



INFORMATION BULLETIN No. 178

SOLAS Alternative Design and Arrangements (AD&A)

Guidance and Instructions for Bahamas Recognised Organisations, Bahamas Approved Nautical Inspectors, Ship Owners, Managers and Masters

1. Purpose

- 1.1. This Bulletin outlines the Bahamas Maritime Authority (BMA) requirements for the Alternative Design and Arrangements (AD&A) process and the approval of AD&A studies.
- 1.2. The BMA's position with respect to the application of the existing IMO guidelines on AD&A is also outlined.

2. Application

- 2.1. This Bulletin applies to all Bahamian ships with keel laying date on or after 01 July 2018 for which AD&A is acceptable under the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS) or subsidiary International Maritime Organization (IMO) Codes, for the design of:
 - i. The ship or the ship's systems; or,
 - ii. Fire safety systems and their provision on board;
 - iii. Lifesaving appliances and their provision on board; or
 - iv. Equivalent Arrangements.

3. Introduction

- 3.1. The BMA supports the use of AD&A to promote research and development of novel technology for the improvement of maritime safety and to facilitate innovation in ship design.
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- 3.2. In response to the SOLAS provisions facilitating AD&A, the IMO has produced guidelines for the development and approval of AD&A studies. The guidelines and associated SOLAS regulations are outlined in Table 1.

SOLAS Chapter	Regulation	Guidelines
I	5	MSC.1/Circ.1455
II-1	55	MSC.1/Circ.1212 MSC.1/Circ.1455
II-2	17	MSC/Circ.1002, as amended by MSC.1/Circ.1552 MSC.1/Circ.1455
III	38	MSC.1/Circ.1212 MSC.1/Circ.1455

Table 1 – SOLAS AD&A Regulations and associated Guidelines

- 3.3. MSC.1/Circ.1455 “*Guidelines for the approval of alternatives and equivalents as provided for in various IMO instruments*” outlines the approval process and obligations of the design team, Administration and the Recognised Organisation (Class Society) when undertaking certain functions on behalf of the Administration.
- 3.4. MSC/Circ.1002 “*Guidelines on alternative design and arrangements for fire safety*” provides the design team with a structured approach for the development of AD&A studies related to fire safety.
- 3.5. MSC.1/Circ.1212 “*Guidelines on alternative design and arrangements for SOLAS Chapters II-1 and III*” provides the design team with a structured approach for the development for the development of AD&A studies related to construction and life-saving systems.

4. Application of IMO Guidelines

- 4.1. The guidelines contained in MSC/Circ.1002, as amended by MSC.1/Circ.1552, shall be applied to AD&A studies conducted under SOLAS Regulation II-2/17.
- 4.2. The guidelines contained in MSC.1/Circ.1212 shall be applied to AD&A studies conducted under SOLAS Regulation II-1/55 or III/38.
- 4.3. The guidelines contained in MSC.1/Circ.1455 shall be applied to all other AD&As and Equivalent Arrangements, and for those of 4.1 and 4.2 when not in conflict.

- 4.4. Where alternative methodologies to those outlined in the IMO Guidelines are proposed, the alternative methodologies are to be agreed with the BMA before commencing the AD&A project.

5. Design Team

- 5.1. At the start of the AD&A process the ship builder, ship owner and designer must establish a design team.
- 5.2. The design team is responsible for developing the design and the associated analysis for the AD&A.
- 5.3. Design Team members will normally represent the following stake holders:
- i. Designers (e.g. Ship builder/designer, equipment manufacturer);
 - ii. Users – (e.g. Ship owner, Ship’s Staff);
 - iii. Specialists – (e.g. Subject Matter Experts (SMEs));
 - iv. Maintainers – (e.g. Ship owner, Ship’s Staff, contractors if delegated maintenance roles).
- 5.4. A brief Curriculum Vitae (CV) for each design team member shall be included in the report, which provides the following:
- i. Summary of previous experience and its relevance to the design under consideration;
 - ii. Summary of academic and professional qualifications;
 - iii. Summary of contribution to the design team’s work.
- 5.5. The CVs included in the report **must not** contain any personally identifiable information on any of the design team members (i.e. name, sex, nationality, date of birth, etc.).
- 5.6. The roles and obligations of the design team are outlined in MSC/Circ.1002, MSC.1/Circ.1212 and MSC.1/Circ.1445.
- 5.7. The ship builder/designer and ship owner are ultimately responsible for ensuring that the ship is designed, built and operated to a legally acceptable level of safety. Therefore, they are considered to be the “principal stakeholders” responsible for the development and implementation of the AD&A and demonstrating that it meets an equivalent level of safety to a prescriptive design.

- 5.8. The design team must appoint a co-ordinator who will act as the primary point of contact for the BMA and Recognised Organisation.
- 5.9. The co-ordinator must be a representative of one of the principal stakeholders – normally this should be the shipyard representative. Third party consultants must not be appointed as the design team co-ordinator.

6. Use of third party consultants

- 6.1. The use of third party consultants as part of the design team is a common approach taken in many AD&A projects, however, where third party consultants are utilised the principal stakeholders still remain fully responsible for the AD&A.
- 6.2. Where third-party consultants are employees of the consultancy business/division of the Bahamas Recognised Organisation issuing the statutory certification for the ship, the Recognised Organisation shall demonstrate that there is no conflict of interest and that the review of the AD&A will be or has been undertaken with complete impartiality. A suitable statement should be included in the AD&A study to this effect.

7. The Role of Recognised Organisations

- 7.1. Bahamas Recognised Organisations are authorised to undertake the review of AD&A studies for compliance with applicable IMO Regulations and guidelines. However, the following activities are reserved to the BMA:
- i. Acceptance of, or exemption from, risk analysis;
 - ii. Agreement on evaluation criteria;
 - iii. Termination of the process because the evaluation criteria were not met;
 - iv. Final approval; and
 - v. Issuance of the Document of Approval.
- 7.2. Where appropriate, Recognised Organisations and/or the BMA may also attend design team meetings as observers. This may be particularly useful to gain confidence in the effectiveness of any risk assessment process undertaken (HAZIDs, etc).
- 7.3. Recognised Organisations must also ensure the continued validity of the basis for approval and the effective implementation of AD&A studies during

construction and in service, as part of the statutory safety surveys and at ISM Code Safety Management Certificate Audits.

- 7.4. Recognised Organisations must ensure that:
- i. Policies and procedures for the review and approval of AD&A studies are in place;
 - ii. Recognised Organisation staff involved in the review and approval of AD&A studies are suitably trained and experienced in the review and approval of AD&A studies and that this is reflected within the Recognised Organisation's internal staff authorisation framework;
 - iii. Recognised Organisation staff involved in the review and approval of AD&A studies are trained and experienced in the application of risk assessment techniques;
 - iv. Policies and procedures for the conduct of on board surveys and ISM audits where a ship is subject to AD&A are in place;
 - v. Recognised Organisation staff involved in conducting on board surveys and ISM Audits are trained and familiar with the concept of AD&A and how AD&A is to be addressed during surveys and ISM audits.

8. Communication with the BMA

- 8.1. Communication with the BMA is extremely important to ensure a streamlined approval process and to avoid unexpected additional design work late in the AD&A process.
- 8.2. Communication with the BMA should be via the Recognised Organisation to ensure that the Recognised Organisation is kept fully informed of the contents of the correspondence.
- 8.3. Where it is intended to undertake an AD&A, the design team must advise the BMA and arrange a "kick off" meeting between representatives of the design team, the Recognised Organisation issuing statutory certification to the vessel and the BMA, as early as possible in the design process.
- 8.4. The initial kick off meeting shall address the following:
- i. A review of the proposed concept or design;
 - ii. A summary of relevant rules, guidelines, codes and standards that are challenged by the design;
 - iii. The risk assessment process to be applied;
 - iv. The planned schedule for the AD&A process including expected document submission dates to the Recognised Organisation and BMA in

line with the approval process outlined in the applicable circular outlined in section 4.

- 8.5. Subsequent meetings between the design team, Recognised Organisation and BMA may be arranged on an ad hoc basis.

9. Sister Ships

- 9.1. AD&A studies are ship specific and individual AD&A studies must be produced for each vessel.

- 9.2. The BMA recognises that principal stakeholders believe it is often desirable for one AD&A study to be produced and applied to a series of sister ships. In principle the BMA has no objection to this approach subject to the following conditions:

- i. The sister ships are substantially similar in design, arrangement, outfitting and construction;
- ii. The ships are built for the same ship owner in the same shipyard (or a shipyard belonging to the same company/group as the original shipyard);
- iii. There is no more than 84 months between the keel laying of the first vessel in the series and the date of delivery of the last vessel of the series.

- 9.3. Where conditions 9.2.i., 9.2.ii or 9.2.iii. are not met, a new AD&A study may not be necessary, provided that the design team can demonstrate the following:

- i. There have been no modifications to the design that conflict with the original AD&A;
- ii. Any applicable amendments to IMO conventions or codes are taken into account and their impact on the original AD&A assessed;
- iii. A review of applicable casualty data for the period since the keel laying of the first vessel in the series is undertaken and it is confirmed that there have been no incidents that would impact on the validity of assumptions, decisions and analysis made in the original AD&A.
- iv. In service operational feedback (e.g. PSC deficiencies, operational failures, surveys, audits, etc.) from sister vessels, to the extent practicable, is reviewed and it is confirmed that there have been no incidents that would affect the validity of assumptions, decisions and analysis made in the original AD&A.

- 9.4. Requests to apply an AD&A to a sister ship in accordance with 9.2 and 9.3 shall be made to the BMA via the Recognised Organisation. The Recognised Organisation shall clearly indicate their support or reservation for any aspect of the request to the BMA.

10. Generic alternative designs

- 10.1. In some cases, the designer may submit generic "alternative design reports" for common equipment and arrangements, that are more or less the same for all ships (e.g. machine room less (MRL) elevators).
- 10.2. In such cases, the core report shall be accompanied by a ship-specific report or addendum that presents the design team (as per paragraphs 5.4 and 5.5) for the specific ship in question and a justification for the continued relevance of the generic report. The ship-specific report or addendum shall also address any operational experience or feedback which is relevant to the specific ship.

11. Reporting requirements

- 11.1. AD&A reports shall be prepared following the general guidance on documentation contained in Section 7 of MSC/Circ.1002 or Section 7 of MSC.1/Circ.1212, as applicable.
- 11.2. The final report should include a summary page providing the main outcome of the study and highlighting any areas where additional installations are required on board (e.g. dedicated sprinkler heads, fire detectors, etc.) or specific actions are to be followed (e.g. operational measures).

12. Existing Ships Changing to Bahamas Flag

- 12.1. When an existing ship that is subject to AD&A is to change flag to The Bahamas without a change of Recognised Organisation (Class), the Recognised Organisation shall submit the original AD&A reports and the Document of Approval to the BMA for review and final approval.
- 12.2. When an existing ship that is subject to AD&A is to change flag to The Bahamas with a change of Recognised Organisation (Class), the owner shall submit the original AD&A reports and the Document of Approval to the new Recognised Organisation for review. The new Recognised Organisation shall, after its review of the documents, submit the original AD&A reports and the Document of Approval to the BMA for review and final approval.

13. Final Approval

- 13.1. Final approval of AD&A documents and the AD&A study shall only be undertaken by the BMA.
- 13.2. At each stage of submission to the BMA, the Recognised Organisation shall review all submitted AD&A documentation prior to submission to the BMA for approval. The Recognised Organisation shall advise the design team of the findings from their review and require the design team to update the documentation as required before the documents are submitted to the BMA by the Recognised Organisation.
- 13.3. When the documents are submitted to the BMA the Recognised Organisation shall include the findings from their review of the documents.
- 13.4. Submissions to the BMA shall include all appendices and annexes to the documents.
- 13.5. The Recognised Organisation shall clearly indicate their support or reservation for any aspect of the AD&A in their submission and provide any recommendations or conditions that they believe are appropriate.
- 13.6. On completion of the BMA's review of the AD&A documentation, the BMA will provide the Recognised Organisation with any comments that would need to be addressed by the design team to achieve final approval from the BMA.

- 13.7. When the AD&A has received final approval, the BMA will:
- i. Issue the Document of Approval;
 - ii. Submit the Report on Approval to the IMO via the IMO Global Integrated Ship Information System (GISIS) website.
- 13.8. The original Document of Approval will be sent to the ISM Designated Person Ashore for the ship, unless the BMA is advised otherwise. The original Document of Approval is to be sent to the ship and retained with the Passenger Ship Safety Certificate.
- 13.9. A copy of the Document of Approval will be sent by the BMA by email to the Recognised Organisation for their records and will be provided to other members of the design team on request.

14. Operational Considerations

- 14.1. It is the responsibility of the ship owner to ensure that the basis for approval of the AD&A is maintained and that any operational conditions or restrictions on which approval is granted are implemented.
- 14.2. Operational measures or restrictions required by the AD&A are to be taken into account by the ship owner within the company's safety management system.
- 14.3. The following documents must be maintained on board:
- i. Document of Approval
 - ii. Approved Documentation listed in section 7 of the Document of Approval.

15. Alterations or modifications affecting the validity of the AD&A

- 15.1. The ship owner is to notify the Recognised Organisation of any proposed alterations to the vessel that affect AD&A.
- 15.2. The Recognised Organisation is to review the proposal and determine the extent to which the proposed alteration affects the assumptions or operational restrictions stipulated in the AD&A.
- 15.3. On completion of their review, the Recognised Organisation must submit details of the proposed alterations to the BMA along with any findings from

the review. The Recognised Organisation must also provide recommendations to the BMA for any further analysis where it has determined that the proposed alterations would affect the original basis for approval of the AD&A.

- 15.4. The BMA will review the Recognised Organisation's submission and advise its concurrence or any additional requirements. Where appropriate it may be necessary to undertake a new AD&A analysis.

16. Fees

- 16.1. Fees for services associated with the approval of AD&A studies may be charged at the rates specified in Annex 1.
- 16.2. The design team is to advise the BMA of the arrangements for payment of fees (ship builder or owner's account) at the kick off meeting, where applicable.
- 16.3. Where fees are due the BMA will invoice the relevant party on completion of the final approval. The Document of Approval will not be released to the ship builder or ship owner until the invoice has been settled.

17. Revision History

Rev.0 (13 June 2018) – First issue

Annex 1 - Fees

New Build remaining on Bahamas flag on delivery	
Activity	Fee
BMA attendance at initial kick-off meeting at a BMA office	Nil
BMA attendance at initial kick-off meeting at other location	\$150/hour and travel expenses at cost
BMA attendance at design team meetings	\$150/hour and travel expenses at cost
Approval of Documents and submission to IMO	Nil
Issuance of Document of Approval	Nil (\$150 for duplicate or additional copy)
Existing Ships (change of flag to Bahamas or alterations affecting a previously approved AD&A)	
Activity	Fee
BMA attendance at initial kick-off meeting at a BMA office	Nil
BMA attendance at initial kick-off meeting at other location	\$150/hour and travel expenses at cost
BMA attendance at design team meetings	\$150/hour and travel expenses at cost
Approval of Documents and submission to IMO	Nil
Issuance of Document of Approval	Nil (\$150 for duplicate or additional copy)
Review of proposed alterations affecting approved AD&A	Nil
New Build transferring to another flag on delivery	
Activity	Fee
BMA attendance at initial kick-off meeting	\$300/hour and travel expenses at cost
BMA attendance at design team meetings	\$300/hour and travel expenses at cost
Approval of Documents and submission to IMO	\$300/hour or \$12,000, whichever is greatest
Issuance of Document of Approval	