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15 January 2001

REGISTRATION OF RESEARCH AND DEVELOPMENT PROJECTS

Summary Table of Projects (10)

- 1 The Maritime Safety Committee, at its sixty-first session (7 to 11 December 1992), instructed the Secretariat to invite Member Governments to provide the Organization with information on ongoing research and development projects. This was done by MSC/Circ.605.
- 2 The Committee, at its sixty-second session (24 to 28 May 1993), approved the format of a summary table of research and development projects prepared by the Secretariat (MSC 62/WP.1, annex) and authorized dissemination of information on reported projects by means of MSC circulars on a quarterly basis.
- 3 The Committee, at its sixty-ninth session (11 to 20 May 1998), taking into account the trend of information provided for the last six quarters, decided to issue the MSC circular containing information on ongoing research and development projects on an annual basis.
- 4 The annex, in the agreed format, contains information on research and development projects reported to the Organization during 2000.
- 5 The information reported prior to 2000 is contained in circulars MSC/Circ.625, MSC/Circ.625/Add.1, MSC/Circ.625/Add.3, MSC/Circ.625/Add.4, MSC/Circ.678, MSC/Circ.705, MSC/Circ.715, MSC/Circ.756 and MSC/Circ.901.

ANNEX

Summary Table of Maritime Research Projects

State's Name

DENMARK

Address for communication	Subject	Brief Outline	Commencement and Completion	Relevant Committee and Sub-Committee
Danish Maritime Authority 38C Vermundsgade, DK-2100 Copenhagen Tel: +45 39 17 44 00 Fax: +45 39 17 44 01	Information Technology for Enhanced Safety and Efficiency in Ship Design and Operation (ISESO)	The applications fall in two main groups: <ul style="list-style-type: none"> • tools to predict the manoeuvrability of a ship at the design stage; and • grounding and collision resilience prediction and analysis, including an ob-board decision support system relating to emergency handling of stability issues. 	1 January 1998 31 December 2000	DE and NAV

GERMANY

Address for communication	Subject	Brief Outline	Commencement and Completion	Relevant Committee and Sub-Committee
Federal Ministry of Transport, Building and Housing Ref. LS 23 Box 200 100 D - 53 170 Bonn	Safety of passenger ships	This project deals with the phenomenon of a conditioned sinking of passenger ships after damage and how a solution may be approached, further to study the mechanism of the spreading of fumes inside ships following a fire.	A period of 2 years	FP and SLF

State's name**UNITED KINGDOM**

Address for communication	Subject	Brief Outline	Commencement and Completion	Relevant Committee and Sub-Committee
Maritime & Coastguard Agency, Spring Place, 105 Commercial Road, Southampton, SO15 1EG	Research Project 418 - Sponsorship of Stability Research Lectureship	To provide the salary of a research lecturer at the Stability Research Centre at Strathclyde and therefore assist continued enhancement of damage stability research in particular the mathematical model and progress safety at sea.	08/98 - 08/01	SLF
	Research Project 424 - Fundamentals of damaged ships survivability	To improve the state of knowledge regarding the fundamentals of stability during damage, vessel floodwater dynamics, and capsize. This is expected to be achieved by the following focused objectives: <ul style="list-style-type: none"> • to improve and validate methods for predicting ship survivability in the event of flooding using numerical models which include the best available description of floodwater dynamics; • to establish new knowledge regarding the effects of flooding, floodwater dynamics, compartment subdivision, damage extent and ship motions on sinking and capsize; and • to propose rational alternatives, as appropriate, to existing damage stability criteria. 	09/98 - 11/00	SLF
	Research Project 433 - SOCRATES update	To upgrade the SOCRATES computer based system for storing and retrieving clean-up details during a major incident.	01/98 – 03/ 98	MSC

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<p>Maritime & Coastguard Agency, Spring Place, 105 Commercial Road, Southampton, SO15 1EG</p>	<p>Research Project 436 - Waste disposal</p>	<p>To produce a database of locations where waste derived from a major oil spillage can be disposed of or temporarily stored in the UK. Contact details, quantities that can be handled, the provision of foul drainage system or containment shall be included within the information to be recorded.</p> <p>The project is now completed and the database will be sent to all Local Authorities EA Regions etc.</p> <p>In short there are very few sites identified for the temporary storage or disposal of oiled beach material.</p>	<p>01/98 – 04/98</p>	<p>MEPC</p>
	<p>Research Project 440 – research and Development of a SAR helicopter winchmans helmet.</p>	<p>To complete research and development to provide SAR winchmen with an appropriate means of communication between themselves and their aircraft under operational conditions.</p>	<p>02/98 -</p>	<p>COMSAR</p>
	<p>Research Project 446 – Ecological and operational parameters for the use of bioremediation</p>	<p>To conduct a series of laboratory experiments to determine the optimum addition rate for fertiliser based bioremediation products. (This work will be needed by next spring to be considered by the proposed working group producing IMO Guidelines).</p> <p>To plan and obtain permission for two field trials within the UK to be conducted on differing substrates between April 1999 and August 2000.</p> <p>To conduct two field trials as detailed above.</p> <p>To report results from laboratory experiments and the field work in a suitable form to support the policy objectives of MPCU and EA and MAFF.</p>	<p>09/98 - 08/01</p>	<p>MEPC</p>

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Address for communication	Subject	Brief Outline	Commencement and Completion	Relevant Committee and Sub-Committee
Maritime & Coastguard Agency, Spring Place, 105 Commercial Road, Southampton, SO15 1EG	Research Project 447 -Chemical Spill Risk Assessment	<p>To produce quantitative estimates of the risk of spills of chemicals carried in bulk in UK waters. The estimates will show the geographical distribution of the risk broken down by accident type, type of chemical and spill size. Spills from offshore installations and in port areas will not form part of this study.</p> <p>Based on the results from the above produce a set of scenarios to test response options and resources required.</p> <p>To carry out a scoping study to determine if it is feasible/practical to extend the study to packaged chemicals.</p>	01/99 - 12/99	MEPC
	Research Project 453 - Time-based survival criteria for passenger ro-ro ferries	To upgrade the mathematical model in areas where uncertainty still exists concerning predictions of damage survival by the use of model experiments results namely, flooding, damping and sloshing in this case. It would be intended to also use some of the results by BMT experiments derived from Research project 391 in this validation process.	08/99 - 07/00	DE and SLF

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Address for communication	Subject	Brief Outline	Commencement and Completion	Relevant Committee and Sub-Committee
<p>Maritime & Coastguard Agency, Spring Place, 105 Commercial Road, Southampton, SO15 1EG</p>	<p>Research Project 456- Data Fusion: Radar and Information from Transponders</p>	<p>To develop statistical models, with appropriate rules and standards, to be used in (e.g) to software of radar systems to ensure, with an acceptable degree of probability; also to be evaluated and recommendations made, the information received from other ships' AIS is accurately and effectively correlated with its displayed target. The statistical model should have the ability to determine whether information received over AIS is true or false, through analysis of information obtained from the radar itself, and provide information to the mariner accordingly.</p> <p>Further advice to be provided on appropriate levels of confidence to be applied in the evaluation of AIS data; i.e. acceptable levels of probability for type 1 (reject AIS data as false when true; do not display) and type 2 (accept – and display - as true when false) errors. These to be evaluated on the basis of a risk assessment in terms of the potential impact upon collision avoidance in international waters.</p> <p>Evaluate the technology of existing designs of shipborne radar systems and provide recommendations on the modifications to be made to ensure these statistical rules and standards are applied, and the estimated cost of application.</p> <p>Estimate the risk of not correlating the information received using AIS on the ship's radar by using alternative, independent displays, and compare with the risk of not displaying the information at all.</p>	<p>04/00 - 01/01</p>	<p>DE and NAV</p>

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Address for communication	Subject	Brief Outline	Commencement and Completion	Relevant Committee and Sub-Committee
Maritime & Coastguard Agency, Spring Place, 105 Commercial Road, Southampton, SO15 1EG	Research Project 457 – A physical study of fast ferry wash characteristics in shallow water	<p>The objectives of this study are to:</p> <ul style="list-style-type: none"> • study the transverse spreading velocity of the critical wave group; • study the divergence of the leading long period waves in the super-critical wash; • determine how the above is influenced by hull configuration, speed and water depth; • provide more detailed information to improve the mathematical models of the wave transformation processes in estuaries used in research project 420 and in future would be used to produce environmental impact statements for fast ferries; • research and demonstrate some remedial measures for reducing the surge effect on shorelines, moored ships and passing vessels in confirmed channels; and • generally improve the understanding of the very long period waves in a supercritical wash. 	09/99 - 11/00	DE and NAV
	Research Project 461 – Health Issues and the Offshore Fishing Industry	<p>The objectives of this project are to:</p> <ul style="list-style-type: none"> • quantify the incidence of ill-health related incidence in the offshore environment; • quantify the use of medicines from the on-board medicine chest; • examine the knowledge of fishing personnel regarding the medicines contained in the medicine chest; • to investigate the use of alcohol in fishing personnel; • investigate and if possible quantify the use of illicit drugs in fishing personnel; • explore the effects of the working environment on the health of fishing personnel; • examine the incidence and patterns of ill-health in fishing personnel; and • examine the incidence and effects of fatigue in fishing personnel. 	08/99 - 08/01	MSC

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Address for communication	Subject	Brief Outline	Commencement and Completion	Relevant Committee and Sub-Committee
<p>Maritime & Coastguard Agency, Spring Place, 105 Commercial Road, Southampton, SO15 1EG</p>	<p>Research Project 464 – Fatigue, Health and Injury among Seafarers</p>	<p>To survey the working and rest hours, and physical and mental health of seafarers.</p> <p>To quantify the physical aspects resulting from fatigue.</p> <p>To explore the effects of the working environment, particularly relating to hours of work and rest, on the health of merchant seamen.</p> <p>To examine the incidence and effects of fatigue in merchant seafarers.</p> <p>To identify patterns of seafarer health and injury by ship type and voyage cycle.</p> <p>To quantify the use of medicines from the on-board medicine chest.</p>	<p>03/00 - 03/01</p>	<p>MSC</p>
	<p>Research Project 465 – Data on vibration levels on ships</p>	<p>To provide data on vibration levels in key working and living areas on a range of existing ships.</p> <p>To advise on the interpretation of this data in the context of the action levels for the whole body vibration specified in the proposed directive, and, if necessary on alternative methods of measurement/calculation which would be practical to apply to existing ships</p>	<p>10 days</p>	<p>MSC</p>

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Maritime & Coastguard Agency, Spring Place, 105 Commercial Road, Southampton, SO15 1EG	Research Project 467 – Simulator training for handling escalating emergencies	<p>To investigate how bridge and engine room resource management training that includes escalating emergencies and increasing levels of stress.</p> <p>To recommend amendments to MCA mandated* simulator training requirements to develop effective training for handling emergencies at sea taking account of the findings of objective 1.</p> <p>*Required to be undertaken prior to the issue of a UK Certificate of Competence in accordance with STCW 95.</p> <p>To quantify the additional costs to all relevant stakeholders to fulfill the recommendations of objective 2, comparing the relative costs of implementing alternative technologies and training techniques.</p> <p>To compare the simulator training regime recommended in objective 2 with the requirements of: other EU member states; major, non-EU, flag state authorities; and, major, non-EU, centres of training and certification adopted in accordance with STCW 95, including the identification of the underlying education levels, tasks and training aims.</p>	04/00 - 12/00	STW
	Research Project 470 – Pilot project to establish nationally agreed guidelines for identification of ship-sources marine litter	<p>Using the expertise within NALG, to develop:</p> <ul style="list-style-type: none"> • identification guides to specific input sources; • guidance on methodology; and • feedback links to sources. 	4/00 - 10/00	MEPC

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<p>Maritime & Coastguard Agency, Spring Place, 105 Commercial Road, Southampton, SO15 1EG</p>	<p>Research Project 471 – Scoping study to apply FSA principles to ballast water management</p>	<p>It will inform the development of UK policy on the subject area of ballast water management. A FSA would provide a rational assessment of the risk posed to the UK by the transfer of ballast water.</p> <p>A scoping study will show how well FSA could be used as a tool to provide a risk-based approach to an environmental issue and give an indication of the resources required for a full FSA</p>	<p>04/00 - 06/00</p>	<p>MEPC and DE</p>
	<p>Research Project 472 – Satellite Oilspill Sensing Trial</p>	<p>To collect evidence to satisfy the Agency that satellite sensing, in addition to aerial sensing, might increase the likelihood of detecting and identifying polluters of the UK EEZ.</p>	<p>04/00 - 12/00</p>	<p>MEPC</p>
	<p>Research Project 473 – Safety First Project – Fire Consequence Modelling</p>	<p>The Safety First Project aims to ensure that a simplified methodology for fire risk assessment of large passenger ships (including cruise ships and ro-ro ships) is in place by 2002, which will enable European shipyards and owners to take immediate advantages of the new regulations when they come into force.</p> <p>Aspects covered by Work package 4 will include fire initiation, fire growth, smoke movement, effect of fires on structures and fittings, fire detection and suppression, explosions and vulnerability of people to fire and smoke.</p>	<p>2000 - 2003</p>	<p>FP</p>

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Address for communication	Subject	Brief Outline	Commencement and Completion	Relevant Committee and Sub-Committee
Maritime & Coastguard Agency, Spring Place, 105 Commercial Road, Southampton, SO15 1EG	Research Project 474 – Transponder and elec. Charting systems for vessels operating in the River Thames	<p>To provide the MCA with appropriate performance standards for transponders and PC-based electronic chart systems for non-seagoing craft – or other small craft where implementation of full SOLAS performance standards would be unwarranted or impracticable.</p> <p>To provide solutions to the practical problems of displaying transponder information on an electronic chart backdrop.</p> <p>To provide information on the potential use and misuse of the combined transponder/electronic chart system for navigational purposes.</p> <p>To address the problem of ensuring compatibility with similar systems fitted aboard sea-going vessels to meet future SOLAS requirements.</p>	07/00 - 11/00	NAV
	Research Project 475 – The use of microemulsion technology for improved cleaning of oiled sand.	<p>The projects aims to transfer the drill cutting clean up technology to MCA sand washing capability in order to improve the effectiveness of it:</p> <ol style="list-style-type: none"> 1. to investigate the feasibility of the approach through a scoping exercise; and 2. to investigate whether microemulsion technology could be used to make MCA's existing 'sand scrubbers' more efficient in removing oil from oiled sand. 	2000 - 2001	MEPC