

# Ship



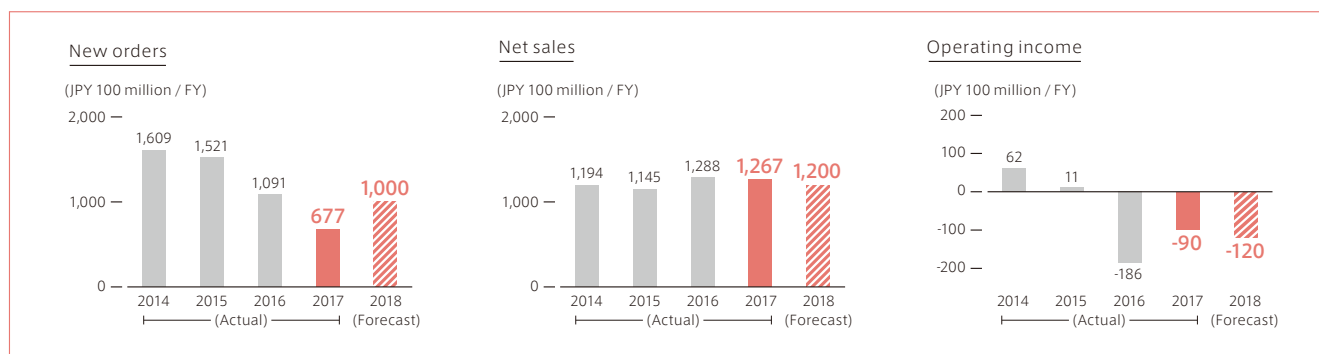
We will achieve profits by strengthening our cooperation with group companies and innovating our production system.

Director and Managing Executive Officer  
General Manager of Ship & Ocean Project Headquarters  
**Tetsuro Koga**

## Business environment and performance

The shipping market has continued to experience a state of excess capacity attributed to the completion of numerous new shipbuilding construction projects over the last several years. In particular, while charter freight has remained at historically low levels in the dry bulk division, there were only a few projects in which we received business inquiries. While charter freight began to show a recovery trend at the beginning of 2017, shipbuilding prices have yet to reach a satisfactory level, and it is expected to be some time before a full-scale recovery takes place. On the other hand, in the market for crude oil tankers and LPG carriers, which has remained at a relatively reasonable level, excess capacity has begun to be felt due to the progress of projects for which orders were received. Moving forward, we hope that excess capacity will be eliminated by scrapping aging ships and ships with high fuel costs. We also expect that market recovery and an increase in the sea-borne cargo volume will result from the continuous growth of emerging economies. In the midst of these conditions, MES has developed and released a steady stream of new bulk carriers that incorporate energy-saving and environment-friendly technologies and VLCC. Since we handed over the first energy-saving ship in November 2013, we have completed and handed over a

cumulative total of 50 energy-saving bulk carriers of various types, which are 56,000-ton, 60,000-ton, 66,000-ton, and 182,000-ton bulk carriers. The environment for receiving new orders has been tough. However, we will continue to apply our competitive advantages as the pioneer shipyard for energy-saving ships and strive to be selective in accepting new orders, while at the same time trying to improve profitability. We will also make efforts to develop new ships that will stimulate the demand of ship owners, such as gas-fueled ships. Orders received decreased by 41.373 billion yen (-37.9%) compared to the previous fiscal year, to 67.712 billion yen, reflecting poor orders received for commercial ships due to the sluggish shipping market, which offset the orders for ships that we received from the public sector and others. Net sales remained almost unchanged from the previous fiscal year, at 126.690 billion yen. We posted an operating loss of 9.753 billion yen due to the ongoing impact of the loss from ocean support vessels, despite the improvement of 8.924 billion yen from the previous fiscal year that resulted from the decrease of low-priced ships, cost improvements, and other positive factors.



## Our Action

Initiatives for innovation based on the Mid-Term Business Plan

### Topics Development of LNG carriers for medium-distance transportation

#### Development of EurasiaFlex, a 80,000m<sup>3</sup> class LNG carrier

The LNG transportation market is expected to see an increase in demand for transportation from terminal ports as hubs to less-equipped ports. Focusing on this trade, we developed an 80,000m<sup>3</sup> class LNG carrier in 2017. We named it EurasiaFlex, positioning it as a versatile ship for medium-distance transportation in the Mediterranean Sea and Asian region. We are proceeding with specific business negotiations.

The new ship has three MOSS-type spherical tanks, and its main engine is ME-GI, a dual fuel engine fueled by crude oil and gas. To satisfy the demand for versatile ships that can enter a variety of ports, we have designed the hull to be 215 meters long, thereby ensuring high versatility. We have also taken steps to reduce the operation cost and other costs. We will improve our existence value by promoting intra-group cooperation in the small-scale LNG carrier market, where technologies, forms of business, key players, and other elements are completely different from those in the traditional large LNG carrier market.



EurasiaFlex 80,000m<sup>3</sup> class LNG carrier

### Topics Acceleration of spread of common platform for FPSO projects

#### An Approval in Principle (AIP) granted by Bureau Veritas to next generation design for a FPSO Hull Platform – the “noah-FPSO Hull”

MES has obtained Bureau Veritas Approval in Principle (AIP) for the noah-FPSO Hull and associated design and construction methods following the American Bureau of Shipping. This AIP provides assurance of the feasibility and reliability of the noah-FPSO Hull design.

The noah-FPSO Hull is a next-generation FPSO (Floating Production, Storage and Offloading) platform (“noah” stands for New Offshore Adapted Hull). The hallmark of the noah-FPSO Hull is that it allows a flexible approach to the design and construction of the hull reflecting production requirements, rather than adjusting the oil/gas production facilities to the hull’s design. MES is now marketing the noah-FPSO Hull to achieve the common platform in the expectation that the FPSO market will expand significantly.



The noah-FPSO Hull, the next-generation FPSO platform

### Topics Building ships for the public sector

- Naming and launching ceremony of Chiyoda, a submarine rescue ship
- Handover of Yonakuni, a 1,000-ton patrol ship for the Japan Coast Guard
- An order received for a fisheries training boat for Nagasaki University

We held the naming and launching ceremony of a submarine rescue ship, the order for which was received from the Ministry of Defense in October 2016. In November of the same year, we handed over a patrol ship for the Japan Coast Guard. We have built 30 ships for the Ministry of Defense and 29 patrol ships for the Japan Coast Guard. We will continue to contribute to activities for protecting the sea around Japan by building ships for these public offices.



Naming and launching ceremony of Chiyoda submarine rescue ship