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**January 2010**

## Welcome!

Our 10th newsletter will be the first one in 2010. We are conservatively optimistic that 2010 will see an improved business environment for our industry and we are looking forward to working closely with our customers and business partners to make the Year of the Tiger a great year.

In this issue we are concentrating on Yard Equipment Maintenance (YEM) though we also have an article referring to Container Services (CS). Our strategies for 2010 have been set and we will continue to expand in YEM as well as in other business segments and still with our customers in focus.

At the end of 2009 we bid farewell to our Managing Director John Brennan, who decided to repatriate back to the USA with his lovely wife. We are in the final stage of hiring in a new MD who we hope will be in place within the 1<sup>st</sup> quarter of 2010 to lead Brigantine to continuous success enabling us to provide excellent services to all of you, our customers.

We wish you a healthy and prosperous 2010.

Yours faithfully,

Paul Erik Andersen  
 Deputy Managing Director

Our engineers put on new clothes for the occasion while still concentrating on their jobs at hand, keeping in mind the required high quality of their work. This was done to be ready for the evening Christmas party. When work was over, they all got together and had a few drinks accompanied with traditional Chinese food while at the same time sharing all the experiences they had gained from the past months living in Nigeria. They all mentioned that this special period had been a great chance for them to grow and learn so many new things they would not have been able to, had they not been in Apapa. They are grateful to Brigantine as a company for giving them such an opportunity and wonderful memories.

If you are interested in this service, please contract Mr. Nick Ye Gang at +234 8039 7994 74 or Ms. Samantha Chen Stokes at +86 138 2523 5993.

## YEM Apapa Team Celebrated Christmas in Nigeria

25 Dec 2009 was Christmas day and one of the most important days of the year for most countries all over the world. During this holiday, our YEM team also got their 1st Christmas Day abroad.



A saying goes: "For people living away from home during the holidays, a lot of people miss their relatives and friends". This old saying may well have expressed the feeling of our Apapa team. During the past few months, while living aboard and working hard in achieving their assignments, the crew was compensated by receiving positive feedback from our local customers. On Christmas day, they wanted to do something special by celebrating and contributing as a team to the festivities of the day.

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## Gear Reducer Repair at Brigantine

The Gear Reducer is an indispensable piece of machinery to any terminal equipment; this work horse makes great efforts in lifting containers or moving the crane. Although they are usually engineered to be durable and reliable for operations, they are delicate as well; a minor flaw can develop such as a shattered gear and lead to disastrous consequences.



Fig 1. A broken gear

We acknowledge that the customer's equipment is the backbone of its business. Good maintenance practices like periodic inspections, oil changes and overhauls are essential to maintain a trouble free and, above all, safe operation. (see Fig. 1).

Brigantine YEM offers to our valued customers a one stop repair and overhaul services for various types and sizes of gear reducers, from on-site dismantling, repairing at our workshop to re-installing of the total equipment. Customers are keen to use our services for our competitive costs and skills which is a complement to their own maintenance task force.

Standard overhaul and repair procedures include the following steps:

- All reducers returned to our workshop are to be completely disassembled and cleaned by removing all rust and sludge residue.
- The casings, gears, shafts and bearings are to be visually inspected for cracks, signs of wear or deformation. NDT also can be conducted when needed.
- We will, whenever possible, provide recommendation to salvage existing parts for extended use by inlaying sleeves, metal spraying, welding and machining as approved by the customer. (see Fig. 2).
- Gears, bearings and clamping bolts provided by customers can be replaced at the customers' discretion.
- All repaired and overhauled units are to be checked for gear contact patterns, clearances, backlash, and freedom of movement. The exterior surfaces of the reducer will be cleaned of all loose scale and rust, and finally color painting can be applied as specified by the customer. (see Fig. 3 &4).



Fig 2. Damaged bearing housing to be repaired by metal spray

It is our job objective that the rebuilding process assures the gear reducer will provide future years of dependable operation as our promise to the customer.

For more information on this service, please contract Mr. Cheung Chi Kin at **+852 9100 0135** or Mr. Jeff Wang Guan at **+86 150 1927 0780**



Fig 3. Check for gear contact pattern



Fig 4. Measurement of perpendicularity of gear

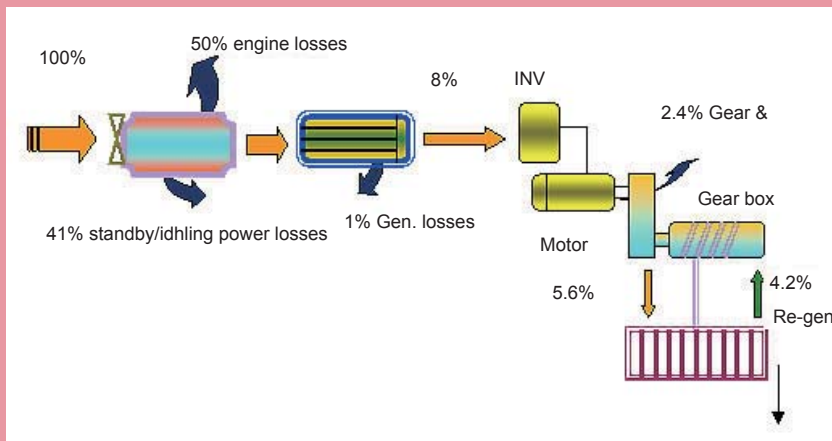
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## Brigantine and Portek Start New Service - Hybrid System in RTG

Nowadays energy saving and environmental protection have become hot topics within all industries in the world. In the container terminal industry, the diesel generator is the main power generating piece of equipment especially in RTG's, which occupies a tremendous amount of the terminal's daily energy consumption. So many terminals put in a lot of effort to cut down RTG consumption. The mature solutions for energy saving purposes include substituting diesel power for electric power. The energy saving includes 3 methods as mentioned below:

1. Energy-recycling (DC-DC): potential energy (hoist mechanism coming down) is converted into electricity stored in the energy-storing unit and then transferred to the main DC bus. Energy-storing units include:
  - Phosphoric acid iron storage battery
  - Super capacitor
  - Flywheel
2. Variable speed generator: adopt a 2nd generation System. For example: Siemens ECO system.
3. Mix power: system combining energy storage and engine variable speed

A recent research shows that the unnecessary energy consumption in RTG's is mainly generated during engine idling & operation standby, during the speed running and braking period. In the whole energy transmission process, energy loss during engine idle speed and operation standby contributes to more than 40% of the whole energy consumption with braking making up 5%. Refer to picture below:



To reduce the energy consumption during the two processes, we work with Portek to carry out the Hybrid engine retrofitting as a best solution, which by the fact that it adopts a variable-speed engine controlling system. It modulates engine rotation speed according to different loads, and then controls the generator moment and speed via ECM (electronic controlling module). Finally, it adds an inverter and energy-storing unit to convert into electricity the energy generated during braking, and feedback to the main electricity circuit.

The mix power solution can be adopted in many kinds of controlling systems, and it only causes little changes in both equipment and the terminal. It is reliable for both aging machines and new equipment.

For more information on this service, please contract Mr. Patrick Gao Bao Qiang at +86 150 1289 6583 or Mr. Jeff Wang Guan at +86 150 1927 0780.





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## New Service Direction - Provide Service to Importer



Recently, we signed service contract with High Fortune Imp & Exp Co, Ltd, a protein product (Fishmeal) trader in Beijiao, Foshan. This is a milestone for Brigantine to provide inspection and EMR service to importer. As we know, traditionally, our clients are shipping lines and leasing companies. However, when we expand our service from Hong Kong, Shenzhen to the PRD area, there are more opportunities for Brigantine to make good use of our competitive advantages in order to attract different client segments.



The PRD area is always a challenge for shipping lines and importers. Due to the slow development of container service in PRD area, it is very often to see disputes between shipping lines and importers for empty return. The local agents are not able to inspect the containers and provide a quality EMR service. So when the empties are repositioned to HK or Shenzhen, the 3rd party damages are found, then the disputes are generated. Learning these facts, Brigantine strives for reducing such kind of disputes and improving the importers' satisfaction, by providing quality inspection and EMR service at market price.



Through 3-month's operation, the number of disputes coming from importer has been greatly reduced. Both Shipping lines and importers spend less time to deal with such type of disputes and focus on their main businesses. With Brigantine's entry into the PRD area, the local EMR service is also leading to a more professional level. In 2010, we will also launch mobile EMR service for shipping lines and importers, in smaller feeder terminals under our scope.

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## New Brigantine YEM Service is Launched

Brigantine, in association with CNOOC Asset Integrity Management Technology Service Center, is launching a new and exciting Engineering and Maintenance Service to Off shore oil & Gas installations.

- a. Risk based Inspection, Maintenance & Repair services for offshore in-service drilling rigs and platforms.
- b. QA/QC services for platform / drilling rigs modification or/and fabrication.

For more information on this service, please contract Mr. Nick Ye Gang at **+234 8039 7994 74** or Ms. Samantha Chen Stokes at **+86 138 2523 5993**.

