal components. In the liner fleet, 96 percent of the tonnage consists of outmoded general purpose freighters. These ships are at a serious disadvantage on major international liner routes, such as the North Pacific, the North Atlantic, and Europe-Far East, where faster and more efficient container and ro-ro ships predominate. The general-purpose cargo fleet is suited principally for coastal deliveries to Soviet Far East and North Sea Route ports, and for trade with many less developed countries.

5. Soviet oil and bulk carriers, on the other hand, are handicapped by their generally small size. Soviet tankers average only 20,500 DWT, approximately one-third the world average. Soviet dry bulk carriers, too, have a much smaller average carrying capacity than that of leading world shipping nations - thirteen thousand DWT, as opposed to a world average of 35 thousand DWT. A reason for these ships' small size can be found in the shallow drafts of most Soviet ports : Few can handle tankers over 50 thousand DWT or dry cargo ships larger than 30 thousand DWT.

6. On the positive side, Soviet merchant fleet ships are in general solidly constructed under what amount to military specifications. Moreover, the Soviets have perfected the design of some of their newer ro-ro ships to the point where these ships are among the most advanced of their type in the world.

II. GROWTH

Past and current rate of growth

7. Total tonnage of the Soviet merchant marine has quadrupled since 1960 (1). Much of the fleet expansion took place between 1960 and 1970, motivated by a surge in Soviet seaborne foreign trade beginning in 1959, which tended to make the USSR dependent on foreign ships for transport. After a temporary cutback in 1971-72, the USSR resumed its vigorous acquisition of

(1) See Table 2, ANNEX I.

merchant ships, adding on the order of 1 million DWT to its fleet each year. Since 1975, it has put prime emphasis on the build-up of its ro-ro fleet, although it has also considerably expanded both the numbers and the carrying capacities of its container ships, bulk carriers, and tankers.

8. In 1977, the rate of expansion of the Soviet merchant fleet appeared to be slowing : The amount of new tonnage added by 1 October was only 0.4 million DWT. Even so, its rate of fleet expansion was not declining so rapidly as the world rate, because of a general cutback in world ship construction.

9. Although actually increasing relative to world capacity Soviet liner capacity also continues to shrink, with the rate of retirement of older cargo ships outrunning that of replacement by newer liners. Soviet orders for liners appear to have slowed from their level of two years ago. Whether the slowing has to do with problems of ship design or use, or conflicts with the naval construction program, is not known.

10. A partial explanation for the Soviet cutback in liner fleet expension is probably that planners are responding to current Soviet shipping requirements. The Soviet Union has enough general purpose ships, as well as small container vessels, to meet its own shipping needs, and these ships are generally not competitive in world shipping markets. It can thus now turn to the procurement of increased numbers of tankers and bulk carriers, in order to transport its own exports more efficiently.

11. In certain cases, liner orders may have been cut back to free resources in other COMECON countries. Polish shipyards, for instance, are selling more ships to the West for hard currency; they have delivered only three of an order of six Skulptor Konenkov class ro-ro vessels to the Soviet Union to date.

12. The Soviet shipbuilding program itself has slowed down. Three or four Soviet shipyards which normally build commercial ships have been taken over by the Soviet Navy; others are simply lying idle. These developments could indicate that some naval construction programs have received higher priority than merchant ship construction. More probably, however, the Soviet Government has judged that, given the presently depressed world shipping market, there is insufficient economic justification for constructing more general cargo ships at the present time.

13. Certain types of dry cargo ships, such as timber carriers and bulk carriers, are still not in sufficient supply to meet Soviet shipping demands. For example, the USSR is using small, inefficient vessels to carry current imports of US feedgrains (These ships handled only 15 percent of such grain

shipments in the first ten months of 1977). It has nonetheless not seen fit to put into operation its currently idle bulk-carrier building facilities, because it can more cheaply charter such vessels in the depressed bulk carrier market, leaving ship-building capacity free to construct specialized vessels for the lucrative liner cross trades. The leadership evidently hopes, moreover, that the current level of grain shipments to the Soviet Union is only temporary.

Future Trends

14. Total tonnage is expected to approximate 19 million DWT by 1980 and could approach 30 million DWT by the end of the century (1). From what is presently known of Soviet plans, areas of most rapid tonnage growth in the 1976-80 period will be ro-ro and container ships, and gas and petroleum tankers.

15. By 1980, ro-ro tonnage will have increased 540 percent over its end-1975 level to total 46 ships at 429 thousand DWT, or slightly over 2 percent of total merchant fleet tonnage (2). Full container tonnage will have increased 130 percent over its end-1975 level to 14 ships at 189 thousand DWT; since the number of ships will have increased only by 2, expansion of capacity will be emphasized. The number of ships having partial container capacity - 250 or more twenty-foot equivalent units (TEU's) - will grow from 38 to 78 for a total tonnage of over one million DWT - a 110 percent increase over the end-1975 level. Largely as a result of these additions, the liner fleet will acquire some 800 thousand DWT of new ships in the 1976-80 period. Still, taken as a whole, it will not expand markedly, since scrappings of aging general purpose cargo ships will probably match new additions.

16. The tanker fleet, on the other hand, will increase significantly in the 1976-80 period. The number of gas tankers will grow four-fold with the addition of eight units to total ten ships at 90 thousand DWT. In the same period petroleum tanker tonnage will expand 50 percent to 7.5 million DWT, or two fifths of total merchant fleet tonnage. Planned tanker deliveries will raise average Soviet petroleum tanker size by 13 percent, from 19.7 thousand DWT in 1975 to 22.3 thousand DWT in 1980, still less than half the current world average. Half of the new tonnage, however, will consist of ships over 50 thousand DWT, including Soviet-built Krym-class tankers of 150 thousand DWT, tankers of 112 thousand DWT from England, and 100-thousand tonners from Bulgaria (3).

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(1) See Table 3, Annex I
(2) See Table 4, Annex I
(3) Presently, the only Soviet oil terminals which can handle ships this large are Ventspils (up to 100 thousand DWT) on the Baltic and Novorossiysk (up to 250 thousand DWT) on the Black Sea.

17. Bulk carrier tonnage is scheduled to increase by about 17 percent in the 1976-80 period to 1.5 million DWT, and is expected to grow by an additional one-third by 1985. The increased capacity will probably be used mainly to cope with a larger volume of Soviet foreign trade and to avoid hard currency outlays currently required for chartering of bulk carriers to carry Soviet goods.

18. Because of its lack of adequate port facilities, the Soviet Union has had difficulties keeping its present fleet of combination oil/bulk carriers fully occupied in carrying Soviet trade. Nonetheless, it apparently plans to more than double its present fleet by 1980 to total ten or eleven ships. There is no evidence so far that the USSR intends to charter out these ships. With the increasing dependence of the East European countries on oil imports, it will probably use the ships to carry oil to the area from third countries, since tanker capacity in the East European countries is either currently non-existent or will soon be inadequate for oil import needs. The combination carriers will also probably be used to carry Soviet exports.

19. The 1978-79 period will see the introduction to the liner fleet of two barge carriers, totalling some 80 thousand DWT, employing Lash systems. Being built at the Valmet Yard in Helsinki, each vessel is designed to carry 26 barges of 1,300 DWT each and both are to be deployed in the Black Sea to link the USSR with the Danube River systems. As many as five barge carriers, totalling 400 thousand DWT, may be in use in the Soviet merchant fleet by 1985, especially in the Northern and Pacific Sea routes. Although Soviet shipyards have the capacity to build lighter barge carriers so far there is no evidence of construction.

20. By 1985, the gas tanker fleet should continue to see significant expansion to a total of 30 ships weighing altogether 300 thousand DWT. The anticipated fleet enlargement may indicate that the Soviet authorities plan on the growth of natural gas transport taking on relatively more significance than that of oil.

Development Emphases

21. What is known and can be deduced concerning Soviet merchant fleet expansion plans shows emphasis given to the development of certain specialized types of vessels, and little or no addition to general cargo fleet tonnage. Plans and orders for the liner fleet, such as they are known, point to an effort to modernize it and make it more competitive in world shipping markets. Larger Lash barges with bows are being developed, for instance, possibly for use in the Rhine-Danube trade. In the same vein, the expansion of the oil tanker fleet indicates an intention to capitalize on the profitable world oil trade.

22. In view of its rapid expansion of container capacity, the USSR is likely to have the capability of operating units totalling 10-11 thousand TEU's on the North Atlantic out of the Baltic by 1980, or 10 percent of all container capacity in the North Atlantic at that time. It is not certain,however, that all the new capacity will be placed in the North Atlantic; some may be used to open a container service from the Baltic to the Far East and Australia.

23. As a result of Soviet emphasis on ro-ro ship development, the Soviet ro-ro fleet is becoming one of the most advanced and commercially competitive in the world. With already two of the most advanced Finnish-built Magnitogorsk-class ro-ro's in its fleet, it has four more on order for delivery by 1980. With the additional capacity, it will be able to deliver commercial liner cargoes such as automobiles, or wheeled arms cargoes. The USSR has stated that it intends to deploy part of its additional ro-ro capacity in a service operating out of the Black Sea to the Far East and Australia. In any case, much of the capacity will probably be used to handle shipments in liner trade between countries other than the USSR.

Ship Deliveries from the West

24. In expanding and developing its merchant fleet, the Soviet Union will doubtless continue its practice of purchasing many items in the West. Of the three traditional suppliers of ships to the USSR - Finland, the GDR, and Poland - the GDR is currently preoccupied with renewal of its own fleet, and Poland, as noted previously, appears to be building ships increasingly for hard-currency sales in the West. The USSR may thus be expected possibly even to increase its Western ship purchases. Presently, 20-30 percent of new tonnage added to the Soviet merchant fleet each year comes from the West.

25. The USSR buys many of its ships in the West for their high technology; then if it is economically feasible to do so, it modifies and manufactures the technology under its own designs. It has followed this practice in developing its production capabilities not only for ro-ro ships, but also for lift ships (from Finland), multiflex ships (from France) and gas tankers (from the Federal Republic of Germany).(1)

26. The West has especially contributed to the growth of the Soviet ro-ro and tanker fleets. In 1976 alone, 45 percent of added ro-ro tonnage (and over half of new ro-ro capacity) came from Finland, and 17 percent of new tanker tonnage (in the form of a single 112-thousand-DWT tanker) came from the United Kingdom.

(1) For a description of these ship types, see Annex II

27. The West, in turn, purchases a certain number of Soviet and East European ships; but it does not thereby acquire much in the way of technology, even if it learns about Soviet thinking and methods in shipbuilding.

28. In the future, the USSR will probably seek to purchase more ships from the West on a barter basis. Indicative is a recent purchase from Finland of five passenger ships of the Byelaya Russkaya class, priced at $ 20 million each, in return for future deliveries of Soviet oil and gas.

III. FUNCTIONS

Fleet operating areas

29. Table 5 (Annex I) shows the distribution of the Soviet merchant fleet in terms of tonnage carried by operating areas at 1st January, 1977. Well over half the ocean-going tonnage is based on the Black Sea where tanker tonnage accounts for nearly half the total, and liner tonnage is a close second. The Baltic is the second most important fleet area and has most of the USSR's ro-ro capacity. The Pacific has the preponderance of full container capacity. Timber carriers are important ellements in the Northern and Pacific based fleets.

Commercial Functions

30. In terms of tonnage carried, the chief activity of the Soviet merchant fleet is to carry Soviet cargo in domestic and international trade. In 1976, movement of Soviet domestic freight (coastal cargoes) accounted for 38 percent of the tonnage carried by the Soviet merchant fleet, and transport of Soviet exports and imports took another 48 percent, or 103 million tons. Only 14 percent of freight carried was that of shipments between countries other than the USSR, or "cross trade" as it is known; and of this latter amount, over four-fifths was bulk and tanker shipments.(1)

31. In its international trade operations, the primary purpose of the Soviet merchant fleet is to earn and conserve hard currency. Merchant fleet international shipments earned $ 535 million in 1975, 6 percent of the USSR's hard-currency receipts in that year. Merchant shipping ranks only behind oil, gold, and timber sales as a chief hard-currency earner for the Soviet Union. Approximately three-fourths of the merchant fleet's hard currency earnings ($ 400 million in 1975) come from shipments of Soviet exports - in particular, the shipment of Soviet oil, coal, and other bulk commodities to Western Europe and Japan. The fleet also aids the Soviet balance of payments by earning clearing credits in the export of oil, phosphates, and other bulk goods to Warsaw Pact trading partners. Analysis of the 1975 fleet operations reveals that 46 percent of fleet capacity was being used for the commercial purpose of bolstering the USSR's foreign exchange position. (2)

(1) See Table 6, Annex I
(2) See Table 7, Annex I

Military Functions

32. The merchant fleet is readily adaptable to military use. Virtually all new merchant ships are over-built to military specifications with such features as nuclear wash-down systems and bead welding, a characteristic of military construction (1). They are thus readily convertible to naval vessels in times of national crisis and are considered to be among the most militarily adaptable ships in the world. As a result, however, they are more costly to construct than normal commercial ships.

33. The apparent Soviet emphasis on ro-ro ship development over that of container vessels probably derives to a large extent from military, in addition to commercial, considerations. Because ro-ro's are more easily convertible to military use than are container ships, they more greatly enhance the amphibious and resupply capabilities of the Soviet Navy. For instance, those of the Skulptor Konenkov class are ideal for moving military supplies : With a speed of over 20 knots and an 18,000-nautical-mile range, they can transport 300 tanks or 60,000 gallons of liquid cargo.

34. Even unconverted, ships of the Soviet merchant marine provide continuing support for the Soviet Navy. It is merchant tankers, for instance, which provide one-half of the oil supply of the Soviet Navy. Moreover, merchant ships reinforce Soviet Naval presence throughout the world. In time of crisis - whether it be national confrontation or shipboard emergency - a merchant ship will be ordered to a location if it is nearest at hand; its presence will then be replaced by a naval ship, once the latter arrives on the scene. Of the 850-1000 merchant ships at sea at any given time, 30-40, or from 3 to 5 percent, are continually assigned to handle potential crises. Thorough coordination of merchant ship activity and merchant fleet support of naval operations is assured by the fact that the merchant fleet is, like the Navy, under the control of admirals. In the Soviet view, the Navy and merchant and fishing fleets are considered all part of one command

35. In line with this concept, military-type discipline is observed on merchant-ship crews. For instance, crews are trained to prepare very quickly for unloadings. Again military-type markings have been observed on merchant ship hatches which indicate that military securing procedures are followed in event of a crisis alert.

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(1) Bead welding is a relatively new technique which is both more efficient and stronger than the older system of continuous welding.

36. The Soviet merchant marine also performs a military function in its carriage of Soviet arms and strategic materials. On the average, Soviet merchant ships deliver around 440 arms shipments per year. They also carry strategic raw materials both to and from the Soviet Union. The implications of these latter functions - the importance of the materials to the USSR and its client nations, and their vulnerability if the deliveries were interrupted - have not been completely assessed, partly because such an assessment would depend on the detailed identification of individual cargoes and their destinations.

37. Soviet merchant fleet shipyards themselves serve a military function, in that they can be rapidly converted to build naval ships. To the best of current knowledge, all Soviet shipyards, except for one on the Black Sea, have the capability to build naval as well as merchant ships. Moreover, all new shipyards constructed in the Soviet Union are naval yards, located according to naval needs. Merchant shipyards, on the other hand, are relatively old, and situated as a result of geography and historical developments.

Political Purposes

38. The Soviet merchant fleet fulfills a political function in that it "shows the flag" for the USSR in all parts of the world, and is used as a pretext for building up Soviet presence in those areas where the Soviets wish to increase their influence. It helps fulfill basic Soviet strategic and political objective of being present in every sea.

39. The merchant fleet also performs an important political function in effectuating Soviet military and economic aid shipments to various parts of the world. It is estimated that 27 percent of tonnage shipped in 1975 was directed to these ends (1). Indeed, part of the reason for Soviet expansion of hard-currency operations of its merchant fleet has been to provide cargo for Soviet merchant ships returning from arms and economic aid deliveries.

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(1) See Table 6, Annex I

IV. OPERATING POLICY

Penetration of World Shipping Markets

40. Of vital concern to many member nations of the NATO Alliance is the extent of the Soviet merchant fleet's penetration into their conference (1) liner shipping markets through its cross-trading activities. By offering ship transport on conference routes at drastically cut rates, the USSR has been able to capture in recent years sometimes substantial portions of the traffic normally carried by conference liners. Western shipping lines have thus seen an erosion of their profits and resulting unemployment. In addition, it is feared that the Soviet merchant fleet could capture an increasing portion of liner conference markets and then, when competition has been eliminated, abruptly raise its rates.

41. With the consequent growth in Soviet carriage of Western goods, a strategic question also arises as to increased Soviet ability to control and interdict these shipments, if it should choose to do so. As is the case with strategic Soviet exports to the West, however, this question cannot be readily answered without detailed information on individual cargoes and their destinations.

42. In general, the extent of Soviet liner cross-trade activities is still relatively small. The great majority of Soviet cross trade takes place outside of scheduled liner services. In 1976, 83 percent or 25 million metric tons of all Soviet cross-trade cargoes were bulk and other goods in shipload lots under non-scheduled charter (2). This type of cross trade has caused little concern among Western shipowners, because the world tanker and bulk carrier fleets and charter markets are too large for the Soviet fleets to have measurable influence on rates; the rates are freely fluctuating and business goes to the lowest bidder. In fact, the Soviet portion of tonnage carried in this highly competitive market has probably slipped in recent years.

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(1) A conference is an association of liner owners operating in a given direction on a given trade route; the conference sets rates charged by its members and allots sailings among them.

(2) These are known as "tramp" shipments.

43. Soviet carriage of liner cross trade, on the other hand, although still small in terms of total Soviet cross-trading activity, has expanded tenfold between 1965 and 1976 (from 0.5 million tons of cargo to 5 million tons annually (1), and now represents perceptible percentages of market shares captured from certain world shipping conferences - notably those operating in the North Atlantic, Baltic, and Pacific Oceans. During 1976 Soviet ships carried about 4 percent of the North Atlantic trade (US/Western Europe) and 6 percent of the available liner area cargo on the Pacific trade route (US/Far East). Again, in the Europe-East Africa trade, Soviet-controlled Besta line liftings in 1977 were approximately 16 percent southbound and 8 percent northbound of total liner trade, on a tonnage basis (the 1976 percentages were 15 and 6, respectively).

44. Another way of measuring Soviet penetration of the liner cross trades is on a country-by-country basis. In the 1970-76 period, for instance, the portion of German international ocean-going freight carried by Soviet liners has tripled, from 1.4 percent of total tonnage to 4.5 percent (2). Similarly, the portion of US liner cargoes carried by Soviet ships has increased from 0.9 percent in 1973 to 3.4 percent of total tonnage carried by mid-year 1977.

45. The issue of Soviet penetration of the liner cross trades, however, is not so much one of the percentage of trade taken, as is the rate-cutting required of Western shipowners to match the Soviet competition. Since liner conferences operate on a small margin of profit even a limited incursion into the market by an outsider results in lost revenues and necessitates a lowering of rates in order to keep vital business. In 1977, for instance, the Europe-East Africa Conference reportedly lost $35-40 million in its efforts at counter rate cutting to match Soviet rates. Soviet incursion into conference liner markets is thus a question touching on the health of an important sector in many NATO member nations' economies. To the extent that affected enterprises have looked to their governments for redress, it has also become a political issue. Finally, in that it aids the Soviet hard-currency balance of payments and at the same time threatens to weaken Western countries' economies, it also concerns national defense.

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(1) See Table 7, Annex I

(2) For German shipments in the North Atlantic, the portion carried by Soviet liners has increased in the 1970-76 period from 2 to 11 percent (while that carried by German ships has declined from 31 to 22 percent); for German shipments to East Africa, the portion carried by Soviet liners has gone from 2 to 9 percent (while the portion carried by German vessels has subsided from 15 to 11 percent); and for German trade with the Far East, the percentage changes have been respectively, for Soviet liners, from 7 to 8 percent, and for German liners, from 19 to 17 percent.

Means of competition

46. The means by which the Soviets have been able to penetrate the liner routes has been that of rate-cutting, initially sometimes as much as 40-50 percent below conference fares. Once the Soviet lines are able to give better service, partly through the employment of more modern and efficient ships, they tend to maximize their income by raising their rates to within 10-15 percent below those charged by conferences, a standard discount for non-conference shippers. On the North Atlantic conference routes, for instance, it is now independent carriers other than Soviet lines which have the lowest rates and probably the greater penetration into conference markets.

47. Soviet enterprises know that because of their ships' relative inefficiencies and slower service, they cannot successfully compete with established liner services at conference-set rates. They thus purposely set fares below going rates, so as to attract customers giving preference to low rates over efficient service. The rates chosen probably depend primarily on the amount of business and hard currency demanded by current plans. Consideration of equipment and operating costs probably plays only a secondary role in rate-setting, since the Soviet shipping companies themselves doubtless have difficulty determining costs with precision, as a result of complex systems of allotments and "hidden" subsidies such as state insurance and social welfare expenditures. Moreover, as a result of preoccupation with plan fulfillment, they seem to set rates with little regard to protests from Western shipping interests, which often claim that the rates are "below costs". In any case, there is probably no adequate way to compare Soviet and Western merchant fleet costs, since they have such widely divergent bases of calculation.

48. Another means by which Soviet shipping companies compete with Western liner trade is in their insistence on buying f.o.b. and selling c.i.f. Thus, in 1976 Soviet ships carried 64 percent of the USSR's maritime trade with the United Kingdom, 75 percent of that with West Germany, and 97 percent of that with Japan. Although such trade is bilateral and therefore not cross trade, it has taken on added significance as Western trade with the USSR has grown in volume.

49. Still another type of Soviet competition with Western conference liner shipping arises from the so-called Trans-Siberian Land Bridge (TSLB) - basically, improvement and containerization of the trans-Siberian railway (1). Because trade between Europe and the Far East is particularly large, the competition of the TSLB with liner services linking the two areas has great potential for disruption. At present, it is estimated that the TSLB carries 8-10 percent of total Europe-Far East trade. The transit time from door to door via the TSLB is currently little faster than

(1) For details of this operation, see Annex III

the fastest sea route, but the USSR is attracting cargoes by offering a rate advantage of 40-50 percent on some goods. Rate-cutting is especially evident on eastbound carryings, to help them keep pace with the increasing use of the TSLB for carrying goods from the Far East to Iran. Overall, the increased business of the TSLB appears more or less to have kept pace with total trade increases between Europe and the Far East, and the position of Western shipping companies does not seem to have been undermined.

Soviet attitude toward Joining Conferences

50. Efforts by Western nations to induce the USSR either to raise its shipping rates or to have its shipping companies join extablished conferences have met with only limited success. Soviet shipping companies still generally tend to resist joining conferences. In May 1977 they belonged to conferences on only twelve routes (1). When conference membership is discussed the Soviets tend to drag negotiations along with no concrete progress. Most effective in achieving movement have been threatened adverse legislation or executive decrees in the countries affected, or adverse publicity. Sometimes merely addressing pointed questions to the Soviet authorities, as for example authorized in the UK 1974 Shipping Act, has produced results. Threatened EC and OECD action have also kept Soviet lines from reducing their rates further in certain instances.

51. The current Soviet attitute toward joining conferences is characterized by stances taken in negotiations with four conferences where outsider cross trading has become a particularly pressing issue. In the Europe-East Africa trade, negotiations between the Soviet Besta Line and the conference have stalled over failure to agree on the number of sailings and percentage of conference revenue Besta should have. Negotiations between the India/Pakistan/Bangladesh Conference and the Soviet Baltic Shipping Company concerning conference membership are continuing but do not look promising, as the latest Conference offer would force Baltic to cut its current number of sailings drastically. Efforts to integrate the Soviet Baltatlantic Shipping Company into the Continental North Atlantic Westbound Freight Conference on a differential rate basis favorable to the Soviet firm suffered a serious setback in July 1977. At that time, Baltatlantic withdrew its pending conference membership application originally put forward in response to declining earnings and US regulatory measures, on the grounds that the extended hearing required by the United States would put final approval of conference membership beyond the point of commercial usefulness. Baltatlantic is now in the process of making a second application, however. Finally,

(1) See Table 8, Annex I

the Soviet Fesco Line has turned down an invitation to join the Pacific Coast Australia Tariff Bureau on the grounds of Fesco's "inexperience in this trade".

52. Regarding the trans-Pacific trade, in May 1977 the USSR established a triangular container service from Japan to the United States West Coast and from there to Australia. Replacing an earlier unsuccessful Fesco container service between Japan and Australia to take advantage of the profitable US southbound trade route to Australia, and to attain access to rail connections between the US West and East coasts, the new service now carries about 10 percent of all Australian imports from the United States. As an indic ation of the Soviet attitude toward joining conferences, the new service shows the tendancy of the USSR to attempt to become firmly established in lucrative routes before giving indication of interest in conference membership.

Western Response to Soviet Cross-Trade Incursion

53. Western nations, especially the United States and member nations of the European Community, have been giving active consideration to a number of measures to forestall Soviet merchant fleet incursion into their liner trades. Within the EEC a Working Group of the EEC Secretariat is currently examining the feasibility of a number of tangible measures. These fall into three categories : Those to be accomplished through bilateral accords, those incorporated in multilateral accords, and those effected via unilateral actions taken in concert by Western nations. Already, since June 1977 the Netherlands has set up a system of licensing under its Maritime Shipping Retortion Act, in an attempt to restrain injurious cross-trade. The Maritime Transport Committee of the OECD is also keeping the problem under close study, although it has not yet arrived at any specific program of action. Finally, in the United States, a Third Flag Carrier Bill has been introduced in Congress to induce uniform rates on all third-country liners carrying goods to or from the United States. (1)

(1) Applying only to cross trade (and therefore not affecting Soviet carriage of goods traded between the US and the USSR), the Bill requires all non-conference carriers to charge conference fares or otherwise to go through complicated filing procedures the rates filed, moreover, must be judged "just and reasonable by the US Federal Maritime Commission. Exempted from the law, if it is passed, would be carriers in countries with which the the United States has concluded a Treaty of Friendship and Navigation, state-owned shipping lines in countries which are traditional US allies, and conference members themselves- about fifty carriers in all.

54. Holding the USSR to traditional, accepted shipping practices, however, will be most effectively accomplished if Western shipping nations act in concert in establishing a strategy to respond to Soviet rate-cutting practices and in exchanging information on Soviet negotiating tactics and stances in merchant maritime matters.

55. It has been suggested that adoption of the UNCTAD Code of Shipping Conduct might help to solve the problem of Soviet liner rate-cutting. Adoption of the Code would probably reduce Soviet participation in most liner trades significantly, although the USSR maintains that the Code would not apply to bilateral shipping practices established before the Code's adoption. Moreover, certain NATO member countries are opposed to the Code because it would effectuate a freight-rate freeze and closed conferences, and in addition would probably not completely solve the problem of Soviet merchant fleet competition with world shipping.

56. With the expansion of cross-trading activities, Soviet shipping companies are facing rising costs abroad, resulting from the necessity of establishing additional offices and paying more for other supportive facilities and services. As these costs represent an increasing drain on hard-currency earnings from shipping, the Soviets may in time find it to their advantage to charge substantially higher fares to offset these costs. Concurrently, they may find it advantageous to join more conferences, since as well as providing increased fares conference membership would confer added respectability to Soviet lines and give them additional port privileges needed for effective, speedy service.

V. COMPLEMENTARY FLEETS

River Fleet

57. Little is known of the Soviet merchant river fleet. Even a reliable estimate of its size is lacking. There are some 350-400 units totalling around one million DWT, having a combined river-sea-going capability, but the USSR has thousands of smaller river ships to handle transport on its vast internal waterway network. Information is also lacking on the USSR's plans for the expansion of its river fleet. The only general cargo river ships it is known to be currently building are in the 2000-2500 DWT range and are being added to the fleet in substantial numbers. Push barges are also being developed, as are powerful ice-breakers for employment initially along the Volga-Baltic waterway (1).

(1) Once this nuclear-powered icebreaker is deployed (the prototype was scheduled to go into operation at the end of 1977), it will have important commercial and military implications. Commercially it will enhance the USSR's canal system as a cargo route between Western Europe and Iran. Militarily it could be of use in making the Baltic-White Sea Canal navigable throughout the year. The canal is of great naval importance because it links the Soviet Navy's main shipbuilding and repair centers near Leningrad with its ice-free bases near Murmansk - the only bases from which Soviet warships have open access to the North Atlantic.

Some Eastern European countries - notably Bulgaria and Czechoslovakia - are playing significant roles in the development of the Soviet river fleet by their deliveries of certain types of river craft. An indication of Soviet plans for river fleet deployment is the fact that berths at several Far East ports are being expanded up to a distance of six kilometers.

58. Use of river-sea routes drastically reduces costly and time-consuming transloading and transshipping operations at maritime ports and so provides the Soviets with a significant advantage in the highly competitive international liner trades. Because of the implications of Soviet river fleet development for future competition on the Rhine-Main-Danube waterway, the matter is under serious study by the Danube Commission and various individual NATO member governments including the United States. Already the Soviet Union has publically insisted on the future free navigation of the waterway, which will be completed around 1985, by pointing to the provisions of the Act of Manheim, which guarantees free navigation of the Rhine, and of the Convention of Belgrade, which stipulates that the Danube be open to ships of all flags. In so doing, it has tended to construe the principle of free navigation as a license for the free acquisition of freight. To protect Western shipping firms from possibly ruinous competition on the Rhine-Main-Danube waterway, proposals have been advanced within the European Community which would tend to restrict rights of cabotage on the Waterway.

Fishing Fleet

59. The status of the Soviet fishing fleet has not significantly change since it was last reported on in an extensive NATO study, in May 1977, of the Soviet fishing industry (C-M(77)39)(1). Certain recent developments, however - notably the establishment of 200-mile fishing zones contiguous to national bounderies throughout much of the world - have implications for the future of the Soviet fishing fleet which have as yet not been fully assessed.

60. The USSR has the largest large-ship fishing fleet in the world, comprising over 4,50 ships totalling near 7 million gross registered tons (GRT). With over half of the world's fishing tonnage, however, it fishes around one-tenth of the world's annual catch. Its low efficiency derives from several causes. First the large average size of its vessels makes for diseconomies of scale, such as large crews and excessive fuel consumption, and necessitates a high proportion of support ships, such as fish carriers, floating factories and supply ships. It has been estimated that half of the Soviet fishing fleet is non-catching as opposed to 10 percent non-catching ships in Japan's fishing fleet; 49 tankers, for instance, are needed to support Soviet fishing operations. Another reason why Soviet fishing ships are inefficient also partly explains their large size : They have to cover long distances before reaching fishing grounds.

(1) Updated in ED/ED/77/94 of December 1977

61. Despite the fishing fleet's large capacity, at the end of 1977 there was no sign that the Soviets were slackening off from their rapid fishing vessel construction program. They have recently designed a super Atlantika-class vessel, for instance, as well as a 5,000-ton trawler. They are emphasizing the construction of more efficient fishing units and the retirement of inefficient tonnage. Part of the reason for the continued rapid pace of Soviet fishing fleet expansion can be found in bureaucratic inertia and the conviction that present difficulties brought about by the recent establishment of 200-mile fishing zones are only temporary.(1).

62. Since there has not been enough time to measure the full impact of fishing-zone establishment on Soviet fishing, it is difficult to evaluate Soviet catch prospects and their implications for the composition of the future fishing fleet. Some experts hold that, although the Soviets are apparently trying to move some of their fishing operations to the Southwest Pacific and the Indian Ocean, they face the prospect of their catch declining in both the short and long term - possibly by as much as 2 million tons from its present level of around 10 million tons annually. Such a decline would have adverse consequences for the Soviet food industry, and could negatively affect the diet and protein intake of the Soviet consumer. Aware of these possibilities Soviet researchers are busy investigating advanced fishing methods and the possibilities of utilizing exotic types of fish.

63. Other authorities maintain, however, that the most likely prospect for the future Soviet catch is merely stagnation, not decline. They foresee that, after a short-term decline, the catch will recover to present levels as the Soviet Union arrives at international accords to offset the negative effects of the 200-mile fishing zones. An agreement concluded in January 1978 between the USSR and Norway concerning a disputed fishing area in the Barents Sea tends to confirm the likelihood of such a trend.

64. Even a stagnating catch, however, coupled with the current Soviet program of rapid fishing fleet expansion, could have important implications for the future of the fleet : 1) its productivity might decline still further; 2) part of it might be sold abroad; or 3) scrapping of older vessels might increase. Although a combination of all three trends is possible, some experts think that emphasis will be given to a scrapping of old Mayakovsky vessels, implying a change in future Soviet fishing techniques.

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(1) Canada, Norway, and the US report no overfishing by Soviet fishermen in their countries' waters since the establishment of the fishing zones; in fact, Soviet catch in US waters has been below the quota allowed by accords now in force.

CONCLUSIONS AND MILITARY IMPLICATIONS

65. Commercially, the Soviet bulk carrier and tanker fleets are too small to have measurable impact on world shipping markets, and fleet expansion plans seem aimed mainly at meeting future Soviet export and import shipping needs, as well as continuing to earn the significant amounts of hard currency that cross trading with these carriers brings. The Soviet liner fleet, on the other hand, is being rapidly modernized and in some cases has already made substantial inroads into highly competitive world liner shipping markets, largely as a result of an aggresive policy of rate undercutting. If present trends continue, it might be in a position by 1980 to capture as much as 10 percent of the tonnage carried in certain important conference liner markets.

66. Certain considerations mitigate against such an eventuality however. One is the costs accruing to the Soviet merchant fleet as it extends its operations. As Soviet lines take on additional offices and Western services to support increased liner operations in the West, they will probably find it to their advantage to raise their fares and even to join conferences in order to assure continued maximum earnings. Again, in response to Soviet merchant fleet competition, Western shipping firms will probably develop even more efficient and specialized carriers, and so will forestall further Soviet inroads into lucrative liner markets. Finally, Soviet competition will undoubtedly be restrained by the increasing tendency of Western governments to take measures against it, or at least to apply pressures to force Soviet liner shipping firms into conferences.

67. The Soviet merchant fleet plays an important support role to the Soviet Navy and will in all likelihood continue to do so. It plays an especially important role in enhancing the amphibious and re-supply capabilities of the Soviet Navy, and expansion plans suggest that this function will be emphasized in the future. For this reason, the subject should be kept under review by the West as a marginal component of military assessment. Another potential strategic threat arises from increasing Soviet carriage of Western goods in cross trades. Although detailed analysis of cargoes is lacking, it appears that the volume of goods is still too small, and that the goods are not of a type, to pose a strategic threat, should the USSR wish to disrupt their delivery.

68. On the other hand, the Soviet merchant fleet is itself both commercially and strategically vulnerable in four main areas. Among them are : a) Ship supply : Planned Soviet expansion of merchant fleet vessel types may be based in certain instances on false information and planning errors. Planned tanker procurement, for instance, may have failed to have taken adequate account of

expansion of merchant fleet vessel types may be based in certain instances on false information and planning errors. Planned tanker procurement, for instance, may have failed to have taken adequate account of excess world tanker capacity through the early 1980's. Again, the fact that up to one-third of new Soviet merchant fleet ships are built in the West suggests that the effectiveness of the fleet expansion program could be severely hampered by disruption of these deliveries. b) Military orientation The fact that the operation and the expansion policy of the Soviet merchant fleet are strongly influenced by military considerations suggests that commercially the fleet will be hampered to a certain degree in responding to world shipping market developments and trends. Although it may become competitive in certain areas, it may never be able to develop the degree and types of specialisation nor to make the rapid changes required for effective competition in these markets. As Western pressure or economic developments force Soviet shipping firms either to raise rates or to join conferences, they may therefore find their business considerably reduced. c) Hard currency earnings. On the other hand, because the merchant fleet earns up to 5 percent of Soviet hard currency receipts, USSR hard currency earnings would be significantly affected by curtailment of Soviet participation in Western shipping markets. Soviet shipping firms will probably be under mounting pressure, therefore, to maintain their hard-currency earnings under increasingly difficult conditions.d) Overextension. Because of the rapid expansion of the size and operations of the Soviet merchant fleet to virtually every area of the wprld, it has become increasingly dependent on external support services and facilities and vulnerable to a threat of their disruption.

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TABLE I

COMPOSITION OF THE SOVIET MERCHANT FLEET AS OF 1ST OCTOBER, 1977

Types	No. of Vessels (1)	Tonnage ('000 DWT) (1)	Average DWT ('000)	% of total Tonnage
1. Liner				
(a) General cargo (2)(3)	1,123	8,253	7.3(4)	48.8
(b) Roll-on/ Roll-off	22	172	7.8	1.0
(c) Full container	14	123	8.8	0.7
(Sub-total)	(1,159)	(8,548)	(7.4)	(50.5)
2. Refrigerator	32	158	4.9	0.9
3. Bulk carrier	121	1,571	13.0	9.3
4. Combination bulk/oil carrier	4	364	91.0	2.2
5. Tanker (3)				
(a) Petroleum	278	5,890	21.2	34.8
(b) Gas	6	43	7.1	0.3
(c) Specialized	15	188	12.5	1.1
(Sub-total)	(299)	(6,121)	(20.5)	(36.2)
6. Passenger	71	156	2.2	0.9
TOTAL	1,686	16,918	10.0	100.0

(1) Figures represent number of ships and DWT in 1,000 ton increments. Ships of under 1,000 DWT are thus not reported.

(2) This figure includes around 400 timber carriers totalling approximately 2 million DWT, or 5,000 DWT per ship, on the average. Timber carriers represent approximately 12 % of total fleet tonnage.

(3) These figures do not reflect 264 (782,000 DWT) river-sea cargo and 86 (416,000 DWT) river-sea tanker units designed for trade from river ports in the Mediterranean, Northern Europe, and the North Pacific.

(4) The average tonnage for the Soviet General cargo ships, not including timber carriers, is approximately 8 thousand tons; and the proportion of general cargo ship tonnage, excluding timber carriers, to total fleet tonnage is about 37 %.

Source : US Government

TABLE 2

SOVIET MERCHANT FLEET GROWTH, 1959 - 76

Year	Inventory of 31 December (1)		Net increase in Tonnage		Deliveries During Year
	Number	Million Deadweight Tons	Million Deadweight Tons	Percent	Million Deadweight Tons
1959	590	3.3	0.3	6	0.4
1960	650	3.9	0.6	18	0.6
1961	680	4.2	0.3	8	0.4
1962	740	5.7	0.9	19	0.9
1963	820	5.7	0.9	19	0.9
1964	900	6.9	1.2	21	1.3
1965	990	8.0	1.1	16	1.2
1966	1,070	8.9	0.9	12	1.0
1967	1,150	9.7	0.8	9	0.8
1968	1,230	10.4	0.7	8	0.8
1969	1,310	11.2	0.8	7	0.8
1970	1,400	11.9	0.7	7	0.8
1971	1,440	12.3	0.4	3	0.5
1972	1,460	12.6	0.3	2	0.5
1973	1,520	13.4	0.8	6	1.0
1974	1,590	14.3	0.9	6	0.9
1975	1,650	15.2	-9	8	1.1
1976	1,700	16.5	1.3	9	1.4

(1) Excluding passenger ships

Source : US Government

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TABLE 3

SOVIET MERCHANT FLEET, 1975, AND PROJECTED GROWTH, 1980, 1985, BY VESSEL TYPES

Types	31st December, 1975			31st December, 1980			Tonnage change in % 1975-1980	31st December, 1985			Tonnage change in % 1980-1985
	Number of Vessels	Tonnage (Mill. DWT)	Average DWT ('000)	Number of Vessels(1)	Tonnage (Mill. DWT)	Average DWT ('000)		Number of Vessels(1)	Tonnage (Mill. DWT)	Average DWT ('000)	
1. Liner											
(a) General purpose	809	6.505	8.0	n.a.	6.00	-	- 7	n.a.	n.a.	-	-
(b) Roll-on/Roll-off	17	.067	3.9	46	.43	9.3	540	80	.80	10	81
(c) Full container	12	.082	6.8	14	.19	13.6	130	25	.25	10	32
(d) Barge carriers	0	0	-	2	.08	40	-	5	.40	80	400
(Sub-total)	(838)	(6.654)	(7.9)	-	(6.70)	-	1	-	-	-	
2. Refrigerator	28	.134	4.8	40	.16	4.0	19	50	.20	4	25
3. Timber carrier	387	1.910	4.9	n.a.	2.08	-	8	n.a.	n.a.	-	-
4. Bulk carrier	110	1.277	11.6	121	1.50	12.3	17	180	2.00	11	33
5. Combination oil/bulk	4	.365	91.2	n.a.	.91	-	149	n.a.	n.a.	-	-
6. Tankers(1)											
(a) Petroleum	271	4.94	19.7	335	7.48	22.3	40	360	9.05	25	21
(b) Gas	2	n.a.	-	10	.09	9	-	30	.30	10	233
(c) Specialized	10	.03	3	10	.03	3	0	10	.05	5	67
(Sub-total)	(283)	(4.97)(2)	(19.0)	(355)	(7.60)	(21.4)	42	(400)	(9.40)	(24)	24
7. Passenger	68	.15	2.2	75	.20	2.6	33	75	.20	2.6	0
TOTAL:	1,718	15.46 (2)	9.2(2)	2,000(3)	19.05	9.5	20	2,200(3)	22.0(3)	10	14

(1) Over 1,000 DWT.
(2) Excluding gas tankers.
(3) Estimate.

Source: United States Government

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TABLE 4

SOVIET MERCHANT FLEET: HOLDINGS AND ACQUISITIONS OF CONTAINER CARRYING SHIPS 1976-1980

Ship Types and Classes	Country of Build	Speed (Knots)	DWT	Container Capacity (TEU)	In Service 31st December, 1975			Delivered 1976			In Service 31st December, 1976			Planned for Delivery 1977-80			Planned to be in Service 31st December, 1980		
					Number	DWT	TEU	Number	DWT	TEU	Number	DWT	TEU	Number	DWT	TEU	Number	DWT	TEU
TOTAL					65	641,611	19,283	18	242,562	9,301	83	884,173	28,584	61	782,493	28,893	138	1,666,666	56,451
RO/RO					15	59,755	2,877	7	93,862	5,004	22	153,617	7,881	24	275,693	14,209	46	429,310	22,090
Magnitogorsk	Finland	22.0	21,000	1,368				2	42,000	2,736	2	42,000	2,736	4	84,000	5,472	6	126,000	8,208
Kapitan Smirnov	USSR	27.0	18,000	1,000										2	36,000	2,000	2	36,000	2,000
Skulptor Konenkov	Poland	20.5	17,500	774				2	35,000	1,548	2	35,000	1,548	4	70,000	3,096	6	105,000	4,644
Hamlet	Denmark	16.5	12,800	380										2	25,600	760	2	25,600	760
Izhener Machulskiy	Finland	16.8	6,031	239	5	30,155	1,195	2	12,062	478	7	62,217	1,673	2	18,093	717	10	60,310	2,390
Ivan Skuridin	USSR	17.0	4,800	242	1	4,800	242	1	4,800	242	2	9,600	484	7	33,600	1,694	9	43,200	2,178
Akademik Tupolev	France	17.0	4,200	235	4	16,800	940				4	16,800	940	2	8,400	470	6	25,200	1,410
Viirelaid	W. Germany	13.0	1,600	100	5	8,000	500				5	8,000	500				5	8,000	500
FULL CONTAINER					12	82,106	3,827	2	26,600	1,458	14	108,706	5,285	6	79,800	4,374	14	188,506	9,659
Khudozhnik Saryan	E. Germany	20.8	13,300	729	1	13,300	729	2	26,600	1,458	3	39,900	2,187	6	79,800	4,374	9	119,700	6,561
Alekeandr Fadeyev	USSR	17.0	6,356	358	5	31,780	1,790				5	31,780	1,790				5	31,780	1,790
Sestrorstak	USSR	15.0	6,171	218	6	37,026	1,308				6	37,026	1,308					37,026	1,308
PART CONTAINER(1)					38	499,750	12,579	9	122,100	2,839	47	621,850	15,418	31	427,000	10,310	78	1,848,850	24,702
Kapitan Panfilov(2)	USSR	14.1	14,500	345	1	14,500	345	1	14,500	345	2	29,000	690	6	87,000	2,070	8	116,000	2,760
Nikolay Novikov	Poland	15.8	14,000	280	15	210,000	4,200	5	70,000	1,400	20	280,000	5,600	5	70,000	1,400	25	350,000	7,000
Geroi Panfilovtsy	USSR	18.5	13,500	342	7	94,500	2,394	1	13,500	342	8	108,000	2,736	20	270,000	6,840	28	378,000	8,550
Varnemyunde	E. Germany	18.5	12,050	376	15	180,750	5,640	2	24,100	752	17	204,850	6,392				17	204,850	6,392

(1) With Container Capacity of 250 or more TEU (Twenty-foot equivalent units).
(2) Primarily an ore carrier unlikely to be assigned to international liner service.

Source: United States Government

TABLE 5

DISTRIBUTION OF SOVIET MERCHANT FLEET BY OPERATING AREAS AT 1ST JANUARY, 1977 (THOUSAND DWT)

	Northern	Baltic	Black	Pacific
General Purpose	275	1,896	3,328	1,029
Full container	-	28	15	84
Ro-Ro	-	131	27	10
Timber carriers	688	330	65	833
Bulk Carriers	240	50	1,368	295
Tankers	8	684	4,574	513
TOTAL	1,211	3,119	9,377	2,764

Source : UK Government

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TABLE 6

EMPLOYMENT OF THE SOVIET MERCHANT FLEET BY SHIP TYPE, 31ST DECEMBER, 1975

(Million DWT)

			Ship Type							
		Total	General Purpose Dry Cargo	Tanker	Timber Carrier	Bulk Dry Cargo	Combination Oil/Dry Bulk Carrier	Refrigerator	Cellular Container-ship	Roll-on/ Roll off
Major current employment	Per Cent	100	42	33	13	3	2	1	1	negl.
TOTAL	100	15.3	6.5	5.0	1.9	1.3	0.3	0.1	0.1	0.1
DOMESTIC/MILITARY PURPOSES (Sub-Total)	27	4.1	2.9	0.5	0.1	0.5	-	0.1	-	-
Carriage of internal trade	10	1.5	0.8	0.4	0.1	0.2	-	-	-	-
Carriage of imported capital goods	13	2.0	2.0	-	-	-	-	0.1	-	-
Carriage of vital bulk imports and foodstuffs	3	0.4	-	-	-	0.3	-	-	-	-
Routine peacetime support of Soviet armed forces	1	0.2	0.1	0.1	-	-	-	-	-	-
POLITICAL PURPOSES (Sub-Total)	27	4.1	2.6	1.5	-	-	-	-	-	-
Carriage of economic and military aid cargos to Communist and Third World client countries	27	4.1	2.6	1.5	-	-	-	-	-	negl.
COMMERCIAL PURPOSES (Sub-Total)	46	7.1	1.0	3.0	1.8	0.8	0.3	-	0.1	0.1
Carriage of exports to OECD countries for hard currency	30	4.7	-	2.5	1.7	0.2	0.3	-	-	-
Carriage of exports to CEMA partners	8	1.2	-	0.5	0.1	0.6	-	-	-	-
Carriage of cross trade and transit cargo for hard currency	8	1.2	1.0	-	-	-	-	-	0.1	0.1

Source: United States Government

TABLE 7

CARGOES CARRIED BY SOVIET MERCHANT FLEET
1965-1976 (MILLION TONNES)

	1965	%	1970 (1)	%	1975 (1)	%	1976	%
Coastal Cargoes	62.5	53	71.6	38	77.8	39	80	38
Soviet seaborne international trade cargoes	49	41	75.3	47	92.0	46	103	48
Cross-trade cargoes	7.5	6	15.0	9	30.0	15	30	14
(of which liner)	(0.5)	(0.4)	(n.a.)	47	(n.a.)	46	(5)	(2)
TOTAL	119	100	161.9	100	199.8	100	214	100

(1) Metric tons

Source : Official US and UK Statistics

TABLE 8

CURRENT SOVIET MERCHANT FLEET MEMBERSHIP IN CONFERENCES

1	Europe/River Plate/ Europe	
2	Europe/Brazil/Europe	
3	Europe/Australia	two separate conferences
4	Australia/Europe	
5	New Zealand/Europe - Northbound only	
6	Europe/West Africa/Europe (COWAC)	
7	Mediterranean/Canada	two separate conferences
8	Canada/Mediterranean	
9	Mediterranean/Great Lakes	two separate conferences
10	Great Lakes/Mediterranean	
11	West Italy/North Atlantic (WINAC) - Westbound only [Soviet line may have withdrawn - situation unclear]	
12	International Passenger Ship Association (Europe to USA)	

Source : World Directory of Freight Conferences
Croner Publications Ltd, 46-50 Coombe Road,
New Malden, Surrey, KT3 4QL

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TERMINOLOGY

Merchant ships are generally classified on the basis of the goods they carry. Thus a preliminary distinction is made between those that carry dry cargo of any type, and those that carry either liquids or gases - tankers. Within the category of dry cargo ships a broad division can be made between ships designed to handle general cargo, and those designed to transport unpackaged commodities in bulk (principally bauxite, phosphate, iron and other metal ores, coal, and grain), known as bulk carriers.

2. Among general cargo ships, moreover, a distinction is sometimes made between vessels designed to handle specific types of dry cargo - such as refrigerator ships and timber carriers - and liners. Liners are ships designed to transport general cargo which usually, but not necessarily, operate on established shipping routes according to fixed schedules - that is, on shipping lines.

3. New types of ships have been developed in recent years to handle the transport, and especially the loading and unloading of general cargo more efficiently than is possible with conventional general purpose cargo ships. Also characterized as liners, but more specifically known as unit load ships, these new ship types include container ships, roll-on/roll-off (ro-ro) vessels, lift ships, multiflex ships, and barge carriers.

4. With container ships, goods are put into uniform containers for transfer from one means of conveyance to another (truck, train, ship) without re-packing; because of the uniformity of the containers, specialized equipment can quickly effect transfer. Ro-ro vessels have special loading ramps for transfer directly from ship to road, and vice-versa, of automobiles or goods in motorized or non-motorized vehicles. Often these vehicles are containerized. Lift ships, meant for the transport of heavy equipment such as cranes and oil derricks, are often semi-submersible for easy loading and unloading. Multiflex ships are extremely versatile, ro-ro's which can also easily handle containers and general cargo.

5. Barge carriers are of several types, but all transport a number of smaller vessels, or barges, to facilitate shallow-water unloading and transfer. The two principal types are the lighter-aboard-ship (Lash) system, which can carry up to 89 barges of 370 tons each, and the Seabee, which can carry 38 barges

each weighing 850 tons.

6. Finally, a hybrid type of ship exists which can transport either liquids (generally oil) or dry commodities in bulk; these ships are generally termed combination oil/bulk carriers, or simply combination carriers.

To recapitulate, ships can be categorized as follows :

I. DRY CARGO

A. General Cargo

1. Liners (general purpose; unit load)
2. Refrigerator ships
3. Timber carriers

B. Bulk carrier

II. TANKER

A. Petroleum

B. Gas

C. Specialized

III. COMBINATION OIL/BULK

TRANS-SIBERIAN LANDBRIDGE (TSL)

Facilities

The TSL draws traffic by road and rail from Central Europe by sea from North Europe and the United Kingdom. This traffic travels from various railheads in Western USSR to the Eastern seaboard via the Trans-Siberian Railway (TSR), whis is the only through overland connection. This route is double tracked and although electrification is still not complete, the line provides an efficient and reliable through route for both passengers and freight with a capacity of some 100 trains per day. The major development in rail transport for the area is the building of the Baykal-Amur-Magistral (BAM) railway. This new line now under construction, which runs almost parallel to the TSR, will double the overall railway capacity to the Pacific coast t of the USSR. It will be 3,400 km long of which some hundreds of kilometres have now been laid. However, as this route crosses terrain which is most difficult from a construction point of view, completion is not now scheduled until 1983. It is more than possible that even this date may be extended.

2. Although there is still no through trans-continental road from Brest to Vladivostok, a two-lane hard surface road now extends as far East as Cholyabinsk. Reports indicate that construction is planned or in progress on several sections of the Trans-Siberian Highway (RSH) between Cholyabinsk and Vladivostok which will complete the through route. Progress is difficult to assess and it is not possible to forecast a complete date but it seems unlikely that the TSH will be in operation before 1990. When it is complete, the trans-continental road from Brest to Vladivostok will be some 9,900 km long. Feeder roads are also planned.

3. Road, rail and ship (including canal) systems in the West of the USSR are reckoned to be more than adequate to support the present and planned TSR and TSH developments. It is assumed that in the interests of journey time rail will continue to provide the main feeder system for the TSR from Western Europe, although some delays may occur at change of gauge stations on entering the USSR. Such delays are on the decrease as the railway authorities of all the countries concerned are modernising and adding to the transloading and bogie changing facilities. The USSR is going ahead with plans to take advantage of the linking of the Rhine, Main and Danube rivers and is building many classes of river-sea ships to operate on them, but it is estimated that if speed is the main advantage of the TSL over West Europe/Far East shipping services then the canal system will not play a major role. However, as an alternative for less high value goods the canal

routes could become important. Road transport is becoming increasingly important in the link between Europe and the TSL, but recent growth is not known.

4. In Western USSR, purpose-built container handling facilities now exist and are still being developed at several Soviet ports. The Leningrad container terminal handles 150,000 TEU containers a year and should handle 200,000 when finally completed. Container facilities exist at Riga and more are under construction at that port. At Tallinn, the present container berth handles 2,500 TEU containers a year; when a new berth under construction is completed, this should increase to 25,000 a year. Ventspils can handle containers at general cargo berths. A large container complex is reported to be under construction at Arkhangel'sk.

5. On the Black Sea, the major container terminal at Il'ichovsk now has a reported capacity of 500,000 TEU containers a year (at a rate of 45 an hour). Container facilities are also reported at Odessa nd Zhadanov.

6. In the Far East, the major container terminals are at Nakhodka and Vostochny. Nakhodka, dealing mainly with containers coming from Japan, handles about 70,000 TEU a year. Vostochny can handle 66,000 TEU outward bound containers annually at the one completed container berth; when the further 6 planned berths are completed (though construction is reported to be proceeding slowly) the future capacity is expected to be about 250,000 TEU containers a year. A cpntainer handling facility has been reported at Vladivostok. It is expected that a container terminal will be built at Sobetskaya Gavàn/Vanine to serve the BAM railway. A container terminal is also under construction at Magadan (Nagayeve).

Operations

7. The estimated sustained operating capacity of the railway East of the Urals ranges from 100 trains a day on the slower more difficult section of the track to maximum of 180. The estimated number of trains using the railway ranges from about 30 a day on some of the East Siberian sections to more than 120 in the West. It is assumed that this includes military trains. There is thus a fair size surplus capacity.

8. Containers carried by the TSR (including Soviet domestic traffic) in 1976 amounted to 121,000 TEU or the equivalent of three trains a day. An increasing number of special container flats are coming into service and the majority of East-West container traffic is now carried by container trains. There are indications that the West to East traffic may be less organized due to the delays and difficulties reported in retrieving containers

due to the imbalance of cross traffic over the TSR. It is planned that this traffic should increase considerably. Table A below shows the movement of containers to and from Japan along the TSR.

TABLE A. TEU CONTAINER TRAFFIC ON THE TSR

	Eastbound	Westbound	Total
1972	2,957	12,401	15,358
1973	9,330	18,959	28,289
1974	17,088	34,391	51,479
1975	12,632	47,314	59,946
1976	22,072	57,684	79,756

9. On estimates of best journey times via the TSL the rail element of the journey from Rotterdam to Japan takes 20-25 days compared with 30-35 days by sea via Panama or Suez and 40-45 days via the Cape, and TSL rates are 20-25 % less on average than the West Europe/Japan Conference is quoting. However, best transit times via the TSL are not the norm and journeys of 30-35 days are the general rule. The MAT/Transib group operates a freight refunding project involving 50% compensation of transport costs if the agreed transit time is exceeded by 15-30 days, 100 % if more than 30 days. Western and Japanese companies may be reluctant to tie up high value goods for unpredictable periods of time. In addition the TSL has not acquired a reputation for efficiency; for example, once a container is in transit it is impossible to trace it or estimate its date of arrival.

Future plans

10. Estimated container handling capacity in the Far East is expected to rise to 200,000-250,000 TEU containers in the next few years. About a quarter of this capacity is likely to be for the USSR's own use. This is the equivalent of 7-8 trains a day along the TSR, and presumably represents an acceptable level of use. Given the USSR's operating problems at the terminals this level of activity is probably the maximum with which the USSR can cope. Freight rates will probably continue to reflect Western shipping rates but at a relatively lower level. Until its operating efficiency improves it cannot rival the major Western shipping companies with the TSL. The USSR will probably reach its target of 150,000-200,000 TEU containers along the TSL within the next years without a drastic cut in freight rates.