3ALFA

NAVAL ENGINEERING



ENGINEERING FOR CRITICAL NAVAL OPERATIONS.

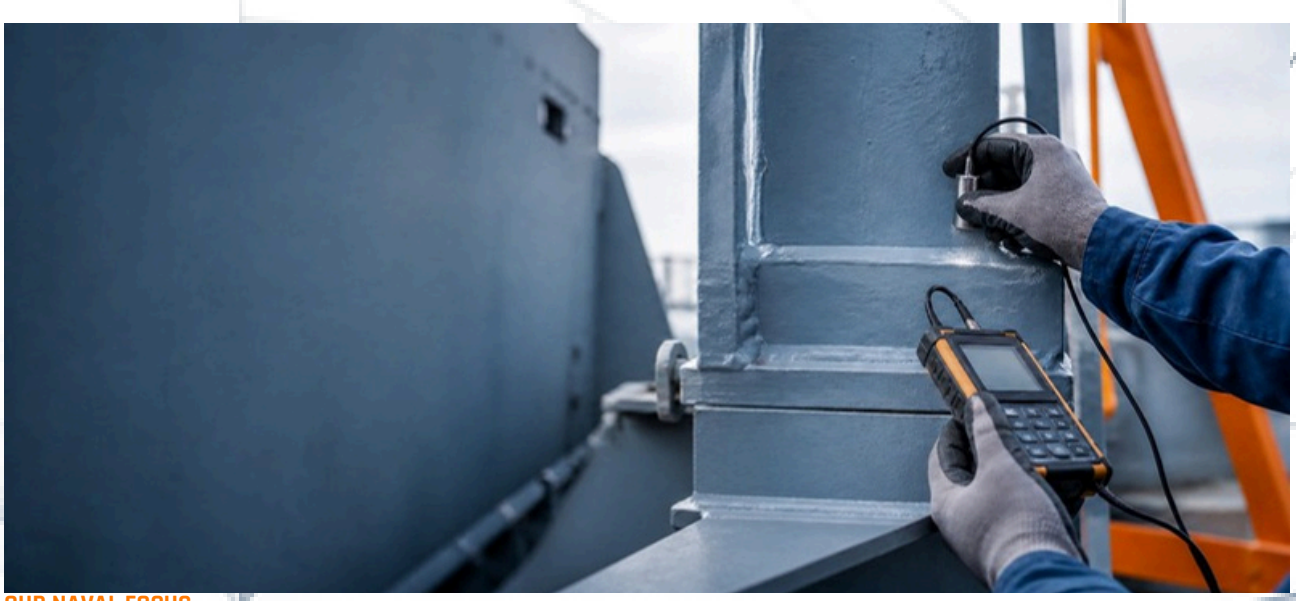
Condition assessment, naval architecture, structural analysis and technical definition for marine assets.

WHO WE ARE

Naval engineering with operational perspective.

3ALFA provides technical coordination and engineering support for naval and metalworking assets where decisions must be traceable, practical and ready for execution.
Our approach combines field condition evidence, naval engineering criteria and disciplined project control. It is designed for owners, operators and technical partners who require a clear basis before modifying, repairing or integrating equipment on board.

ASSET-FOCUSED We begin with the vessel, its condition and its operating constraints.	DECISION-ORIENTED Analyses are structured to support a technical decision, not just produce a model.	CONTROLLED DELIVERY Scope, inputs, assumptions and deliverables are defined and documented.



OUR NAVAL FOCUS

Engineering studies that reduce uncertainty before intervention.

From condition assessment to structural and dynamic evaluation, we structure the information needed to define a technically supportable path forward.

WHO'S BEHIND 3ALFA

FOUNDING PARTNERS



MIGUEL A. VIDAL

PROJECTS & TECHNICAL STUDIES

LINE MANAGER

Retired Peruvian Navy Officer and Industrial Engineer, with a master's degree in Construction Management. Headed Naval Projects in the Navy, then Project Manager in SIMA PERÚ's Naval Construction and Metalworking Department.

JOSE A. PEREZ-BARRETO

NAVAL & METALWORKING

LINE MANAGER

Retired Peruvian Navy Officer and Industrial Engineer, with a master's degree from the Universidade de São Paulo. Ten years as Senior Project Manager at SIMA PERÚ, leading teams of up to 200 people.





CARLOS A. LUQUE

STRUCTURAL ENGINEERING

LINE MANAGER

Civil Engineer with a master's degree in Business Administration. Project Manager at SIMA PERÚ and Site Supervisor at Movitécnica's metalworking plant. Heavy steel-structure erection, including Puente Pachitea (2,500+ tonnes of steel).

CORE CAPABILITIES

A focused technical scope for naval assets.

The following workstreams can be configured according to the asset, available documentation and the decision to be supported.

01
Condition assessment
Ultrasonic thickness survey planning, inspection-point traceability and condition evidence to inform the engineering model.

02
Stability and trim
Assessment of weight, centre of gravity and loading conditions to support safe integration and operational decisions.

03
Structural assessment
Finite element analysis of masts, foundations, supports and local reinforcements using confirmed geometry and load cases.

04
Dynamics and vibration
Modal and forced-response evaluation when equipment, rotating machinery or operating bands may affect structural behaviour.

05
Environmental loading
Wind-load definition and structural verification. Advanced CFD or global seakeeping studies only when the question and data justify them.

06
Technical definition
Calculation reports, specifications, interface matrices, execution pathways and technical support during implementation.



Scope and methods are selected after confirming the asset data, criteria of acceptance, required interfaces and technical-review requirements.

ENGINEERING WORKFLOW

From evidence to an implementation-ready decision.

We maintain traceability between field data, modelling assumptions, results and the recommended next step.

01	**Define the technical question**	Confirm the asset, installation concept, operational constraints, required decision and acceptance criteria.
02	**Establish the engineering baseline**	Organise drawings, geometry, material data, measured thicknesses, equipment mass and centre of gravity, load conditions and interfaces.
03	**Analyse at the appropriate level**	Apply naval-architecture, structural and dynamic methods that match the risk, data quality and review requirement.
04	**Deliver a controlled technical package**	Document assumptions, model limits, results, conclusions and the required actions for design, fabrication or further verification.

DISCIPLINED PROJECT CONTROL

Technical findings are useful only when they can be reviewed, understood and acted upon.

For each assignment, the reporting structure, version control, review milestones and deliverables are defined upfront. This facilitates collaboration with vessel owners, shipyards, technical specialists and international engineering partners.



METHODS AND DIGITAL ENGINEERING

Tools serve the engineering question - never the reverse.

We structure the technical workflow around verified inputs and the appropriate level of analysis. The exact software environment is selected with the executing specialist according to data availability, interoperability, client requirements and demonstrated competence.

NAVAL ARCHITECTURE	Hydrostatics, stability and trim using a verified vessel model and defined loading conditions.
STRUCTURAL AND DYNAMIC ANALYSIS	Finite element, modal and response assessments of local structures, supports and interfaces.
ENVIRONMENTAL LOADS	Code-based wind cases as a starting point; CFD or seakeeping only where a defined technical uncertainty requires it.
ENGINEERING INTEGRATION	Controlled geometry, interface coordination, technical documentation and support for fabrication or installation planning.

Professional integrity. Mention of a method or software family does not imply a particular licence, certification, client-approved methodology or completed analysis. Each study requires confirmed inputs, defined criteria and qualified technical review.



TECHNICAL LEADERSHIP

Project discipline for demanding marine environments.

3ALFA's naval offering draws on industrial, naval and project-management experience to coordinate technical work with a practical view of execution.
The team integrates engineering coordination, contractual control and delivery planning to keep technical studies connected to the real constraints of the vessel, the shipyard and the operation.

NAVAL AND METALWORKING
Experience in metal structures and ship-related projects provides context for condition, fabrication and repair discussions.

PROJECT AND CONTRACT CONTROL
Structured scope, milestones, documentation and stakeholder coordination support reliable delivery.

WORKING WITH TECHNICAL PARTNERS

A clear counterpart for locally grounded engineering coordination.

We can support international technology providers and specialist engineering partners by coordinating local technical inputs, asset information, study interfaces, documentation and implementation planning in Peru.

The deliverable is a controlled path from the technical question to an auditable engineering package, with scope boundaries stated clearly where further data, client decisions or specialist validation are required.



DISCUSS YOUR NAVAL ENGINEERING REQUIREMENT

A technically grounded starting point for your next decision.

Share the asset, the intended intervention and the decision that needs to be supported. We will help define the engineering path, the required inputs and the deliverables that make the decision actionable.

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