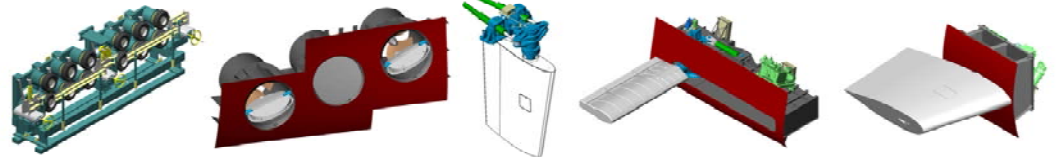




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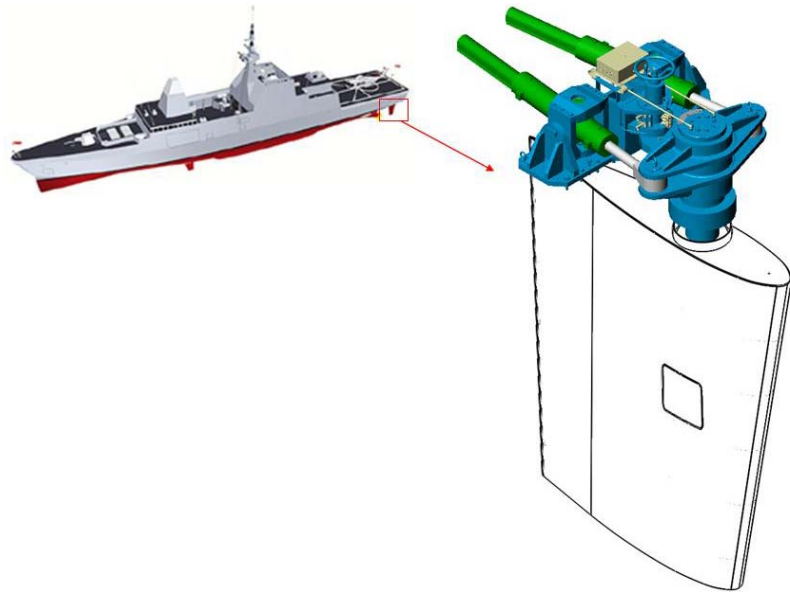


Engineering for Marine Equipment



Special ship fitting systems

STEERING GEAR

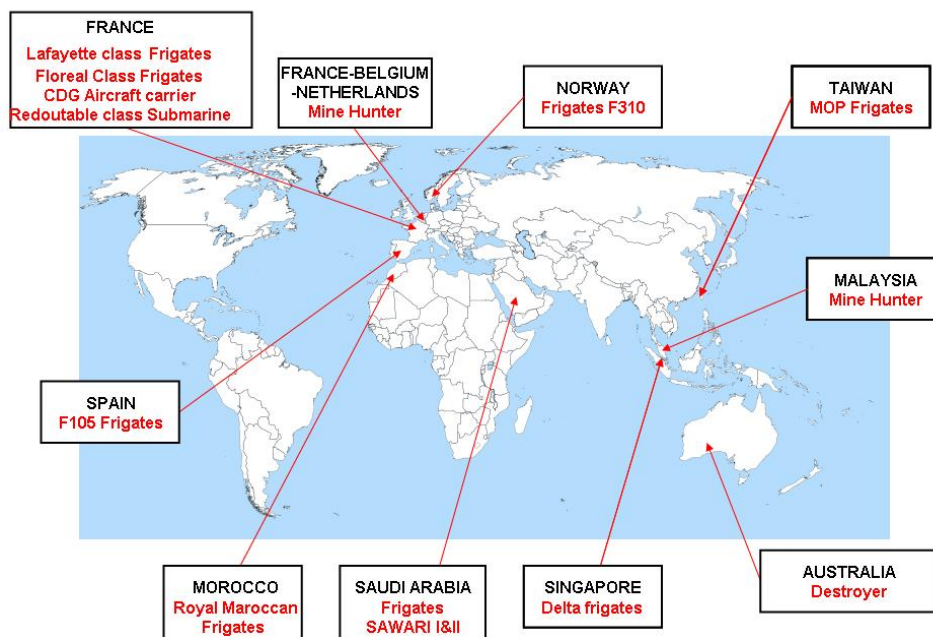


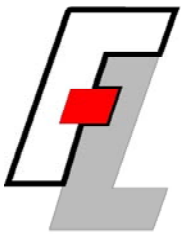
HISTORICAL RECORD OF THE "STEERING GEAR" CONCEPT

Steering gears have been developed by the FL Marine Department (previously ACH Engineering) since 1962. These systems have been fitted to various types of ships (military frigates and helicopter carriers) and have proved to be efficient and reliable.

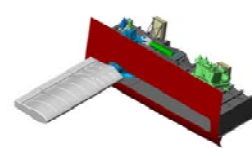
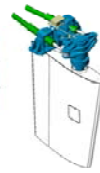
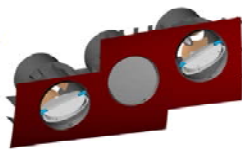
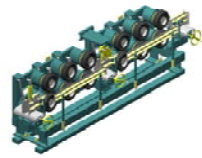
The FL Marine Department has adapted the steering gear concept to meet naval standards, especially for shock resistance to submarine explosions, reduction of noises and vibrations and electromagnetism effects.

The following military programs have been supplied by the FL Marine Department:





**Marine
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Engineering for Marine Equipment

MAIN CHARACTERISTICS OF THE STEERING GEARS

There are two symmetrical port and starboard side installations. Each one is mainly composed of rudder blade actuators fitted with two linear double-acting cylinders. They give the movement to the crossbar, which is directly connected to the rudder shaft. They are powered by hydraulic units controlled by the main and/or auxiliary electric power units. The supply consists of steering gear actuators, except the rudders and the hull passages, which are delivered by the shipyard. Upon request, we can supply those parts as well.

Our systems are manufactured in accordance with classification society rules, and we can comply with special military requirements.

