

DNV·GL



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WHY USE  
NAVAL SERVICES  
FROM DNV GL

## STAYING ON COURSE IN CHOPPY WATERS

**Today navies, naval and governmental administrations have to deal with many limiting factors, including:**

- Shrinking personnel numbers, resulting in a mismatch of available in-house expertise for shipbuilding and design
- Continuously reduced budgets

**But the pressure to meet or exceed objectives remains:**

- Sufficient capability
- Latest technology
- Reliability
- Operational readiness
- High safety level
- Environmentally responsible

**DNV GL supports navies, yards and manufacturers in achieving these objectives**

You can rely on the combined competence of DNV GL for surface-, subsurface- and governmental vessels. We are the technical advisor to the German Navy and provide classification and advisory services to the Norwegian Navy and many other navies around the world. We are also a founding member of the Naval Ship Classification Association (NCSA) and the International Naval Safety Association (INSA).

## DNV GL PROVIDES CLASSIFICATION, CERTIFICATION AND TECHNICAL SUPPORT

- Experts with extensive experience in supporting yards
- In-depth and extensive global experience in specification, design, test and acceptance of surface combatants and submarines
- Unparalleled experience in all aspects of ship design and support and provision of assurance, including construction supervision
- Access to an extensive resource pool of technical expertise
- Considerable experience and in-house expertise, within a number of different safety and technical regulatory frameworks
- Collaborative approach providing continuous advice and support to designers, builders and operators to achieve the best result
- A holistic approach ensures that vessels and their systems meet all relevant standards
- Provision of appropriate training to all stakeholders in naval vessel construction to ensure a complete understanding of the process





Source: Courtesy of Damen Schelde Naval Shipbuilding

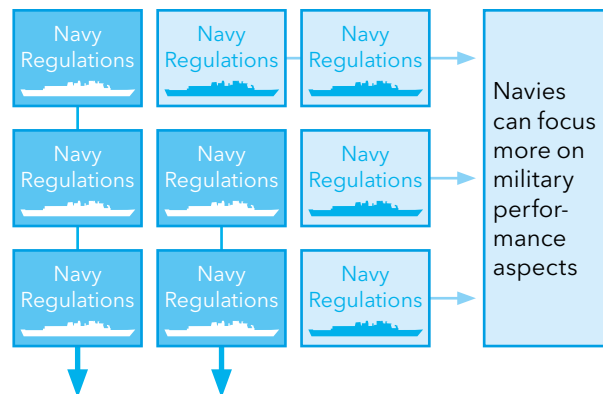
## BENEFITS OF DNV GL CLASS

When using a class society in the procurement of a naval ship, the class requirements become part of the contractual agreement. This means that the navy yard specification can be simplified to contain only the requirements from owners. By referring to a class notation, many standard technical requirements are implicitly given. These technical standards are used by a number of yards and can give cost reductions.

### The use of a class regime as part of the contract has a number of effects on the project:

- The technical standard for the ship is defined
- The technical basis and quality documentation of subdeliveries, such as steel plates, engines, pumps, etc., are defined
- Revision of technical standard is "frozen" at the date of the contract signing
- The extent of documentation (drawings, etc.) for the ship is defined
- Cost overruns are eliminated through compliance with class requirements
- Independent third-party follow-up of safety and quality issues of the ship are performed by the class society

## COST SAVINGS ON NEWBUILDING PROJECTS



Some navy regulations may be replaced by DNV GL naval class requirements



### Cost reduction factors for the yard

- Freedom to optimize
- Known standard
- Flexible specification
- Standard solutions

## SIMPLIFIED PROCESSES ACHIEVE COST REDUCTION AND EVEN BETTER RESULTS

Our experience has shown that navies which use the full class concept can achieve quality and costs results which match civilian ship building. That is why we recommend applying the full class concept on naval projects.

## BENEFITS OF DNV GL ADVISORY

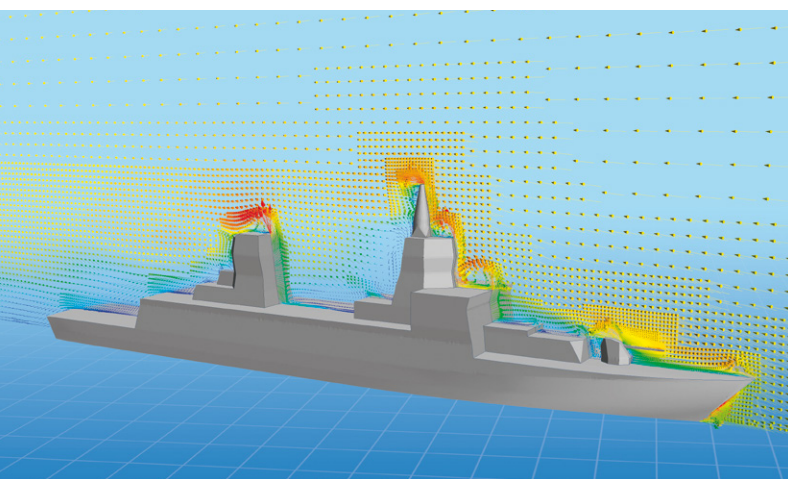
### Naval and governmental administrations can count on:

- A reliable and independent partner during concept design, construction and operation
- Full access to DNV GL expertise whenever needed
- DNV GL making specifications and requirements transparent, resulting in a common understanding among all involved parties
- DNV GL ensuring that vessels are built according to these specifications and requirements
- Expert guidance in developing a certification concept tailored to your needs

We also facilitate a comprehensive perspective on investment projects, ensuring that reliability, operability, maintainability and life-cycle cost are taken into account during every step of the project.

### Yards and suppliers of materials and components can anticipate:

- Clearly agreed requirements and specifications to rely on
- Technical expertise on hand during design and construction, not limited to approval but also advisory
- An independent third-party available in case of clarifications, modifications or new customer requirements



## OUR ADVISORY SERVICES

### Signatures

- Waterborne noise
- Infrared
- Wave pattern

### Energy efficiency

- Hull form and propulsion optimization
- Trim optimization
- Optimization of ship's operating systems

### Survivability

- Damage stability (hydrostatics)
- Structural optimization (survivability and/or weight)
- Shock
- Fire safety

### Availability

- Risk assessment/FMEA
- Hull structure fatigue

### Life-cycle management/extension

- Condition monitoring (hull and machinery)
- Hull condition assessment and prediction of remaining lifetime
- Hydrostatics (weight of additional installations)
- Conversions: feasibility and impact
- Life extension support

### Unconventional designs

- Hydrodynamics: loads, seakeeping, operability index, propulsion, etc.
- Aerodynamics: operational capabilities of helicopter, smoke propagation
- Structure: strength, vibration and noise
- Risk: materials, alternative fuels, etc.

### Troubleshooting

- Noise and vibration
- Strength and fatigue (hull and machinery)



SAFER, SMARTER, GREENER

## BENEFIT CASES OF PROVEN EFFICIENCY

For a European Navy full drawing approval, including the hull, systems and statutory certification was executed on a combatant newbuilding project. The complete structural hull package was approved and stamped within the normal approval time of three weeks, ensuring a timely delivery of the series and no cost overruns.

In another European case, DNV GL has been involved in providing procurement support to the respective Ministry of Defence and Procurement Organization, which resulted in less cost and time overruns as originally foreseen.

### We understand your needs

Our extensive technical advisory experience for complex navy vessels ensures that the navy or coast guard receive a highly reliable support. We address the demands of naval projects, which require good understanding of the various roles of a combat vessel providing the necessary flexibility in applying the relevant standards. Furthermore we help naval and governmental customers take full advantage of the commercial practice without compromising the integrity of their vessels' capability.

**DNV GL is the classification society which is driving safety at sea through enhanced standards, certification of software-based control systems, proactive approaches and high quality in everything we do.**

If you have any questions or would like to know more, please contact:

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