



Today there are very great differences in types, sizes and ages of ships. There are also big differences in equipment, machinery, navigation, communication and automation systems. Likewise, crews vary greatly.

To a big degree today's crews do not have the seafarer's mentality which existed, say 50 years ago. Their origin, level of training and general preparation is far from uniform, and consequently a crew's behaviour, particularly in adverse sailing conditions, may vary considerably.

Great effort has been channelled into developing modern technology and wide-ranging rules have been formulated in the expectation that operational and safety standards of the modern vessel will be improved. Indeed, research and new products are daily being made available for onboard application with the view to promising a higher level of

goods are being lost as before and the environment is being destroyed at a quicker pace than ever.

It's only rather recently that the industry has realised that the human factor involved in the operation of seagoing ships has not been seriously taken into account in light of the demands of today's trades, technical developments and human resources.

Tackling the problem has now commenced on several different independent and official levels, including of course the International Maritime Organisation (Imo), where it appears on the agendas of various meetings.

As a major industrial and shipping force, the European Community in a bid to decisively contribute to finding a better solution to the man/ship relationship, has launched a research project as part of the European Research Programme for Transport (EURET).

By pooling together the resources available within the multinational European research groups from both traditional shipping nations – the UK and Greece – and the industrial nations – Germany, France and Italy – it is expected that a precise definition of the problems and a recommendation for their solutions will be evolved.

The research work will develop along the following lines:

- Identification of international regulations implemented and studies carried out in the past. Duties assigned to the crews, work to be done, watches in routine, manoeuvres and in alert/emergency conditions
- Systematic examination of the work done by crew members and overall analysis of the information obtained
- Specific analysis of the duties of each watch and their reallocation. Analysis of behaviour and efficiency of crew in dealing with the various operational situations
- Analysis of the behaviour of a standard crew
- Ergonomics and professional qualifications required for a reduced crew
- Interference factors arising from the

HUMAN IS KEY IN MAN/SHIP SYSTEM

It is generally accepted that in today's shipping industry it's unrealistic to take an overall view of the ship and her crew. Constantine Philippou* looks at the human factors which have to be taken into consideration in the ship/man system

efficiency, safer sailing and a more economical vessel.

Over the past decade stricter international regulations have seen higher standards applied to newbuildings and retrofits, though in truth, taken overall these applications have proven to offer poor practical results. Older operational problems have simply shifted in nature to compound other problems, often causing a worse situation.

Certainly accidents continue to take place at rates similar to before, often with more catastrophic results. Seafarers and

A direct consequence should affect the fleet's earnings potential in a highly competitive marketplace

ship/system and effecting crew members

- Human factors and the psychological and physical efficiency of the crew
- Actions taken to deal with the interference factors and human factors
- Cost benefit analysis of the measures to be taken

With such a wide ranging reference the results and conclusions of this project should be of extreme importance to the shipping industry as they may determine:

- Crew standards and qualifications, synthesis and number of crew and organisation and training of crew
- Rules of regulatory bodies and authorities
- Shore support and management
- Development of new technologies

The study is expected to lead to a shift in investment emphasis away from sophisticated new technologies, which has been putting such a burden on shipowners, to investing in the human element, which, at least in Greece, it is acknowledged requires more attention.

A direct consequence of this project for Greek shipping is expected to be the influence it will have on standards of operation and crew, which in turn will affect the fleet's earnings potential in a highly competitive marketplace.

Further, given the traditional pressures from the highly industrialised countries to continuously install new technology on board ships, this study will certainly give added leverage for the purely shipping nations to voice another opinion which maybe more in tune with the problems facing the industry today. Still, Greek shipping must given careful consideration to the implications that will come from this study for they may in the future have a great bearing on European Community policies.

★Hellenmar Ltd, the sole Greek representative in this project, is a partnership between Costas Philippou, Andreas Leontopoulos and John Papaioannou.

SIMULATOR CUTS TRAINING COSTS

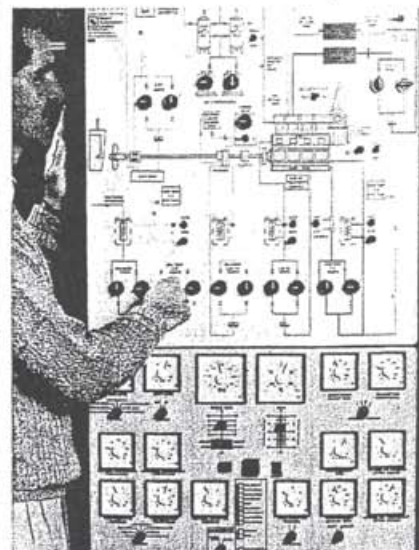
The increasing emphasis on recruitment and training of officer cadets in nautical colleges worldwide has signalled new developments in marine engineering training equipment. One of the most recent items takes the form of a PC-based marine diesel engine simulator which has

PRODUCTS

been devised by Swansea company, Haven Automation Limited. Already established in the field of large scale custom built marine simulators, Haven have developed the new MODEQ 300 system as a low-cost off the shelf training package.

Haven's new marine diesel engine simulator simulates the operation of a typical marine propulsion unit with auxiliary engine room systems, reducing training on real equipment, and providing an economical alternative to custom designed simulators for specific applications. Other advantages over traditional training methods are that student/instructor ratios are increased, the MODEQ 300 is transportable, and is suited to a variety of technical environments. Because MODEQ systems are virtually maintenance-free, training should not be interrupted by equipment down-time.

The system consists of an interactive panel with support controls for the operation of motorised equipment, as well as analogue instrumentation for monitoring system parameters, such as temperatures, pressures, tank levels and speeds. Standard exercise and logging facility mean MODEQ 300 can be used by students unsupervised.



Engine simulator enhances training.