

CAREERS IN NAVAL ARCHITECTURE

INTRODUCTION

A **Naval Architect** is a professional engineer who is responsible for the design, construction and repair of ships, boats, other marine vessels and offshore structures, both civil and military, including:

- Merchant ships - Oil/Gas Tankers, Cargo Ships, Cruise Liners, etc
- Passenger/Vehicle Ferries
- Warships - Frigates, Destroyers, Aircraft Carriers, Amphibious Ships, etc
- Submarines, Semi Submersibles and underwater vehicles
- Offshore Drilling Platforms.
- High Speed Craft - Hovercraft, Multi-Hull Ships, Hydrofoil Craft, etc
- Workboats - Fishing Vessels, Tugs, Pilot Vessels, Rescue Craft etc
- Yachts, Power Boats and other recreational P[craft.

Some of these are among the largest, and modern complex and highly valued moveable structures produced by mankind. Without them to provide for the safe and efficient transport and recovery of the world's raw materials and products, modern society as we know it could not exist.



Modern engineering on this scale is a team activity conducted by professional engineers in their respective fields and disciplines. However, it is the **Naval Architect** who integrates their activities and takes ultimate responsibility for the overall project. In addition to this vital managerial role, the **Naval Architect** has also a specialist function in ensuring that a safe, economic and seaworthy design is produced.

To undertake all these tasks the **Naval Architect** must have an understanding of many branches of engineering and must be in the forefront of high technology areas such as computer aided design.

A **Naval Architect** requires a creative, enquiring and logical mind; the ability to communicate clearly in speech and writing with others inside and outside the engineering profession; sound judgement and qualities of leadership. The education and training given to the **Naval Architect** are designed to develop these skills and to lead him or her to professional status, through membership of The Royal Institution of Naval Architects.

Depending on the type of qualifications held and personal interests, **Naval Architects** may become specialists in one field or develop broad experience in several. Eventually they may find themselves in senior executive positions using their knowledge and experience of general management as well as their professional skills in engineering and project leadership.



A VARIETY OF CAREERS

Naval Architects have a wide range of employment opportunities, world-wide. They are involved in such a wide variety of work that it is difficult to categorise it comprehensively. However, the main areas are as follows:

- **Design:** **Naval Architects** are by necessity creative people. They must have an understanding of the many aspects of ship design - function, appearance and especially important at sea, safety. Apart from the architectural aspects of ship form and layout, they must be able to use complex mathematical and physical models to ensure that the design is satisfactory technically and that it meets the safety rules and standards.

A ship, boat or offshore structure must be stable, seaworthy and have adequate strength in all weathers as well as the hydrodynamic (and, for sailing craft, aerodynamic) performance to give economic propulsion, and safe and comfortable motion in all sea states. The design process demands the extensive use of computer based information systems.

- **Construction:** The task of the ship and boat builder and is to convert drawings and detailed specifications into real structures. A **Naval Architect** specialising in construction



usually holds a management post, taking responsibility for the management of the whole yard or for sections of it such as planning, production or the complex operation of fitting out.

- **Research and Development:** Maritime research in the UK enjoys a high reputation world-wide and **Naval Architects**, many with post-graduate qualifications, are engaged in research in universities and industry.
- **Consultancy:** As independent consultants, **Naval Architects** provide clients with engineering solutions, technical and commercial guidance, support and project management for concept design studies, new vessel constructions, refits and conversions. The variety of work provides a rewarding challenge to the **Naval Architect**.
- **Regulation, Surveying and Overseeing:** **Naval Architects** employed by Classification Societies as Ship Surveyors are engaged worldwide in evaluating the safety of ships and marine structures using the Society's Rules and those of intergovernmental organisations such as the International Maritime Organisation. They approve aspects of design such as strength, stability, and lifesaving.



HOW TO BECOME A NAVAL ARCHITECT

Those wishing to become **Naval Architects** will normally study for a diploma or degree in naval architecture or a related subject, at university or college. This is followed by 4 years training in design, engineering practice and management, and gaining experience in the workplace, before becoming a professionally qualified **NAVAL ARCHITECT**.

Information about the work of **NAVAL ARCHITECTS**, or how to become a **NAVAL ARCHITECT** can be obtained from:

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