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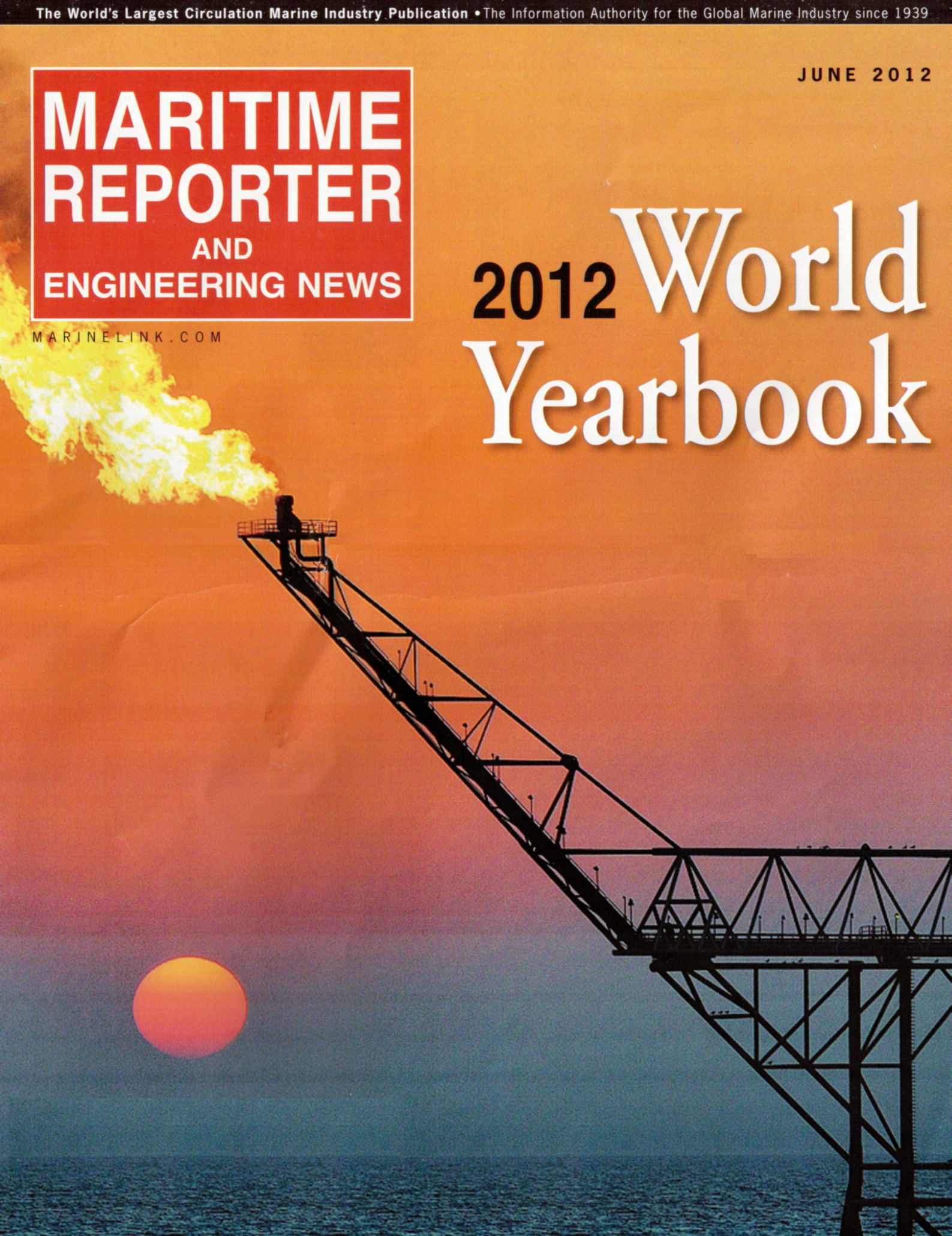


Competitive Shipbuilding

Cost Management is the Key; there are Software Solutions to Help

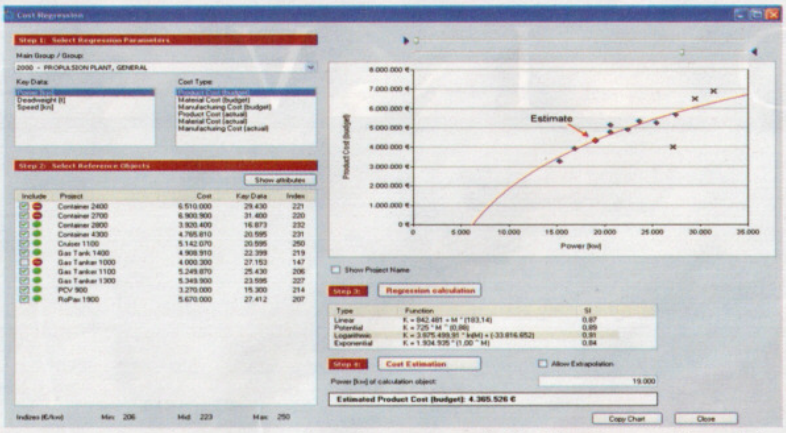
Cost pressure in shipbuilding has intensified over the past few years substantially. Cost management at an early stage of the shipbuilding process allows counteracting this cost pressure effectively. The fierce competition in global shipbuilding and the extreme rise in costs are forcing shipyards to implement effective cost management during product development and manufacture. However, the difficulty is that the majority of costs for a ship have already been defined before the start of production. Analyses indicate that approximately 90% of the total costs for a ship are established through decisions made in the initial design and design engineering phases. Therefore, cost management during the early phases in shipbuilding is especially effective. In reality, however, the available cost information at the beginning of a project is usually incomplete and imprecise, making cost management highly complex and elaborate.

Cost prognoses play an important role during the bidding process and in the evaluation of design options. They are also absolutely necessary for comparing the actual project status with targets. This, in turn, is the prerequisite for cost management measures during the project process.

Due to the number of persons involved and the calculation complexity, reaching consensus between the various participating planning units requires a high level of time and effort. The following difficulties often arise, especially for multiple component assemblies handled by several parties:

- The costs are incomplete because objects were "overlooked", or it was erroneously assumed that these costs are part of another building group.
- Objects and their costs are mistakenly included in the planning multiple times.
- Cost values requiring validation cannot be traced to the person who initially generated them, so that other users can only guess at their logic and accuracy.

An often used method of predicting costs at an early project stage is the application of cost indexes, calculated by using the information gained in previous projects. A typical example is the cost per unit weight calculation. Besides weight, costs can also be determined by other parameters like length over all, surface area, surrounded volume, mass, speed, power, lane meter, (container) capacity, number of crew members or passengers etc. The advantages of



using cost indexes for cost prognosis are the possibility to identify them quickly from previous projects and their simplicity in using them in cost forecasting. These advantages are counteracted by a number of disadvantages, in particular:

- Depending on the object to be calculated, the degree of imprecision for the cost forecast can be very high, as multiple parameters can potentially influences costs.
- Using key parameters to predict costs assumes a linear cost progression, which is usually not the reality, since costs can progressively increase or decrease.
- The use of a mean value provides no insight as to how the costs of the reference object are distributed, meaning there is no indication that the cost prognosis is reliable.

Ultimately, these parameters can be used only in rare instances to generate acceptable cost prognoses. Once the total costs for the ship are generated, they are then compared with the costs in the bid. Oftentimes, the new costs exceed the originally planned costs and cost savings must be attained. During ongoing cost forecasting, later estimates are also compared with earlier ones. If deviations between the two are evident, project management attempts to find the source of these differences in order to combat cost overrun.

INEFFICIENT MANAGING OF COST INFORMATION

Planned and actual costs from previous projects, identified planning errors, offers from suppliers and expert knowledge regarding technological and economic factors provide information that can be used as a basis for cost management in design and engineering. In practice, there are often no attempts to utilize this information systematically. Therefore, such knowledge is often filed away in the minds of specific individuals. Again, available information is usually distributed throughout various IT systems and occasionally exists only as a hard copy. These circumstances lead to problems:

- The necessity of manual system queries and subsequent cost aggregations makes predicting, planning and controlling the costs extremely time-intensive.
- The possibility of cost estimating belongs to single experts. Besides this fact, the quality of estimations, based on the knowledge of experts, differs widely.
- The expense of determining and updating dependences of technical and economical parameters, which can be used for cost estimations in new projects, reduces the value of those indexes extremely.
- The existing data base, generated in past projects, is far from being complete, caused by the lack of an integrated system for managing and providing the cost information.

In this situation, considerable cost knowledge is available in the company but scattered among employees and departments; there is no structured cost information consolidation and the information is often not clearly identified as cost knowledge.

PROBLEM SOLUTION BY SYSTEM SUPPORT: SOFTWARE 'COSTFACT'

The 'costfact' software solution was developed to solve the mentioned problems and can be used during the bidding and the production phases to plan and control the costs of new projects as well for the analysis of completed projects. A uniform system platform enables the link-up of costfact to other external systems, e.g. to import current data from an ERP system. As a multi-

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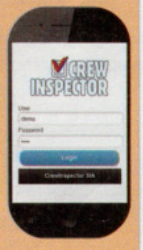
Latvia based maritime crewing software provider CrewInspector released an online application tailored for mobile phone and tablets enabling its customers to access its crew management database. Since 2003 CrewInspector ship crew management system operates over the internet.



Crew management software itself is being available on all desktop browsers including most popular ones Internet Explorer, Mozilla Firefox, Google Chrome and Safari. CrewInspector mobile supports major mobile platforms and internet browsers, being constantly updated: Apple iOS, Android, Windows Phone, Blackberry, Palm WebOS, Firebox Mobile, Chrome for Android, Opera Mobile, Samsung bada, Nokia Symbian.

www.crewinspector.com

Weather Solutions Upgrades Fleetweb

GAC-SMHI Weather Solutions, an alliance between the GAC Group and the Swedish Meteorological and Hydrological Institute (SMHI), has unveiled a new feature of its Fleetweb online application to alert users of coordinates and details of sea crime attacks.

This latest upgrade adds a new tool to Fleetweb enabling constant monitoring and optimization of fleet routing and performance. Operators have an overview of how their vessels are performing in terms of speed and fuel consumption, bunker buyers can see on a daily basis what fuel volumes are required, and technical managers can better plan maintenance schedules.

The addition of Sea Crime Solutions provides rapid sea crime alerts with precise co-ordinates and incident details to allow operators to immediately inform their ships of attacks in their vicinity and along their planned routes. It also gives an accurate picture of the overall sea crime threat at any given time, particularly in high-risk waters.

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user capable, database-supported and globally usable application, costfact improves the consistency of the entire proposal and calculation process. Furthermore, costfact helps to avoid errors and to accelerate cost planning, analyzing and optimization throughout the entire life cycle.

With costfact, cost planning, both top down and bottom up, is done within the vessel's group system, differentiated by cost types and cost objects. costfact contains complete ship building structures that can be modified and expanded, belonging to the demands of the shipyard and the concerned project.

Beginning a cost planning by costfact, the user can start with an 'empty' cost structure, practicing a 'zero based budgeting'. However, this process will be accelerated clearly for usual, by deriving the cost of new objects from costs of already existing groups and consolidating this information to the calculation of the new vessel. By this procedure the cost planning is executed in three steps:

1. Choosing a project template: A master calculation or existing project with accordant similarities is used as starting point of the new ship's cost planning.

2. Importing the cost of building groups: The cost items, which differ to the model, were taken over from other projects as far as possible. Afterwards the costs can be increased or decreased by factors to update the cost according to the current situation.

3. Manual input and modification: The residual calculation objects that could not been determined by similar objects, are calculated manual by inserting the cost in a table sheet.

Every change of each single cost item is journalized automatically to enable the user to get always an answer to the question who changed what and when in the calculation. An additional cost forecast feature of costfact is its ability to determine cost functions, based on a comprehensive and in-depth statistical examination of the technical and economical characteristics of existing objects. These functions enable the user to deviate the costs of similar objects. In particular in early project phases, cost forecasts are always afflicted with significant uncertainties. To quantify this uncertainty, costfact offers a risk analysis function: On the basis of evaluations with regard to the forecast errors of the single components and the statistical error compensation, this function calculates how much the expected cost will probably differ from the planned cost.

If the accumulated actual costs during the building of the ship are recorded, costfact can be used for a concurrent calculation. This calculation accompanies the production process and shows the cumulated cost at any time of the project and enables comparisons of planned and actual data with reference to the different levels of the ship's structure. Thereby possible cost variances can be identified and analyzed. In that way indications for an inefficient input of materials or an inefficient manufacturing can be received, so that controlling measures can be taken to minimize the cost overrun.

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OMC Adopts MarineCFO Software Suite

MarineCFO said that Offshore Marine Contractors (OMC), has chosen to implement the full MarineCFO Enterprise software suite. OMC provides lift-boats to the offshore oil and gas industry. It offers 175 ft. Class lift-boats, 200 ft. class lift-boats and will take delivery of its first 215 ft. Class lift-boat this month. "We have the newest and most technically advanced fleet of lift-boats in the world and now we have the most effective and efficient software system to manage our fleet and organization," said **Raimy Eymard, Chief Financial Officer** (pictured) of Offshore Marine Contractors, Inc.. "MarineCFO allows us to integrate all our departments without the headaches of paper trails and errors, therefore increasing our bottom line."

CargoMax Trim Optimization Tool

Herbert-ABS Software Solutions launched CargoMax -Trim Optimization Tool. The Trim Optimization Tool is designed to offer a powerful solution bundled with a regulatory feature. End-users obtain achievable trim and draft optimization at the press of a button for enhanced fuel savings and regulatory compliance. The optimum is achieved under consideration of strength, stability, propeller emersion, visibility, freeboard and maximum deadweight. Combining rigorously tested algorithms, with user-friendly interfaces, it provides quick and consistent results ensuring that the safety of the vessel is maintained at all times.

VSTEP Delivers NAUTIS Tug Trainer Simulator

VSTEP delivered a NAUTIS Tug Trainer Simulator at Rotterdam-based T.O.S (Transport & Offshore Services). T.O.S. is an international maritime service provider with its head office in Rotterdam and a network of branch offices abroad. The NAUTIS Tug Trainer Simulator is a new generation of DNV certified Tug Handling Simulators, catering to the full range of maritime training goals in compliance with the latest STCW & IMO requirements. The NAUTIS Tug Simulators allow captains to experience and train the handling of tugs with different propulsion systems during tug operations.