

MASTER ON THE 'FLY'

Papua New Guinea is without doubt, a true paradise. Situated immediately to the north of Australia's Cape York peninsular, it borders the Torres Straits and Coral Sea and is one of Australia's closest geographical neighbors. The shortest distance between Australia and the Papua New Guinea official border is only about 95 miles, but in fact the northernmost Australian inhabited Island of 'Boigu' (English name Talbot Island) with a population of only around 300, lies just 3 miles from the New Guinea coast. To the northeast of Papua New Guinea is situated the Solomon Sea, Bismark Sea and Pacific Ocean so the island group is roughly centered within tropical Oceania. A country of immense cultural and biological diversity, it's known for its wildlife, beaches, sports fishing and coral reefs. It features some of the most lush and pristine rain forests, active volcanic mountains, magnificent scenery and some of the world's longest meandering navigable rivers, The Sepik and Fly Rivers. It is also prone to Tsunamis and earthquakes, which are known locally as Gurias.

Over the years I have had a close association with Papua New Guinea. This evolved when I became a Pilot at Bougainville Island, mainly handling Bulkers at the Port of Anewa Bay which was a major international export terminal at that time for bulk Copper Concentrates. Sadly this export trade met its demise when the large copper mine operated at Panguna, by Bougainville Copper Ltd.,

was abandoned due to serious political unrest on the island which necessitated the repatriation of all expatriate and management staff. It was very unfortunate because Bougainville is without doubt one of the most beautiful and scenic locations in New Guinea and a delightful place to both live and work. However, some time later I was employed for several years with the P&O group as Master on their mini-bulkers plying the Fly River, mainly carrying Copper Concentrates, and which is the focus of this article.

The concentrate is mined in the mountainous highlands adjacent to the mining township of Tabubil, close to the Indonesian Border, then piped as slurry about 97 miles South to Kiunga, located in the upper reaches of the Fly River, where the concentrate is dried, stored and blended ready for transshipment down river using a fleet of mini-bulkers, to a large silo and storage vessel anchored in the Gulf of Papua or Port Moresby, (depending on seasonal Monsoon and Trade Winds). Overseas transshipment is effected directly from the storage vessel by means of ship to ship transfer.

At the time of my tenure the bulk carriers were all on long term charter to Ok Tedi Mining and operated from the Fly River loading port of Kiunga, located some 522 river miles inland. These mini-bulkers were splendid little ships, about 5,000 DWT, twin screw, purpose built, beamy and shallow drafted. Built with the tropics in mind they

were relatively comfortable with spacious accommodations and good air-conditioning, as such they were primarily intended to serve the Fly River copper concentrate export trade. The entire fleet was built in Singapore, several of which I was detailed to stand-by the latter stages of construction and fitting out, prior to delivering them to New Guinea and conducting crew training and shakedown voyages.

The overall terms the fleet was relatively modern, well maintained and built to the absolute maximum specification allowing for safe navigation in the Fly River, which restricted draft to about 4.5 meters, perhaps 4.9 metres if the river was very high, but even then it did not eliminate the risk of grounding. Ships returned to Singapore after several years of service to be jumboized, and fitted with a new Parabolic Bow, so designed to reduce ship's wash and thereby minimize river bank erosion, which was becoming a big issue with local landowners. Length overall was limited to 90 metres. During my time I was Master of the Western Enterprise, Western Endeavour, Western Star, Western Flyer, Western Triumph and Western Zenith. I also did a couple of fill-in trips on the Western Trader which was a geared tween decker, used for voyages to Pacific Island locations such as Palau and the Marshall Islands. She had seen better days, particularly her main engine and machinery, and was very sensitive in terms of stability, a very fickle



The 2,146gt Western Star was built in 1990 by Sing Koon Seng at Singapore. In 2000 she was lengthened by 5.4 metres which increased her gross tonnage to 2,318. Western Star partially loaded with containers. Most likely from Townsville or Cairns. These ships were very adaptable and could carry significant quantities of Diesel Oil for project operations at Kiunga and the Mine township at Tabubil. The picture was taken prior to her being jumboized and fitted with a Parabolic Bow.

vessel indeed.

As mentioned, concentrate was the core trade for these ships but was occasionally this was supplemented by voyages to Port Moresby and Lae, in addition to Australian Ports, with containers and general cargo. The ships were also capable of carrying several thousand tons of bulk fuel Oil to support the mining township at Tabubil and the concentrator at Kiunga.

The Fly River has its source In the Victor Emanuel Ranges and at the Star Mountains in the interior and is the second longest river in Papua New Guinea. It flows some 650 miles before emptying out into the western sector of the Gulf of Papua in a large fan delta formation. The river is tidal upstream for 150 miles from the estuary and regularly experiences Bore tides. A small stretch of the river forms the border between Papua New Guinea and the Indonesian province of Irian Jaya and it is navigable as far as the Port of Kiunga which is located some 522 river miles inland. The Fly River has 2 main tributaries, namely, the Strickland and Ok Tedi Rivers (the Ok Tedi sometimes referred to as the Alice River) and generally is very fast flowing, except in periods of drought when the river tends to dry out in some reaches resulting in downstream flow and water depth being drastically reduced. The ships employed an expatriate Master and Chief Engineer, all other officers and crew being PNG nationals. The New Guinea Mate and 2nd Mate were highly experienced in inland navigation and superb helmsman, handling the vessels expertly contributing to a safe passage as the ships dodged the various sand banks and areas of notoriety where groundings frequently occurred. They were invaluable for their local knowledge and were regularly called upon regarding river conditions, which in many cases they could read like a book, through their years of experience. They were a considerable asset to the Master with their advice, particularly when the river was not running full and grounding became a reality and virtually imminent.

This type of work did not suite all expatriate seafarers as it required a good amount of hands on application. Those who transitioned directly from large ocean trading vessels sometimes found it difficult to quickly adjust to the remote and solitary aspects of the job, and become acquainted with the necessity to work at close quarters and the restrictions which operating in such a river imposed, often contrary to what they had experienced in earlier seagoing life. Many discovered it became hard to adapt to mastering the strong river flow and river conditions.

The observance of shipboard safety (many additional considerations when operating in the river) coupled with an aptitude of both self calm and nerve were absolute requisites to beat the challenges, especially those associated with berthing the ship at Kiunga which called for above average skills when



The 2,129gt Western Endeavour was built in 1988 by Sing Koon Seng at Singapore. In 1999 she was lengthened by 13.2 metres, increasing her gross tonnage to 2,754. She is seen here at the loading berth in Kiunga. This was the first of the vessels built for the Fly River Copper Concentrate Trade. The picture taken following her being lengthened and fitted with a new Parabolic Bow, designed to reduce wash from the vessel.

coming alongside light ship, due to the wharf situated on a river bend across the river flow.

No bow thrusters were fitted to the ships and using anchors when berthing was useless due to dragging on account of the fine silt of the riverbed and strong flow which was practically on the beam during this process. Many a good man decided the challenges were too demanding and it wasn't for them, so they moved on. The constant monotony of river navigation on a 24 hour basis (using powerful search lights and having to rely more or less exclusively on Radar at night), repeatedly sniffing the river bed coupled with a never ending effort to seek better water depth to avoid grounding, also weighed heavily at times and warned off many a good man, not to mention the densest of fogs that often engulfed the river. Hence there was quite a turnover, especially amongst Masters.

To be fair and honest to all participants, it took a good 6 months to harness the river's unique attributes and challenges in getting the strong river flow to work in ones favor rather than against. Once mastered, life became so much easier. Another factor was that with the exception of occasional trips to Port Moresby, Lae or Australian ports there was very little opportunity to escape from the ship, even for a few hours. The shipping port at Kiunga was remote in the extreme with nowhere to go. Kiunga was surrounded by dense jungle. The only shop was a dingy trade store which sold tinned bully beef to locals by the ton, and a single open air market which attracted local rascals (pickpockets, petty thieves, etc). Other than that, there only remained the so called 'Guest House' which was a very small local motel operated by a couple of expats. For most, it must be said, attributed to an intense countdown until the day arrived when it became time for the short trip to Kiunga airstrip to board the charter flight to Port Moresby at the conclusion of a 3 month tour of duty. Hence it was not every-

one's cup of tea.

The Fly River was prone to long periods of reduced water and shallowness, which made transitting the full 522 miles somewhat difficult without nudging the bottom or running aground at some stage of the passage, especially when loaded and outbound from Kiunga. Grounding goes against the code of all good mariners but it was common because the river bed changed so frequently and when there may have been 10 meters of water one day, the next day it may only be 5 meters, or indeed nothing at all. Mud banks shifted frequently and in the tidal reaches mud islands formed then quickly disappeared with regular monotony due to the amount of erosion caused by the fast flowing stream. Sitting high and dry on a relatively level, soft mud river bed did not however cause any damage to the vessels in general, and on numerous occasions became the norm for lengthy periods.

The main disadvantage of grounding, apart from the obvious loss of time and inconvenience, was that one never knew how long one would be stranded on the mud. One extreme case caused a vessel to remain grounded, high and dry on a flat mud bank for more than 3 months, during which time the crew played soccer on the dried out surface mud, even painted a 'Goal Post' on the ship's hull plating. The main difficulty was the supply of fresh food and provisions because not even the smallest of craft could get alongside to deliver. In several exceptional cases it became necessary to charter helicopters when a number of vessels became stranded, doing a delivery run to those unfortunate enough to be aground.

For those newer vessels with keel cooling it was not so bad because circulating water could be maintained but for those not so fitted one was obliged to rig fire hoses to the nearest flowing river water in order to sustain the use of ship's generators, air condi-

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tioning plant and other facilities. Therefore a considerable amount of bottled drinking water was always carried on board to cover such eventualities. Obviously the river water was unfit for human consumption and barely passed the "Pub Test" even for washing in cases of dire need.

It was very ghostly navigating the river at night. The powerful searchlights cast a very sinister shadow. It was even more uncanny when sitting aground at night on a mud bank in a river surrounded by dense jungle just meters away. Only the noise of animals broke the deafening silence and tranquility, added to the sense of haunting, and aided the onset feeling of discomfort and potential alien danger, throughout the hours of darkness.

Depending upon which part of the river you were in determined the friendliness of the local tribesmen and natives that lived in the jungle villages that skirted the river bank. Most were friendly and waved as we sailed past but some others not so friendly, and paddled out in cut out canoes attempting to hinder the ship's passage. One became immune to these veiled threats but never lost sight of the dangers of swamping the canoes and causing the occupants to fall overboard into crocodile infested waters. The best we could do was to make a lot of noise on the ship's siren and slow down best we could, and try to minimize our wash and wake.

When transitting the river it was often required that the ship come very close to the river bank in order to seek the deepest water, so at night I had very strict orders that no one was permitted to go outside on deck. Apart from which, the mosquitoes would have a feast and Malaria was prevalent. This became mandatory in my night order book because we would regularly find arrows and spears on the deck and bridge wings, propelled in our direction by natives of the night. Occasionally, at night these projectiles could be heard striking the superstructure or landing on the ship's deck. It was not so much the projectile itself that was the principal concern, but rather what kind of poison may have been placed on the arrow or spear tips, to aide their native hunting.

The 'Fly' had an abundance of wildlife such as colorful Cassowaries, Deer and exotic Birds, Hornbills, multi-colored Parrots and the like but it also had its fair share of dangerous creatures, in particular Crocodiles and Snake, Spiders and Wild Pigs. Crocodiles were always conspicuous during daylight hours basking in the sun on exposed mud banks or at the water's edge and at night they were equally as visible because their eyes shone red when the beam of the searchlights was cast upon them. At night the sweet odors off the rain forest became almost overpowering and the jungle came alive with sounds that were very unsettling to the uninitiated. During my spell working on the Fly, river traffic was controlled and monitored as best



The 2,143gt Western Zenith was built in 1993 by President Marine at Singapore. In 1999 she was lengthened by 13 metres, increase her gross tonnage to 2,768. On 30th April 2015 she arrived at Chittagong to be broken up. This is a fine study of Western Zenith at the container wharf in Kiunga. The Parabolic Bow can be seen very clearly in this image. The 3 powerful searchlights used for night navigation in the river can be seen on the bow. 2 others situated on the Monkey Island.

possible by Ok Tedi at Kiunga. Under the call sign 'Ok Tedi Kiunga' they broadcast every morning at 9am by HF Radio mainly on 5960 Khz but sometimes we used other frequencies if the atmospherics were bad. All Ships were required to report their position and speed. This worked satisfactorily and allowed ships to roughly calculate where and when they may expect to meet passing traffic and permit VHF contact beforehand, once within range. The system worked well except for large barges under tow, laden with illegally harvested logs. Obviously these perpetrators operated under the veil of secrecy and were most active during hours of darkness which made them even more of a menace since in the majority of cases they did not exhibit any steaming lights. High definition Radar was the only way to detect them. It was common knowledge that this illegal practice was in full swing but no one seemed to pay much attention to it from our perspective. The only known logging camp was at the river mouth, just off Umuda Island, where at any given time there could be upward of a dozen logging vessels anchored, all engaged in loading dressed logs for Asian destinations.

There was an unofficial (cum official) river map which had been laboriously drawn by an ex Australian Master during the early days of the OK Tedi Mine development project. His river map was surprisingly accurate and indicated in great detail the location of all the 'RM' markers, conspicuous objects, and fixed hazards for the entire length of the river as far as Kiunga, it was a work of art. There were a few navigation markers in areas not subject to much change but mostly Masters learned their own tricks and transit points from the national crew...such as for

example, keeping a conspicuous tree, land mark, structure or natural beacon in such a position until it reached a certain bearing and radar distance, before altering to the next course, etc etc., buoyage was nonexistent. Determining the ship's progress transitting the river was an easy exercise because of the highly conspicuous 'RMs' placed every 5 river miles. Hence when reporting to 'Ok Tedi Kiunga' by radio (i.e. position RM 225, upstream/downstream, speed 10 knots) it gave you a good handle on both speed and position. When entering or departing the river delta reporting was also mandatory by HF radio. A typical downstream passage from Kiunga to river estuary (barring groundings) was approximately 48 hours duration, whilst an unhindered upstream passage was about 72 hours duration.

The rule of navigation in the Fly River was of course, ships moving downstream had the right of way and those sailing upstream were required to pull over clear of the channel towards the river bank and give way. It was not a simple case of keeping to the starboard side of the river, ships were compelled to seek the deepest water. Depending on which area of the river you were at time of meeting the conflicting traffic, dictated whether you just pull clear of the channel or go hard alongside the river bank in the narrower reaches, thus giving way to the loaded downstream vessel. The latter was not so pleasant, especially at night, because it was difficult to avoid trees, many of which seriously overhung the river bank in places. In such cases snakes and other hazardous creatures become a reality so one needed to anticipate. A clean-up party was required every day at first light to clear away dead and broken tree branches together with any other

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hazards. The national crews were fearless and unperturbed by any nasties and creepy crawlies which had landed on deck during the night.

One of the major natural hazards when navigating the Fly River was very large semi-submerged logs. If they struck a propeller blade that could mean curtains, and easily snap off or seriously bend a complete propeller blade(s). These large logs were almost invisible as they floated just below the surface, even during the day but at night one had no chance of sighting and taking evasive action.

During periods when the river was low due to lack of rain at the river source it was not uncommon to anchor off Umuda Island in the river estuary, whilst waiting for the river to rise. These layovers could run into weeks until the rains broke. We nicknamed this the 'Umuda Country Club' and each day Masters and Chief Engineers would visit ships in turn for a lunch and a few beers. There was a great deal of competition between the ship's Cooks to see who could lay down the most delicious of meals. There was nothing else to do except watch videos or read, so the daily gathering and interaction with other vessels was the only option to break the monotony and boredom.

The Fly River was extremely wide at the river mouth, a typical fan delta but once passing Sturt Island, about RM 125, where there was a sawmill operated by a lone expatriate and his local extended family, the river started to twist remarkably. The Sawmill was very conspicuous with its ramshackle wooden jetty and grass airstrip carved out of the bush on the slope of a hill. For the next 100 RM or so the river meandered through grass lands, with reeds as tall as the ships masts in many places. At this point the river was somewhat featureless but still reasonably wide it must be said.

The next point of interest was Obo Station. Basically, a small missionary settlement consisting of only a few wooden shacks and a radio tower, supported by a jungle airstrip. Once past Obo Station and the confluence of the Strickland River, the topography changed yet again. The river became much narrower and started to twist and wind even more noticeably with some bends up to 180 degrees. Rafts of water lilies, often in full bloom, were magnificent and the sweet odors emitted from other flowers and plants were always present, mainly as a result of the Jungle closing in as the river became more restricted.

Some stretches of the river formed the border with Indonesia, and their military patrols were occasionally observed but they never bothered river traffic. Only the presence of the sporadic Indonesian flag defined their territory. In any event the Indonesians had the right of navigation downstream to the river estuary.

Approaching the junction of the Fly and



The 2,768gt Western Triumph was built in 1992 by Sing Koon Seng at Singapore. On 17th March 2015 she arrived at Chittagong to be broken up.

Alice Rivers, in the region of RM 436, was always a nightmare as it was a notoriously bad area for shallows and grounding as well as hidden underwater snags and logs. The deepest water lay right close to the river bank for about a 2 mile stretch so it was normal to collect remnants of overhanging trees as one swept past, particularly when proceeding downstream as the ships speed was fast which made steering difficult, being so close to the riverbank but the PNG helmsmen were expert and had good experience handling the challenge. Successfully navigating RM 436 area signaled the last of the hazards, since the water depth increased upstream all the way to Kiunga (RM 522), save for the 'Rock Bar'. Negotiating the 'Rock Bar' which was a very narrow and sharp river bend of about 90 degrees was always difficult. Going upstream it wasn't too difficult stemming the river flow but when proceeding downstream, especially when the river was high and the river flowing even faster than normal, it could prove very hazardous. Approaching this point when transiting downstream, one was faced with a very hard cliff like river bank on the starboard side right at the critical point at which a very sharp turn to Port was required. Speed could not be reduced as it needed to be maintained in order ensure best steerage in the attempt to negotiate the sharp bend. The secret was, to keep the ship's bow as close as one dared to the port hand river bank as one approached, with the helm hard over to port and with a little luck the ship would make the turn and miss the section of hard river bank on the starboard side, but never more than by a few feet. Some ships in the fleet were not so lucky and suffered the consequences of colliding with the hard knoll, which very surprisingly did not cause serious structural damage. The notorious 'Rock Bar' was I think another factor in causing many good men to leave the job.

From the 'Rock Bar' it was plain sailing right up to Kiunga, even allowing for the increased narrowing of the River. Kiunga was

situated at the top of a longish reach but the two jetties were positioned awkwardly on the river bend which created challenges when berthing. One berth was used for general cargo and containers (later to include a second container facility), whilst the other was exclusively for loading the concentrate. We always berthed port side alongside to facilitate the ship loading. Loading a full cargo could be achieved in approximately 6 hours and it was a very dusty and dirty affair. There were suitable anchoring locations slightly up and downstream from the main township, which often became crowded during periods of low river levels with a number of ships waiting for a rise of water.

Once loaded and ready for departure it was a simple task of singling up to a solitary stern rope or back spring, depending on personal preference and allowing the river flow to swing the ships head away from the berth, swinging quite rapidly to starboard, until the bow was almost facing downstream before casting off and engaging main engines to assist with completing the swing. During this maneuver it was necessary to keep the ship's stern as close to the wharf as possible because on the opposite river bank there was a prominent mud bank which reduced the navigable width of the river and restricted any kind of alternative maneuver.

When operating in the Fly River it always paid off to remain alert, open minded and anticipate, because the river frequently deceived those mariners who were not prepared for the unexpected or unpredictable. Hence, upon completion of a 3 month spell one was ready for home leave and it was always good to take the small twin engine Dornier or Otter to Port Moresby. The discomfort of the cramped 2.5 hour flight was soon forgotten and easily overshadowed by the first of several iced beers at the Airways Hotel bar at Moresby, usually whilst awaiting onward international connections and a pending home leave.