9) S.S. Melo (GYYV) (Shell Tankers) 105138 GRT (280,000 DWT) 28000 SHP R/E/O Mina al Ahmadi 3/1/72 - 24/2/72 Milford Haven. Re-signed on articles.
10) S.S. Melo (Shell Tankers) R/E/O Milford Haven 25/2/72 - 3/6/72 Singapore.

This was a Shell 280,000 ton super tanker which took crude oil from the Persian Gulf to the UK and Europe via the Cape. We also did one trip from the Persian Gulf to Singapore with crude oil. The ship was powered by steam turbines, as at that time, it was still the only reliable way to obtain the huge engine powers needed to drive such big ships. Later, even the super tankers were diesel powered as engine designs improved. The Diesel requires only a fraction of the fuel that a steam turbine uses, but needs greater maintenance and its initial cost is higher. It's a trade-off between fuel prices and maintenance costs. As the price of fuel increased, higher reliability and better design decreased the maintenance required for Diesel engines, they had a clear lead, despite their greater initial capital cost.

I flew out to Kuwait on the 29th December, and was met by the agents at the airport as arranged. It was night as we drove for an hour or more out into the desert, along a nice new road which suddenly just stopped in the middle of nowhere. A few hundred yards of bumpy desert followed, then a temporary road started again, leading into the port area. I was taken to a Mission to Seamen's hostel to await the ship. I was somewhat disappointed, as I was hoping for a nice hotel. The hostel was clean, but a bit spartan and the food was somewhat plain. Unfortunately the ship was delayed a few days, and it was after New Year before I finally made my way up the gangway. Mina was not a particularly large place, so outside the refinery and tank farm was just a village – not much to see or do. Kuwait is of course a "dry" country, so I couldn't even toast in the New Year. The New Year celebrations at the hostel were a very quiet affair, and I went to bed at 10 pm with a glass of orange juice. Happy New Year!

It was my first close view of these massive ships, and I was very impressed. Climbing up the accommodation ladder when light ship (i.e. empty) was like climbing the side of a 4 or 5 story building. It was hard work and a very long way! The gangway was only a framework, so looking through and down made one feel somewhat insecure. Luckily my baggage was hauled up on a rope by some sailors as I looked on apprehensively in case it fell. I arrived puffing and blowing on deck next to the loading manifold, only to be greeted by a 200ft walk to reach the accommodation aft, and then another 5 flights of stairs up to my deck. For someone used to smaller ships, the size of these things was almost unbelievable. I was just about dead when I finally arrived at the radio room, where I gratefully collapsed onto a chair and accepted a consoling beer from my welcoming opposite number.

The sheer size of the ship made getting around a problem. At least I found that there was a lift to get to the engine room, which eased things considerably. It started 2 decks below the bridge and ran almost down to the bottom plates. This saved no end of effort and was essential for quick access. During emergencies and rough weather however it was banned in case it jammed or we lost power, which would mean people trapped inside.

The radio equipment was relatively good, consisting of the Marconi Crusader 1.5
KW SSB transmitter, and the ubiquitous Redifon R408 receiver, (which was – to be truthful – considerably better than the Marconi Atalanta). Each cabin had its own radio antenna outlet from a Pantenna communal aerial amplifier to prevent the otherwise usual forest of wires strung all over the ship. The main and reserve HF transmitting antennas were strung from the mainmast on top of the all aft accommodation, to two Sampson posts near the manifold amidships. The sheer size of the ship meant that they were high, long and efficient. We had an immense range on 500 KHz CW and 2 MHz SSB R/T. The high power on 500 KHz meant the aerials had to be extremely well insulated and maintained to prevent flashover or arcing across the insulators.

Despite being fairly modern, these huge ships still relied on hand sent Morse code telegrams and the odd R/T call for all urgent changes of orders, cargo information and general management operations. Shipborn radio telex was still in its infancy, and satellite communications were still a long way in the future. The communications work load was fairly high, but people were expert in imparting maximum information in the smallest number of words. Some of the messages we had to send and receive were cryptic to say the least, and were often coded using the company's private code book to compress them still further.

We were fitted with Marconi Argus/Hermes Radars, which were almost the ultimate in complexity for civilian systems at that time. Stabilised North up, True and Relative motion with or without picture offset. It even had a simple form of analogue computer using capacitor storage and integration techniques in a so called "dry box". It was all valve and had an impressive output power of 75 KW. The scanner was large and perched right on top of the main mast, around 30 - 40 metres or more above sea level. I used to be somewhat nervous of heights, but after having to go up and down this mast a few times (no one else was going to look after the scanner!), I became quite blasé about it. The first time though - talk about white knuckles! Wow! From above however, one got a superb view over the ship and the surrounding sea which made up a bit for the effort of climbing up there. I was higher than any lookout in the days of sail, and people on deck were small and insignificant. On a hot still day, there was always a breeze up there, so I sometimes used to "service the radar scanner" and admire the scenery. It was great for spotting whales and dolphins too.

The radar used to tick madly when in operation (The sampling relay for the true motion computer was quite noisy). The Ledex motor for the remote

switching also made a great noise on changing ranges or other operational parameters. The radar display and transceiver unit used to sing tunefully to themselves as the ranges were changed too. It gave a good picture though. I never did manage to find one fault however. It was an intermittent one, and I ended up chalking a cross at one particular point on the side of the radar display, with a note: - If it doesn't work, kick it here. It used to work for weeks afterwards without problem.

We had a very nice swimming pool on the starboard side of the accommodation. This was a favourite spot in good weather after the watch. In hot weather we used to throw the beers into the pool to keep them cool. One had merely to dive down and grab one. There is something about the slight taste of salt with a beer which stays with me even now! The pool was even illuminated at night with underwater lights! Another way of passing time off duty was star gazing. At sea, there is no "light pollution" as found ashore. The ship is blacked out at night except for its navigation lights so one can lie on deck and have a magnificent view of the cosmos. On clear moonless nights the sky was literally ablaze with stars. Shooting stars were often to be seen, sometimes really bright with long tails and very occasionally, even colours. On moonless cloudy nights of course, it was profoundly dark and somewhat eerie! Although I often looked, I have never seen a UFO or anything that could not be explained as a natural phenomenon. I have travelled numerous times through the Bermuda Triangle, with never a hint of anything mysterious. Most disappointing! Sometimes the sea would glow with phosphorescence, the whole hull being outlined in a blue-white or greenish glow. I have seen dolphins outlined in a glowing light streaking around under the water, and brilliant, almost dazzling explosions of light from the bow wave. The deep ocean at night can sometimes seem like a magical place.

The ship was so big that it took 10 minutes or more to walk up to the bow. To increase efficiency, we had two bicycles for getting around. In bad weather however they were too unsafe and we had to walk! In fact, the deck area was so big, one could almost get lost when going for a walk, especially at night. I sometimes used to do this after the watch on fine nights. The quarter hour slow walk up to the bow, with the bright stars slowly moving above as the ship rolled, was a great way to relax – except when the night was really dark. Then, the ever present creaks and groans emanating from the pipework as it moved to the ships motion, sounded very eerie indeed. Looking back aft

from the bow, one could only see an indistinct silhouette of the accommodation block against the sky. All forward facing cabin ports were blacked out and the only lights were the port and starboard navigation lights and the masthead lights, which shone out brightly. All engine noises were blotted out by the restful susurration of the sea hitting the bow and washing against the hull.

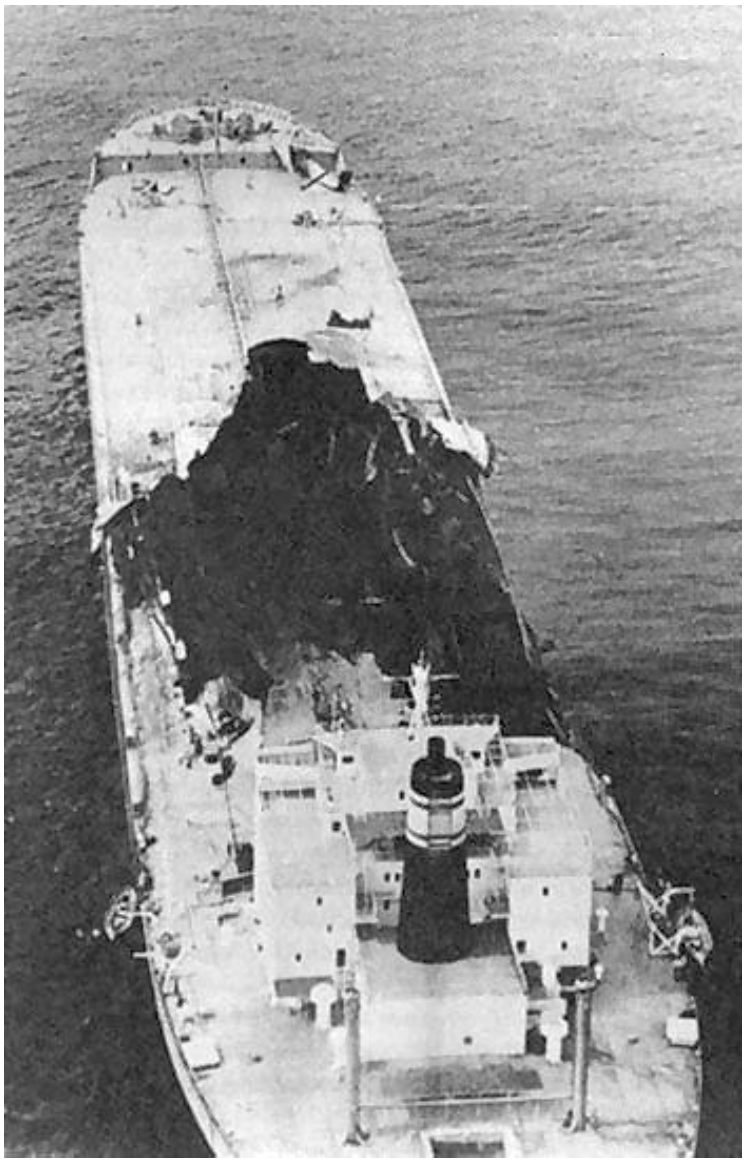
Quite often crew reliefs were done on passing Cape Town. The Suez Canal was closed, and ships of this size would be unable to pass through anyway. Cape Town was a convenient point, about half way through the month or more needed for the trip. The reliefs were done either by helicopter or by boat, thus not requiring the ships to enter port. The helicopter used to sometimes land on our deck or sometimes hover just above. This was a masterly feat of flying in blustery weather, and over a rolling and pitching ship too. It was much preferred by those who had to use it to the small converted fishing boat needed if the helicopter could not fly (perhaps due to bad weather or other engagements). The seas around Cape Town can be very heavy and it was often a long, wet, uncomfortable trip, and a somewhat dangerous business transhipping with the boat. The helicopter or boat also brought out stores, mail and spare parts. The ship very often only slowed down for a while during the transfer, then continued at full speed. The whole operation only taking a half hour or so. Occasionally, we would go close inshore near to Green Point, just off Cape Town itself. This would allow the boat to come out when weather conditions were too bad further off shore. It was wonderful on a warm calm night, just drifting about one or two miles off, watching the lights, and listening to the hum of the city. So near, but yet so far, and totally unattainable. At least we could get some good music on the radio.

It was during this period that two sister ships to the Melo, (the Mactra and Marpessa) exploded violently within two weeks of each other, whilst tank cleaning off West Africa. There was also some loss of life. Approximately 2 weeks prior to this, another super tanker, the King Haakon 4 had also exploded with devastating effects, also in approximately the same position, and doing the same tank cleaning operations. This was particularly worrying for us, as the first we heard about our sister ships fate was via the BBC radio. News photographs apparently showed the deck plating rolled back like an opened sardine can, and the entire ship aflame. We only heard about it officially from Shell head office via a radio message after several hours. Later we heard that two officers' wives were sun bathing on the monkey island (above the bridge) on the Mactra at the time of the explosion, but they were incredibly lucky. They

heard a loud Woompf! but the blast wave passed over their heads, and they survived.

The brand new Marpessa sank on her maiden voyage, but very slowly. Her bow being visible above water for several days, but slowly settling lower. The rest of around 800 feet of ship just hung down under the water like a huge whale. She sank suddenly and completely after the bulkheads gave way under the tremendous strain. She was the largest single shipping loss ever suffered up until that time. The Mactra however, due to some heroic work by her crew, did not sink. Her quick thinking Captain ran her astern, so the flames blew away from the accommodation. She retained power and could fight her fires. They were eventually brought under control and extinguished, and the ship was towed to Durban with a huge 400 foot by 50 foot hole in her deck. There she was virtually rebuilt and sailed again.

Here is a photograph of the first ship to explode, the Norwegen tanker King Haakon 4, showing the immense hole in her deck after the fire had been put out. The Mactra had a similar hole in her foredeck, showing the power of the explosion. That a ship can survive such a blast shows how well built they really are. The forces acting on them however were still imperfectly under-stood. Luckily, the relatively weak deck plating allowed the explosive forces to escape upwards, and so minimising damage to the hull. The relatively undamaged double bottoms could keep the ship afloat. Even then however, it was luck that the damage to frames and other longitudinal members was not bad enough to cause the ship to fold up, or even to sever the fore part from the after part of the ship.
Providing the ship does not sink, it can be repaired. Often however the repair cost exceeds the value of the ship, and it is scrapped.



Super Tankers were rather new, and unknown effects occurred. The tanks had to be washed with almost boiling hot high pressure water jets to remove the oil sludge and sand in them. The sand is often in suspension in the crude oil when it is pumped aboard. It settles out during the voyage and must be cleaned out of the tanks from time to time. Hot water dissolves the oil, but the sand must often be shovelled out by hand, usually in drydock when the tanks are guaranteed gas free. The oily water mix from the tank washing was pumped into a settling tank. When the oil had settled at the top, the water was pumped off. The oil and sludge was then mixed in with the next load of crude (The so called load on top system). Sometimes it could be pumped ashore to be processed at the loading port. It all cost money however, and some refineries could not accept the oil and salty water mix as the investment in separators had not been made. It was not unknown for unscrupulous Captains to pump the slops overboard during the night, then pocket a large backhander for saving costs. The oil slicks, sometimes tens of miles long, were often observed from aircraft. Positive identification of the offender however was almost impossible at that time, unless he was actually seen doing it. Today, modern satellite observations can pinpoint oil slicks and even analyse some of their constituents to identify the oil type, and perhaps even which ship it came from. Oil pollution of the worlds ocean's however, still presents a very serious environmental problem.

During tank cleaning, the almost boiling water is pumped into moveable high pressure jets (cleaning guns) which automatically rotate vertically and horizontally, spraying the hot water at high velocity around the tank walls. They are similar in principal to the garden lawn sprayer, but vastly bigger and much more powerful. Due to the way the voyages are planned, most of the hot washes take place on the return trip to the Gulf, about a week after leaving Europe. This puts the most dangerous time of the voyage off West Africa. At the start of washing, there is so much gas, it is not possible to have a tank explosion. The gas mixture is "too rich" There is not enough air to burn. At the end of the tank washing, there is very little, or no gas. It is thus also not possible to have a tank explosion. The gas mixture is "too lean". Between these two extremes though, there is a point where a spark with enough energy, can ignite the gas in a tank as big as a church. The energy released is enormous, and the results only too evident on the Mactra and Marpessa.

Immediately after the explosions on board our two sister ships, we were ordered by an urgent telegram to all M-Class vessels, to cease hot washes. ("Imperative... Whatever it is you are carrying out with regard to tank washing, stop at once.") Much later modified tank cleaning guns were fitted which lowered the high static build-up alleged to have caused the explosions. Reportedly, experiments on another "M-Boat" to purposely cause an explosion, failed to do so. It was however found that the high pressure water jets and the clouds of steam acted just like a thunder cloud. Sensitive cameras photographed sparks inside the tanks. The huge tanks were big enough for these "flashes of lightning" to contain enough energy to ignite the air-hydrocarbon mixture inside, with disastrous results. It was thought the ships effectively blew themselves up with their own miniature thunderstorm. It shows how unpredictable the subject was and also how much value was placed on finding the cause. Shell were willing to sacrifice another ship to do it.

The outcome of the whole painful and extremely expensive exercise, was that the cargo tanks were "inerted" using scrubbed and processed exhaust gas from the main engine. This contains virtually no free oxygen, all having been removed by being burnt in the engine. Instead, it consists almost entirely of a mixture of carbon dioxide and nitrogen, neither of which can sustain combustion. There was thus no oxygen to cause any explosions under any circumstances, and the ships were safe. Virtually all new super tankers now use this system of inert gas filled tanks. Many of the older ones were modified to include this system too, as their insurance premiums were reduced accordingly.

We also had an adventure with an old Line Throwing rocket during one lifeboat drill. Sometimes the outdated pyrotechnics (emergency rockets, flares etc) were kept for practice purposes during lifeboat drill instead of being dumped as was actually required. This was against regulations, but many Captains thought it gave an element of realism. If rockets were fired, I always sent a navigation warning to all ships in the area saying were doing so, thus preventing any untoward panic if the other ships saw rockets being let off. In this case, the line throwing rocket broke its line and flew free...nearly knocking a hole in the ship (which was fully laden with oil at the time!) and causing much excitement on the bridge, where we were watching it.

These rocket lines are used for getting a light line across to another ship or ashore in order to haul a heavier rope across. The heavier rope can be used to ferry people ashore with a breeches buoy, or to heave a large towing line aboard for rescue purposes. A very shaken and sooty Chief Officer told how the rocket line jammed in the holder when he fired it as a demonstration. Until this time, we had often used old pyrotechnics for demonstration purposes without problems. In this case however, the old rocket ignited correctly, roared out of its firing container, and then just sat at the end of around 8 feet or so of wire strop right in front of our shocked Chief Officer. The wire end having jammed in the container which he was holding, and aiming like a gun. Finally the wire strop broke (we found it was rusted) and the rocket flew free without the stabilising weight of the line behind it. It flew high into the air, looped back and fell into the sea close amidships. I was on the bridge at the time, testing the lifeboat transmitter on the bridge wing. I remember seeing (and hearing) the rocket soaring high overhead, leaving a dark trail of smoke behind. Perhaps I should add that the rocket was made of steel and rather heavy. If it had landed on deck, it almost certainly would have made a hole, or maybe even have penetrated through the deck plating. Underneath were the oil tanks full of crude oil and gas! The mind boggles at the possible consequences. After this occurrence, all old pyrotechnics were hastily dumped, and we never used any for training purposes again.

We had a somewhat hairy passage through the Malacca Straits, between Malaysia and Indonesia. It is one of the busiest shipping areas in the world, rivalling and perhaps even surpassing the English Channel. It is narrow and only just deep enough for the biggest tankers like us. We were so deep (drawing over 60 feet of water) that we could not alter course, and had to stay exactly within the marked channel. We had a Marconi Metron shallow water indicator which sometimes showed there was only a foot or so of water under us. This caused the Captain and pilot many a nervous moment. At night, there are numerous small fishing boats drifting about between Malaysia and Indonesia. Many are nothing much more than rowing boats with a small outboard or maybe only just a sail. They are mostly of wooden construction, and do not show up on the radar. They are also without lights. Sometimes we would see a flickering flame close by the bow as a fisherman set fire to a piece of paper or rag to show us he was there. It could well be that we hit some. We would never know, and were unable to manoeuvre anyway. Fishing in those waters is dangerous. The visibility can also sometimes be very poor due to heavy rain or squally showers from thunderstorms. Dense rain can hide even big ships, both visually and from the eye of the radar. An unlit small boat would never be seen, and of course never noticed, even if we hit it.

Some bigger ships insisted on the rule of the road, but we were unable to change course. We had lights and signals saying we were deeply laden and not manoeuvrable, but the small ship Captains still tried it on. I remember looking forward as we gently nudged a small coaster out of the way without touching it. Our bow pressure wave was enough to do it. Years later, navigational warnings were broadcast, naming the ships and times they would be passing various points of the Malacca Straits, so that this sort of thing was less common. A collision in this waterway could block traffic for weeks, with subsequent horrendous costs due to re-routing, not to mention the

environmental pollution it could cause. Despite this, no effective policing of the Malacca Straits traffic exists, even to this day.