

moment there are more than seven major maritime transport companies in the Caspian Sea. Some of these companies have been active in the Caspian Sea for long time .

Among numerous shipping companies existing in the region, Volga shipping , Caspian shipping Trans petro Volga , Lukoil and KNF are the most famous companies.

These shipping companies all together own 310 vessels from which 74 are off shore boats and the remaining 236 vessels are equally tankers and cargo vessels which are often traveling through Volga - Don or Volga Baltic water ways.

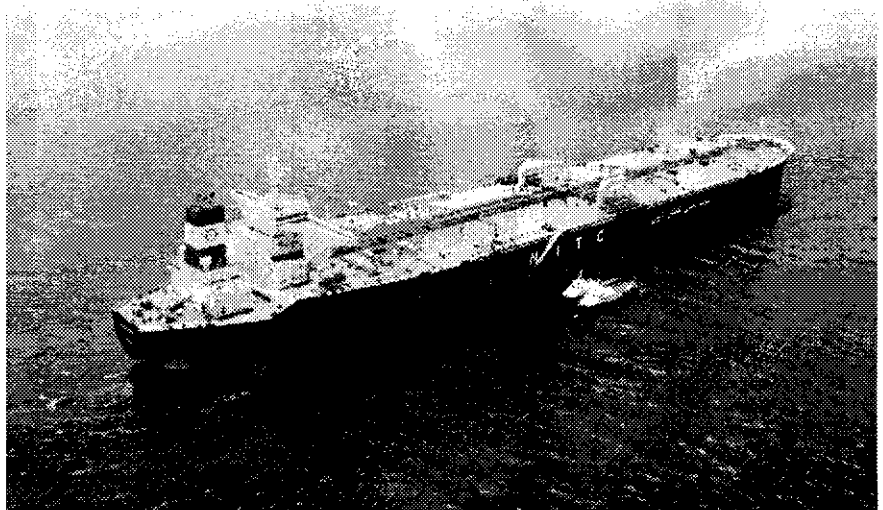
Now it is Islamic Republic of Iran's turn to consolidate its share in the maritime transportation of this region , especially in the oil shipping , and to assert its presence in this offshore trade center.

Some assume that since in the Central Asian countries , the pipelines are the most popular means of transfer of oil and considering that in the northern areas of the Caspian sea some 50,000 kilometers of pipelines have already been laid down, the extent of activities of the oil tankers would not be any more than 800 kilometers and hence there is not much room for maneuvering for the oil tankers .But as we will explain this perception is not supported by facts .

### **THE ROLE OF NATIONAL IRANIAN TANKER COMPANY**

The implementation of the swap project, using a 32-inch pipeline between Tehran and Neka, can ideally be done when a pipeline is constructed between Neka and the oil regions of Kazakhstan and Turkmenistan. In this way the crude oil from Kazakhstan and Turkmenistan can be refined at the oil refineries of Tehran or Tabriz.

But as I explained before , making



decisions on the kazakhstan-Neka pipeline or Turkmenistan-Neka pipeline would not be as easy as making decisions about Tehran - Neka pipeline .

Therefore, the oil tankers are the only means of transfer that can temporarily or even permanently replace the use of pipelines to the above-mentioned countries.

NITC has considered two alternatives for the swap project:

- First Alternative: Transfer of Maximum 100,000 Barrels of Crude Oil Per Day

- Second Alternative: Transfer of crude oil between 100,000 bpd up to 400,000 bpd

In the first alternative undoubtedly the oil tanker fleet will play an exclusive role utilizing the existing 12- inch pipeline between Tehran and Neka.

In this phase, we plan to buy four units of 5,000 - ton and two 12,000-ton oil tankers and simultaneously we should install an anchoring buoy for the vessels in Neka coast line to transport swap oil .

In the second alternative, i.e. .the transfer of oil up to 400,000 bpd, we have two solutions before us :

1. We can reach an agreement with kazakhstan and Turkmenistan to establish a new pipeline to meet the whole requirements.

2. We can focus on the plan to build 60,000 - ton oil tankers to transfer the projected crude oil with six SWAPMAX oil tankers.

In my opinion, in case that we fail to reach a joint agreement with kazakhstan and to establish a pipeline, the second solution would be more workable.

As I mentioned before, when time reaches the Caspian Sea it becomes indolent, but we have to avoid repeating historical mistakes. We must take a quick and bold measure in order not to fall behind . Otherwise, all the regional countries would wish the success of Baku-Ceyhan pipeline and would celebrate its inauguration.

I do believe that by starting this process, we can receive required crude oil FOB from the ports in Turkmenistan and Kazakhstan through our own vessels. This would prove the fact that it is more economical to transfer the Caspian oil through the Islamic Republic of Iran, and hence no excuse should remain for delay.

In this case, we will be able to fulfill our other rational goals as time passes.

In conclusion, I should sincerely thank the organizers of this conference for inviting distinguished guests from many countries and I hope that the conference fully achieves its goals.

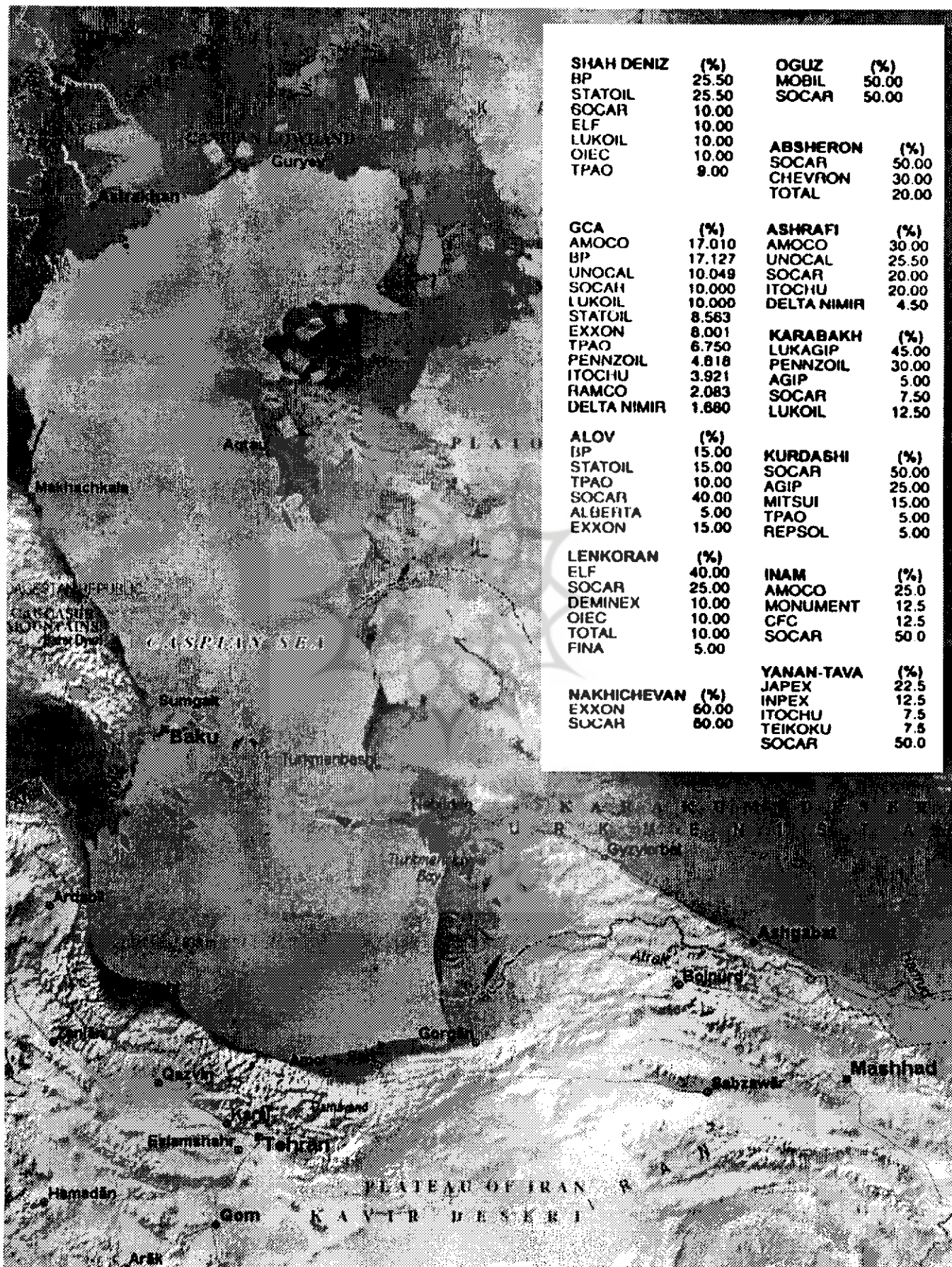
Thank you

Table 4 ACTIVE SHIPPING COMPANIES IN THE CASPIAN SEA

NAME OF COMPANY	NO OF VESSELS	NATIONALITY	PLACE OF ACTIVITY	SERVICES RENDERED	REMARKS
VOLGA SHIPPING CO.	85 CASPIANMAX 98 RIVER TANKER	RUSSIA FEDERATION	CASPIAN SEAS, BLACK SEA, VOLGA WATERWAYS	CHARTERING VESSELS OUT	ALL THE VESSELS ARE DOUBLE HULL AND UNDER THE CLASS, BUT VESSELS ARE NOT AVAILABLE FOR LONG TERM TIME CHARTER
TRANS PETRO VOLGA	6 CASPIANMAX 3 RIVER TANKER	RUSSIA FEDERATION	CASPIAN SEA	CHARTERING VESSELS OUT	ALL THE VESSELS ARE DOUBLE HULL AND THEY ARE READY TO COOPERATE WITH NITC EVEN FOR LONG TERM TIME CHARTER
CASPIAN SHIPPING CO.	35 CASPIANMAX	AZERBAIJAN REPUBLIC	CASPIAN SEA	CHARTERING VESSELS OUT	PRESENTLY THEY ARE TRANSPORTING KAZAKESTAN CRUDE OIL AND TURKMENISTAN PRODUCTS TO BAKU OR ANZALI AND THEY ARE READY TO CHARTER THE VESSELS TO NITC
LUK OIL	10 RIVER TANKERS	AZERBAIJAN REPUBLIC	VOLGA WATERWAYS	SHIPPING AND MARINE ACTIVITIES	THIS COMPANY IS IN SOLE SERVICE TO AZERBAIJAN OIL CO
BUE CASPIAN LTD.	NO OWNED VESSELS	AZERBAIJAN REPUBLIC	BAKU	SHIP MANAGEMENT	THEY DON'T HAVE ANY OWNED VESSELS BUT THEY MANAGE SO MANY FLEETS IN AZERBAIJAN WATERWAYS.
KNP	74 OFFSHORE FLEET AND CRAFTS	AZERBAIJAN REPUBLIC	BAKU	MARINE SERVICES	THEY ARE ONE OF THE EXPERIENCED AND ACTIVE COMPANIES IN THE REGION
TRANSMARINE SHIPPING ENTERPRISES	THEY DON'T HAVE ANY OWNED VESSELS	AZERBAIJAN REPUBLIC	BAKU MARINE AREA	MARINE SERVICES	THIS COMPANY IS A SMALL PRIVATELY OWNED CO AND HAS LOTS OF INFLUENCE IN THE MARINE POLICIES AND IS OFTEN HELPFUL

NOTE: GERMANY, NETHERLAND, AND U.A.E SHIPPING COMPANIES HAVE MORE INFLUENCE OF THE SHIPPING MARKET OF CASPIAN SEA AND THEY ARE ABLE TO PROVIDE DIFFERENT TYPES OF VESSELS IN CASPIAN SEA.

Figure 4



● Berthing of the vessel is done in the shortest possible time and without any assistance from the port personnel on shore.

● Since the STL system is connected to a tank at the bottom of the vessel, the stormy weather will not have any effect on the operation.

● A port equipped with the STL system can be operational throughout the year whereas a port equipped with SBM is non - operational almost 120 days a year.

● The only disadvantage of utilizing the STL system instead of SBM system is that it should be installed at a place, with 25 meters of depth, which consequently requires longer pipelines on the seabed.

## **SBM SYSTEM**

In figure 2, it is shown how to use this system.

In case we decide to purchase 12000-ton DWT tankers as required in the first stage of Swap project we certainly need to install a new SBM at Neka coast line.

## **INSTALLATION OF PIPELINE ON THE SEABED**

By establishing a pipeline at the sea, we will be able to transfer the crude, available in the coastal tank farms of the exporting countries , to the Neka port.

## **COST ANALYSIS ON SWAPMAX TANKERS**

According to our evaluation, it would cost 2 dollars per barrel to transport oil while using 5,000-ton tankers whereas it would cost between 80 to 85 cents to transfer a barrel of oil on a 60,000 - ton SWAPMAX tanker .

## **3. CASPIAN SEA AS A POLITICIZED REGION**

Unfortunately because of the heavy political confrontations, the issue of the transfer of crude oil produced by the Caspian sea littoral states is yet to be comprehensively studied by experts.

Such powers as Russia and China each have presented their own specific doctrines and views because of their geographical proximity or their estimation of future needs.

However, at the moment what is of significance is the intention of the United States in transferring the surplus crude oil of the Caspian basin to the Mediterranean Sea through Baku-Ceyhan pipeline.

### **B- BAKU-CEYHAN PIPELINE**

In figure 3, you see the Baku-Ceyhan pipeline that exceeds 2000 kilometers and its establishment will cost over two billion Dollars.

In case that this pipeline is laid down, it will be the most expensive pipeline. The plan to establish this pipeline is rooted in political assumption which does not take into account the physical limitation of the region unless we assume that the proven oil reserves in this region stand at 160 billion barrels instead of 16 billion barrels as officially announced.

Expert studies have shown that the Islamic Republic of Iran can serve as the most appropriate and economical route for the transfer of surplus crude oil of the Caspian Sea.

In other words, from the expertise standpoint ,the Caspian crude oil is in the window show of Persian Gulf and not the Mediterranean Sea.

Hence, the efforts by the United State for adopting a supra-regional

approach to the exportation of the Caspian oil, which has perhaps been considered as an alternative to make up for the gradual reduction of the North Sea oil, is rooted in daydreams. Even if this pipeline is successfully constructed, it will have a limited output and thus limited effect on the world energy supply.

## **4. INVASION OF THE OIL COMPANIES (figure 4)**

Among the main characteristics of the Caspian basin's oil reserves is the huge influx of the oil companies to such areas as Baku, Kazakhstan and Turkmenistan.

As you notice in figure 4, there are some 30 oil companies active in the region with Baku hosting the highest number of them:

The companies that are active in the region include:

EXXON, TEXACO, MOBIL, CHEVRON, BP,AMOCO, TPAO, DELTA NIMIR , SOCAR ,LUKOIL, STATOIL, ITOCHU, PEMZOIL , AIOC ,DRAGON OIL, MONUMENT and SHELL.

Presence of many oil companies in the region has created a communication problem.

Despite their peaceful coexistence , these companies are engaged in rivalry.

Hence, it would be difficult to create uniform contact with all of them and reach certain positive results.

As the governments of the region have delegated many of their services to the oil companies either directly or indirectly, the fate of the agreed terms depends on a number of conditions .

## **STATUS OF NATIONAL IRANIAN OIL TANKER COMPANY IN THE CASPIAN SEA**

As you see in table 4, at the

Figure 3

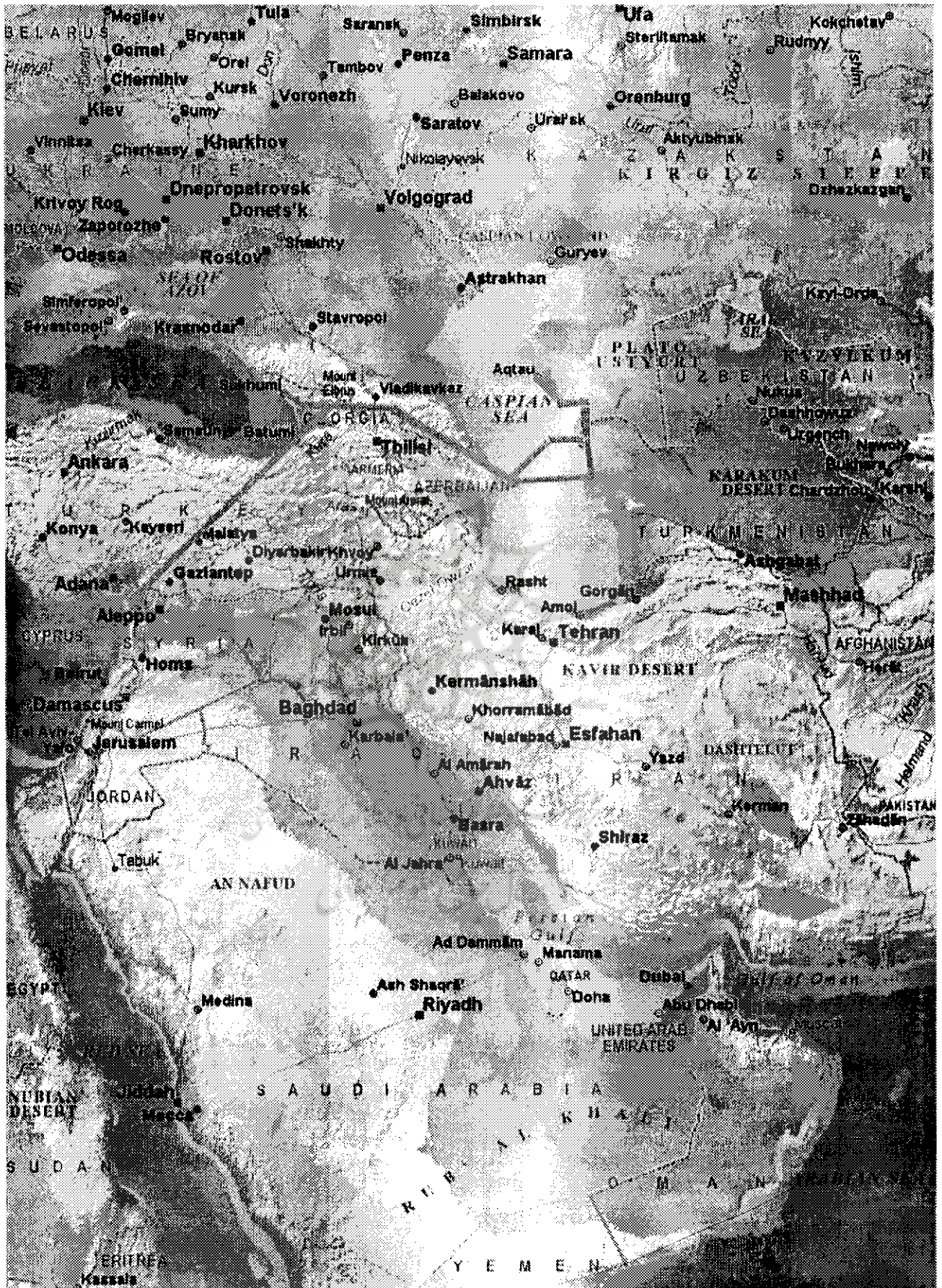


Figure 2

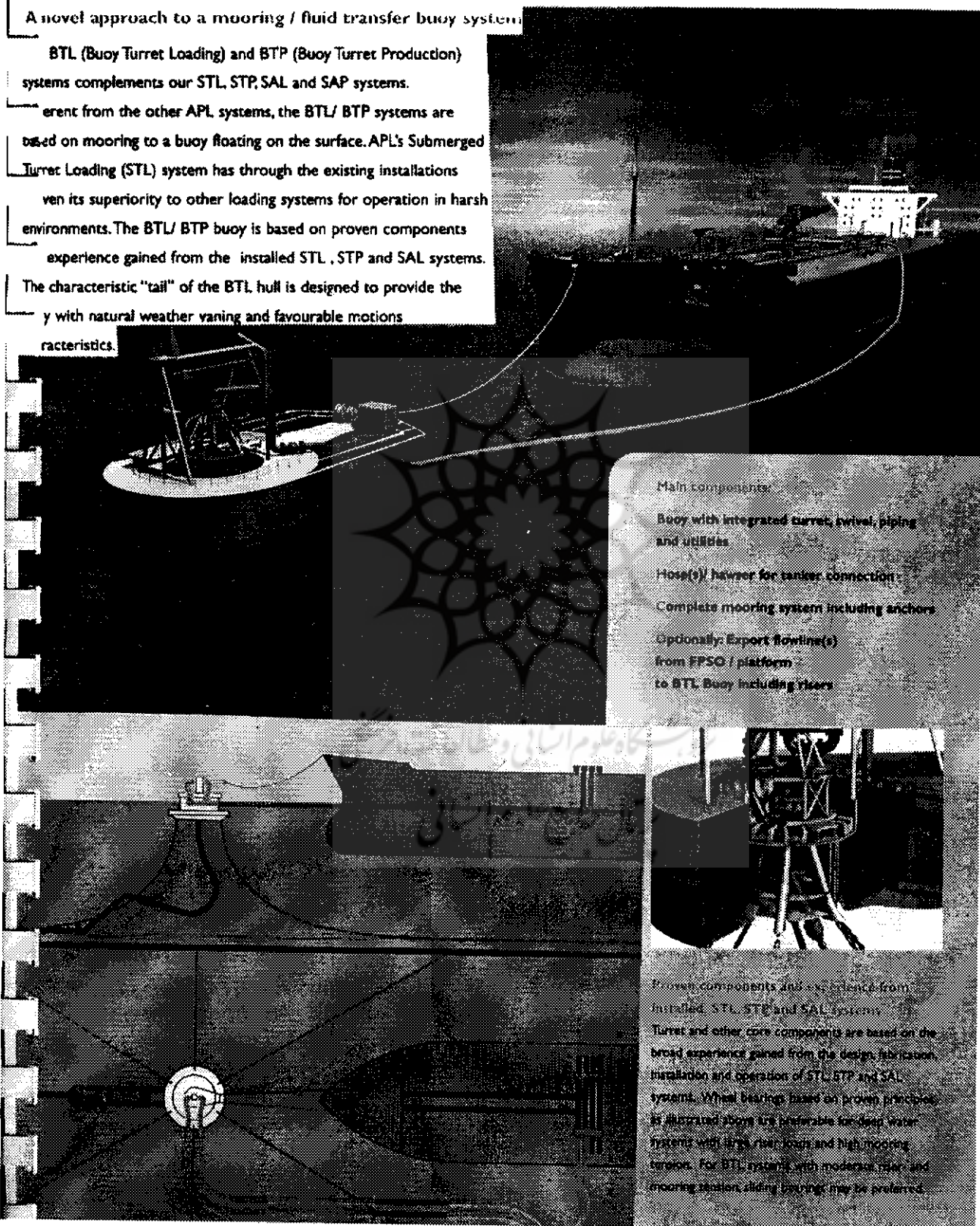
## (S B M) Single Buoy Moorings

A novel approach to a mooring / fluid transfer buoy system

BTL (Buoy Turret Loading) and BTP (Buoy Turret Production) systems complements our STL, STP, SAL and SAP systems.

Different from the other APL systems, the BTL/ BTP systems are based on mooring to a buoy floating on the surface. APL's Submerged Turret Loading (STL) system has through the existing installations proven its superiority to other loading systems for operation in harsh environments. The BTL/ BTP buoy is based on proven components and experience gained from the installed STL, STP and SAL systems.

The characteristic "tail" of the BTL hull is designed to provide the buoy with natural weather vaning and favourable motions characteristics.



### Main components:

Body with integrated turret, swivel, piping and utilities

Hose(s) / hawser for tanker connection

Complete mooring system including anchors

Optionally: Export Rowline(s) from FPSO / platform to BTL Buoy including floats

Proven components and experience from installed STL, STP and SAL systems

Turret and other core components are based on the broad experience gained from the design, fabrication, installation and operation of STL, STP and SAL systems. When bearings based on proven principle is illustrated above the preferable enclosed water system with large diameter and high mooring tension. For BTL systems with moderate mooring and mooring station sliding bearings may be preferred.

**Table 3 Shipyards In the Caspian Sea**

ISLAMIC REPUBLIC OF IRAN		AZERBAIJAN REPUBLIC		RUSSIA FEDERATION	
NAME OF COMPANY	ACTIVITY	NAME OF COMPANY	ACTIVITY	NAME OF COMPANY	ACTIVITY
SADRA SHIPBUILDING	TO BUID AND FABRICATE OFFSHORE STRUCTURES	ZAKS	TO REPAIR THE VESSELS	ASTRAKHAN SHIPBUILDING	TO BUILD THE VESSELS WITH CAPACITY 5000 TONNE.
	-TO BUILD THE VESSELS WITH CAPACITY 5000 TONNE	ZIKH	TO FABRICATE THE OFFSHORE STRUCTURES	LOTOS SHIPBUILDING	TO BUILD CARGO VESSELS WITH CAPACITY 7000 TONNE
		KASMORNEFL MOT	TO REPAIR NAVAL VESSELS	MARINE SHIPBUILDING PLANT	METAL WORKING AND TO BUILD VESSELS SECTIONS
		SHELF PROJECT STORY	TO BUILD OFFSHORE PLATFORM	KROSNYE BARIKADY BUILDING	TO BUILD DIFFERENT SECTIONS OF VESSELS FOR LOTOS OR AKER RAUMA PLANTS
	-TO BUILD CARGO VESSELS	AKER RAUMA	TO BUILD BARGE JACK UP BARGE AND PLATFORM	INTERNATIONAL SHIPBUILDING PLANT	TO BUILD CRANE BARGE AND OTHER MARINE STRUCTURES
	-TO BUILD TUG BOAT			VOLGOGRAD SHIPBUILDING PLANT	-TO BUILD CONTAINER VESSELS AND BARGE
	-TO BUILD OFFSHORE VESSELS				-TO BUILD SEAGOING TANKERS AND OFFSHORE VESSELS WITH CAPACITY UPTO 11000 TONNE

I would like to state here that based on the careful studies that have been conducted , this transfer will be more economical, if the necessary resources are provided.

**A: construction of 60,000-ton DWT oil Tankers**

In order to construct this type of vessel, the pre - fabricated parts can be transferred through Volga Waterway to the Caspian Sea and it can be assembled in one of the qualified shipyards of the Caspian Sea such as Neka Shipyard or Volga Shipyards.

**B: Installation of SBM or STL for Anchoring the Vessels**

Considering that the new vessels cannot berth at the exiting oil ports due to shallow coastlines, it is necessary that a system for anchoring the vessels would be installed within a six to ten kilometer range away from the ports of Kazakhstan, Turkmenistan, Baku and Neka.

The utilization of STL loading and unloading buoys in the Caspian Sea is more feasible than the SBM system, considering irregular storms which occur most of the time.

The STL system is a new loading-unloading system, which has been used in different terminals of the North Sea and in practice has been quite efficient.

It should be installed at the bottom of the sea and harnessed by stay cable.

This system is connected to the vessel's tanks so that loading and unloading operation is practical.

The advantages of this system are:

- The loading and unloading operation is possible even in a bad weather.
- There is no need to have pilot services or a tugboat.

Table 2 PARTICULARS OF CASPIAN SEA PORTS

PORTS NAME	BAKU / DUBENDI	TURKMENBASHI/ CHELEKEN	AKTAU	NEKA
PARTICULARS				
WATER DEPTHS	12 M	6/8 M	9 M	5 M
DISTANCE TO NEKA	530 KM	400KM	850 KM	-
CHARTERING RATE (PER TONNE)	TURKMENBASHI-BAKU 7-8 USD	TURKMENBASHI-NEKA 11-13 USD	AKTAU-NEKA 13-16 USD	-
LOADING AND DISCHARGING TIME	7 HOURS	7 HOURS	6-8 HOURS	7 HOURS
TURNAROUND TIME TO NEKA PORT	5 DAYS	4 DAYS	7 DAYS	-
PORTS FACILITIES AND STORAGE TANK FARMS	28 STORAGE TANKS FOR AT LEAST 1.7 MILLION TONNE AND 8 TANKER BERTHS	2 STORAGE TANKS WITH CAPACITY 8000 BARRELS TO BE USED FOR LARMAG AND 2 FINGER PIERS	2 OIL JETTY AND 1 OIL STORAGE TANK WITH CAPACITY OF 5000 TONNE.	CRUDE OIL TANKS FARM COMPRISE OF 22 X 5000 M3 OIL STORAGE TANKS . THIS PORT HAS 6 BERTHS FOR DRY CARGO AND 4 TANKER BERTHS
OIL POLLUTION CONTROL /RECOVERY FACILITIES	NO INFORMATION AVAILABLE	NO INFORMATION AVAILABLE	ANTI -POLLUTION EQUIPMENT COMPRISE 1500 METERS OIL BOOMS ON THE JETTY	THERE IS 1 OIL POLLUTION BOOM AND 1 STORAGE TANK FOR RECEPTION OF DIRTY BALLAST (CAPACITY 5000 M/T)
				THIS PORT HAS 2 TANKER BERTHS AND 3 INCOMPLETE BERTH, 2 STORAGE TANK WITH CAPACITY 7500 TONNE EACH FOR REFINED OIL AND 2 CRUDE OIL TANKS WITH CAPACITY 5000 TONNE . THERE IS ONE TANKER BERTH IN NOUSHAHRE, 4 TANKER BERTH IN BANDAR ANZALI. THERE ARE 10 TANKER BERTHS IN IRANIAN PORTS OF CASPIAN SEA
				PILOT IS COMPULSORY THE PORTS HAS NO OIL SPILL RECOVERY EQUIPMENT AND IN NECESSARY CASES THE NOUSHAHRE AND BANDAR ANZALI EQUIPMENT SHOULD BE USED.



**Table 1 Estimated Oil Supply/ Demand In The Caspian Sea**  
**Estimated Oil Supply / Demand**  
**In The Caspian Sea**

Kb/d	2000	2001	2002	2003	2004	2005	2006
<b>Azerbaijan</b>							
Production	340	415	483	617	761	916	1094
Local demand	164	161	159	156	153	150	155
Other Evacuation routes	160	210	300	350	550	650	650
Surplus Available for SWAP	16	44	24	111	58	116	289
<b>Turkmenistan</b>							
Production	130	145	150	160	180	200	220
Local demand	87	88	88	89	90	91	92
Surplus Available for SWAP	43	57	62	71	90	109	128
<b>Kazakhstan</b>							
Production	715	799	933	1069	1113	1247	1377
Local demand /Russia Swaps	276	284	293	301	310	320	329
Other Evacuation Routes	350	420	510	600	630	660	720
Surplus Available for SWAP	89	95	130	168	173	267	328
Total Surplus Available for SWAP	148	196	216	350	321	492	745
◆ Expected SWAP volume with IRAN	100	120	150	200	250	300	370

◆ Azerbaijan surplus oil has not been included

for the transport of crude oil from Aqtau and Turkmenbashi to Neka have been illustrated .

Based on the estimations, it is expected that a round voyage from Aqtau to Neka would take seven days and the round voyage from Turkmenbashi to Neka would take five days.

Of course, we must not lose sight of the fact that the Caspian Sea is one of the most unstable seas in the world. When the gale - force winds blow over the waters of the Caspian Sea , the waves can rise as high as 6 meters and can have an arch with a ray of 200 meters.

This makes our shipping operation difficult in many days throughout the

year especially within a period between the end of October to the first days of March.

#### **PARTICULARS OF CASPIAN SEA'S OIL PORTS**

As you notice in table 2, the depth of waters at all the oil ports of the Caspian Sea including Baku, Turkmenebashi, Aqtau and Neka stands at below 10 meters with the exception of Baku whose depth is 12 meters.

Among all these ports, Neka is really the shallowest and needs to be dredged.

The transportation rate of each ton of oil by tankers with a capacity of five to seven thousand tons from Turkmenebashi to Neka is 13 Dollars

and from Aqtau to Neka it is between 13 to 16 Dollars.

#### **MAJOR SHIPPING COMPANIES AT CASPIAN REGION**

There are 11 shipyards around Caspian sea area which the largest equipped shipyards are located in north Caspian adjacent to Vula river. (table 3)

The Russian shipyards have a long experience in construction of oil tankers and we have recently received a letter from them announcing that they are prepared even to construct large tankers up to 100,000 tons DWT.

Technical specification of Russian shipyards are mostly adopted from Finland but it is somehow different from the Japanese and Korean ship building technology.

I should recall that at the present time there are enough potentiality in the Neka shipyard to build even 60.000-ton tankers.

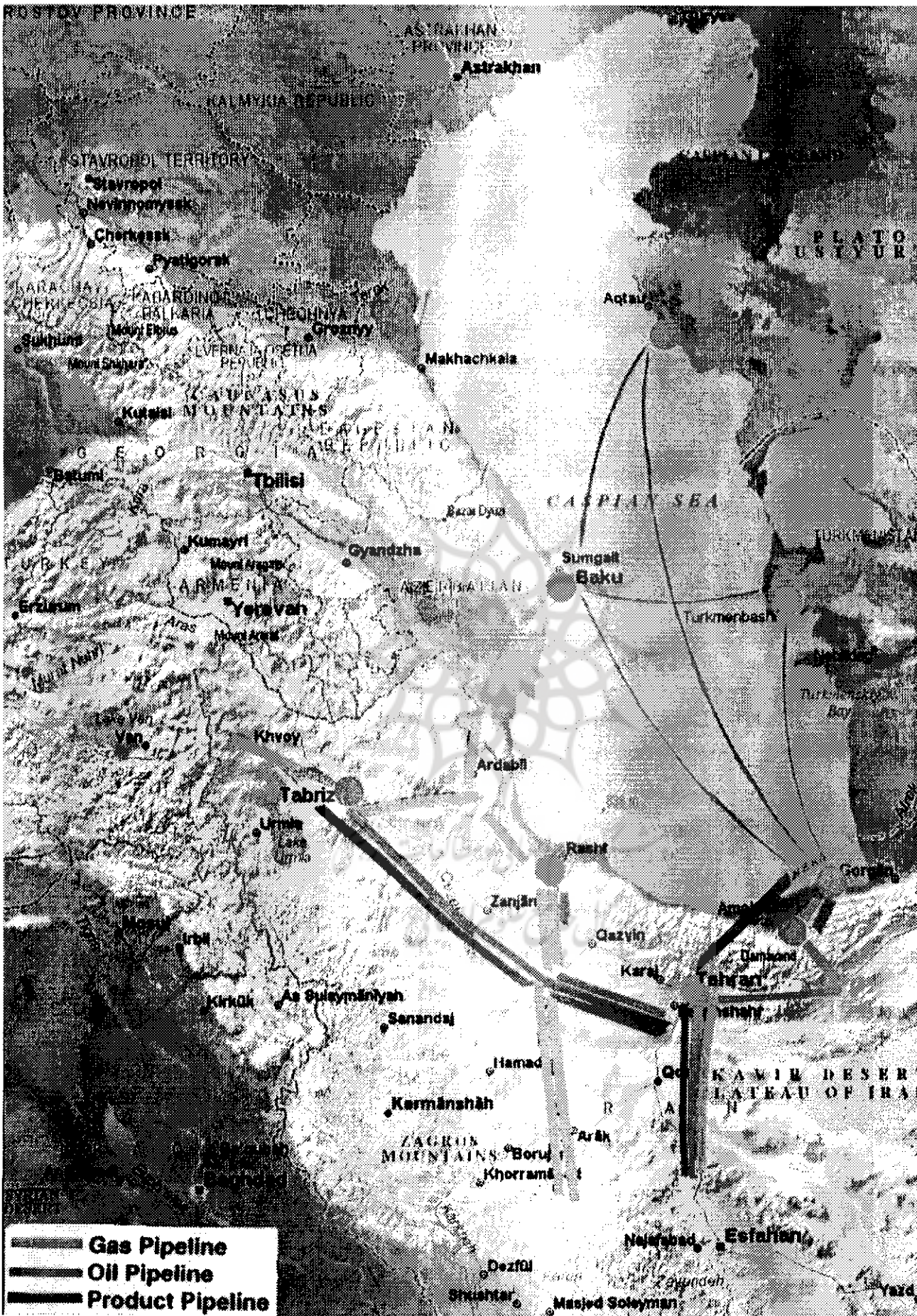
After making final decision on construction of Swap- Max Tankers, all technical options exiting in the Caspian Area especially Neka shipyard will be carefully considered.

#### **2- NECESSITY OF MASSIVE TRANSFORMATION IN THE CASPIAN SEA OIL TRANSPORTATION**

After close and comprehensive scrutiny , the National Iranian Tanker Company has come to the conclusion that the transportation of large volumes of oil would require oil tankers with a capacity of 60,000 tons Dwt.

Through utilization of these 60,000 - ton oil tankers as called SWAPMAX, which have yet to be introduced to the Caspian Sea we will be able to transfer all of the surplus oil of the Caspian sea basin to the Neka oil port.

Figure 1

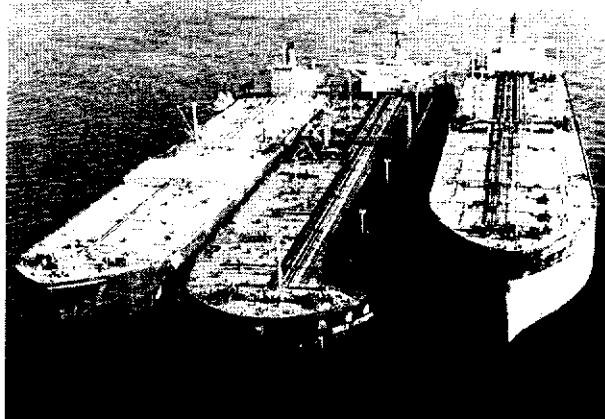


# SHIPPING OIL IN PERSIAN GULF AND CASPIAN SEA

Presented at International Conference of "THE IMPACT OF THE MIDDLE EAST/CASPIAN OIL ON GLOBAL ENERGY MARKETS", 4th/5th November 2000-Tehran

By: M.Souri

Chairman and Managing Director National Iranian Tanker Company



It is a great pleasure for me to welcome distinguished guests from various countries attending this important gathering which is duly organized by the Institute for International Energy Studies.

In the past several years, the issues of the Caspian Sea and its problems have been discussed in various forums.

Each year, a number of conferences and gatherings are held on the Caspian Sea in Iran, regional countries and even in Britain but unfortunately despite all these discussions and expert studies, very little practical results have been achieved.

Perhaps, one may refer to "infertile" as the most notable characteristic of the Caspian Sea debates.

In a better word, when time gets to the Caspian Sea, it becomes indolent and slow motion.

In contrast to offshore trade activities in places such as Persian Gulf, Rotterdam and Singapore which actually serve as the arteries of maritime transportation, the cycle of trade especially maritime sector in the Caspian Sea littoral states, has remained in its old form and has yet to catch up with the dynamism as required in the contemporary era.

This is while about 140 years ago;

the world's first oil tanker was constructed at Baku port.

Despite the fact that this offshore trade center is the birthplace of the most important phenomenon of the twentieth century, i.e. the oil tanker, the ship - building industry has not had the expected growth in this region.

At the moment, we are facing a number of problems in the implementation of oil swap project in the Caspian Sea due to ship-building limitations.

Here I will first briefly point to the characteristics of oil in the Caspian Sea , and then I will present the latest possibilities studied for transporting of oil from this semi- land - locked sea.

## Characteristics of Oil Shipping in Caspian Sea

### 1- Caspimax Oil Tankers

These oil tankers, with a capacity of three to seven thousand tons, are the most commonly used oil tankers in this sea.

These small tankers have low draft and can take berth at the oil ports of the neighboring countries. In addition to that , if they can not be utilized in the Caspian Sea, they can be

easily transferred to Black Sea or the Baltic Sea through Volga - Don or Volga - Baltic waterways.

In other words, their activities will not remain limited within the Caspian Sea.

These oil tankers , regardless of their number and the manner of utilization , are only able to transfer a limited amount of oil and cannot be used for large-scale transfer projects.

## Prospect of production of Crude Oil in the Caspian Sea region

In the next six years some 370,000 barrels of the surplus crude oil will be available to be exported from the oil reserves of Kazakhstan and Turkmenistan (table 1)

If we also add the surplus oil of Azerbaijan , this amount will reach 760,000 bpd .

If we want to transfer 370,000 barrels of oil produced each day from designated ports in Kazakhstan and Chelleh-ken port in Turkmenistan to the Iranian port of Neka, we will need about 70 oil tankers with a capacity of five thousand tons .

## SHIPPING ROUTES FOR OIL TRANSPORTATION

As you notice in figure 1 , the routes