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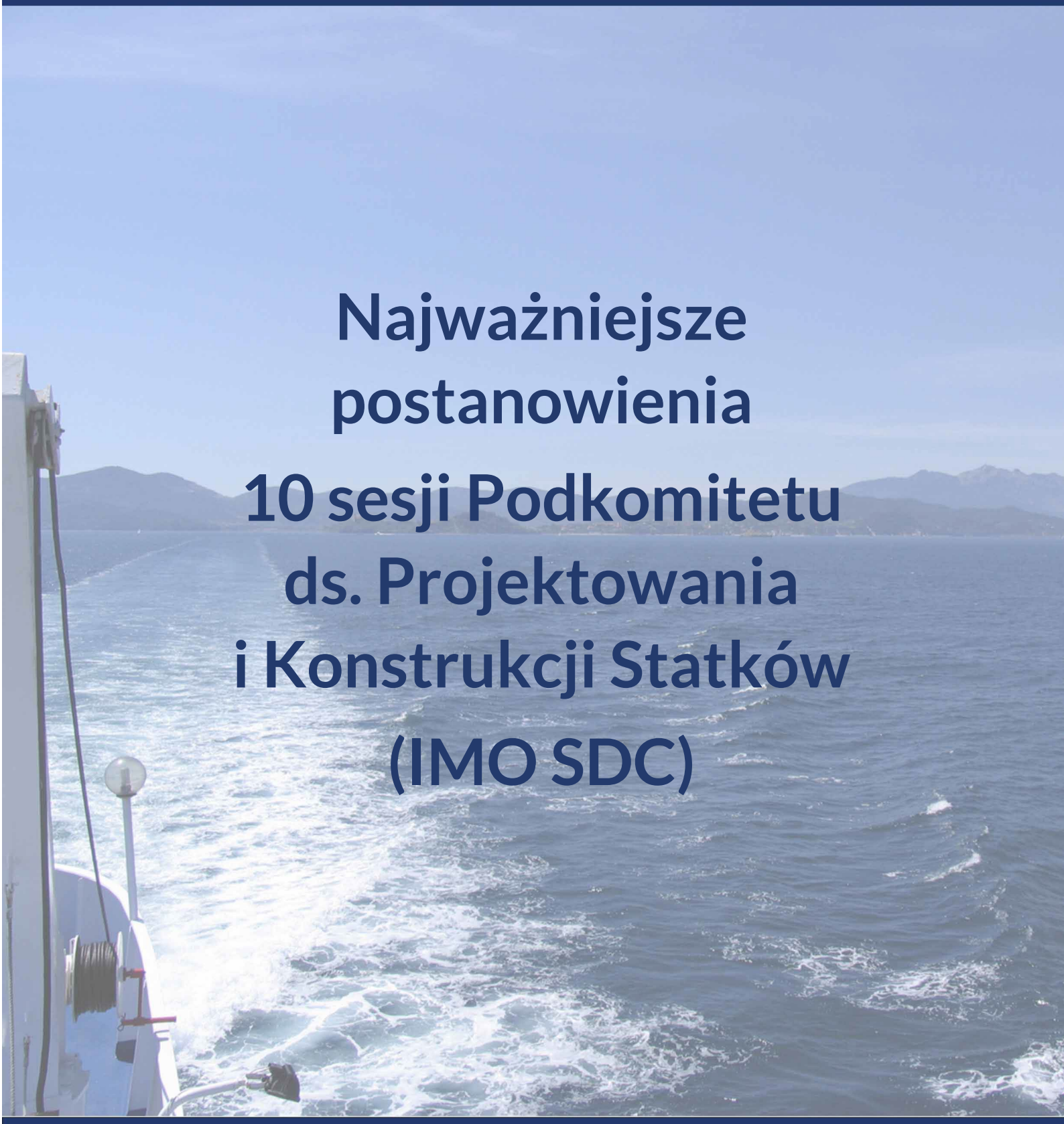

Najważniejsze postanowienia 10 sesji Podkomitetu ds. Projektowania i Konstrukcji Statków (IMO SDC)

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Na 10. sesji Podkomitetu ds. Projektowania i Konstrukcji Statków (SDC 10), która odbyła się w dniach 22-26 stycznia 2024 r. w siedzibie Międzynarodowej Organizacji Morskiej (IMO) w Londynie, podjęto szereg zagadnień przedstawionych poniżej.

Opracowanie Wytycznych w zakresie urządzeń do holowania awaryjnego (*Emergency Towing Arrangements* – ETA) dla statków innych niż zbiornikowce

Po incydentach związanych z zanieczyszczeniem, które wielokrotnie miały miejsce w Europie od końca lat sześćdziesiątych, wprowadzono przepisy dotyczące holowania awaryjnego w prawidle II-1/3-4 SOLAS. Wzrost wielkości statków nie pozwala już na holowanie awaryjne bez odpowiedniego sprzętu.

IMO pracuje obecnie nad nowym zestawem wytycznych dotyczących ETA mających zastosowanie do nowych statków innych niż zbiornikowce o pojemności 20 000 GT i większej. Będą one miały zastosowanie od 1 stycznia 2028 r., wspierając poprawki do prawidła II-1/3-4 SOLAS, które mają wejść w życie w tym samym terminie. Na sesji skupiono się na opracowaniu następujących bezpiecznych praktyk, które nie zostały jeszcze sfinalizowane:

- Czas na rozmieszczenie ETA;
- Elastyczność w projektowaniu umożliwiająca „rozwiązania równoważne”;
- Wymagania dotyczące wytrzymałości;
- Wymagania dotyczące testowania prototypów;
- Poprawki do okólnika MSC.1/Circ.1175/Rev.1 - Zmienione wytyczne dotyczące statkowych urządzeń holowniczych i cumowniczych;
- Poprawki do okólnika MSC.1/Circ.1255 - Wytyczne dla właścicieli/operatorów dotyczące przygotowania procedur holowania awaryjnego.

Przegląd Wytycznych dot. redukcji hałasu podwodnego z żeglugi (MEPC.1/Circ.833) oraz wskazanie dalszych kroków w tej sprawie

Społeczność międzynarodowa dostrzegła, że podwodny hałas (URN) generowany przez statki handlowe może mieć zarówno krótko-, jak i długoterminowe negatywne konsekwencje dla życia morskiego, zwłaszcza ssaków morskich. W związku z powyższym MEPC 76 w 2021 roku podjął decyzję o rozpoczęciu prac związanych z nowelizacją wytycznych w tej sprawie.

Faza gromadzenia doświadczeń oraz przegląd Zmienionych wytycznych

MEPC 80 zatwierdził okólnik MEPC.1/Circ.906 zwierający *Zmienione wytyczne dotyczące redukcji podwodnego hałasu z żeglugi morskiej w celu przeciwdziałania niekorzystnemu wpływowi na życie morskie*. Aby ułatwić ich stosowanie przez branżę opracowano schemat blokowy procesu planowania zarządzania hałasem podwodnym, który zostanie dodany do okólnika wraz z wszelkimi innymi niezbędnymi poprawkami zebranymi podczas fazy gromadzenia doświadczeń. Poniżej przedstawiono szacunkowy harmonogram:

- MEPC 80 (2023) - rozpoczęcie fazy gromadzenia doświadczeń branżowych;
- MEPC 82 (2024) - zatwierdzenie okólnika MEPC.1/Circ.906/Rev.1, który będzie zawierał schemat blokowy procesu planowania zarządzania hałasem podwodnym URN;
- MEPC 85 (2026) - ocena wyników fazy gromadzenia doświadczeń.

Opracowanie obowiązkowych przepisów URN (projekt planu działania)

Rozpoczęto również prace nad opracowaniem obowiązkowych przepisów URN. Oczekuje się, że MEPC 81 (2024) oceni i zatwierdzi projekt planu działania w tej sprawie, który zakłada:

- Zwiększenie świadomości społecznej, edukacji i szkolenia marynarzy;
- Standaryzację procesu planowania zarządzania hałasem podwodnym;
- Opracowanie celów w zakresie hałasu podwodnego;
- Dalszy rozwój polityki redukcji URN;
- Opracowanie narzędzi do gromadzenia danych i udostępniania informacji;
- Zachęcanie do badań nad URN i wzajemnym powiązaniem hałasu z emisją gazów cieplarnianych (GHG), oraz biofoulingiem, a także wpływem URN na gatunki i siedliska.

Okólnik MEPC.1/Circ.833 został odwołany przez MEPC.1/Circ.906, który wszedł wżycie 1 października 2023 roku.

Projekt poprawek do Kodeksu wdrażania programu rozszerzonych przeglądów masowców i zbiornikowców olejowych ESP, 2011

Omówiono propozycje włączenia technik zdalnej inspekcji (RIT) jako alternatywnego środka do szczegółowej inspekcji konstrukcji statków i ruchomych jednostek przybrzeżnych. Zastosowanie technik RIT jest ogólnie popierane, ponieważ znacznie zwiększa bezpieczeństwo personelu, niemniej jednak te propozycje będą musiały zostać dopracowane przed włączeniem do Kodeksu ESP.

Podczas przyszłych sesji SDC dalszej analizy będą wymagały następujące kwestie:

- Rozdzielczość obrazu z kamery;
- Ograniczenia związane przykładowo z wiekiem statku;
- Prowadzenie dokumentacji i udostępnianie danych;
- Kwalifikacje inspektorów/operatorów; oraz
- Rozszerzenie zastosowania RIT na statki niepodlegające Kodeksowi ESP.

Przewiduje się, że prace nad tym projektem mogą zostać zakończone w 2026 roku, a przepisy wejść w życie w dniu 1 stycznia 2028 roku.

Cele w zakresie bezpieczeństwa oraz wymagania funkcjonalne w Wytycznych dotyczących alternatywnych projektów i rozwiązań w rozdz. II-1 Konwencji SOLAS – rewizja okólnika MSC.1/Circ.1212/rev.1

SDC zakończyło prace nad rewizją okólnika MSC.1/Circ.1212/rev.1 (Wytyczne dotyczące alternatywnych projektów i rozwiązań w rozdz. II-1 Konwencji SOLAS), który obecnie obejmuje:

1) Cele dla każdego wymagania;
2) Wymagania funkcjonalne i standardy wydajności dla rozdziału II-1 Konwencji SOLAS:
   a. Część C - Instalacje maszynowe;
   b. Część D - Instalacje elektryczne; oraz
   c. Części E - Dodatkowe wymagania dla okresowo bezobsługowych przedziałów maszynowych.

Korzystanie z tych wytycznych zwykle wymaga znacznie więcej czasu na obliczenia i dokumentację niż w przypadku typowej zgodności z przepisami normatywnymi.

Zastosowanie: Niniejsze wytyczne będą miały zastosowanie do wszystkich statków pasażerskich i wszystkich statków towarowych o pojemności 500 GT i większej, uprawiających żeglugę międzynarodową, do których może mieć zastosowanie prawidło II-1/55 (Alternatywne projekty i rozwiązania). Projekt wytycznych zostanie rozpatrzony i zatwierdzony na MSC 108 w maju 2024 r.

Przegląd rozdziałów II-1 (cz. C) i V Konwencji SOLAS, oraz powiązanych instrumentów, w zakresie wymagań związanych z napędem i sterowaniem, z uwzględnieniem zarówno tradycyjnych, jak i nietradycyjnych układów napędowych i sterowych

Systemy sterowania radykalnie ewoluowały od czasu przyjęcia obecnych przepisów SOLAS; wiele nowoczesnych systemów stanowi połączenie napędu i sterowania. Obecne wymagania SOLAS nie uwzględniają w odpowiedni sposób nietradycyjnych systemów napędu/sterowania.

Do tej pory przedmiotowa kwestia była rozwiązywana za pomocą ujednoliconych interpretacji zawartych w okólniku MSC.1/Circ.1416/Rev.1, jednak uważa się, że konieczny jest przegląd przepisów IMO w tym obszarze w celu odzwierciedlenia nowoczesnych rozwiązań.

Projekt poprawek zawiera:

1) Nowe prawidło II-1/28-1 SOLAS – Urządzenia do ruchu wstecz i zatrzymania statku;
2) Nowe prawidło II-1/29-1 SOLAS – Urządzenie sterowe.

W następnej kolejności można opracować poprawki do następujących części Konwencji SOLAS, rezolucji oraz okólników:

1) Oczekiwane standardy wydajności w prawidłach II-1/28 do 30 SOLAS;
2) Prawidło II-1/30 SOLAS – Dodatkowe wymagania dla elektrycznych i elektro-hydraulicznych urządzeń sterowych;
3) Prawidło II-1/42 SOLAS – Awaryjne źródło energii elektrycznej na statkach pasażerskich;
4) Prawidło II-1/43 SOLAS - Awaryjne źródło energii elektrycznej na statkach towarowych;
5) Prawidło V/25 SOLAS – Praca urządzenia sterowego;
6) Okólnik MSC.1/Circ.1536 – Ujednolicone interpretacje prawideł II-1/29.3 oraz 29.4 SOLAS;
7) Rezolucja A.467(XII) – Wytyczne dopuszczenia niepodwojonych siłowników napędowych steru na zbiornikowcach, chemikaliowcach i gazowcach o pojemności brutto 10 000 i większej, ale o nośności mniejszej niż 100 000 ton;
8) Rezolucja MSC.137(76) – Standardy dotyczące manewrowości statków;
9) Okólnik MSC/Circ.1053 – Objaśnienia do standardów dotyczących manewrowości statków;
10) Rezolucja A.601(15) – Zalecenia dotyczące dostarczenia i wywieszenia na statkach informacji o manewrowości;
11) Możliwe odwołanie rezolucji A.415(XI) i A.416(XI), oraz okólników MSC.1/Circ.1398 i MSC.1/Circ.1416/Rev.1.

Dyskusja nad tymi zagadnieniami będzie kontynuowana; przewiduje się, że prace zakończą się w 2025 roku (SDC 11).

Zastosowanie: wszystkie nowe statki pasażerskie i wszystkie nowe statki towarowe o pojemności 500GT i powyżej, zaangażowane w żeglugę międzynarodową, których umowa na budowę została zawarta w dniu 1 stycznia 2028 roku, lub po tej dacie.

Poprawki do Wytycznych dotyczących budowy, instalacji, konserwacji i inspekcji/przeglądu środków służących do wchodzenia na pokład i schodzenia na ląd (MSC.1/Circ.1331) w zakresie mocowania siatek bezpieczeństwa na drabinkach i przejściach dla załogi

Na sesji SDC 10 uzgodniono poprawki do okólnika MSC.1/Circ.1331, mające wpływ głównie na producentów, którzy zostaną zobowiązani do dokonania przeglądu projektu drabin do wchodzenia na pokład i schodzenia na ląd oraz trapów. Środki te będą musiały spełnić uznane normy w terminie uzależnionym od daty instalacji lub od daty budowy statku.

Uzgodnione poprawki zakładają, że:

- Załoga zaangażowana w olinowanie drabiny lub trapu oraz siatki bezpieczeństwa powinna posiadać wystarczającą ochronę osobistą, w tym kamizelki ratunkowe i uprzęże bezpieczeństwa;
- Siatka zabezpieczająca nie będzie wymagana, jeśli zastosowane zostaną odpowiednie środki wymienione w poprawkach do okólnika;
- Siatka zabezpieczająca i/lub siatka boczna powinny być przechowywane w wentylowanych miejscach, bez dostępu światła słonecznego i zanieczyszczeń chemicznych. Siatki powinny być regularnie sprawdzane i konserwowane, a w razie potrzeby wymieniane;
- Uzgodniono również niewielkie zmiany w testach obciążeniowych.

MSC 108 rozważy zastosowanie okólnika oraz proponowane zapisy, według których:

- Drabiny do wchodzenia na pokład i schodzenia na ląd oraz trapy, zainstalowane na statkach zbudowanych w dniu 1 stycznia 2010 r. lub po tej dacie, powinny spełniać obowiązujące normy międzynarodowe, takie jak ISO 5488:1979 oraz ISO 7061:1993.
- Drabiny do wchodzenia na pokład i schodzenia na ląd oraz trapy, zainstalowane w dniu 1 lipca 2026 r. lub po tej dacie, powinny spełniać obowiązujące normy międzynarodowe, takie jak ISO 5488:2015 oraz ISO 7061:2015.
- Konstrukcja i testy wciągarek do drabin, zainstalowanych w dniu 1 lipca 2026 r. lub po tej dacie, powinny być zgodne z obowiązującymi normami międzynarodowymi, takimi jak ISO 7364: 2016.
- Wytyczne mają zastosowanie do drabin i trapów, z wyłączeniem drabinek pilotowych.

Ujednolicone interpretacje

SDC 10 uzgodnił szereg interpretacji, które zostaną przekazane do zatwierdzenia na kolejne 108 posiedzenie Komitetu MSC w czerwcu br.

Nowa Ujednolicona interpretacja Kodeksu poziomu hałasu na statkach (rez. MSC.337(91))

Nowa ujednolicona interpretacja zapewnia szczegółowe wskazówki dotyczące kalibracji mierników poziomu dźwięku i kalibratorów. Interpretacja stanowi, że firmy pomiarowe powinny dostarczyć dokumentację dotyczącą spełnionych norm kalibracyjnych. Dokumentacja powinna zawierać oświadczenie o wynikach okresowych testów i klasie wydajności, jaką spełnia przyrząd po kalibracji.

Okólnik będzie miał zastosowanie do statków o pojemności 1600 GT i większej, z wyłączeniem jednostek szybkich, statków rybackich, jednostek MODU oraz jachtów rekreacyjnych.

Projekt poprawek do okólnika MSC.1/Circ.1572/Rev.1 - Standardy wydajności dla sygnalizatorów poziomu wody na masowcach i statkach z pojedynczą ładownią innych niż masowce

Proponowane poprawki do okólnika mówią, że sygnalizatory poziomu wody w przestrzeniach ładunkowych powinny być odpowiednie do instalacji w strefie niebezpiecznej porównywalnej z tą określoną w normie IEC 60092-506 oraz odpowiednie dla wybuchowej atmosfery gazowej i/lub pyłów palnych, które mogą być obecne; jeśli gazy i pyły nie są znane, należy zastosować odpowiednio klasę temperaturową T6, grupę gazową IIC i/lub grupę pyłową IIIC.

Ponadto, takie sygnalizatory powinny być produkowane, testowane, oznaczane i instalowane zgodnie z normami serii IEC 60079 lub innymi równoważnymi uznanymi normami międzynarodowymi. W przypadku zainstalowania certyfikowanego sprzętu przeciwwybuchowego (EX), należy go odpowiednio zabezpieczyć przed uszkodzeniami mechanicznymi spowodowanymi przez ładunek lub sprzęt do załadunku i rozładunku, aby zachował swoje właściwości EX.

Ujednolicona interpretacja będzie miała zastosowanie do nowo zainstalowanych sygnalizatorów poziomu wody na masowcach (bez względu na datę ich budowy). Statki z pojedynczą ładownią inne niż masowce będą musiały spełnić rezolucję MSC.188(79)/Rev.2 (Standardy wydajności dla sygnalizatorów poziomu wody na statkach podlegających prawidłom II-1/25, II-1/25-1 oraz XII/12 SOLAS).

Projekt poprawek do Interpretacji do II-1/3-6 SOLAS zawartych w Załączniku do okólnika MSC.1/Circ.1572/Rev.1 - Standardy wydajności dla sygnalizatorów poziomu wody na masowcach i statkach z pojedynczą ładownią innych niż masowce

Poprawki są związane ze stałymi środkami dostępu i koniecznością zwiększenia częstotliwości ich inspekcji przez załogę lub kompetentnych inspektorów. Inspekcje te powinny być odnotowywane w Części 2 Podręcznika dostępu do konstrukcji statku i udostępniane inspektorowi towarzystwa klasyfikacyjnego przed rozpoczęciem przeglądu. Ponadto przed jakimikolwiek oględzinami przestrzeni, w których wykorzystywane są stałe środki dostępu, dla każdej przestrzeni należy odnotować inspekcję potwierdzającą stan stałych środków dostępu. Środki dostępu powinny być kontrolowane przy każdej okazji wejścia do zbiornika/przestrzeni, nie rzadziej jednak niż raz w roku. Historia przeprowadzonych napraw powinna być również dodatkowo rejestrowana.

Oczekuje się, że ww. zmiany będą miały zastosowanie do zbiornikowców o pojemności 500 GT i większej oraz masowców, zgodnie z definicją zawartą w prawidle IX/1 SOLAS, o pojemności 20 000 GT i większej, zbudowanych w dniu 1 stycznia 2006 r. lub po tej dacie.

Projekt Ujednoliconej interpretacji prawidła XV/5.1 Konwencji SOLAS oraz paragrafu 3.5 części I Międzynarodowego kodeksu bezpieczeństwa statków przewożących personel przemysłowy (Kodeks IP)

Ujednolicona interpretacja służy wyjaśnieniu, w jaki sposób należy zharmonizować Certyfikat bezpieczeństwa IP z różnymi certyfikatami bezpieczeństwa Konwencji SOLAS pod względem ważności, dat przeglądów i zatwierdzeń.

Okólnik będzie miał zastosowanie do statków, które podlegają pod rozdział XV Konwencji SOLAS (Środki bezpieczeństwa dla statków przewożących personel przemysłowy).

Poprawki do okólnika MSC.1/Circ.1511 – Ujednolicone interpretacje prawidła II-2/9 (Powstrzymywanie pożaru) oraz II-2/13 (Drogi ewakuacji) SOLAS

Zgodnie z zaproponowanymi zmianami definicja „przestrzeni bezpiecznej" obejmuje przestrzenie maszyny sterowej, w których zwykle przechowywane są oleje hydrauliczne do urządzeń maszyny sterowej, a także przestrzenie kategorii specjalnej.

Przedmiotowa ujednolicona interpretacja może pomóc projektantom, operatorom statków i organom administracji w rozważeniu drogi ewakuacji do przestrzeni maszyny sterowej, w której przechowywany jest olej hydrauliczny.

Zastosowanie: wszystkie statki towarowe o poj. 500GT i większej, oraz wszystkie statki pasażerskie odbywające rejsy międzynarodowe.

Poprawka do prawidła 25 Protokołu z 1988 do Międzynarodowej konwencji o liniach ładunkowych, LL 1966 odnośnie wymagania montażu barierek bezpieczeństwa na pokładzie

Zgodnie z nowymi poprawkami wszystkie barierki bezpieczeństwa na pokładzie otwartym oraz te, do których ma dostęp załoga podczas żeglugi, muszą spełnić te same normy, co barierki zainstalowane na otwartych nadbudówkach oraz pokładach wolnej burty, tzn. posiadać przy najmniej trzy poręcze a otwór poniżej najniższej poręczy nie powinien przekraczać 230 mm. Pozostałe poręcze nie mogą być oddalone od siebie o więcej niż 380 mm.

Zmiany będą dotyczyć wszystkich nowych statków o długości 24 m i powyżej, zaangażowanych w żeglugę międzynarodową, których kontrakt na budowę został zawarty w dniu 1 stycznia 2028 roku, lub po tej dacie.

Wytyczne dotyczące stosowania elementów kompozytowych (FRP) w konstrukcjach statków

W ślad za wynikami projektów badawczych, IMO rozważa przegląd okólnika MSC.1/Circ.1574 ws. Tymczasowych wytycznych dot. zastosowania elementów FRP w elementach konstrukcyjnych statku: zagadnienia bezpieczeństwa pożarowego. Niemniej jednak, pojawiające się obawy dotyczące możliwości recyklingu, bezpieczeństwa pożarowego i toksyczności tych materiałów będą musiały zostać należycie zbadane i dokładnie ocenione przed zatwierdzeniem rewizji tymczasowych wytycznych. Oczekuje się, że prace dotyczące tego zagadnienia zostaną zakończone w 2025 roku.

Dodatkowo, przedmiotem dyskusji na MSC 109 w grudniu 2024 roku będzie rozszerzenie wytycznych o konstrukcje wykonane z kompozytów. W tym kontekście konieczne będzie przeprowadzenie szeroko zakrojonych prac dotyczących zrównoważonego rozwoju i kwestii zdrowotnych, jednakże dopuszczenie konstrukcji wykonanych z FRP może otworzyć ścieżkę do projektowania lżejszych statków w przyszłości.

Przegląd Tymczasowych wyjaśnień dotyczących oceny funkcjonalności systemów na statkach pasażerskich po pożarze lub zalaniu (MSC.1/Circ.1369)

Wiele zmieniło się w zakresie technologii, procesów oraz doświadczeń przemysłu od czasu zatwierdzenia okólnika MSC.1/Circ.1369, który zawiera dodatkowe wskazówki do prawideł II-1/8-1, II-2/21 i II-2/22 SOLAS. W branży zaobserwowano różne interpretacje dotyczące

wdrażania przepisów dotyczących bezpiecznego powrotu do portu (SRtP), zwłaszcza w odniesieniu do pojedynczych rejsów przekraczających zakres SRtP, pracy załogi i wykorzystania gazu jako paliwa lub innych paliw o niskiej temperaturze zapłonu na statkach pasażerskich.

Obecnie opracowywane poprawki do przywołanego okólnika mają na celu poprawę wskazówek dotyczących:

- warunków meteorologicznych i morskich,
- czasu trwania rejsu,
- szkoleń i zapoznawania załóg, oraz
- paliw alternatywnych.

Przewiduje się, że prace zakończą się w 2025 roku.

Sprawy różne

Przegląd okólnika MSC.1/Circ.1627 – Tymczasowe wytyczne w zakresie kryteriów stateczności drugiej generacji

Wraz z nabywaniem coraz większego doświadczenia w korzystaniu z okólnika MSC.1/Circ.1627, zauważono, że przykładowo naturalny okres kołysania statków dłuższych niż 140 m może być w dokumencie niezamierzenie niedoszacowany. Niemniej jednak, z uwagi na krótki czas, który upłynął od czasu zatwierdzenia okólnika w 2020 roku, na sesji zdecydowano, że przed rozpoczęciem procesu wprowadzania jakichkolwiek zmian w okólniku, należy w dalszym ciągu gromadzić dodatkowe informacje i doświadczenia z jego stosowania.

Wytyczne dla statków towarowych oraz jachtów rekreacyjnych zaangażowanych w działalność komercyjną o pojemności mniejszej niż 500 GT uprawiających żeglugę na wodach polarnych

SDC 10 zadecydował, że na kolejnych sesjach zostaną rozważone możliwe działania na rzecz ograniczenia ryzyka niebezpieczeństw w związku z coraz większym ruchem statków na wodach polarnych.

Przegląd Kodeksu alertów i wskaźników, 2009 (rez. A.1021(26))

SDC 11 rozpocznie przegląd Kodeksu alertów i wskaźników, 2009 w celu uwzględnienia w nim szeregu instrumentów IMO, do których odnosi się Kodeks, a także kilku nowych instrumentów IMO uchwalonych od czasu jego przyjęcia. Zakłada się, że prace zakończą się w 2026 roku.

Raport z 10. sesji Podkomitetu ds. Projektowania i Konstrukcji Statków (IMO SDC)

INTERNATIONAL MARITIME ORGANIZATION

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SUB-COMMITTEE ON SHIP DESIGN AND CONSTRUCTION
10th session
Agenda item 17

SDC 10/17
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1 GENERAL

1.1 The Sub-Committee on Ship Design and Construction (SDC), chaired by Mr. Erik Tvedt (Denmark), held its tenth session from 22 to 26 January 2024. The Vice-Chair, Mr. Jaideep Sirkar (United States), was also present.

1.2 The session was attended by delegations from Member States and Associate Members of IMO, representatives from United Nations and specialized agencies, and observers from intergovernmental organizations and non-governmental organizations in consultative status, as listed in document SDC 10/INF.1.

Opening address

1.3 The Secretary-General welcomed participants and delivered his opening address, the full text of which can be downloaded from the IMO website using the following link: https://www.imo.org/en/MediaCentre/SecretaryGeneral/Pages/Secretary-GeneralsSpeechesToMeetings.aspx

Chair's remarks

1.4 In responding, the Chair thanked the Secretary-General for his words of guidance and encouragement and assured him that his advice and requests would be given every consideration in the deliberations of the Sub-Committee.

Use of hybrid meeting capabilities

1.5 The Sub-Committee noted that the plenary sessions would be conducted in hybrid mode, i.e. remote participation enabled, following the decision of C 129 to continue the trial period of the hybrid capabilities (C 129/D, paragraphs 18.3 and 18.4).

1.6 In this regard, the Sub-Committee noted that C 129 had:

.1 agreed to extend the trial period to enable the assessment of the current planned enhancements introduced by the Secretariat;

.2 deferred a final decision on the matter to C 132, scheduled for mid-2024; and

.3 agreed not to request any further enhancements until the current planned enhancements had been implemented and assessed at C 132.

Update on the revised Organization and method of work (MSC-MEPC.1/Circ.5/Rev.5)

1.7 The Sub-Committee noted that MSC 107 and MEPC 80 had concurrently approved the fifth revision of the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.5) which includes a new paragraph 6.2 in the section "Preparation of documents", following the successful launching of the new Meeting Document Submission Portal on IMODOCS.

Adoption of the agenda and related matters

1.8 The Sub-Committee adopted the agenda of its tenth session (SDC 10/1) and agreed to be guided in its work, in general, by the annotations contained in document SDC 10/1/1 (Secretariat) and the arrangements in document SDC 10/1/2 (Chair).

Statements by delegations with respect to attacks on ships in the Gulf of Aden and the Red Sea

1.9 Several delegations expressed concerns for the safety of ships and their crew following attacks by Houthi rebels on commercial ships in the Red Sea and the Gulf of Aden and, in this respect, commended the Secretary-General's effort in bringing this to the attention of the United Nations Security Council at its special session on 3 January 2024.

1.10 Delegations that took the floor condemned the acts against commercial ships and seafarers while expressing grave concern for the region and the disruption caused to international trade.

1.11 A number of delegations, having highlighted the devastating impact such attacks had on innocent seafarers, especially those on board the **MV Galaxy Leader** who were still being held hostage, called for the immediate release of the ship and its crew.

1.12 Statements on the matter were made by the delegations of Australia, Belgium, Canada, Germany, Malta, Spain, the United Kingdom and the United States, the full text of which is set out in annex 12. Statements on the matter were also made by the delegations of the Bahamas, China, Denmark, France, Greece, Italy, Japan, Norway, Panama, Poland, the Republic of Korea, Singapore, EC and ITF.

2 DECISIONS OF OTHER IMO BODIES

2.1 The Sub-Committee noted the outcome of MSC 107, MEPC 80 and C 129, as reported in document SDC 10/2 (Secretariat), and took action accordingly under the relevant agenda items.

3 DEVELOPMENT OF GUIDELINES FOR EMERGENCY TOWING ARRANGEMENTS FOR SHIPS OTHER THAN TANKERS

General

3.1 The Sub-Committee recalled that MSC 107 had approved draft amendments to SOLAS regulation II-1/3-4 relating to new requirements for all new ships other than tankers of not less than 20,000 gross tonnage (GT) to be fitted with emergency towing arrangements (ETA), for adoption at MSC 108 and entry into force on 1 January 2028.

3.2 The Sub-Committee also recalled that MSC 107 had agreed to the request of SDC 9 to develop a complete new set of guidelines for emergency towing arrangements on new ships other than tankers, based on, or as a revision of, resolution MSC.35(63), taking into account the justification for the work prepared by SDC 9.

3.3 The Sub-Committee further recalled that MSC 107 had also agreed, as a consequence of the new work on development of the guidelines, that the *Revised guidance on shipboard towing and mooring equipment* (MSC.1/Circ.1175/Rev.1) would also need to be amended.

Draft guidelines for emergency towing arrangements for ships other than tankers

3.4 The Sub-Committee had for its consideration the following documents:

.1 SDC 10/3 (Japan), proposing preliminary draft guidelines for ETA for ships other than tankers, as well as highlighting that the existing guidelines for tankers (resolution MSC.35(63), as amended by resolution MSC.132(75)), should also be revised in order to reflect common modern practices;

.2 SDC 10/3/1 (China), proposing five elements to be considered when developing the guidelines for emergency towing arrangements for ships other than tankers, which include (1) the need to provide guidance for "prototype testing" of ETA, as required by SOLAS regulation II-1/3-4, paragraph 2.2.2; (2) proposing that pre-rigged ETAs installed on ships other than tankers should be optional; (3) flexibility in the ETA design for specific ship types (e.g. ro-ro and ro-pax); (4) adopting an alternative to GT parameter for the strength of towing components; and (5) reinstating a standardized pear-shaped open link for the chafing chain; and

.3 SDC 10/3/2 (IACS), commenting on document SDC 10/3 (Japan) and providing alternative proposals or seeking clarification for the minimum strength of towing components, safe towing load (TOW) and the rapid deployment of ETA on board ships other than tankers.

3.5 The delegation of Japan, in providing additional information on document SDC 10/3, highlighted that the threshold of 30,000 GT for ships other than tankers for a safe towing load of at least 1,000 kilonewtons (kN) was chosen as it corresponded to 50,000 tons deadweight (DWT) in the existing guidelines for tankers, based on empirical data of the existing fleet.

3.6 In the ensuing discussion, the Sub-Committee noted the following views:

.1 the guidelines to be developed should not be overly prescriptive, so as to provide flexibility for different ship designs while ensuring an acceptable level of safety;

.2 the proposed threshold value of 30,000 GT for a TOW of at least 1,000 kN may not be appropriate, given that the large windage area of pure car truck carriers (PCTC) and ultra-large container ships, in addition to their DWT, would have significant effects on the requirements of the TOW;

.3 while equivalence for certain ship designs may be considered, it should also be taken into account that ETA may potentially be used by third parties and that, therefore, a uniform and simple design may be maintained;

.4 the proposal to substitute prototype testing for non-pre-rigged ETA, as proposed in annex 1 of document SDC 10/3, could not be supported as the loose items of an ETA need to be tested;

.5 IACS unified interpretation SC113 on Emergency Towing Arrangements on Tankers - Prototype Test was approved as MSC.1/Circ.966 and any amendments to prototype testing may be incorporated therein;

.6 pre-rigged ETA for ships other than tankers should be optional as it may not be a feasible option for some ship designs;

.7 the use of high modulus synthetic ropes for towing operations should be carefully considered, due to their poor fire and friction resistance;

.8 the consideration of allowable strength of the bottom structures of the ship's hull for emergency towing was not feasible; and

.9 the calculation of the friction between the seabed and stranding positions was not possible as it relied on many variables.

3.7 The Sub-Committee agreed to develop draft guidelines for emergency towing arrangements for ships other than tankers, based on annex 1 of document SDC 10/3 (Japan), taking into account documents SDC 10/3/1 (China) and SDC 10/3/2 (IACS).

Application provisions for draft new SOLAS regulation II-1/3-4

3.8 With regard to the recently approved draft SOLAS regulation II-1/3-4, as contained in annex 1 of document MSC 108/3, planned for adoption at MSC 108 (15 to 24 May 2024), the Sub-Committee noted the single date reference in paragraph 2.2, i.e. "For ships other than tankers constructed on or after [1 January 2028]".

3.9 The Sub-Committee also noted that paragraph 4.2.1.1 of the *Guidance on drafting of amendments to the 1974 SOLAS Convention and related mandatory instruments* (MSC.1/Circ.1500/Rev.2) stated that the format of application dates should be defined, as applicable, using the criteria based on "three dates" or the "keel-laying date based on a single date".

3.10 Notwithstanding the above, the Sub-Committee did not support any changes to the application provisions for the draft new SOLAS regulation II-1/3-4, for reporting to MSC 108, for action, as appropriate.

ESTABLISHMENT OF THE EXPERTS' GROUP ON DEVELOPMENT OF GUIDELINES FOR EMERGENCY TOWING ARRANGEMENTS FOR SHIPS OTHER THAN TANKERS

3.11 Having considered the above matters, the Sub-Committee established the Experts' Group on Development of Guidelines for emergency towing arrangements for ships other than tankers and instructed it, taking into account the comments made and decisions taken in plenary, as well as documents SDC 10/3/1 (China) and SDC 10/3/2 (IACS), to:

.1 develop draft guidelines for emergency towing arrangements for ships other than tankers, based on annex 1 of document SDC 10/3 (Japan), considering in particular the following for ETA:

.1 the time for their deployment;

.2 accommodating flexibility in design; and

.3 strength requirements;

.2 identify any necessary amendments to the *Revised guidance on shipboard towing and mooring equipment* (MSC.1/Circ.1175/Rev.1); and

.3 consider whether a correspondence group should be established to progress the work intersessionally and, if so, prepare draft terms of reference for consideration by the Sub-Committee.

Report of the Experts' Group

3.12 Having considered the report of the Experts' Group on Development of Guidelines for emergency towing arrangements for ships other than tankers (SDC 10/WP.6), the Sub-Committee:

.1 noted the progress made in developing the draft guidelines for emergency towing arrangements for ships other than tankers, including the pending finalization of section 2.3 on Strength of the towing components (SDC 10/WP.6, annex);

.2 noted that the *Guidelines for owners/operators on preparing emergency towing procedures* (MSC.1/Circ.1255) might also need to be reviewed in relation to the procedural aspect, as a consequence of the new requirement for ETAs on ships other than tankers;

.3 noted that it was premature to identify necessary amendments to the *Revised guidance on shipboard towing and mooring equipment* (MSC.1/Circ.1175/Rev.1) in light of the pending finalization of strength parameter for the ETAs on ships other than tankers;

.4 agreed that the urgency criteria of the Organization and method of work (MSC-MEPC.1/Circ.5/Rev.5) could not be met for the establishment of an intersessional correspondence group, since the expected entry-into-force date of the related amendments to SOLAS regulation II-1/3-4 was 1 January 2028; and

.5 invited interested Member States and international organizations to submit more information, including data, which might contribute the determination of the strength requirements to the next session.

Expansion of the output

3.13 In light of the need for consequential amendments to the *Revised guidance on shipboard towing and mooring equipment* (MSC.1/Circ.1175/Rev.1) the Sub-Committee recalled that output 214, currently on the Committee's post-biennial agenda, entailed the Revision of appendices A and B of the *Revised guidance on shipboard towing and mooring equipmen*t (MSC.1/Circ.1175/Rev.1).

3.14 Subsequently the Sub-Committee agreed to recommend to the Committee to expand the scope of the existing output to incorporate the aforementioned post-biennial output under the existing output with the following revised output title: "Development of Guidelines for emergency towing arrangements for ships other than tanker and revision of appendices A and B of MSC.1/Circ.1175/Rev.1", subject to approval by MSC 108 (see annex 9).

4 FURTHER DEVELOPMENT OF THE IP CODE AND ASSOCIATED GUIDANCE

General

4.1 The Sub-Committee recalled that MSC 105 had agreed to a second phase of work, after adoption by MSC 106 of the new SOLAS chapter XV (Safety measures for ships carrying industrial personnel) and the International Code of Safety for Ships Carrying Industrial Personnel (IP Code) (resolutions MSC.521(106) and MSC.527(106), respectively), to address outstanding matters, including clarifying the interaction between the IP Code and the Special

Purpose Ships (SPS) Code; incorporating provisions for passenger ships and; with respect to high-speed craft carrying industrial personnel (IP), provisions for sleeping berths and for high-speed craft carrying more than 60 persons, under the new output title "Further development of the IP Code and associated guidance".

4.2 The Sub-Committee also recalled that SDC 9, after consideration of document SDC 9/INF.3 (IMCA), providing IP Code Guidance, had invited interested delegations to liaise with IMCA with a view to developing a first draft of the Explanatory Notes, taking the document into account and addressing any other outstanding issues.

4.3 The Sub-Committee further recalled that SDC 9 had also agreed to take into account the information provided in document SDC 9/INF.6 (China) when addressing passenger ship provisions in the IP Code or related guidance thereto.

Further development of the IP Code and related guidance

4.4 In the absence of any submission to this session and no substantial proposal for amendments to the IP Code and related guidance to its last session, the Sub-Committee recalled paragraph 5.12 of the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.5), which provides that sub-committees should seek the advice of the Committees in the case of outputs for which no submissions have been received for two consecutive sessions.

4.5 In light of the above, the Sub-Committee invited submissions to SDC 11 on the matter in order to complete the outstanding work. If no document is submitted to SDC 11, the Sub-Committee would propose to the Committee that work on the output has been completed.

5 REVIEW OF THE 2014 GUIDELINES FOR THE REDUCTION OF UNDERWATER NOISE FROM COMMERCIAL SHIPPING TO ADDRESS ADVERSE IMPACTS ON MARINE LIFE (MEPC.1/CIRC.833) (2014 GUIDELINES) AND IDENTIFICATION OF NEXT STEPS

General

5.1 The Sub-Committee recalled that MEPC 80 had approved the *Revised guidelines for the reduction of underwater radiated noise from shipping to address adverse impacts on marine life* (MEPC.1/Circ.906) (URN Revised Guidelines), as finalized by SDC 9, revoking MEPC.1/Circ.833. In this context, MEPC 80 had:

.1 encouraged interested Member States and international organizations to submit, by MEPC 85, lessons learned/best practices in the implementation of the above-mentioned URN Revised Guidelines, including outreach and awareness efforts to support uptake, with a view to identifying necessary revisions to the Revised Guidelines;

.2 endorsed the updated work plan for the continued work on underwater radiated noise (URN) (SDC 9/16/Add.1, annex 2);

.3 agreed to extend the target completion year for the output to 2024;

.4 agreed to disseminate the *Guidelines for underwater radiated noise reduction in Inuit Nunaat and the Arctic* as MEPC.1/Circ.907; and

.5 approved the convening of an expert workshop on the relationship between energy efficiency and underwater noise.

5.2 The Sub-Committee also recalled that SDC 9 had re-established the Correspondence Group on Review of the Guidelines for the Reduction of Underwater Noise (MEPC.1/Circ.833) with a view to continuing the remaining work (next steps) on identifying ways to implement the Revised Guidelines and to promote the work of the Organization.

5.3 With regard to the request of MEPC 76 to the Secretariat to discuss with potential donors, such as the Global Environment Facility (GEF), the potential funding of a global underwater vessel noise project, the Sub-Committee was advised of the establishment of the Global Partnership for Mitigation of Underwater Noise from Shipping (GloNoise Partnership) Project. The new joint project of IMO, the United Nations Development Programme (UNDP) and GEF with a budget of $1,950,000, over a 24-month period, was agreed between IMO and UNDP to commence in December 2023. The main objective of the project was to establish a global stakeholders' partnership to assist developing countries in raising awareness, capacity-building and collecting information to assist the policy dialogue on anthropogenic underwater noise mitigation from ships. A partnership of Lead Pilot Countries (LPCs) had been created, providing support, via engagement with IMO, from private sector and global strategic partners, including from developed countries, in addressing the major environmental issue of underwater noise from shipping. The LPCs were Argentina, Chile, Costa Rica, India, South Africa, and Trinidad and Tobago. Twinning Partners were Georgia, Madagascar and Malaysia.

Suggested next steps in addressing URN from ships (action plan)

Report of the Correspondence Group

5.4 The Sub-Committee considered document SDC 10/5 (Canada) containing the report of the Correspondence Group on the Review of the Underwater Noise Guidelines and providing a revised reference chart on the URN management planning process to be used, as a tool, for raising awareness of the URN Revised Guidelines, and a list of suggested next steps in the format of an action plan.

5.5 In response to the Correspondence Group's report (SDC 10/5), and, in particular paragraph 26 thereof, which states that the ''draft supplementary guidelines for URN reduction in Inuit Nunaat and the Arctic were approved at MEPC 80", the delegation of the Russian Federation highlighted, inter alia, that MEPC.1/Circ.907 on *Guidelines for URN reduction in Inuit Nunaat and the Arctic* was disseminated by MEPC 80, but not approved by it. Thus, there was no basis for it to be incorporated into the action plan.

5.6 The Sub-Committee also had for its consideration the following documents:

.1 SDC 10/5/1 (ICS, BIMCO, INTERTANKO and IPTA), supporting URN-reduction targets advocated for by the Okeanos Foundation and referred to in a study conducted by the University of Southampton (United Kingdom) on the impact of shipping's energy efficiency measures on reduction of URN and opportunities for co-benefit, and encouraging the uptake of the URN Revised guidelines through raised awareness (e.g. with best practice industry publications) and incentive schemes (e.g. discounting of port dues);

.2 SDC 10/5/2 (Chile), proposing to: (1) incentivize shipowners and operators that seek to use measures that meet both greenhouse gas (GHG) and URN-reduction targets; (2) expand the application of the URN Revised guidelines to include government-owned or operated vessels; and (3) clarify the definition of "new vessel" for the purpose of implementing the Guidelines discussed under this agenda item;

.3 SDC 10/5/3 (Japan), proposing, with respect to establishing methods to measure and to estimate URN, as contained in the draft action plan, to estimate the amount of URN reduction for ships with fixed propeller, from ship design data and operational parameters, that can be managed on board, based on measured data accumulated from the past;

.4 SDC 10/5/4 (Japan), proposing, in connection with the further development of policies for URN reduction as part of the next steps, to take into account:

.4.1 the different ambient noise levels that existed and which, in some areas, may even exceed URN of ships;

.4.2 the fact that the magnitude of URN received by marine organisms in a given sea area depended on the ship traffic condition in that area; and

.4.3 the need to evaluate the impact on marine life (impact on communication, reproduction of marine species, etc.) and to consider the distribution of marine life;

.5 SDC 10/5/6 (China), proposing to incorporate the reference chart on the URN management planning process (SDC 10/5, annex 1) into the URN Revised guidelines, and to include in the action plan a new item on the impact of URN-reduction measures on ship safety;

.6 SDC 10/5/7 (Inuit Circumpolar Council), proposing the inclusion of an "Arctic and Inuit Nunaat Implementation Framework" in the action plan with findings, insights and experiences submitted on an ongoing basis to the experience-building phase (EBP); and

.7 SDC 10/5/8 (FOEI, WWF, IFAW, Pacific Environment and CSC), providing proposals to optimize collective learning in the EBP, including fostering greater integration of energy efficiency and URN measures and suggesting that the Sub-Committee consider and recommends an appropriate way forward to implement the proposed action plan developed by the Correspondence Group.

5.7 In connection with the above, the Sub-Committee noted the information provided in the following documents:

.1 SDC 10/INF.3 (Secretariat), informing on the outcome of the Workshop on the relationship between energy efficiency and URN from ships to facilitate discussion on the next steps;

.2 SDC 10/INF.4 (Canada), highlighting the results of a recent study on the technologies that could help meet both objectives: to improve energy efficiency and to reduce URN from ships, focusing on newbuildings and retrofit technologies;

.3 SDC 10/INF.5 (TTC), highlighting the outcome of a review by ITTC of the full-scale measurement and estimation methods proposed to date, which can be divided into three categories: (1) full-scale noise measurement directly in deep water and in shallow water; (2) full-scale noise estimation based on onboard monitoring data; and (3) full-scale propeller noise prediction using scaling laws based on model-scale propeller noise measurement;

.4 SDC 10/INF.6 (Kuwait), informing about a proposal by the Kuwait Institution for Scientific Research (KISR) to conduct a study of commercial ships in Kuwait regarding underwater noise pollution and its impact on the marine life; and

.5 SDC 10/INF.11 (Canada and IAPH), informing on a multi-year collaborative project that recommends procedures for measurement and reporting of URN emissions from ships for varying water depths, which can be adopted directly or used by ship classification societies for quiet vessel certification/notation approaches.

5.8 In the ensuing discussion, the Sub-Committee noted the following views:

.1 while there were merits in standardizing URN management planning/measurements methods, standardization should not limit the evaluation of the amount of URN reduction to only one fixed operational methodology;

.2 the development of training guidance for seafarers to raise broader awareness of URN was supported;

.3 indirect measurements of URN, as proposed in document SDC 10/5/3, was a pragmatic approach but required validation against direct measurements;

.4 while the use of the shaft speed of the propeller was supported, the method needed validation to reflect diversity of ship design data and operational factors (e.g. propeller specification, ship's speed, cargo loading conditions, etc.);

.5 with respect to potential conflicts between GHG reductions measures and those for URN reductions, shipowners, designers and suppliers should be dissuaded from practices which lead to such conflicts. The best compromise of URN and GHG reductions should be endeavoured, not only by design considerations but also by a combination of both the design aspect for GHG reductions, such as propeller design, and operational measures, such as speed reduction in certain vulnerable sea areas;

.6 it was important to have a common understanding on the methodology used to estimate the amount of URN reduction from the various measures introduced in order to enable a consistent evaluation of the URN reduction in different phases of a ship life, from its design and construction phase to the operation phase;

.7 an "Arctic and Inuit Nunaat Implementation Framework" should be included in the Action Plan and Experience-Building Phase, as part of next steps for this work; and

.8 caution should be exercised within IMO in respect of using controversial territorial nominations, like "Nunaat", especially in light of their claims to represent parts of sovereign States' territories, as well as their population.

5.9 Taking into account the above views, the Sub-Committee instructed the Working Group on Reduction of Underwater Noise from Commercial Shipping to consider the proposals in detail, for finalization of the URN management planning reference chart and the draft action plan.

Proposed change of output title and introducing an Experience-Building Phase

5.10 The Sub-Committee considered document SDC 10/5/5 (United States), proposing, as part of the next steps in addressing URN from ships, to:

.1 change the title of the existing output to "Experience-Building Phase for the Reduction of Underwater Radiated Noise (MEPC.1/Circ.906)";

.2 extend the target completion year to 2026; and

.3 place the revised output on the agendas of MEPC 82 through to MEPC 85 to promote greater access to knowledge and research on URN and to encourage wide participation in the information-sharing stage for the URN Revised Guidelines.

5.11 In this connection, the Sub-Committee recalled paragraph 4 of the URN Revised Guidelines, requesting Member States and international organizations to submit information, observations, comments and recommendations based on the practical experience gained through the application of these URN Revised Guidelines to MEPC.

5.12 While the establishment of an Experience-Building Phase (EBP) was supported by many delegations, some delegations preferred a five-year EBP, rather than a three-year one, to allow more time to collect data and to reach conclusion.

5.13 Subsequently, the Sub-Committee agreed to the proposal in document SDC 10/5/5 (see paragraph 5.10) and, in order for MEPC to place the revised output on its agenda at its eighty-second session, the Sub-Committee agreed to request MEPC 81 to consider it as an urgent matter.

5.14 In addition to the above, the Sub-Committee agreed that an EBP would provide the vehicle to identify suitable URN measurement methods and that, until the EBP was over, the Guidelines should not be further revised so as to allow time for the experience gained.

ESTABLISHMENT OF THE WORKING GROUP ON REDUCTION OF UNDERWATER NOISE FROM COMMERCIAL SHIPPING

5.15 Having considered the above matters, the Sub-Committee established the Working Group on Reduction of Underwater Noise from Commercial Shipping, and instructed it, taking into account the comments made and decisions taken in plenary, and documents SDC 10/5, SDC 10/5/1, SDC 10/5/2, SDC 10/5/3, SDC 10/5/4, SDC 10/5/6, SDC 10/5/7, SDC 10/5/8, SDC 10/INF.4, SDC 10/INF.5, SDC 10/INF.6 and SDC 10/INF.11, to:

.1 finalize the reference chart in annex 1 of document SDC 10/5;

.2 identify the best appropriate distribution and communication plan of the reference chart to support awareness of the URN Revised guidelines, i.e. whether as an IMO circular or to be included in the URN Revised guidelines, and formulate recommendations for consideration by the Sub-Committee;

.3 take into account the conclusions of the IMO expert workshop (SDC 10/INF.3) on the relationship between energy efficiency and underwater radiated noise and amend the draft action plan as necessary; and

.4 finalize the proposed draft action plan, as contained in annex 2 of document SDC 10/5, taking into account annex 3 thereof, including:

.1 identifying the roles and responsibilities of the Organization versus Member States and other stakeholders; and

.2 prioritizing the proposed measures in the action plan that address the barriers which were preventing the uptake and implementation of the 2014 Guidelines (SDC 8/WP.8, paragraph 20).

Report of the Working Group

5.16 Having considered the report of the Working Group on Reduction of Underwater Noise from Commercial Shipping (SDC 10/WP. 3), the Sub-Committee took action as outlined below.

Finalization of the Underwater Radiated Noise (URN) management planning reference chart

5.17 The Sub-Committee agreed to the Underwater Radiated Noise (URN) management planning reference chart (SDC 10/WP.3, annex 1), to be included as appendix 4 of the URN Revised Guidelines, as well as to the amendments thereto in section 5 making reference to the URN planning reference chart, as set out in annex 1, for consideration by MEPC 82 with a view to approval, as MEPC.1/Circ.906/Rev.1.

Draft action plan for the Organization's continued work on preventing and reducing URN from ships

5.18 In considering the proposed draft action plan (SDC 10/5, annex 2), aimed at guiding the Organization's continued work on preventing and reducing URN from ships and providing a mechanism to identify specific outcomes and indicative actions, the Sub-Committee:

.1 noted the Working Group's discussion on, and the finalization of, the draft action plan;

.2 agreed to the draft action plan for the reduction of underwater noise from commercial shipping, as set out in annex 2;

.3 agreed to invite MEPC 81, as an urgent matter, to:

.1 endorse the draft action plan when considering the request for the revision of the title of the output (see paragraph 5.13); and

.2 note that the three-year experience-building phase (EBP) stated in the draft action plan may need to be revisited for an extension of up to two years; and

.4 agreed to invite interested Member States and observer organizations to submit documents to MEPC 82 addressing the action items in the plan, as appropriate, subject to MEPC 81's endorsement of the action plan; and

.5 agreed to invite MEPC 82 to encourage interested Member States and international organizations to take into account the outcome of the workshop on the "Relationship between energy efficiency and underwater radiated noise from ships" (SDC 10/INF.3) when considering the relationship between energy efficiency measures and URN.

Guidance for the Experience-Building Phase (EBP)

5.19 The Sub-Committee noted the outcome of the Working Group's discussion on the need for guiding the EBP and:

.1 agreed to the draft guidance on the EBP for the URN Revised guidelines identifying the key areas for the EBP, as set out in annex 3; and

.2 agreed to invite MEPC 81, as an urgent matter, to note the guidance on the EBP for the URN Revised guidelines and to invite interested Member States and international organizations to follow the guidance when gathering, preparing and sharing experiences, data and research during the EBP.

Secretary-General's assessment of the implications of the proposed work

5.20 The Secretary-General, in light of the proposed extension of the output and the actions proposed in the draft action plan, advised of his intention to conduct an assessment of the technical, administrative and financial implications of the work proposed, in line with Rule 15 of the rules of procedure of MEPC, so as to ensure that the Secretariat will be in the position to support the work conferred to MEPC.

Completion of the output

5.21 The Committees were invited to note that the work on the output had been completed.

6 AMENDMENTS TO THE 2011 ESP CODE

Allowing the use of remote inspection techniques for close-up surveys

6.1 The Sub-Committee recalled that, at its seventh session, it had considered document SDC 7/10 (IACS), proposing to amend the International Code on the Enhanced Programme of Inspections During Surveys of Bulk Carriers and Oil Tankers (2011 ESP Code), in order to allow the use of remote inspection techniques (RIT). While IACs' proposal was generally supported, SDC 7 had agreed that the matter required a broader consideration by the Organization, which might consider taking a holistic approach in regulating RIT, including those that might be considered under other instruments. Consequently, SDC 7 invited interested Member States and international organizations to submit proposals on the matter to the Sub-Committee for consideration (SDC 7/16, paragraphs 10.3 and 10.4).

6.2 In connection with the above, the Sub-Committee considered the following documents:

.1 SDC 10/6 (IACS), advising that, in their applicable unified requirements (UR), RIT have already been established as they offered safer surveys, decreased fault rate and reduction of cost of maintenance. Therefore, IACS proposes to permit the use of RIT for close-up survey of the structure of ships during surveys under the 2011 ESP Code; and

.2 SDC 10/6/1 (Bahamas et al.), commenting on the proposal in document SDC 10/6 and recommending that the Organization take a holistic approach on the use of RIT and to consider, inter alia, the limitations/conditions for using RIT and the need for the Organization to develop technical guidelines.

6.3 Having considered the above-mentioned submissions, the Sub-Committee noted the following views:

.1 the draft amendments were not mature enough to be finalized, in particular:

.1 with regard to the proposal in paragraph 1.6.3 of the annex to document SDC 10/6 on surveys not carried out by an Administration, specific requirements for the RIT, when used directly by a recognized organization (RO), should be provided, similar to those for an approved firm;

.2 references to IACS UR needed to be considered by the Sub-Committee first before being included; and

.3 clarification needed to be provided regarding instances when RIT is not capable to perform thickness measurements simultaneously with a close-up survey;

.2 the proposal for RIT should not be confused with remote surveys and it should be clarified that the former relates to a surveyor being physically present on board using RIT;

.3 the use of RIT was an auxiliary new means for access to structures and would involve a highly manoeuvrable, flexible, fast and efficient high-resolution camera. Clear images can be submitted to the surveyor. However, suitable technical requirements needed to be developed; and

.4 a holistic approach should be taken, not limited to the ESP Code.

6.4 After consideration, the Sub-Committee agreed in principle to the proposal by IACS to use RIT for close-up inspections. However, its use would not be limited to bulk carriers and oil tankers under the ESP Code. The lack of technical requirements and oversight would necessitate further work.

6.5 Subsequently, the Sub-Committee agreed that work should be undertaken intersessionally in a correspondence group which should be tasked to consider the proposal for amendments to the ESP Code, as contained in document SDC 10/6, taking into account the limitations, conditions and other elements listed in paragraph 3 of document SDC 10/6/1. The correspondence group should also be tasked to develop guidelines on RIT under the ESP Code, which may be used by the Organization as a template for more holistic guidelines in the future.

6.6 In connection with the above, the Sub-Committee recalled that work was currently conducted by the III Sub-Committee, under output 1.18 on "Development of guidance on assessment and applications of remote surveys, ISM Code audits and ISPS Code verifications". The Sub-Committee agreed to recommend that any work undertaken for the development of RIT guidance should be brought to the attention of the III Sub-Committee, as appropriate.

Establishment of the correspondence group

6.7 In order to progress the work intersessionally, the Sub-Committee established the Correspondence Group on Amendments to the ESP Code to permit the use of remote inspection techniques, under the coordination of IACS[1] and instructed it, taking into account the discussions in plenary and document SDC 10/6/1 (Bahamas et al.), to:

.1 prepare and finalize the draft amendments to the ESP Code, based on document SDC 10/6;

.2 develop draft guidelines for the use of RIT for surveys and approval of firms engaged in surveys using RIT, as an alternative means for close-up survey of the structure of ships;

.3 identify those provisions that would facilitate a holistic approach on the matter, for consideration by other IMO bodies, bearing in mind the ongoing work on existing output 1.18 on "Development of guidance on assessment and applications of remote surveys, ISM Code audits and ISPS Code verifications", and to consider how to facilitate the development of such a holistic approach;

.4 convene virtual meetings using a suitable platform in order to consider any of the terms of reference, as necessary; and

.5 submit a written report to SDC 11.

7 SAFETY OBJECTIVES AND FUNCTIONAL REQUIREMENTS OF THE GUIDELINES ON ALTERNATIVE DESIGN AND ARRANGEMENTS FOR SOLAS CHAPTER II-1

General

7.1 The Sub-Committee recalled that SDC 9, with respect to the further development of goals, functional requirements and expected performances for SOLAS chapter II-1, parts C, D and E, with the objective to amend the *Revised guidelines on alternative design and arrangements for SOLAS chapters II-1 and III* (MSC.1/Circ.1212/Rev.1) (Revised Guidelines on alternative design), had:

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.1 endorsed the presentation format of the goals, functional requirements and expected performances for SOLAS chapter II-1, parts C and E, which should follow the same format as the one used for SOLAS chapter III, in appendix 5 of the Revised Guidelines on alternative design (SDC 9/WP.4, paragraph 16);

.2 endorsed that the goals, functional requirements and expected performances for SOLAS chapter II-1, parts C, D and E be presented separately, but be included in the same appendix of the Revised Guidelines on alternative design (SDC 9/WP.4, paragraph 17); and

.3 agreed, in principle, to the goals for SOLAS chapter II-1, parts C and E (SDC 9/WP.4, paragraphs 18, 19 and 22, and annexes 3 and 4).

7.2 The Sub-Committee also recalled that SDC 8 had finalized the goal, functional requirements and expected performances for part D of SOLAS chapter II-1 (electrical installations) and that SDC 9, following the proposal in document SDC 9/7/1 (IACS), had proceeded with the development of failure modes/hazards identification for SOLAS chapter II-1, parts C and E, and subsequently had agreed in principle to the outcome of that work (SDC 9/WP.4, paragraphs 4 to 15 and annexes 1 and 2).

7.3 The Sub-Committee also recalled that SDC 9 had re-established the Correspondence Group on Safety objectives and functional requirements for SOLAS chapter II-1 to progress the work intersessionally.

7.4 The Sub-Committee recalled that MSC 107 had endorsed the proposal by SDC 9 to consider the development of further functional requirements and expected performances of SOLAS regulations II-1/28, 29 and 30 under the output on "Revision of SOLAS chapters II-1 (part C) and V, and related instruments regarding steering and propulsion requirements, to address both traditional and non-traditional propulsion and steering system" (agenda item 8).

General considerations for the development of goals, functional requirements and expected performances for SOLAS chapter II-1

7.5 In order to clarify the outstanding work under the current output in connection with that under agenda item 8 on "Revision of SOLAS chapters II-1 (part C) and V, and related instruments regarding steering and propulsion requirements, to address both traditional and non-traditional propulsion and steering systems", the Sub-Committee agreed that:

.1 for existing SOLAS regulations II-1/28, 29 and 30, the development of functional requirements and expected performances should be concluded at this session;

.2 however, any amendments to the Revised guidelines on alternative design, i.e. the development of functional requirements and expected performances as a result of amending aforementioned SOLAS regulations addressing non-traditional propulsion and steering systems (agenda item 8), may be necessary after these SOLAS regulations had been agreed to; and

.3 following on from the above, the work under this output should be completed at this session with the functional requirements and expected performances for SOLAS chapter II-1 being appended to MSC.1/Circ.1212/Rev.1, for consideration by MSC 108 with a view to approval.

Report of the Correspondence Group

7.6 The Sub-Committee considered document SDC 10/7 (Japan), containing the report of the Correspondence Group on Safety objectives and functional requirements for SOLAS chapter II-1, providing the draft goals, functional requirements and expected performances of SOLAS chapter II-1, parts C, D and E, based on the identification of respective failure modes and hazards.

7.7 The Sub-Committee also noted the information in document SDC 10/INF.2 (Japan), providing information on the discussion in the correspondence group on the failure modes/hazards of SOLAS chapter II-1, parts C and E, which may be taken into account for the finalization of the goals, functional requirements and expected performances of SOLAS chapter II-1, parts C and E.

7.8 Subsequently, the Sub-Committee agreed to instruct the Working Group on Development of functional requirements for SOLAS chapter II-1 to finalize the draft amendments to the *Revised guidelines on alternative design and arrangements for SOLAS chapters II-1 and III* (MSC.1/Circ.1212/Rev.1) for SOLAS chapter II-1, parts C, D and E.

ESTABLISHMENT OF THE WORKING GROUP ON DEVELOPMENT OF FUNCTIONAL REQUIREMENTS FOR SOLAS CHAPTER II-1

7.9 Having considered the above matters, the Sub-Committee established the Working Group on Development of functional requirements for SOLAS chapter II-1 and instructed it, taking into account the comments and decisions made in plenary, to finalize the draft goal, functional requirements and expected performances of SOLAS chapter II-1, parts C, D and E, as contained in annexes 1, 2 and 3 of document SDC 10/7, taking into account documents SDC 10/INF.2 and SDC 10/8/5.

Report of the Working Group

Finalization of the draft amendments to the Revised guidelines on alternative design and arrangements for SOLAS chapters II-1 and III (MSC.1/Circ.1212/Rev.1)

7.10 Having considered the relevant part of the report of the Working Group on Development of functional requirements for SOLAS chapter II-1 (SDC 10/WP.4), the Sub-Committee noted the Working Group's discussion on draft goals, functional requirements and expected performances of SOLAS chapter II-1 parts C, D and E. The Sub-Committee agreed to the draft amendments to *Revised guidelines on alternative design and arrangements for SOLAS chapters II-1 and III* (MSC.1/Circ.1212/Rev.1), and the associated draft MSC circular, as set out in annex 4, for consideration by MSC 108 with a view to approval.

Completion of the output

7.11 The Sub-Committee invited the Committee to note that the work on the output had been completed (see annex 9).

8 REVISION OF SOLAS CHAPTERS II-1 (PART C) AND V, AND RELATED INSTRUMENTS REGARDING STEERING AND PROPULSION REQUIREMENTS, TO ADDRESS BOTH TRADITIONAL AND NON-TRADITIONAL PROPULSION AND STEERING SYSTEMS

General

8.1 The Sub-Committee recalled that MSC 105 (20 to 29 April 2022) had agreed to the output proposal in document MSC 104/15/8 (Austria et al.) on "Revision of SOLAS chapters II-1 (part C) and V, and related instruments regarding steering and propulsion requirements to address both traditional and non-traditional propulsion and steering systems", with two sessions needed to complete the item, assigning the SSE Sub-Committee as the coordinating organ, in association with the NCSR and SDC Sub-Committees as and when requested by the SSE Sub-Committee. In this regard, the Committee had instructed the SSE Sub-Committee to clarify the scope of the new output, in particular whether propellers of traditional propulsion systems were included, and to advise the Committee accordingly.

8.2 The Sub-Committee also recalled that MSC 105 had agreed, in accordance with MSC.1/Circ.1481 and MSC.1/Circ.1500/Rev.1, that the amendments to be developed should apply to new ships and that the output was to amend regulations in SOLAS chapters II-1 (part C) and V.

8.3 The Sub-Committee also recalled that MSC 107 had decided to transfer the output, for which the SSE Sub-Committee had been initially assigned as the coordinating organ, from its post-biennial agenda to the provisional agenda of SDC 10, in order to balance the workload between the two sub-committees and to ensure that any amendments to MSC.1/Circ.1212/Rev.1, in relation to SOLAS chapter II-1, would be prepared by the same sub-committee.

8.4 The Sub-Committee further recalled that MSC 107 had agreed to take into account annex 4 of document SDC 9/7 (Japan), containing draft functional requirements for steering and propulsion under SOLAS regulations II-1/28 to 30 derived from the STEERSAFE project.

Draft revised SOLAS regulations in chapters II-1 (part C) and V regarding steering and propulsion requirements

8.5 With respect to the development of draft revised SOLAS regulations in chapters II-1 and V to address both traditional and non-traditional propulsion and steering systems, the Sub-Committee had the following documents for its consideration:

.1 SSE 9/14/4 (IACS), which had been agreed by SSE 9 to be considered under this output;

.2 MSC 104/15/8 (Austria et al.), containing the output proposal for the review of SOLAS chapters II-1 (part C) and V, and related non-mandatory instruments regarding steering and propulsion requirements;

.3 MSC 105/18/1 (Austria et al.), containing an updated output proposal for the review of SOLAS chapters II-1 (part C) and V, and related non-mandatory instruments regarding steering and propulsion requirements;

.4 MSC 104/15/37 (China), proposing to review comprehensively the safety requirements for steering systems and to consider the development or the review of additional instruments (e.g. additional regulations of SOLAS, as

well as amendments to the Survey Guidelines under the Harmonized System of Surveys and Certification (HSSC)[2]);

.5 SDC 10/8 (IACS), providing comments on, and proposals for, the draft amendments to SOLAS chapters II-1 (part C) and V, and related non-mandatory instruments;

.6 SDC 10/8/1 (part 1) (Japan), highlighting that there is insufficient justification for amending the current SOLAS regulations that apply to traditional propulsion and steering systems and that, therefore, amendments should be limited to non-traditional systems; and

.7 SDC 10/8/3 (part 3) (Japan), proposing modifications to draft SOLAS regulation II-1/29 to accommodate for tugboats and their reserve thrust force in case of damage, as well as for GATE RUDDER arrangements (two rudders on one propulsor).

8.6 The Sub-Committee noted the revision and the update of document MSC 104/15/8 (Austria et al.), as contained in document MSC 105/18/1 (Austria et al.).

8.7 In the ensuing discussion, the Sub-Committee noted the following views:

.1 currently, SOLAS would not provide for modern propulsion systems, leading to individual interpretations being made and resulting in more complicated designs and unfavourable requirements for azimuthing thrusters, compared to traditional rudder-steered ships;

.2 there would be no justification for changing the existing SOLAS requirements for traditional steering and propulsion systems and, therefore, these should not change. The focus of the work should be to develop requirements for non-traditional systems;

.3 testing, experience gained and lessons learned, as the result of studies or casualties, have shown that there have not been any significant accidents or incidents that would require amending regulations for traditional systems;

.4 care should be taken to reference a non-mandatory instrument in mandatory text, as proposed in draft SOLAS regulation II-1/28 which refers to resolution MSC.137(76); and

.5 the proposal in document SDC 10/8/3 to accommodate for GATE RUDDER in SOLAS, a non-traditional steering and propulsion systems with unsymmetrical rudder angle range, would not be supported as IMO instruments should be drafted technology-agnostic.

8.8 The observer delegation of IACS provided comments on the alleged difficulties encountered by surveyors in detecting problems of steering gear and steering gear control systems during on-site surveys, as reported in paragraph 13 of document MSC 104/15/37 (China). The full text of the statement is set out in annex 12.

[2] Resolution A.1186(33).

Considerations for a goal-based approach

8.9 After general support for the goal-based approach taken for revised SOLAS regulations II-1/28 and 29, as contained in annex 2 of document MSC 105/18/1, the Sub-Committee noted the view of some delegations that the functional requirements, and, in fact, the new SOLAS regulations under development, should be applicable to both traditional and non-traditional steering and propulsion systems.

8.10 Subsequently, the Sub-Committee concluded that there would be no change of scope of the output, and consideration should be given to developing requirements for both traditional and non-traditional steering systems for newbuilt ships.

8.11 In light of the four-year SOLAS amendment cycle, the Sub-Committee noted that, in order for the draft SOLAS amendments to enter into force on 1 January 2028, it would have to finalize these at its next session.

Instructions to the Working Group

8.12 The Sub-Committee instructed, therefore, the Working Group on Development of functional requirements for SOLAS chapter II-1, established under agenda item 7, to further develop draft amendments to SOLAS regulations II-1/3, 28, 29 and 30, and V/25 and 26, based on annex 2 of document MSC 105/18/1, taking into account documents MSC 104/15/37, MSC 105/18/2, SDC 10/8, SDC 10/8/1, SDC 10/8/2, SDC 10/8/3, SDC 10/8/4 and SSE 9/14/4, as well as consequential amendments to SOLAS, including, but not limited to, SOLAS regulations II-1/42, 43 and 45.6.1.

Considerations for limiting the application of SOLAS amendments to new ships

8.13 The Sub-Committee, after recalling that MSC 107 had limited the application of the new SOLAS regulations to new ships and, in the absence of any proposals for application provisions, agreed on the need to develop application provisions for the draft regulations in SOLAS chapters II-1 and V regarding steering and propulsion requirements.

Instructions to the Working Group

8.14 Having considered the above matters, the Sub-Committee instructed the Working Group on Development of functional requirements for SOLAS chapter II-1 to develop application provisions for revised draft SOLAS regulations II-1/3, 28, 29 and 30, and V/25 and 26, and any consequential SOLAS amendments deriving therefrom, so as to limit their application to new ships only, while retaining the current SOLAS provisions for existing ships.

Draft amendments to related non-mandatory instruments

8.15 The Sub-Committee considered the proposals for amending the following related non-mandatory instruments, in conjunction with the draft revised amendments to SOLAS chapters II-1 and V to address traditional and non-traditional propulsion and steering systems, as contained in the applicable part of annex 2 of document MSC 105/18/1 (Austria et al.):

.1 *Guidelines for acceptance on non-duplicated rudder actuators for tankers, chemical tankers, and gas carriers of 10,000 gross tonnage and above but less than 100,000 tonnes deadweight* (resolution A.467(XII));

.2 *Recommendation on the provision and the display of manoeuvring information on board ships* (resolution A.601(15));

.3 *Standards for ship manoeuvrability* (resolution MSC.137(76));

.4 *Unified interpretations of SOLAS regulations II-1/29.3 and 29.4* (MSC.1/Circ.1536); and

.5 *Explanatory Notes to the standards for ship manoeuvrability* (MSC/Circ.1053).

The Sub-Committee also considered the proposal for a draft circular which may contribute to the work under the existing output 2.5 on "Safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapter II-1" (agenda item 7).

8.16 In connection with the above, the Sub-Committee also had for its consideration the following documents:

.1 SDC 10/8 (IACS) (relevant part only), proposing to consider a number of issues, including whether existing resolution A.601(15) should be retained so as to be applicable to existing ships; changes to the new heading keeping test; and availability/redundancy requirements for the steering force for modern propulsion and steering units; and

.2 SDC 10/8/2 (part 2) (Japan and ASEF), opposing draft amendments to resolution MSC.137(76) for traditional propulsion and steering systems and MSC/Circ.1053 with respect to, inter alia, changing the heading angle for the zigzag test and adding the heading keeping test as contained in annex 2 of document MSC 105/18/1 (Austria et al.), and proposing the development of a new resolution for non-traditional propulsion and steering systems only.

8.17 With respect to the proposal in document SDC 10/8/2, one delegation suggested to follow the Sub-Committee's earlier decision on the common goal-based approach to be taken for the draft SOLAS amendments, and that a similar approach should be pursued for the related non-mandatory instruments, whereby the work on the common part and the part where traditional and non-traditional systems differed, be identified when drafting amendments, particularly with respect to the *Explanatory Notes to the standards for ship manoeuvrability* (MSC/Circ.1053).

Instructions to the Working Group

8.18 Having considered the proposed amendments to related non-mandatory instruments in the applicable part in annex 2 of document MSC 105/18/1, as well as the commenting documents, the Sub-Committee instructed the Working Group on Development of functional requirements for SOLAS chapter II-1 to develop consequential amendments to the following non-mandatory instruments, based on the relevant part in annex 2 of document MSC 105/18/1, taking into account documents SDC 10/8 (IACS) and SDC 10/8/2 (Japan and ASEF), and bearing in mind that the amended SOLAS regulations would apply to new ships only:

.1 *Guidelines for acceptance on non-duplicated rudder actuators for tankers, chemical tankers and gas carriers of 10,000 gross tonnage and above but less than 100,000 tonnes deadweight* (resolution A.467(XII));

.2 *Recommendation on the provision and the display of manoeuvring information on board ships* (resolution A.601(15));

.3 *Standards for ship manoeuvrability* (resolution MSC.137(76));

.4 *Unified interpretations of SOLAS regulations II-1/29.3 and II-1/29.4* (MSC.1/Circ.1536); and

.5 *Explanatory Notes to the standards for ship manoeuvrability* (MSC/Circ.1053).

Scope of the output and inclusion of technical requirements for declared steering angle limits

8.19 With respect to proposals on the scope of the output and inclusion of technical requirements for declared steering angle limits, the Sub-Committee had the following documents for its consideration:

.1 MSC 105/18/2 (China), proposing, inter alia, a revised output title and to incorporate turning stability criteria and the safety assessment procedure of steering control system of ASD tugs (MSC 101/23/8, paragraph 15), which would address the methods and procedures for determining the declared steering angle limits, as proposed in draft SOLAS regulations II-1/3 and 29 (MSC 105/18/1, annex 2); and

.2 SDC 10/8/4 (China), proposing revisions to SOLAS chapter II-1 (part C) with respect to the technical requirements for declared steering angle limits, which should be updated in order to avoid the risk of capsizing or excessive heeling of ships fitted with non-traditional propulsors under various manoeuvring conditions.

Instructions to the Working Group

8.20 The Sub-Committee, in the absence of any concrete proposal for a method to determine steering angle limits, and given the decision of MSC 101, which had invited the delegation of China and other interested delegations to work collaboratively on a joint proposal for a new output on the safety of ASD tugs, instructed the Working Group on Development of functional requirements for SOLAS chapter II-1 to assess the proposal in document SDC 10/8/4 (paragraph 6), with a view to advising the Sub-Committee on the need for a method to determine steering angle limits and whether such work would be justified under the scope of the current output.

Development of functional requirements and expected performances of SOLAS regulations II-1/28, 29 and 30

8.21 With respect to the development of functional requirements and expected performances of draft revised SOLAS regulations II-1/28, 29 and 30, the Sub-Committee had the following documents for its consideration:

.1 MSC 105/18/1 (Austria et al.), annex 2, containing a draft MSC circular on goals, functional requirements and expected performance criteria for SOLAS regulations II-1/28 and 29, and V/25 and 26;

.2 SDC 9/7 (Japan), annex 4, containing draft functional requirements and expected performances for SOLAS regulations II-1/28, 29 and 30, for steering and propulsion systems derived from the STEERSAFE project; and

.3 SDC 10/8/5 (China), proposing several issues to take into account for the draft functional requirements and expected performances proposed in document SDC 9/7 (Japan).

8.22 In connection with the above, the Sub-Committee recalled that, under item 7 (paragraph 7.5.3), it had agreed that the functional requirements and expected performances for SOLAS chapter II-1, parts C, D and E were to be finalized at this session, which included FRs and EPs for SOLAS regulations II-1/28, 29 and 30, and the proposal in document MSC 105/18/1 (annex 2) should be reviewed once the draft SOLAS regulations had been finalized.

8.23 In addition, the Sub-Committee agreed that there was no need for a separate MSC circular on goals, functional requirements and expected performances for SOLAS regulations II-1/28 and 29 since MSC.1/Circ.1212/Rev.1 was meant to cover all of part C of SOLAS chapter II-1, including regulations II-1/28, 29 and 30.

Revision of MSC.1/Circ.1/1416/Rev.1 as an interim measure

8.24 The Sub-Committee noted the explanation by the observer delegation of IACS regarding the substance of the matter in document SSE 9/14/4 (IACS), in particular that MSC.1/Circ.1416/Rev.1 unintentionally led to multiple redundancy of steering-propulsion arrangements for multiple steering-propulsion units, and the need to remedy the situation by revising the circular, as an interim measure, in parallel to proceeding with amendments to SOLAS regulations II-1/28 to 30 (SSE 9/14/4, paragraph 8).

Instructions to the Working Group

8.25 Subsequently the Sub-Committee instructed the Working Group on Development of functional requirements for SOLAS chapter II-1, after completion of the draft amended SOLAS regulations, to develop functional requirements and expected performances for SOLAS regulations II-1/28 to 30, based on annex 2 of document MSC 105/18/1 (Austria et al.), taking into account document SDC 10/8/5 (China).

8.26 The Working Group was also instructed to:

.1 identify, based on the outcome of the work on developing draft amendments to SOLAS regulations II-1/3, 28, 29 and 30, and V/25 and 26, whether resolutions A.415(XI) and A.416(XI), and MSC.1/Circ.1398 and MSC.1/Circ.1416/Rev.1 should be revoked, taking into account the request in document SSE 9/14/4;

.2 advise if there is a need to amend or to review other instruments to ensure that the draft SOLAS amendments developed do not conflict with existing provisions in such instruments; and

.3 consider whether a correspondence group should be established and, if so, prepare terms of reference for consideration by the Sub-Committee.

Report of the Working Group

8.27 Having considered the report of the Working Group on Development of functional requirements for SOLAS chapter II-1 (SDC 10/WP.4), the Sub-Committee took action as outlined in paragraphs below.

Draft amendments to SOLAS regulations

8.28 The Sub-Committee noted the progress made in the preparation of draft amendments to SOLAS regulation II-1/28 regarding requirements on the capability of going astern and the stopping of ships (SDC 10/WP.4, paragraphs 11 to 15 and annex 2) but that, owing to time constraints, the work on SOLAS regulations II-1/3 and 28 to 30, and V/25 and 26, as well as consequential amendments to SOLAS, including, but not limited to, SOLAS regulations II-1/42, 43, and 45.6.1 could not be finalized. The Sub-Committee, therefore, agreed that this work should be undertaken by the correspondence group, if re-established.

8.29 The Sub-Committee agreed to defer decisions on the application provisions for the revised SOLAS regulations, as it would have been premature in light of the assessment that it was instrumental to agree first on the amendments, which were deemed to impact the application provisions.

Amendments to non-mandatory instruments

8.30 The Sub-Committee also agreed to defer decisions on the following after the finalization of the draft amendments to SOLAS regulations II-1/1, 3 and 28 to 30, and V/25 and 26:

.1 application provisions for, and the development of, non-mandatory instruments (SDC 10/WP.4, annex 3);

.2 possible revocation of resolutions A.415(XI), A.416(XI), MSC.1/Circ.1398 and MSC.1/Circ.1416/Rev.1; and

.3 the potential need to amend or review other instruments.

Scope of the output and inclusion of technical requirements for declared steering angle limits

8.31 With regard to the need for a method to determine steering angle limits, the Sub-Committee, based on the outcome of the consideration of documents MSC 105/18/2 and SDC 10/8/4, agreed that such work required a separate output, as it was outside the scope of the current output.

Establishment of the correspondence group

8.32 In order to progress the work intersessionally, the Sub-Committee established the Correspondence Group on Revision of SOLAS chapters II-1 (part C) and V, and related instruments, regarding steering and propulsion requirements, to address both traditional and non-traditional systems, under the coordination of Japan[3], and instructed it, taking into account the decisions taken and comments made at SDC 10, to:

[3] **Coordinator:**
Dr. Koichi Yoshida
Japan Ship Equipment Inspection Society of Japan
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.1 further develop, towards finalization, draft amendments to SOLAS regulations II-1/1, 3, and 28 to 30, and V/25 and 26 based on document SDC 10/WP.4 taking into account documents MSC 104/15/37, MSC 105/18/1, SDC 10/8, SDC 10/8/1, SDC 10/8/2, SDC 10/8/3, SSE 9/14/4, as well as consequential amendments to SOLAS, including, but not limited to, SOLAS regulations II1/42, 43 and 45;

.2 develop expected performances for draft amendments to SOLAS regulations II-1/28 to 30 based on annex 2 of document MSC 105/18/1;

.3 consider the revision of MSC.1/Circ.1416/Rev.1, as proposed in document SSE 9/14/4;

.4 consider if there is a need for consequential amendments to the following non-mandatory instruments, and if deemed necessary, develop draft amendments based on the relevant parts of annex 2 of document MSC 105/18/1, taking into account documents SDC 10/8 and SDC 10/8/2:

.1 *Guidelines for acceptance on non-duplicated rudder actuators for tankers, chemical tankers, and gas carriers of 10,000 gross tonnage and above but less than 100,000 tonnes deadweight (resolution A.467(XII))*;

.2 *Recommendation on the provision and the display of manoeuvring information on board ships* (resolution A.601(15));

.3 *Standards for ship manoeuvrability* (resolution MSC.137(76));

.4 *Unified interpretations of SOLAS regulations II-1/29.3 and 29.4* (MSC.1/Circ.1536); and

.5 *Explanatory notes to the standards for ship manoeuvrability* (MSC.1/Circ.1053); and

.5 submit a report to SDC 11.

Further instruction to the Correspondence Group

8.33 The Sub-Committee, taking into account the recollection by the observer of IACS of the reasons for requesting the Working Group to consider the request in document SSE 9/14/4 (IACS) (see paragraph 8.24), agreed to further instruct the Correspondence Group to consider the specific proposal in document SSE 9/14/4, together with the related discussion at this session.

9 AMENDMENTS TO THE GUIDELINES FOR CONSTRUCTION, INSTALLATION, MAINTENANCE AND INSPECTION/SURVEY OF MEANS OF EMBARKATION AND DISEMBARKATION (MSC.1/CIRC.1331) CONCERNING THE RIGGING OF SAFETY NETTING ON ACCOMMODATION LADDERS AND GANGWAYS

General

9.1 The Sub-Committee recalled that MSC 106 had agreed to include in its post-biennial agenda an output on "Amendments to the Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation

(MSC.1/Circ.1331) concerning the rigging of safety netting on accommodation ladders and gangways", with one session needed to complete the item, assigning the SDC Sub-Committee as the coordinating organ, in association with the SSE Sub-Committee, as and when requested by the SDC Sub-Committee.

9.2 The Sub-Committee also recalled that, following the proposal by SDC 9, MSC 107 had agreed to include the output in the provisional agenda of SDC 10.

Draft amendments to the Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation (MSC.1/Circ.1331)

9.3 With respect to the development of amendments addressing safety netting on accommodation ladders and gangways to the *Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation* (MSC.1/Circ.1331) (Means of embarkation Guidelines), the Sub-Committee had the following documents for its consideration:

.1 SDC 10/9 (IACS), proposing several amendments to the Means of embarkation Guidelines for their improvement and to update references therein; and

.2 SDC 10/9/3 (China), commenting on the proposal in document SDC 10/9 (IACS) and highlighting that the inclusion of a reference to SOLAS regulation V/23 in the "Application" of the Means of embarkation would lead to contradictory or separate requirements for accommodation ladders used for pilot transfer in resolution A.1045(27) and under the Means of embarkation Guidelines.

9.4 The observer delegation of IACS informed the Sub-Committee of a correction to the annex to document SDC 10/9, to replace the last sentence of the text:

"The ladder or gangway should be in horizontal position, and the accommodation ladder should be suspended by the wire(s) and supported by the winch."

9.5 Having noted general support for the proposals in documents SDC 10/9 (IACS) and SDC 10/9/3 (China), the Sub-Committee agreed to consider the matter further when drafting amendments to the Means of embarkation Guidelines and not to include a reference to SOLAS regulation V/23 therein, as it would be out of the scope of the output. Furthermore, the Sub-Committee noted that the matter had already been addressed by the NCSR Sub-Committee, when working on the output on "Revision of SOLAS regulation V/23 and associated instruments to improve the safety of pilot transfer arrangements".

Proposed revised paragraph 3.8 on rigging of a safety net

9.6 The Sub-Committee had for its consideration document SDC 10/9/1 (Denmark et al.), proposing to clarify the recommendations in paragraph 3.8 of the Means of embarkation Guidelines, by allowing alternative arrangements, such as side nets, which render the hazardous rigging of a safety net unnecessary.

9.7 In the ensuing discussion, the Sub-Committee noted the following views:

.1 the proposed new paragraph 3.8.2 would need to be expanded to address risks associated with the upper and lower platforms;

.2 the proposed new paragraph 3.8.2 should be amended to allow existing equipment (i.e. accommodation ladders and gangways) not to be rigged with a safety net in cases where the old ISO standards (ISO 7061:1993 and ISO 5488:1979) allowed for handrail heights of less than 1m;

.3 the proposed new paragraph 3.8.2, requiring a mandatory net from bulwark to berth, was deemed impractical or unworkable, as in many locations it may not be possible to secure the safety net to a berth or shore structure; and

.4 material and strength of the ropes of the railing side net would need to meet internationals standards, such as ISO 9554:2019.

9.8 With respect to the proposed new paragraph 3.8.3 in the annex to document SDC 10/9/1, clarification was sought from the submitters on whether the handrail height of not less than 1,000 mm had been derived from the latest ISO standard which would make the new paragraph superfluous if the ISO standards were to be updated (ISO 7061:1993 to be replaced by ISO 7061:2015 and ISO 5488:1979 by ISO 5488:2015).

9.9 In connection with the above, the Sub-Committee agreed to include a definition on "safety net", as proposed in document SDC 10/9/1 (Denmark et al.), as well as in document SDC 10/9/2 (China), to be finalized by the Drafting Group on Amendments to the Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation (MSC.1/Circ.1331).

Exclusion of the application of SOLAS regulation II-1/3-13 to accommodation ladders and winches

9.10 The Sub-Committee considered document SDC 10/9/2 (China), proposing a definition of "safety net", as well as clarifying the scope of application of the provisions on lifting appliances, for incorporation in the revised Means of embarkation Guidelines.

9.11 In the ensuing discussion, the Sub-Committee noted the following views:

.1 the draft proposed amendment 1.2 stating that SOLAS regulation II-1/3-13 and associated guidelines were not applicable to the means of embarkation and disembarkation was not supported, as it could be construed that Administrations should not require accommodation ladders and gangways to be tested; and

.2 the proposal in paragraph 10.2 deviated from the decision of MSC 107 which, in considering draft SOLAS regulation II-1/3-13, had confirmed that definitions, exclusions and scope of application of the draft amendments did not need to be to be modified substantially.

9.12 Subsequently, the Sub-Committee agreed to consider the proposals in document SDC 10/9/2 (China) and instructed the drafting group to incorporate the proposed amendments in the revised Means of embarkation Guidelines.

Application provision for new equipment installed

9.13 The Sub-Committee agreed that new equipment installed should comply with the revised Means of embarkation Guidelines on or after 1 July 2026, regardless of whether being installed on existing or a newbuilt ships.

ESTABLISHMENT OF THE DRAFTING GROUP ON AMENDMENTS TO THE GUIDELINES FOR CONSTRUCTION, INSTALLATION, MAINTENANCE AND INSPECTION/SURVEY OF MEANS OF EMBARKATION AND DISEMBARKATION (MSC.1/CIRC.1331)

9.14 Having considered the above matters, the Sub-Committee established the Drafting Group on Amendments to the Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation (MSC.1/Circ.1331) and instructed it, taking into account the comments and decisions made in plenary, to finalize the draft amendments to the Means of embarkation Guidelines, based on documents SDC 10/9, SDC10/9/1, SDC 10/9/2 and SDC 10/9/3.

Report of the Drafting Group

9.15 Having considered the report of the Drafting Group on Amendments to the Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation (MSC.1/Circ.1331) (SDC 10/WP.7), the Sub-Committee took action as outlined in the following paragraphs.

Progress made on the development of amendments to MSC.1/Circ.1331

9.16 The Sub-Committee noted the progress made by the Drafting Group in developing amendments to the *Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation* (MSC.1/Circ.1331) but that the outstanding issues could not be completed due to time constraints, in particular:

.1 with respect to the entry-into-effect date of the revised Means of embarkation Guidelines, clarification was needed as to which version of the Guidelines should apply when replacing accommodation ladders and gangways installed on ships built before 1 January 2010; and

.2 discussion on the implementation of new and old ISO standards.

Extension of the target completion year

9.17 Subsequently the Sub-Committee deferred discussion on the remaining issues, i.e. paragraphs 2.1, 2.1bis and 2.3 of the draft amendments to the Means of embarkation Guidelines, as contained in annex 1 of document SDC 10/WP.7, to the next session and, thus, to retain the output for inclusion in the agenda of SDC 11, while requesting the Committee to extend the target completion year by one year, i.e. 2025 (see annexes 9 and 10).

10 UNIFIED INTERPRETATION OF PROVISIONS OF IMO SAFETY, SECURITY, ENVIRONMENT, FACILITATION, LIABILITY AND COMPENSATION-RELATED CONVENTIONS

General

10.1 The Sub-Committee recalled that the Assembly, at its twenty-eighth session, had expanded this continuous output to include all proposed unified interpretations (UIs) to provisions of IMO safety, security and environment-related conventions, so that any newly developed or updated draft UIs could be submitted for the consideration of the Sub-Committee, with a view to developing an appropriate IMO interpretation.

10.2 The Sub-Committee also recalled that MSC 107 had discussed whether unanimity should be required for the approval of a draft UI, taking into account that its previous practice

had been to approve UIs only if there had been unanimous support. However, the Director of the Legal Affairs and External Relations Division had advised the Committee that, given that amendments to mandatory IMO instruments, such as SOLAS, usually required a two-thirds majority for entry into force, and not unanimity, the previous practice had been somewhat illogical in light of the hierarchy in the Vienna Convention on the Law of Treaties. Subsequently, the Committee had requested the Secretariat to provide legal advice to MSC 108 on how to approach the approval of UIs when there was no unanimity, for consideration under the agenda item on "Any other business".

Interpretation on means of internal communication equipment in an emergency on passenger ships (SOLAS regulation II-1/42.2.3.1)

10.3 The Sub-Committee had for its consideration the following documents:

.1 SDC 10/10 (IACS), proposing an interpretation on means of internal communication equipment in an emergency on passenger ships (SOLAS regulation II-1/42.2.3.1); and

.2 SDC 10/10/6 (China), commenting on the draft interpretation in document SDC 10/10 (IACS) and proposing additional internal communication equipment that should be operational in an emergency.

10.4 In the ensuing discussion, the Sub-Committee noted the following views:

.1 while the interpretation was supported in general, it should only be applicable to newbuildings, and, given that the list of communication equipment in the draft interpretation was not exhaustive, the introductory text of the interpretation should be amended to read "All internal communication equipment required in an emergency" should be interpreted as, <u>including</u>: ";

.2 the proposed interpretation was for SOLAS regulation II-1/42.2.3.1, which only applied to passenger ships. However, SOLAS regulation II-1/43.2.4.1, which applied to cargo ships, also referred to "all internal communication equipment as required in an emergency"; hence it would seem appropriate to develop an interpretation for both regulations;

.3 as paragraph 5 of the annex to MSC.1/Circ.1572/Rev.1 already contained an interpretation on internal safety communication equipment, it would be appropriate to amend the existing circular rather than drafting a new one;

.4 while the interpretation was supported, item 4 should be amended to include engineering spaces and fire-fighting and damage-control teams, as specified in SOLAS regulation II-2/21, paragraph 4.5;

.5 the term "central control station" was not defined in SOLAS chapter II-1 to which this interpretation pertained, but in SOLAS regulation II-2/3.9; therefore, it was suggested to add either a reference to the definition or to include the definition in the interpretation; and

.6 more detailed consideration might be needed to identify the equipment to be covered by the interpretation, which might not be achieved at this session.

10.5 Following consideration of the comments and proposals by the Sub-Committee, IACS advised that it would revise the proposed draft interpretation, as contained in the annex to document SDC 10/10, so as to address the issues raised and to present it to a future session of the Sub-Committee.

Interpretation of the Code on noise levels on board ships with respect to calibration of sound instruments (resolution MSC.337(91))

10.6 The Sub-Committee considered document SDC 10/10/1 (IACS), proposing an interpretation of paragraphs 2.1 and 2.2 of the *Code on noise levels on board ships* (resolution MSC.337(91)) to clarify the standard of calibration of the sound level meter and its field calibrator.

10.7 In the ensuing discussion, the Sub-Committee noted the following views:

.1 while the interpretation was supported, an amendment should be made by adding "equivalent standard acceptable to the Administration" for sound level meters and field calibrators;

.2 the proposal to add "equivalent standard acceptable to the Administration" for field calibrators would not be appropriate as it would go beyond the existing regulation; and

.3 while the interpretation was supported, to calibrate all existing sound level meters and field calibrators, as proposed in the interpretation, would be very challenging. Therefore an appropriate phase-in period should be considered, i.e. an application date for the interpretation.

10.8 Having agreed in principle to the draft new UI of paragraphs 2.1 and 2.2 of the *Code on noise levels on board ships* (resolution MSC.337(91)), for consideration by MSC 108 with a view to approval, as MSC.1/Circ.1509/Rev.1, the Sub-Committee instructed the Drafting Group on Unified Interpretations to consider the proposal in detail with a view to finalization.

Draft interpretation of the performance standards for water level detectors (resolution MSC.188(79)

10.9 The Sub-Committee considered document SDC 10/10/2 (IACS), proposing to amend the part of UI in MSC.1/Circ.1572/Rev.1 on *Performance standards for water level detectors on bulk carriers and single hold cargo ships other than bulk carriers* (resolution MSC.188(79)), following adoption of the revised performance standards by resolution MSC.188(79)/Rev.2.

10.10 In commenting on the proposal, as contained in the annex to document SDC 10/10/2, one delegation proposed that the interpretation in paragraph 9.2.5 be amended, so that electrical equipment, where the characteristics of the dust and/or gases were unknown, temperature class T6, gas group IIC and/or either dust group IIIC or IP5X, were to be used as appropriate.

10.11 After consideration of, and support for, the proposed amendment in paragraph 10.10 above, the Sub-Committee agreed to the draft revised "Unified interpretations of SOLAS chapters II-1 and XII; the technical provisions for means of access for inspections (resolution MSC.158(78)); and the Performance standards for water level detectors on ships subject to SOLAS regulations II-1/25 and 25-1, and XII/12 (resolution MSC.188(79)/Rev.2)", in relation to performance standards for water level detectors, in amending MSC.1/Circ.1572/Rev.1, as set out in the relevant part of annex 5[4], for consideration by MSC 108 with a view to approval, as MSC.1/Circ.1572/Rev.2.

[4] Annex 5 also contains draft amendments agreed under paragraph 10.20 to be disseminated as MSC.1/Circ.1572/Rev.2 as consolidated text.

Interpretation for the harmonization of the Industrial Personnel Safety Certificate with various SOLAS safety certificates

10.12 The Sub-Committee considered document SDC 10/10/3 (IACS), proposing an interpretation to clarify how to harmonize the Industrial Personnel Safety Certificate with various SOLAS safety certificates when their validity or their endorsement differ.

10.13 Consequently, the Sub-Committee agreed to the draft new "Unified interpretation of SOLAS regulation XV/5.1 and paragraph 3.5 of part 1 of the International Code of Safety for Ships Carrying Industrial Personnel (IP Code) on the harmonization of the Industrial Personnel Safety Certificate with SOLAS safety certificates" when their validity or their endorsement differ, as set out in annex 6, for consideration by MSC 108 with a view to approval.

Steering gear spaces to be regarded as "safe position" under the means of escape from machinery spaces (SOLAS regulations II-2/9 and 13)

10.14 The Sub-Committee considered document SDC 10/10/4 (IACS), proposing a revision of MSC.1/Circ.1511 on the *Unified interpretations of SOLAS regulations II-2/9 and 13* to clarify the term "safe position" used in connection with means of escape from machinery spaces.

10.15 While there was general support for the interpretation, the Sub-Committee noted a statement by one delegation highlighting that, taking into account the typical flashpoint and auto-ignition point of hydraulic oil, as contained in table 1 of MSC.1/Circ.1321, the exclusion of steering gear spaces where hydraulic oils for the steering gear equipment are stowed would contradict the text preceding the draft new text, which excludes spaces where flammable liquids are stowed.

10.16 After having agreed in principle to the draft revised UI of SOLAS regulations II-2/9 and 13 to clarify the term "safe position" used in connection with means of escape from machinery spaces for consideration by MSC 108 with a view to approval, as MSC.1/Circ.1511/Rev.1, the Sub-Committee instructed the Drafting Group on Unified Interpretations to consider the proposal in detail with a view to finalization.

Revised interpretation of SOLAS regulation II-1/3-6 to ensure safe means of access to cargo and other spaces

10.17 The Sub-Committee considered document SDC 10/10/5 (IACS), proposing amendments to MSC.1/Circ.1572/Rev.1 to improve the uniform implementation regarding the interval of inspections of means of access (to be carried out by the crew or competent inspectors), after a near miss incident and subsequent research into the matter.

10.18 In connection with the above, the Sub-Committee noted the information in document SDC 10/INF.8 (IACS), reporting on a "near miss" safety incident in relation to the permanent means of access.

10.19 In the ensuing discussion, the Sub-Committee noted the following views:

.1 while supporting the proposal in general, the interpretation of the wording "open deck" was not supported, as the explanatory text in paragraph 6.4 of document SDC 10/10/5, regarding access from the open deck, conflicted with 1.1 of the tables in the annex to resolution MSC.133(76); and

.2 while supporting the interpretation in general, the proposal to inspect means of access arrangements annually may go beyond the requirements in SOLAS regulation II-1/3-6.

10.20 Having agreed to exclude the draft interpretation of the wording "open deck" in section 1.5 and having noted that the annual inspections, mentioned in paragraph 10.19.2 above, referred to inspections by crew or competent inspector, but not to the regular survey, the Sub-Committee agreed to the draft UI of SOLAS regulation II-1/3-6 to ensure safe means of access to cargo and other spaces, in amending MSC.1/Circ.1572/Rev.1, as set out in the relevant part of annex 5[5], for consideration by MSC 108 with a view to approval, as MSC.1/Circ.1572/Rev.2.

Instructions to the drafting group

10.21 Following discussion, the Sub-Committee instructed the Drafting Group on Amendments to the Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation (MSC.1/Circ.1331), established under item 9, taking into account the comments made and decisions taken in plenary, to finalize:

.1 draft amendments to the *Unified interpretations of the Code on Noise Levels on Board Ships (resolution MSC.337(91))*, based on document SDC 10/10/1; and

.2 draft amendments to *Unified interpretations of SOLAS regulations II-2/9 and 1*3 (MSC.1/Circ.1511), based on document SDC 10/10/4;

Report of the Drafting Group

10.22 Having considered the relevant part of the report of the Drafting Group on Amendments to the Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation (MSC.1/Circ.1331) (SDC 10/WP.7), the Sub-Committee agreed to the:

.1 draft amendments to the *Unified interpretations of the Code on Noise Levels on Board Ships (resolution MSC.337(91))*(MSC.1/Circ.1509), as set out in annex 7, for submission to MSC 108 for approval as MSC.1/Circ.1509/Rev.1; and

.2 draft amendments to *Unified interpretations of SOLAS regulations II-2/9 and 1*3 (MSC.1/Circ.1511), as set out in annex 8, for submission to MSC 108 for approval as MSC.1/Circ.1511/Rev.1.

11 AMENDMENT TO REGULATION 25 OF THE 1988 LOAD LINE PROTOCOL REGARDING THE REQUIREMENT FOR SETTING OF GUARD RAILS ON THE DECK STRUCTURE

General

11.1 The Sub-Committee recalled that MSC 107 had agreed, after consideration of a proposal contained in document MSC 107/17/18 (China), to include in the biennial agenda of the SDC Sub-Committee for 2024-2025 and the provisional agenda of SDC 10 an output on "Amendment to regulation 25 of the 1988 Load Line Protocol regarding the requirement for setting of guard rails on the deck structure", with a target completion year of 2024.

[5] Annex 5 also contains draft amendments agreed under paragraph 10.11 to be disseminated as MSC.1/Circ.1572/Rev.2 as consolidated text.

11.2 The Sub-Committee also recalled that MSC 107 had also agreed that the amendments to be developed should apply to new ships only, for planned entry into force on 1 January 2028.

Proposed amendments to regulation 25 of the 1988 Load Line Protocol

11.3 With regard to the requirement for the setting of guard rails on the deck structure, the Sub-Committee considered document SDC 10/11 (China), proposing amendments to regulation 25 of the 1988 Load Line Protocol with respect to the arrangements of guard rails, chains and bulwarks on exposed decks which are accessible to the crew during navigation.

11.4 In the ensuing discussion, the Sub-Committee noted the following views:

.1 application to new ships, as indicated by MSC 107, should be included in the regulation in its application statement;

.2 the proposed amendments to regulation 25 addressed the gap with respect to the arrangements of guard rails on large ships' open deck superstructures and would improve safety on board;

.3 the proposed maximum sag of the chain (50mm), when used instead of guard rails, would be too prescriptive and not necessary in light of the existing provisions which state that the opening below the lowest course of the guard rails shall not exceed 230 mm, while the other courses shall not be more than 380 mm apart;

.4 with the newly introduced term "exposed sea access holes (such as edges of moonpools)", it would be advisable to clarify the meaning of the term "around all exposed decks" in the same sentence; and

.5 while the proposal was supported in general, the proposed prescriptive requirement of 50mm sag may lead to the chain to be excessively tight and thus not easy to detach which, especially when used to access life-saving appliances, would be undesirable.

11.5 Subsequently, the Sub-Committee agreed to instruct the Drafting Group on Amendments to the *Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation* (MSC.1/Circ.1331) to incorporate the agreed amendments and to develop an application provision ensuring that the new requirements applied to new ships only.

Instructions to the Drafting Group

11.6 Following discussion, the Sub-Committee instructed the Drafting Group on Amendments to the *Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation* (MSC.1/Circ.1331), established under item 9, taking into account the comments made and decisions taken in plenary, to:

.1 finalize the draft amendment to regulation 25 of the International Convention on Load Lines, 1966, as amended by the Protocol of 1988 relating thereto, based on paragraph 14 of document SDC 10/11;

.2 draft an application provision for the draft revised regulation 25 developed under .1, taking into account the earlier decision that the new requirements should apply to new ships only; and

.3 prepare the check/monitoring sheet, parts II and III, as contained in annex 2 of the *Guidance on drafting of amendments to the 1974 SOLAS Convention and related mandatory instruments* (MSC.1/Circ.1500/Rev.2).

Report of the Drafting Group

11.7 Having considered the report of the Drafting Group on Amendments to the Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation (MSC.1/Circ.1331) (SDC 10/WP.7), the Sub-Committee took action as outlined in the paragraphs below.

Application provision in the draft amendment to regulation 25

11.8 The Sub-Committee agreed to use the keel-laying date for the application of the proposed draft amendments to regulation 25 of the 1988 Load Line Protocol with respect to the arrangements of guard rails, chains and bulwarks on exposed decks which are accessible to the crew during navigation.

Sag of the chains

11.9 After noting that several proposals had been made on requirements for "sag of chains" in the draft amendment to regulation 25(3)(d) and that the matter could not be finalized due to time constraints, the Sub-Committee invited interested Member States and international organizations to submit further proposals on the requirements for "sag of chains" to its next session.

Extension of the target completion year

11.10 While having agreed in principle to the draft amendment to regulation 25 of the International Convention on Load Lines, 1966, as amended by the Protocol of 1988 (SDC 10/WP.7, annex 4), the Sub-Committee noted that further work was required for finalization and agreed to request the Committee to extend the target completion year of the output to 2025 and to keep the agenda item on the provisional agenda of SDC 11 (see annexes 9 and 10).

12 GUIDELINES FOR THE USE OF FIBRE-REINFORCED PLASTICS (FRP) WITHIN SHIP STRUCTURES

General

12.1 The Sub-Committee recalled that SDC 9, following consideration of a proposal in document SDC 9/15/2 (CESA), had recommended, and MSC 107 had agreed, to put the post-biennial output on "Guidelines for use of fibre-reinforced plastics (FRP) within ship structures" on the provisional agenda of SDC 10, with a target completion year of 2025.

12.2 The Sub-Committee also recalled that, while the use of FRP had been supported in general by many delegations at SDC 9, concerns had also been raised regarding the potential challenges, in particular concerning its recycling and its combustibility, with respect to fire safety.

Revision of the *Interim guidelines for use of Fibre-Reinforced Plastic (FRP) elements within ship structures: Fire safety issues* (MSC.1/Circ.1574)

12.3 With respect to developing amendments to the *Interim guidelines for use of Fibre-Reinforced Plastic (FRP) elements within ship structures: Fire safety issues* (MSC.1/Circ.1574) (FRP Interim Guidelines), the Sub-Committee considered the following documents:

.1 SDC 10/12 (Germany and CESA), highlighting the latest advancements in research and development on the use of FRP elements and proposing to discuss the technical matters concerning the revision of the Interim FRP Guidelines, as well as whether steel material requirements in SOLAS would conflict with the updated FRP Guidelines that were to permit the use of FRP in structures other than those that may be removed without compromising the safety of the ship;

.2 SDC 10/12/1 (CESA), containing draft terms of reference for an intersessional correspondence group, as well as an intersessional working group, in order to progress the revision of the FRP Interim Guidelines for consideration at SDC 11; and

.3 SDC 10/12/2 (IACS), commenting on document SDC 10/12, supporting the performance approach for fire resistance, as suggested in document SDC 9/15/2 (CESA), and proposing to consider further the main fire safety aspects, including the ignition potential of the FRP material; fire-fighting strategies and equipment; and the insulation requirements to protect the FRP over the lifetime of the ship.

Potential conflict with SOLAS using fibre-reinforced plastics in ship structures

12.4 In considering whether requirements, stemming from existing SOLAS regulation II-2/11, as well as class "A" steel requirements in SOLAS, would conflict with the updated FRP Interim Guidelines that would permit the use of FRP in structures, the Sub-Committee noted the following views:

.1 the scope of the agenda item was to revise the Interim FRP Guidelines, based on the experience gained in their use, and should not be expanded without the express approval of the Committee;

.2 the revision work on the FRP Interim Guidelines, as agreed by SDC 9, would have to focus on its recyclability and fire safety. Only when these two issues would be addressed sufficiently, the output scope could be expanded;

.3 research on applying FRP in ship structures on large ships was at a very early stage, without wider data support, and there were a number of challenges associated with it, including:

.1 FRP cannot be re-used, it does not easily decompose, and easily becomes an organic pollutant;

.2 there were currently no appropriate recycling methods for FRP minimizing environmental harm;

.3 compared with steel, FRP were volatile organic elements that can harm seafarers' health;

.4 the service life of FRP under extreme environmental conditions is not certain, as well as uncertainty on the ageing and damage characteristics of FRP; and

.5 however, for smaller specialized tonnage (e.g. fishing vessels), FRP standards have been developed by Administrations, which may be taken into account under this output; and

.4 FRP were high-strength material, compared to their weight and not subject to corrosion. However, fire safety and health of the persons on board posed challenges for the use of FRP.

12.5 Subsequently, the Sub-Committee agreed that the scope of the output should not be expanded, and that revised FRP Interim Guidelines under development should not contradict current SOLAS provisions, in line with the current instructions for this output.

Fire performance criteria for FRP

12.6 In considering, in particular, the proposal in document SDC 10/12/2 (IACS), the Sub-Committee noted the following views:

.1 an additional technical review should be carried out on smoke, toxicity and for the joints connecting FRP with the ship structure, as well as expanding the test regime for FRP to ensure the safety of the ship and persons on board;

.2 combustibility, flammability and smoke emission were important parameters to be taken into account when assessing FRP fire characteristics through appropriate tests;

.3 with respect to the proposed fire tests, compared to steel structures, it should be noted that the structural core of FRP structures collapses quicker under pressure, and consideration should also be given to the level and rate of thermal deformation; and

.4 in light of the current work undertaken by the SSE Sub-Committee in reviewing the FTP Code, it may be prudent to refer issues related to fire-testing of FRP to that Sub-Committee.

12.7 Subsequently, the Sub-Committee agreed that the aforementioned issues should be taken into account intersessionally, for further review and development of appropriate amendments to the FRP Interim Guidelines.

Establishment of intersessional groups

12.8 The Sub-Committee, after consideration of the proposals in paragraphs 12.2 and 12.3 of document SDC 10/12 (Germany and CESA), agreed to establish an intersessional correspondence group, but did not concur with the need to establish an intersessional working group.

12.9 Subsequently, the Sub-Committee established the Correspondence Group on the Revision of the Interim guidelines for use of Fibre-Reinforced Plastic (FRP) (MSC.1/Circ.1574),

under the coordination of Sweden,[6] and instructed it, taking into account the comments made and decisions taken at this session, as well as documents SDC 10/12 and SDC 10/12/2, to:

.1 review the FRP Interim Guidelines;

.2 invite for and consider input concerning experience gained in the use of the FRP Interim guidelines;

.3 address concerns raised during SDC 9 regarding recycling and fire safety (SDC 9/16, paragraph 15.10);

.4 consider and advise whether other IMO instruments (e.g. SOLAS and FTP Code) should be amended in order to enable and to support, the use of FRP;

.5 convene virtual meetings using a suitable platform in order to consider any of the terms of reference, as necessary; and

.6 submit a written report to SDC 11.

13 REVISION OF THE INTERIM EXPLANATORY NOTES FOR THE ASSESSMENT OF PASSENGER SHIP SYSTEMS' CAPABILITIES AFTER A FIRE OR FLOODING CASUALTY (MSC.1/CIRC.1369) AND RELATED CIRCULARS

General

13.1 The Sub-Committee recalled that SDC 9 had commenced the work on the revision of the *Interim Explanatory Notes for the assessment of passenger ship systems' capabilities after a fire or flooding casualty* (MSC.1/Circ.1369) (Interim Explanatory Notes) and related circulars, and had established a Correspondence Group to continue the work intersessionally.

13.2 The Sub-Committee also recalled that MSC 107 had endorsed the Sub-Committee's recommendation to refer document SSE 8/15 (IACS), proposing clarification of the fire-testing requirements for pipe couplings required to remain operational after a safe return to port (SRtP) fire casualty in the Interim Explanatory Notes to the Correspondence Group, inviting participation of fire safety experts.

Report of the Correspondence Group

13.3 The Sub-Committee considered the report of the Correspondence Group on Revision of the Interim Explanatory Notes for the assessment of passenger ship systems' capabilities after a fire or flooding casualty (MSC.1/Circ.1369), as contained in document SDC 10/13 (Germany).

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13.4 In this context, the Sub-Committee noted:

.1 the proposed establishment of splinter groups (SDC 10/13, annex 1) to progress work on specific topics;

.2 the draft new structure and the organization of the draft revised Interim Explanatory Notes (SDC 10/13, annexes 2 and 3);

.3 the draft amendments to the Interim Explanatory Notes (SDC 10/13, annex 4); and

.4 the view to take into account the industry standards listed in document SDC 10/13, annex 5, during the process of revision of the Interim Explanatory Notes .

Proposals on the minimum speed verification method for safe return to port

13.5 The Sub-Committee also considered document SDC 10/13/1 (China), proposing to clarify the minimum speed verification method for SRtP by specifying environmental conditions that should be assumed for the proposed verification methods.

13.6 In the ensuing discussion, the Sub-Committee noted the following views:

.1 the proposed revision of interpretation 18 of SOLAS regulation II-2/21.4.1, as contained in paragraph 2.1 of appendix 1 of MSC.1/Circ.1369, would require further clarification, especially for some of the parameters, including providing the rationale for arriving at them, as well as whether the implementation of such a revision would be difficult in practice; and

.2 the aspects of minimum power and speed in adverse weather conditions should be considered. However, the proposal would lead to requirements for the minimum propulsion power, as well as significantly increasing the efforts to document compliance, compared to current industry practice.

13.7 Subsequently, the Sub-Committee instructed the Working Group on Revision of the Interim explanatory notes for the assessment of passenger ship systems' capabilities after a fire or flooding casualty (MSC.1/Circ.1369) to consider document SDC 10/13/1 (China) in the review of the Interim Explanatory Notes.

Development of recommendations for crew training and familiarization

13.8 The Sub-Committee further considered document SDC 10/13/2 (ITF), proposing a concept note for the development of crew training and familiarization provisions in the draft revised Interim Explanatory Notes, for use by company, master and management level officers to comply with the ISM Code.

13.9 In the ensuing discussion, while the concept note was generally supported, the Sub-Committee noted the following views:

.1 while there were mandatory training requirements for seafarers, a crew training in the draft revised Interim Explanatory Notes would be ship-specific, and familiarization for officers and crew would be important in light of ever-larger passenger ships with large numbers of persons on board;

.2 since this proposal was on seafarer training and familiarization, it should be sent to the HTW Sub-Committee for verification; and

.3 the concept note would need to be more specific on the elements pertaining to SRtP, such as essential services, as well as the different roles of the crew in an incident invoking SRtP.

13.10 Subsequently, the Sub-Committee instructed the Working Group to consider document SDC 10/13/2 (ITF) in the review of the Interim Explanatory Notes.

Establishment of the Working Group

13.11 The Sub-Committee instructed the Working Group on Revision of the Interim explanatory notes for the assessment of passenger ship systems' capabilities after a fire or flooding casualty (MSC.1/Circ.1369), taking into account the comments made and decisions taken in plenary, to:

.1 as a priority, agree to the structure of MSC.1/Cic.1369, based on annex 2 of document SDC 10/13 (Germany), in conjunction with annex 3 thereof, taking into account the options in paragraphs 13 and 18 of document SDC 10/13;

.2 further consider the draft amendments, based on annex 4 of document SDC 10/13, taking into account documents SDC 10/13/1 (China), SDC 10/13/2 (ITF) and SSE 8/15 (IACS), as well as the industry standards listed in annex 5 of document SDC 10/13;

.3 further consider the draft amendments and structure of appendix 1 of MSC.1/Circ.1369, taking into account the options presented in paragraphs 13 and 18 of document SDC 10/13; and

.4 consider whether a correspondence group should be established and, if so, prepare terms of reference for consideration by the Sub-Committee.

Report of the Working Group

13.12 Having considered the report of the Working Group on Revision of the Interim Explanatory Notes for the assessment of passenger ship systems' capabilities after a fire or flooding casualty (MSC.1/Circ.1369) (SDC 10/WP.5), the Sub-Committee took actions, as outlined in the paragraphs below.

Draft structure and draft amendments to the Interim Explanatory Notes

13.13 The Sub-Committee noted the draft new structure and comparison table, as set out in annexes 1 and 2 of document SDC 10/WP.5, respectively, which had been prepared with a view to facilitating further work.

13.14 The Sub-Committee also noted the draft new layout of appendix 1 of MSC.1/Circ.1369, as set out in annex 3 of document SDC 10/WP.5, The preparation of the draft new layout had entailed the consideration of new elements for inclusion, such as those related to operational aspects, which may be applicable to both new and existing ships. In this context, the cover of the amended would need to specify which sections would apply to new and/or existing ships.

13.15 With respect to the inclusion of provisions for alternative fuels and technologies, the Sub-Committee was invited to recall the ongoing work of other IMO bodies, in particular:

.1 Correspondence Group on Development of a Safety Regulatory Framework to Support the Reduction of GHG Emissions from Ships using New Technologies and Alternative Fuels, under the MSC;

.2 Correspondence Group on Development of Technical Provisions for Safety of Ships using Alternative Fuels, under the CCC Sub-Committee; and

.3 Correspondence Group on the Review of Transport Provisions for Vehicles under the CCC Sub-Committee, in conjunction with energy storage.

13.16 In connection with the above, the Sub-Committee further noted the recommendation that a correspondence group, if established, should not consider in detail, at this stage, alternative fuels and technologies, while not precluding discussion, at a general level, if appropriate.

Re-establishment of the Correspondence Group

13.17 Subsequently, the Sub-Committee re-established the Correspondence Group on Revision of the Interim Explanatory Notes (MSC.1/Circ.1369), under the coordination of Norway[7], and instructed it, taking into account the comments made and decisions taken, at this session, to:

.1 continue the review of MSC.1/Circ.1369, to assess and to develop further the text of the revised Interim Explanatory Notes, based on the new structure, as set out in annex 1 of document SDC 10/WP.5, taking into account annex 4 of document SDC 10/13 and the relevant industry standards contained in annex 5 of document SDC 10/13;

.2 assess the interpretations contained in appendix 1 of the Interim Explanatory Notes and to revise them, as appropriate, based on annex 3 of document SDC 10/WP.5, taking into account documents MSC 102/21/12, SSE 8/15, SDC 9/11, SDC 9/WP.7, SDC 10/13/1 and SDC 10/13/2;

.3 further develop guidance for new identified areas and new interpretations in the Interim Explanatory Notes, as appropriate;

.4 based on the draft revision of MSC.1/Circ.1369, consider the impact on the related circulars, e.g. MSC.1/Circ.1400, MSC.1/Circ.1437, MSC.1/Circ.1532/Rev.1 and MSC.1/Circ.1539/Rev.1, and to identify other circulars for harmonization (e.g. MSC.1/Circ.1422 and MSC.1/Circ.1589), as appropriate; and

.5 submit a report to SDC 11.

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Extension of the target completion year

13.18 In light of the outstanding work, the Sub-Committee agreed to request the Committee to extend the target completion year by one year, i.e. 2025 (see annex 9).

14 BIENNIAL STATUS REPORT AND PROVISIONAL AGENDA FOR SDC 11

General

14.1 The Sub-Committee recalled that, since its last meeting, the MSC had held its 107th session and had approved the Sub-Committee's biennial agenda and the provisional agenda for SDC 10.

14.2 The Sub-Committee also recalled that MSC 107 had noted the biennial status report for the 2022-2023 biennium and had approved the proposed biennial agenda for the 2024-2025 biennium and the provisional agenda for SDC 10, as revised.

14.3 The Sub-Committee further recalled that MSC 107 had agreed to include:

.1 in its biennial agenda for 2024-2025, a continuous output on "Development of a safety regulatory framework to support the reduction of GHG emissions from ships using new technologies and alternative fuels", assigning the Committee as the coordinating organ, in association with the CCC, HTW, III, SSE and SDC Sub-Committees, as and when requested by the Committee, and invited the MEPC to consider being an associated organ;

.2 in the biennial agenda of the CCC Sub-Committee for the 2024-2025 biennium, an output on "Development of measures to prevent the loss of containers at sea", with a target completion year of 2025, assigning the CCC Sub-Committee as the coordinating organ, in association with the SDC, NCSR, HTW and III Sub-Committees, as and when requested by the CCC Sub-Committee; and

.3 in its post-biennial agenda an output on "Revision of appendices A and B of the *Revised guidance on shipboard towing and mooring equipment* (MSC.1/Circ.1175/Rev.1)", with one session needed to complete the item, assigning the SDC Sub-Committee as the associated organ.

14.4 In addition to the above, the Sub-Committee recalled that MSC 107 had agreed to consider and to address the ongoing and prospective high workload of the Committee and sub-committees, in establishing a relevant working group at MSC 108 and applying a moratorium on submissions of proposals for new outputs to MSC 108 (MSC 107/20, paragraphs 17.68 and 17.69).

Biennial status report for the 2024-2025 biennium

14.5 Taking into account the progress made at this session, the Sub-Committee agreed to the biennial status report, as set out in annex 9, for consideration by MSC 108 with a view to approval.

14.6 In connection with the above, the Sub-Committee considered document SDC10/14/1 (IACS), proposing to lift the output on "Review of the 2009 Code on Alerts and Indicators" from the post-biennial agenda of the Committee to the provisional agenda of SDC 11, based on the annex to document SSE 10/17 (IACS).

14.7 After consideration, the Sub-Committee agreed to the above-mentioned proposal in document SDC 10/14/1 (IACS) and to request MSC 108 accordingly, subject to confirmation by SSE 10, which had been assigned as the coordinating organ (see annex 9).

Proposed provisional agenda for SDC 11

14.8 Taking into account the progress made at this session, the Sub-Committee agreed to the proposed provisional agenda for SDC 11, as set out in annex 10, for consideration by MSC 108 with a view to approval.

Correspondence Groups established at this session

14.9 The Sub-Committee established Correspondence Groups on the following subjects, due to report to SDC 11:

CG 1 – Amendments to the ESP Code to permit the use of remote inspection techniques;

CG 2 – Review of SOLAS chapters II-1 and V requirements to address both traditional and non-traditional propulsion and steering systems;

CG 3 – Revision of the *Interim explanatory notes for the assessment of passenger ship systems' capabilities after a fire or flooding casualty* (MSC.1/Circ.1369); and

CG 4 – Revision of the *Interim guidelines for use of Fibre-Reinforced Plastic (FRP)* (MSC.1/Circ.1574).

Arrangements for the next session

14.10 The Sub-Committee agreed to establish, at its next session, experts, working and drafting groups on the following subjects:

.1 Development of Guidelines for emergency towing arrangements for ships other than tankers;

.2 Review of SOLAS chapters II-1 and V requirements to address both traditional and non-traditional propulsion and steering systems;

.3 Revision of *the Interim explanatory notes for the assessment of passenger ship systems' capabilities after a fire or flooding casualty* (MSC.1/Circ.1369) and related circulars;

.4 Revision of the *Interim guidelines for use of Fibre-Reinforced Plastic (FRP)* (MSC.1/Circ.1574); and

.5 Amendments to the 2011 ESP Code; amendments to the *Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation* (MSC.1/Circ.1331); Unified interpretation of provisions of IMO safety, security, environment, facilitation, liability and compensation-related conventions; Amendment to regulation 25 of the 1988 Load Line Protocol regarding the requirement for setting of guard rails on the deck structure; [Review of the 2009 Code on Alerts and Indicators[8]],

[8] Subject to approval of the provisional agenda for SDC 11 by MSC 108.

whereby the Chair, taking into account the submissions received on the respective subjects, would advise the Sub-Committee, before SDC 11, on the final selection of such groups.

Urgent matters to be considered by MEPC 81

14.11 Having noted the close proximity of SDC 10 to MEPC 81, the Sub-Committee invited MEPC 81 to take action on urgent matters emanating from this session on the output on "Review of the 2014 Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life (MEPC.1/Circ.833) (2014 Guidelines) and identification of next steps", as set out in paragraph 5.18.3, with the remaining issues to be considered by MEPC 82.

Date of the next session

14.12 The Sub-Committee noted that the eleventh session of the Sub-Committee had been tentatively scheduled to take place from 20 to 24 January 2025.

15 ELECTION OF CHAIR AND VICE-CHAIR FOR 2025

15.1 In accordance with the Rules of Procedure of the Maritime Safety Committee, the Sub-Committee unanimously re-elected Mr. Erik Tvedt (Denmark), as Chair, and Mr. Jaideep Sirkar (United States), as Vice-Chair, [9] both for 2025.

16 ANY OTHER BUSINESS

Second generation intact stability criteria

Experience gained in the application of the second generation intact stability criteria

16.1 The Sub-Committee recalled that the *Interim Guidelines on the second generation intact stability criteria* (MSC.1/Circ.1627) (Interim Guidelines) and associated *Explanatory notes to the Interim Guidelines on second generation intact stability criteria* (MSC.1/Circ.1652) (Explanatory Notes) had been issued on an interim basis in order to gain experience in their use.

16.2 In connection with the above, the Sub-Committee had for its consideration document SDC 10/16 (Denmark and WSC), reporting on the calculations made for the container ship **Maersk Essen**, applying the second generation intact stability criteria, following its cargo loss; and proposing that the Sub-Committee consider whether a comprehensive review of the Interim Guidelines was needed in order to evaluate the correctness of the calculations for parametric roll analysis since the ship had passed level 2 vulnerability criterion for parametric roll.

16.3 The Sub-Committee also noted the information provided in the following documents:

.1 SDC 10/INF.7 (ITTC), informing the Sub-Committee of ITTC's latest recommended procedures for the direct stability assessment, as contained in the Interim Guidelines and associated Explanatory Notes, as well as the status of revision of other ITTC recommended procedures cited in the Interim Guidelines and Explanatory Notes;

[9] On 9 February 2024, the United States informed the Secretariat of the Organization on Mr. Jaideep Sirkar's passing away.

.2 SDC 10/INF.9 (Japan), providing a list of typographical errors in the Explanatory Notes, as well as proposing that the Explanatory Notes incorporate recommendations for experimental validation examples using short-crested irregular waves for other failure modes;

.3 SDC 10/INF.10 (Japan), providing the results of additional sample calculations of the excessive acceleration failure mode, based on the Interim Guidelines, which verified the threshold of the simplified operational guidance; and

.4 SDC 10/INF.12 (China), providing the research results from the international standard model ONR tumblehome, which confirms the consistency of the convolution method and the representative frequency method of the direct stability assessment in irregular waves, by comparing the time-domain motions and wave forces with numerical calculations.

16.4 The delegation of Japan, in response to submitters of document SDC 10/16 (Denmark and WSC) questioning the validity of the probabilistic approach/wave scatter data used for Level 2 C2 particularly for container vessels in worldwide operation, identified an underestimation of the natural roll period of the accident containership as the major reason of the false judgement. The full text of the statement is set out in annex 12.

16.5 The Sub-Committee concurred with Japan on the way forward on the matter, as set out in the last part of their statement, and agreed to:

.1 note the information provided by Japan in its statement;

.2 invite Member States to submit relevant information to future sessions of the Sub-Committee or Committee, as appropriate;

.3 take into account all reports and studies submitted to the Organization, for a future revision of the Interim Guidelines, including document SDC 10/16; and

.4 invite MSC 108 to note that the roll period formula in the weather criterion is not suitable to ships longer than 140 metres.

16.6 The Sub-Committee also noted the following views:

.1 the full report of the study, referenced in document SDC 10/16, was awaited with interest, as well as other relevant submissions on the experience gained in the application of the second generation intact stability criteria;

.2 a comprehensive review of the Interim Guidelines was not advisable at this stage considering the limited application experience so far;

.3 while cargo lashing failure risk was important, the Interim Guidelines were developed to assess the survivability of the ship and the safety of persons on board and, with respect to the different failure modes (SDC 10/16, paragraph 16), combining the different failure modes, posed significant challenges for the development of physics-based criteria. Therefore, simple criteria for combined failure modes would be uncertain at this stage; and

.4 concerns were shared on:

.1 the limitations of wave data within the Interim Guidelines, which did not provide worse-case conditions, similar to the long waves experienced in the Pacific area, that typically produce the worse cases of parametric roll; and

.2 the lack of clarity on whether the Interim Guidelines would also protect against the loss of cargo or loss of ship.

16.7 In providing further information on the calculations and experience gained in applying the Interim Guidelines, the delegation of Denmark highlighted that the rolling period estimation for the **Maersk Essen** calculation may need to be revised, but other factors also contribute to the accuracy of the results and need to be addressed, such as:

.1 the limit of the roll angle used in the Interim Guidelines was 25 degrees and not aligned with the design criteria of the lashing systems, which was 19.2 degrees;

.2 the probabilities of the wave periods encountered were very small, as indicated in the scatter diagram (0.03%), indicating a low risk; and

.3 the possibility for parametric roll and pure loss of stability occurring together was difficult to achieve, but should nevertheless be considered.

16.8 In light of the above, the Sub-Committee concluded that it was premature to revise the Interim Guidelines and that more data and experience in their application would be needed. In this context, the Sub-Committee reiterated its request to Member States and international organizations to submit reports and studies on the matter to future sessions.

Rectification of typographical errors in the Explanatory Notes (MSC.1/Circ.1652)

16.9 Following consideration of the typographical errors in the Explanatory Notes, as contained in paragraph 4 of document SDC 10/INF.9 (Japan), the Sub-Committee requested the Secretariat to incorporate the corrections, as set out in annex 11, for subsequent circulation, subject to MSC 108's concurrence.

Challenges in designing ships for alternative fuels

16.10 The Sub-Committee considered document SDC 10/16/1 (Saudi Arabia), reporting on the challenges in designing ships for alternative fuels, including, inter alia, larger fuel storage capacity needs for ammonia and methanol, compared to ships carrying Heavy Fuel Oil (HFO), in order to sail over the same distance, as well as the impacts on longitudinal strength and stability of the ship, and proposing to initiate a wide and comprehensive discussion to consider these issues.

16.11 In this context, the Sub-Committee recalled that:

.1 the Organization had addressed the matter of alternative fuels in various contexts, which were included in the Revised GHG reduction strategy adopted at MEPC 80 and that, from a safety perspective, the CCC Sub-Committee had been working on the development of safety provisions for LNG, hydrogen, ammonia and possible provisions on low-flashpoint oil fuels and mandatory instruments regarding methyl/ethyl alcohols and fuel cells in the near future;

.2 MSC 107 had agreed to include in its biennial agenda for 2024-2025 a continuous output on "Development of a safety regulatory framework to support the reduction of GHG emissions from ships using new technologies and alternative fuels", assigning the Committee as the coordinating organ, in association with the CCC, HTW, III, SSE and SDC Sub-Committees, as and when requested by the Committee; and

.3 MSC 107 had established the Correspondence Group on Development of a Safety Regulatory Framework to Support the Reduction of GHG Emissions from Ships Using New Technologies and Alternative Fuels, which had been tasked, inter alia, to conduct an assessment for each identified fuel and new technologies and the risk each fuel posed to persons, ships and applicable operations.

16.12 After consideration of the matter, and being mindful of the above-mentioned ongoing work of the Committee on the matter, the Sub-Committee agreed to refer document SDC 10/16/1 to MSC 108, for consideration under the new output on "Development of a safety regulatory framework to support the reduction of GHG emissions from ships using new technologies and alternative fuels", as appropriate.

Safety measures for vessels under 500 GT operating in Arctic waters

16.13 The Sub-Committee recalled that SDC 9 had confirmed that the outstanding work under the output on "Safety measures for non-SOLAS ships operating in polar waters" was the development of guidelines for the following two types of vessels operating in polar waters: (1) pleasure yachts of 300 GT and upwards, but less than 500 GT, engaged in trade (i.e. commercial yachts); and (2) cargo ships of 300 GT and upwards, but less than 500 GT (SDC 9/16, paragraph 3.1).

16.14 The Sub-Committee also recalled that SDC 9, while recognizing the importance of establishing a robust regime for all vessels entering polar waters, and also noting the lack of data on traffic of smaller vessels in polar waters, had agreed to place this output on the post-biennial agenda to allow more time for collecting relevant information, so that work could resume in the future, without the need for a new output proposal (SDC 9/16, paragraphs 3.5 and 13.3). This decision was confirmed by MSC 107.

16.15 In connection with the above, the Sub-Committee considered document SDC 10/16/2 (WWF), reporting on the results of an analysis of PAME Arctic Ship Traffic Data; providing the number and types of ships under 500 GT operating in Arctic waters; and proposing to address the outstanding work by developing guidelines for commercial yachts and cargo ships of 300 GT and upwards, but less than 500 GT, operating in polar waters.

16.16 In the ensuing discussion, the Sub-Committee noted the following views:

.1 there was no analysis of the incidences by vessel type or the number of calls to SAR services, and no information was provided regarding the area which had been analysed. However, such information was crucial for an informed decision on the need to develop guidelines;

.2 amendments to SOLAS chapter XIV and the Polar Code were adopted by MSC 107 for voyage planning, for pleasure yachts of 300 GT and upwards not engaged in trade, and cargo ships of 300 GT and upwards but less than 500 GT, operating in polar waters. Therefore, the decision for additional requirements should only be undertaken once experience is gained in their application; and

.3 the data provided in document SDC 10/16/2 (WWF) was compiled on a monthly basis. In 2022, approximately 1,292 entries for vessels under 500 GT out of 8,467 were identified. Operating in the Arctic carried risks, not only for the vessels, but also for the marine environment, and needed to be addressed in appropriate guidance.

16.17 Subsequently, the Sub-Committee invited interested Member States and WWF to submit a proposal to the Committee requesting to lift the output from the post-biennial agenda to the provisional agenda of SDC, as appropriate.

Expression of condolence

16.18 The Sub-Committee noted with great sadness the recent passing away of Mrs. Liubov Shvedova, Head of the Russian Translation Section of the Secretariat; expressed its condolences to her family and the delegation of the Russian Federation; and requested it to convey its sincere sympathy to her family and colleagues.

Expression of appreciation

16.19 The Sub-Committee expressed appreciation to the following members of the Secretariat, who had recently moved to other duties or had retired, for their invaluable contribution to its work, and wished them a long and happy retirement or, as the case might be, every success in their new duties:

- Ms. Heike Deggim (IMO Secretariat) (on new duties)
- Mr. Joseph Westwood-Booth (IMO Secretariat) (on retirement)

17 ACTION REQUESTED OF THE COMMITTEES

17.1 The draft report of the session (SDC 10/WP.1/Rev.1) was prepared by the Secretariat for consideration and adoption by the Committee.

17.2 During the meeting held on 26 January 2024, delegations were given the opportunity to provide comments on the draft report (SDC 10/WP.1) and the Secretariat, then, prepared the revised draft report (SDC 10/WP.1/Rev.1), incorporating the comments made. Member States and international organizations wishing to provide further editorial corrections and improvements, including finalizing individual statements, were given the deadline of 7 February 2024, 23.59 (UTC), to do so by correspondence, in accordance with paragraphs 4.37 and 4.38 of the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.5).

17.3 The Maritime Safety Committee, at its 108th session, is invited to:

.1 note that the Sub-Committee considered the format of the application date for the approved draft SOLAS regulation II-1/3-4 (MSC 108/3, annex 1) and, while not using the criteria based on three dates or the keel-laying date based on a single date, the Sub-Committee did not support any changes to the approved draft application date (paragraphs 3.8 to 3.10);

.2 agree to the expansion of output 2.20 on "Development of Guidelines for emergency towing arrangements for ships other than tanker" by lifting the output "Revision of appendices A and B of the Revised guidance on shipboard towing and mooring equipment (MSC.1/Circ.1175/Rev.1)" from

the Committee's post-biennial agenda and merging it with existing output 2.20 under the new title "Development of Guidelines for emergency towing arrangements for ships other than tanker and revision of appendices A and B of MSC.1/Circ.1175/Rev.1" (paragraphs 3.13 and 3.14, and annex 9);

.3 note that the Sub-Committee agreed to develop guidelines on remote inspection techniques (RIT) under the ESP Code and to inform the III Sub-Committee accordingly, bearing in mind that the latter was working on the "Development of guidance on assessment and applications of remote surveys, ISM Code audits and ISPS Code verifications" (paragraphs 6.5 and 6.6);

.4 approve the draft MSC circular on *Revised guidelines on alternative design and arrangements for SOLAS chapters II-1 and III* (MSC.1/Circ.1212/Rev.1) (paragraph 7.10 and annex 4);

.5 approve the draft MSC circular on "Unified interpretations of SOLAS chapters II-1 and XII, of the technical provisions for means of access for inspections (resolution MSC.158(78)) and of the Performance standards for water level detectors on ships subject to SOLAS regulations II-1/25 and 25-1, and XII/12 (resolution MSC.188(79)/Rev.2)", in relation to performance standards for water level detectors (paragraph 10.11 and annex 5);

.6 approve the draft MSC circular on "Unified interpretation of SOLAS regulation XV/5.1 and paragraph 3.5 of part 1 of the International Code of Safety for Ships Carrying Industrial Personnel (IP Code) on the harmonization of the Industrial Personnel Safety Certificate with SOLAS safety certificates" (paragraph 10.13 and annex 6);

.7 approve the draft Unified interpretation of SOLAS regulation II-1/3-6 to ensure safe means of access to cargo and other spaces (paragraph 10.20 and annex 5);

.8 approve the draft MSC circular on "Unified interpretations of the Code on Noise Levels on Board Ships (resolution MSC.337(91))" (paragraph 10.22.1 and annex 7);

.9 approve the draft MSC circular on "Unified interpretations of SOLAS regulations II-2/9 and 13" (paragraph 10.22.2 and annex 8);

.10 approve the biennial status report for the 2024-25 biennium of the Sub-Committee (paragraph 14.5 and annex 9), and to agree, in particular, to:

.1 extend the target completion year of output on "Amendments to the Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation (MSC.1/Circ.1331) concerning the rigging of safety netting on accommodation ladders and gangways" to 2025 (paragraph 9.17);

.2 extend the target completion year of output on "Amendment to regulation 25 of the of the 1988 Load Line Protocol regarding the requirement for setting of guard rails on the deck structure" to 2025 (paragraph 11.10);

.3 extend the target completion year of output on "Revision of the Interim explanatory notes for the assessment of passenger ship systems' capabilities after a fire or flooding casualty (MSC.1/Circ.1369) and related circulars" to 2025 (paragraph 13.18);

.4 lift the output on "Review of the 2009 Code on Alerts and Indicators" from the post-biennial agenda to the provisional agenda of SDC 11, with work to be undertaken based on the annex of document SSE 10/17 (IACS) containing the draft amendments to the Code, subject to confirmation of SSE 10 which had been assigned as the coordinating organ (paragraphs 14.6 and 14.7);

.11 approve the proposed provisional agenda for SDC 11 (paragraph 14.8 and annex 10);

.12 note, in connection with the application of the *Interim guidelines on the second generation intact stability criteria* (MSC.1/Circ.1627), that the roll period formula in the weather criterion is not suitable to ships longer than 140 metres (paragraph 16.5.4);

.13 concur with the request to the Secretariat to incorporate typographical errors in the Explanatory Notes of MSC.1/Circ.1652, as contained in paragraph 4 of document SDC 10/INF.9 (Japan) (paragraph 16.9 and annex 11);

.14 consider document SDC 10/16/1 under the output on "Development of a safety regulatory framework to support the reduction of GHG emissions from ships using new technologies and alternative fuels", as appropriate (paragraph 16.12); and

.15 approve the report in general.

17.4 As urgent matters, the Marine Environment Protection Committee, at its eighty-first session, is invited to:

.1 note that the work of the Sub-Committee on the output 1.16 on Review of the 2014 Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life (MEPC.1/Circ.833) (2014 Guidelines) and identification of next steps had been completed (paragraph 5.21 and annex 9);

.2 agree to continue the work on reducing URN from ships by introducing an Experience-Building Phase (EPB) and changing the title of the existing output 1.16 to "Experience-Building Phase for the Reduction of Underwater Radiated Noise (MEPC.1/Circ.906)", taking into account and endorsing the draft action plan (paragraphs 5.10, 5.13 and 5.18.3.1, and annexes 2 and 9);

.3 agree to extend the target completion year of the re-titled output to 2026 (paragraphs 5.10 and 5.13 and annex 9);

.4 place the revised output on the agendas of MEPC 82 through to MEPC 85 to promote greater access to knowledge and research on URN and encourage wide participation in the information-sharing stage for the Revised guidelines (paragraphs 5.10 and 5.13);

.5 concur with the Sub-Committee's conclusion that an EBP would provide the vehicle to identify suitable URN measurement methods and that, until the EBP was over, the Guidelines should not be further revised so as to allow time for the experience gained (paragraph 5.14);

.6 note that the three-year experience-building phase (EBP) stated in the draft action plan may need to be revisited for an extension of up to two years (paragraph 5.18.3.2);

.7 invite interested Member States and observer organizations to submit documents to MEPC 82 to address the action items in the action plan for the reduction of underwater noise from commercial shipping (annex 2), as appropriate, subject to the decision on endorsement of the draft action plan under sub-paragraph .2 (paragraph 5.18.4);

.8 note that the Sub-Committee agreed to the draft guidance on the Experience-Building Phase (EBP) for the Revised guidelines (MEPC.1/Circ.906) (paragraph 5.19.1 and annex 3);

.9 note the aforementioned draft guidance in .8 and invite interested Member States and international organizations to follow the guidance when gathering, preparing and sharing experiences, data and research during the EBP (paragraph 5.19.2 and annex 3); and

.10 note the Secretary-General's intention, in light of the proposed extension of the output and the actions proposed in the draft action plan, to conduct an assessment of the technical, administrative and financial implications of the work proposed, in line with rule 15 of the Rules of procedures of the Marine Environment Protection Committee, so as to ensure that the Secretariat will be in a position to support the work conferred to the MEPC (paragraph 5.20).

17.3 The Marine Environment Protection Committee, at its eighty-second session, is invited to:

.1 approve the draft MEPC circular on the Revised guidelines for the reduction of underwater radiated noise from shipping to address adverse impacts on marine life, including the revised cover note prepared by the Secretariat (paragraph 5.17 and annex 1); and

.2 encourage interested Member States and international organizations to take into account the outcome of the workshop on the "Relationship between energy efficiency and underwater radiated noise from ships" (SDC 10/INF.3) when considering the relationship between energy efficiency measures and URN (paragraph 5.18.5).

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ANNEX 1

DRAFT MEPC CIRCULAR*

REVISED GUIDELINES FOR THE REDUCTION OF UNDERWATER RADIATED NOISE FROM SHIPPING TO ADDRESS ADVERSE IMPACTS ON MARINE LIFE

1 The Marine Environment Protection Committee, at its sixty-sixth session (31 March to 4 April 2014), with a view to providing guidance on the reduction of underwater noise from commercial shipping, and following a recommendation made by the Sub-Committee on Ship Design and Equipment (DE), at its fifty-seventh session, approved the *Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life* (MEPC.1/Circ.833) (the Guidelines).

2 The Marine Environment Protection Committee, at its eightieth session (3 to 7 July 2023), following a comprehensive revision of the Guidelines by the Sub-Committee on Ship Design and Construction (SDC), at its ninth session (23 to 27 January 2023), with a view to increasing awareness, uptake and implementation, approved the ~~annexed~~ *Revised guidelines for the reduction of underwater radiated noise from shipping to address adverse impacts on marine life* (MEPC.1/Circ.906 ~~Revised Guidelines~~).

3 The Marine Environment Protection Committee[, at its eighty-second session (30 September to 4 October 2024)], following amendments prepared by the Sub-Committee on Ship Design and Construction (SDC), at its tenth session (22 to 26 January 2024), pertaining to the inclusion of the URN planning reference chart, approved the annexed *Revised guidelines for the reduction of underwater radiated noise from shipping to address adverse impacts on marine life* (Revised guidelines).

4 ~~3~~ Member States are invited to use the annexed Revised guidelines with the aim of reducing underwater radiated noise from ships and to bring them to the attention of all parties concerned, in particular ship and equipment designers, shipbuilders and shipowners and operators, classification societies, suppliers, manufacturers and other stakeholders.

5 ~~4~~ Member States and international organizations are also invited to submit information, observations, comments and recommendations based on the practical experience gained through the application of these Revised guidelines to the Marine Environment Protection Committee under the agenda item "Any other business".

6 ~~5~~ These Revised guidelines will take effect on ~~1 October 2023~~ [1 December 2024].

7 ~~6~~ This circular revokes ~~MEPC.1/Circ.833~~ MEPC.1/Circ.906.

* Tracked changes are indicated using "strikeout" for deleted text and "grey shading" to highlight all modifications and new insertions, including deleted text.

ANNEX

5 UNDERWATER RADIATED NOISE (URN) MANAGEMENT PLANNING

1 The following new paragraph is inserted after paragraph 5.4:

"5.5 A reference chart is set out in appendix 4 to support the preparation and implementation of URN management planning for the various parties indicated in paragraph 5.4."

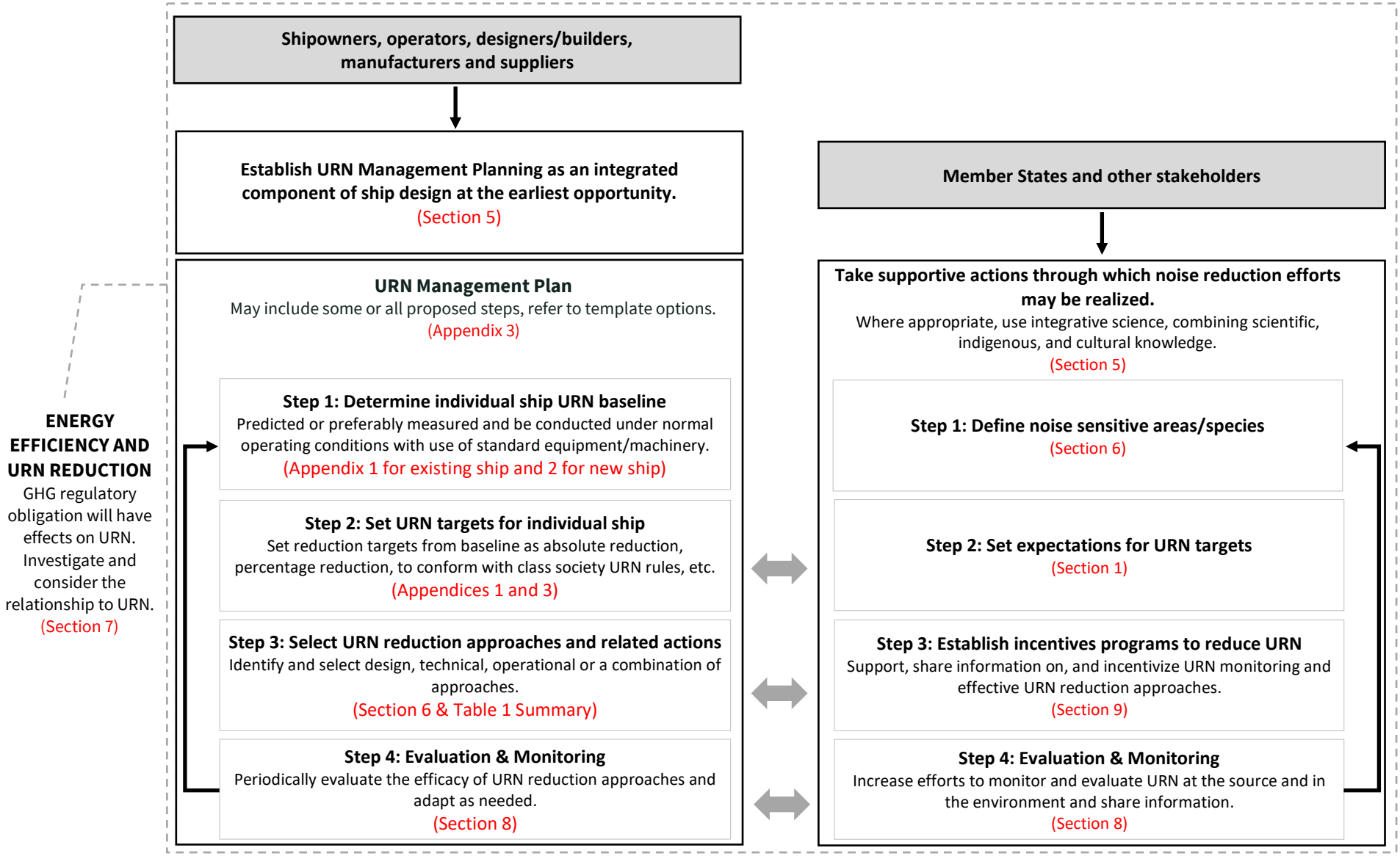
2 A new appendix is inserted after appendix 3, as follows:

"APPENDIX 4

UNDERWATER RADIATED NOISE (URN) MANAGEMENT PLANNING REFERENCE CHART

This reference chart is provided to support the implementation of the *Revised guidelines for the reduction of underwater radiated noise from shipping to address the adverse impacts on marine life*. The Revised guidelines are non-mandatory and URN Management Planning is intended to be a flexible tool that allows for a customized approach which can be modified to address specific contexts. URN Management Planning is meant to be an iterative process with steps that reinforce one another.

UNDERWATER RADIATED NOISE (URN) MANAGEMENT PLANNING REFERENCE CHART



ANNEX 2

DRAFT ACTION PLAN FOR THE REDUCTION OF UNDERWATER NOISE FROM COMMERCIAL SHIPPING

1 Background

Commercial shipping is one of the main contributors to underwater radiated noise (URN), which has adverse effects on marine life, including marine mammals, upon which many coastal and Indigenous communities depend for their food, livelihoods and cultures. The issue of URN and impact on marine mammals was first raised at IMO in 2004. Since ships routinely cross international boundaries, management of such noise requires a coordinated international response from a broad range of stakeholders.

Recognizing the importance of preventing and further reducing URN from ships, the Marine Environment Protection Committee (MEPC) approved *Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life* (MEPC.1/Circ.833), "the Guidelines," in 2014. This commitment was reinforced in 2021 when MEPC 76 tasked the Sub-Committee on Ship Design and Construction (SDC) to identify barriers to uptake of the Guidelines, review and revise them, if deemed necessary, and identify a programme of action/next steps to further prevent and reduce URN, as well as to encourage action.

Based on the barriers to uptake (SDC 8/WP.8), the SDC Sub-Committee revised the Guidelines. In 2023, MEPC 80 approved the *Revised guidelines for the reduction of underwater noise from shipping* (MEPC.1/Circ.906), and encouraged interested Member States and international organizations to submit to the Committee lessons learned/best practices in the implementation of the Revised guidelines, i.e. an "experience-building phase" (EBP).

Recognizing the need for an action plan to address barriers to the uptake of the Guidelines in order to further prevent and reduce URN from ships, this action plan was prepared by the SDC Sub-Committee at its tenth session and submitted for endorsement by MEPC 81, with an invitation to interested Member States and international organizations to submit proposals on the action plan's implementation, beginning at MEPC 82.

2 Objective

The action plan to further prevent and reduce URN from ships has been developed to guide IMO's continued work on this issue and provides a mechanism to identify specific outcomes and indicative actions to achieve these outcomes, in a way that is meaningful and measurable.

3 Time frame

The action items in this plan may be pursued in parallel with the Revised guidelines' EBP. Time frames for measures are indicative and should be evaluated by the MEPC, as deemed appropriate.

4 Implementation

The IMO organs identified below are recommendations based on the subject matter of each action. Based on the outcomes of the EBP and considering follow-up proposals and/or commenting documents by interested Member States and international organizations, MEPC should review the action plan at MEPC 85, as appropriate.

Reference	Timeline[1]	Priority	Tasks/subtasks	Main Organ		
A	**Establish an experience-building phase (EBP) for the Revised guidelines** Gather experience implementing the Revised Guidelines to increase uptake and inform next steps.					
1	Short	High	Implement a 3-year experience-building phase of the Revised guidelines[2], to conclude at MEPC 85, to gain experience and develop best practices in the use of the Revised guidelines, followed by a review to make any necessary amendments, with the possibility of an extension phase up to two years, if necessary, to be determined by the end of the third year. Therefore, any necessary changes to the Revised guidelines may only occur after the completion of the EBP.	MEPC		
2	Short	Medium	Consider the development of a database for the results of the EBP with a view to further informing IMO actions to reduce URN from ships.	MEPC		
B	**Enhanced public awareness, education and seafarer training** Communicate widely the Revised guidelines and Underwater Radiated Noise Management Plans, along with the *Guidelines for underwater radiated noise reduction in Inuit Nunaat and the Arctic* (MEPC.1/Circ.907) to increase awareness, uptake and implementation by the relevant stakeholders.					
1	Short	High	Develop or adapt as needed information/briefings or training to increase awareness, uptake and implementation of the Revised guidelines, including topics like the threat of URN on the marine life, mitigation options and potential co-benefits (e.g. ship strike reduction, energy efficiency).	SDC		
2	Short	High	Conduct a multi-stakeholder, cross-disciplinary workshop focused on the nexus of URN and energy efficiency in 2025, following the "Workshop on the Relationship between energy efficiency and underwater radiated noise from ships" (September 2023).	MEPC		

[1] Timeline: Short (less than 3 years / during the Experience-Building Phase), Medium (3-6 years), Long (6+ years), or Continuous.

[2] Approved at MEPC 80: "Recommend to MEPC 80 to encourage Member States and observers to submit lessons learned/best practices in the implementation of the Revised guidelines by MEPC 85, including outreach and awareness efforts to support uptake with a view to identify necessary adjustments/modifications to the Guidelines".

Reference	Timeline[1]	Priority	Tasks/subtasks	Main Organ		
3	Short	Medium	Conduct activities and develop learning tools under the Integrated Technical Cooperation Programme to build technical cooperation and improve implementation of the revised Guidelines, considering linkages with the GloNoise Partnership.	SDC/ TCC /MEPC		
4	Medium	Med-High	Add reference in the Polar Code Part II B to the revised URN Guidelines and the *Guidelines for underwater radiated noise reduction in Inuit Nunaat and the Arctic* (MEPC.1/Circ.907) and relevance to the polar regions and recommend that polar operators take into consideration these Guidelines and implement them, as appropriate.	MEPC		
5	Short	High	Develop training guidance for seafarers to raise broader awareness of Underwater Radiated Noise (URN), its adverse impacts on the marine environment, in particular on sensitive areas and best practices for reducing URN.	SDC/ HTW		
C	**Standardize Underwater Radiated Noise Management Planning process** Establish best practices for the development and review of URN Management Plans.					
1	Short	High	Continue to refine methodologies to establish a standardized and harmonized approach to determine baseline URN level and monitor URN levels based on vessel design and operational characteristics.	SDC		
2	Short	High	Pursue the work related to the harmonization of URN measurement standards and consider conducting a review of URN measurement methods and comparability through existing and/or new research initiatives.	SDC		
3	Short	High	Continue to develop and refine methodologies to establish a standardized approach of predictive methods of URN levels during the design and construction of all new-build ships, and operation of existing ships (computational marine engineering methods e.g. FEM, BEM, SEA, CFD) and consider conducting a review of URN prediction methods, including empirical methods and model tests, and comparability through existing and/or new research initiatives.	SDC		

Reference	Timeline[1]	Priority	Tasks/subtasks	Main Organ		
4	Short	High	Standardize measurement methodology and metrics and support comparability among field measurements and onboard measurements for the prediction of cavitation inception speed to facilitate operational measures in noise management planning.	SDC		
5	Long	Med-High	Recommend research and development, demonstration, and standardization of onboard noise sensors and monitoring equipment.	SDC		
D	**Develop Underwater Radiated Noise Targets** Share lessons learned through implementation of URN goal setting exercises.					
1	Short	Medium	Commission studies to estimate URN emissions from the maritime sector and project possible future developments, to inform the development of URN targets.	MEPC		
2	Medium	High	Through relevant submissions to MEPC, continue to be informed by regional actions and Indigenous knowledge on URN targets (biologically relevant) in the development of IMO URN targets.	MEPC		
3	Medium	Med-High	Develop URN targets for vessels possibly taking into account various parameters, such as type (e.g. ice-class), speed, size, etc., as well as existing URN data; and evaluate as necessary.	MEPC		
E	**Further develop policy for URN reduction** To further develop policy for URN reduction at IMO, coalesce potential future actions.					
1	Medium	High	Informed by the EBP, consider, as appropriate, the development of a road map for the reduction of underwater radiated noise from ships, to include the Organization's vision, guiding principles, list of actions with timelines and follow-up actions towards the development of a revised road map, with periodic review of the road map. This road map could include examination of existing IMO instruments that would be relevant to URN reduction and/or other appropriate actions.	MEPC		

Reference	Timeline[1]	Priority	Tasks/subtasks	Main Organ		
F	**Create IMO processes/technical groups to share information and take into consideration other IMO regulatory goals**					
1	Continuous	High	Share the experiences gained within the Organization's competencies on URN reduction with Governments and competent organizations, including the Convention on Biological Diversity.	IMO		
2	Short-Med	Medium	Develop Supplementary Guidelines or update the Revised Guidelines after the EBP, as appropriate, with further information for Members States and other authorities in support of the Revised Guidelines with regard to URN regional monitoring, possibly setting biologically driven URN targets, defining noise sensitive areas, etc.	SDC/ PPR		
3	Short	High	Promote ship designs, technologies and operations that increase energy efficiency, and lower GHG emissions, while reducing URN. Also identify any technical and operational energy efficiency measures that increase URN and develop ways to inform and encourage ship owners and operators, and other relevant stakeholders to, wherever practical, avoid or minimize the use of such measures.	MEPC		

Actions to support IMO

IMO is an international forum that uses research to inform policy decisions. Therefore, Member States and relevant international organizations, Indigenous peoples, and other stakeholders are invited to lead the following actions and inform IMO of relevant results in order for the Organization to take actions, as appropriate, to further reduce URN.

Reference	Timeline	Priority	Tasks/subtasks
G	**Develop tools to collect data and share information**		
1	Short	Med-High	Package and make available to seafarers/operators the information on the location of URN sensitive areas within Marine Protected Areas, PSSA's, area of Indigenous use including Indigenous Knowledge, and taking into consideration Articles 29, 41, 42 of UN Declaration on the Rights of Indigenous Peoples (UNDRIP) etc. among others and any recommended or required measures for use in voyage planning.
2	Short	Medium	Explore, develop and share experience on incentive programmes and other experiences related to URN mitigation and the application of the Revised Guidelines and the *Guidelines for underwater radiated noise reduction in Inuit Nunaat and the Arctic* (MEPC.1/Circ.907) to support their adoption.
3	Short	High	Develop an 'URN Reduction Best Practice Forum' to facilitate exchange of experience, knowledge, new technologies and to develop best practices related to implementation of the Revised Guidelines.
4	Short	High	Develop a 'how to' guidance for the *Guidelines for underwater radiated noise reduction in Inuit Nunaat and the Arctic*, which would ensure a clear understanding and further articulation of MEPC.1/Circ.907.
5	Medium	Med	Promote collaborations with underwater ambient noise or ambient sound monitoring programmes to unify and/or complement the development of underwater radiated noise objectives, determining, for example, sensitive areas, recommendations on measurement procedures, monitoring methodologies, etc.
H	**Encourage research on URN and GHG/URN and Biofouling** Continue research and development efforts addressing commonly used energy efficiency measures, including IMO GHG regulations (EEDI, EEXI, CIII) and their impacts on URN. Initiate research and development activities addressing innovative technologies that further enhance energy efficiency, address biofouling, and greenhouse gas and underwater noise reduction of ships, while assessing any implications for ship safety.		
1	Short-Medium	High	Conduct research for assessing any implication of such measures on ship safety, where appropriate.
2	Short	High	Conduct simulations and evaluations of URN measures and effects on stakeholders and international shipping.
3	Short	Med-High	Conduct research on the potential environmental effects of local speed reduction measures and/or slow steaming (URN/GHG combined).
4	Short	High	Conduct research on the possible effects of different types of anti-fouling systems on URN, particularly ultrasonic and consider developing recommendations as appropriate.
5	Short-Medium	High	Conduct research on the effect of cleaning propeller and hull on ship noise, in addition to other potential measures.

Reference	Timeline	Priority	Tasks/subtasks
I	**Encourage research on impacts of URN on species and habitats**		
1	Short-Long	High	Further collaborate on scientific research to define (noise) sensitive areas/species and harmonization of methodologies.
2	Continuous	High	Further collaborate on scientific research on the adverse impacts of URN on ecosystems, and marine and coastal biodiversity.
3	Long	Med-High	Further collaborate on standardizing biological monitoring to inform URN management.
4	Long	Medium	Further collaborate on developing real-time information systems for species monitoring to inform URN vessel management.

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ANNEX 3*

DRAFT GUIDANCE DOCUMENT ON THE EXPERIENCE-BUILDING PHASE (EBP) FOR THE REVISED GUIDELINES FOR THE REDUCTION OF UNDERWATER RADIATED NOISE FROM SHIPPING TO ADDRESS ADVERSE IMPACTS ON MARINE LIFE (MEPC.1/CIRC.[906])

Main objectives

The main objectives of the EBP are to collect information on lessons learned and best practices in the application and the uptake of the Revised guidelines (MEPC.1/Circ.[906]) by ship designers, builders, owners, and operators to reduce the URN of any given ship and other stakeholders in establishing mechanisms and programmes through which noise reduction efforts can be realized, to further prevent and reduce URN from ships.

Key areas where experience-building is urgently needed:

Member States and other stakeholders are invited to gather, prepare and submit experiences, data and research on the following key areas of the Revised guidelines during the EBP under the agenda item "Experience-Building Phase for the Reduction of Underwater Radiated Noise (MEPC.1/Circ.906)", taking into consideration the *Guidelines for underwater radiated noise reduction in Inuit Nunaat and the Arctic* (MEPC.1/Circ.907).

Key areas for the EBP (not in order of priority):

.1 URN Management Planning, including URN baselining, management plan development, and target setting;

.2 design and technical noise reduction approaches;

.3 maintenance and operational approaches;

.4 energy efficiency and URN reduction;

.5 evaluation and monitoring;

.6 incentivization; and

.7 training and raising awareness.

Process for updating the Revised guidelines, if deemed necessary:

The scope and status of the Revised guidelines will remain unchanged for the period of the EBP. Any necessary changes may only occur after completion of the EBP, and after lessons learned and analysis of data have been considered by MEPC.

The Secretariat is requested to submit an information document to MEPC 85 providing a cumulative list of submissions relevant to EBP, for the interested parties to assess the progress made on the application and uptake of the Revised Guidelines. After assessing the progress made, it is anticipated that the Committee will decide whether it is necessary to extend the EBP duration for another two years to gather additional information on lessons learned.

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* The draft guidance has been presented in anticipation of MEPC 81 agreeing to the revision of the title of the output as "Experience-building phase for the reduction of underwater radiated noise (MEPC.1/Circ.906)" and placing it on the provisional agenda of MEPC 82 as an urgent matter.

ANNEX 4

DRAFT MSC CIRCULAR*

REVISED GUIDELINES ON ALTERNATIVE DESIGN AND ARRANGEMENTS FOR SOLAS CHAPTERS II-1 AND III

1 The Maritime Safety Committee, at its eighty-second session (29 November to 8 December 2006), approved *Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III*, developed to provide further guidance on SOLAS regulations II-1/55 and III/38, which were adopted by resolution MSC.216(82) and entered into force on 1 January 2009.

2 The Guidelines serve to outline the methodology for the engineering analysis required by SOLAS regulations II-1/55 and III/38 on Alternative design and arrangements, applying to a specific engineering or life-saving system, design or arrangements for which the approval of an alternative design deviating from the prescriptive requirements of SOLAS chapters II-1 and III is sought.

3 The Maritime Safety Committee, at its 101st session (5 to 14 June 2019), approved amendments to the *Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III* (MSC.1/Circ.1212/Rev.1), prepared by the Sub-Committee on Ship Systems and Equipment, at its sixth session.

4 The Maritime Safety Committee, at its [108th session (15 to 24 May 2024)], approved amendments to the *Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III* (MSC.1/Circ.1212/Rev.2), prepared by the Sub-Committee on Ship Design and Construction, at its tenth session.

~~4~~ 5 Member Governments are invited to bring the Revised guidelines set out in the annex to the attention of shipowners, shipbuilders and designers for the facilitation of design within the framework of SOLAS regulations II-1/55 and III/38.

6 This circular revokes [MSC.1/Circ.1212 and] MSC.1/Circ.1212/Rev.1.

* Tracked changes are indicated using "strikeout" for deleted text and "grey shading" to highlight all modifications and new insertions, including deleted text.

1 Add the following sentence to the end of paragraph 6.3.3 of the annex to the circular:

"In the case of machinery installations, electrical installations and additional requirements for periodically unattended machinery spaces according to SOLAS chapter II-1 parts C, D and E, the goals, functional requirements and expected performance criteria, as set out in appendix 6, should be taken into account."

2 Add the following appendix 6 to the annex of the circular (new text):

"**APPENDIX 6**

GOALS, FUNCTIONAL REQUIREMENTS AND EXPECTED PERFORMANCE CRITERIA FOR SOLAS CHAPTER II-1, PARTS C, D AND E

GOALS, FUNCTIONAL REQUIREMENTS AND EXPECTED PERFORMANCE CRITERIA FOR SOLAS CHAPTER II-1 (PART C) (MACHINERY INSTALLATIONS)

Goal: To ensure adequate design, construction and availability of machinery installations for safe operation of the ship and safeguard of the persons on board from associated hazards in expected operating conditions

FR 1: Sufficient availability and capacity of propulsion to avoid navigational hazards should be ensured. Sufficient design and construction to reduce, to a minimum, any danger to persons on board should be ensured. This will be accomplished by ensuring:

EP 1-1: Special consideration should be given to the reliability of single essential propulsion components, and a separate source of propulsion power may be required to give the ship a navigable speed.

EP 1-2: Means should be provided whereby normal operation of propulsion machinery can be sustained or restored even though one of the essential auxiliaries becomes inoperative.

EP 1-3: Means should be provided to ensure that the machinery can be brought into operation from the dead ship condition without external aid.

EP 1-4: All machineries should be subjected to appropriate tests before being put into service for the first time. Machineries subject to internal pressure should be pressure tested prior to being put into service.

EP 1-5: Machinery essential to the propulsion and manoeuvring and safety of the ship should be designed to operate when the ship is upright and when inclined at certain angles in both static and dynamic conditions.

EP 1-6: Provision should be made to facilitate cleaning, inspection and maintenance of essential machinery including boilers, internal combustion engines, and pressure vessels.

EP 1-7: Any mode of the vibrations raised by machineries should not cause undue stresses in the machineries in the normal operating conditions.

EP 1-8: The design and installation of vent pipes for fuel oil settling and service tanks and lubricating oil tanks should not lead to the risk of ingress of seawater or rainwater.

EP 1-9: Means should be provided to protect against hazards originating from the machinery, such as moving parts and hot surfaces.

FR 2: It should be ensured that machinery (main and auxiliary; both reciprocating engines and turbine engines, gears and shafts) should be capable of maintaining optimal operational conditions for safe voyages. This will be accomplished by ensuring:

EP 2-1: Means should be provided to keep the machinery in safe and stable operating speed.

EP 2-2: Machinery subject to internal pressure should be protected against excessive pressure.

EP 2-3: Machinery and the parts for transmission of power should be designed and constructed to withstand the maximum working stress.

EP 2-4: Machinery should be provided with automatic shut-off arrangements in the case of failures which could lead to breakdown or serious damage.

FR 3: Adequate means of reversing the direction of thrust should be provided. This will be accomplished by ensuring:

EP 3-1: The thrust can be reversed and be sufficient to stop the ship within a reasonable distance.

EP 3-2: The test results and information on means of going astern should be available on board.

FR 4: Sufficient steering availability and capacity in normal and under failure conditions should be provided to ensure sufficient manoeuvring capabilities and to avoid navigational hazards. This functional requirement is also applicable to electrical and electrohydraulic steering gear. This will be accomplished by ensuring:

EP 4-1: The steering performance should not be lost owing to a single failure in the steering gear or the control system.

EP 4-2: The steering gears and their components should have sufficient strength and overload of the steering gears should be avoided.

EP 4-3: The steering system should have capability to redirect the steering force in sufficient time.

EP 4-4: The steering gear should be controlled from the location where lookout and conning function take place. The steering gear should also be capable of being controlled from the steering gear compartment with sufficient communication capability to the navigation bridge.

EP 4-5: Electrical and electrohydraulic steering power systems and steering control systems should be provided with sufficient redundancy and safeguards.

FR5: Machinery essential for the propulsion and safe control of the ship should be provided with effective means for its operation and control. This will be accomplished by ensuring:

EP 5-1: Where remote control of propulsion machinery from the navigation bridge is provided and the machinery control rooms are intended to be continuously attended:

5-1.1: the speed, direction of thrust and, if applicable, the pitch of the propeller should be fully controllable from the navigation bridge;

5-1.2: the means of remote control should be provided, for each independent propeller;

5-1.3: the propulsion machinery should be provided with an emergency stopping device on the navigation bridge;

5-1.4: propulsion machinery orders from the navigation bridge should be indicated in the machinery control room;

5-1.5: control of the propulsion machinery should be possible only from one location at a time;

5-1.6: it should be possible to control the propulsion machinery in the case of failure of remote control;

5-1.7: indicators should be fitted on the navigation bridge for propeller speed and direction of rotation, and pitch position if applicable; and

5-1.8: an audible and visible alarm should be provided on the navigation bridge and in the machinery control room to indicate a malfunction or failure of the control system.

EP 5-2: Where machinery is provided with automatic or remote control from an attended control room, the control should be designed and installed such that the machinery operation is as safe and effective as if it were under direct supervision.

EP 5-3: Automatic starting, operational and control systems should include provisions for manual override.

EP 5-4: Failure of any part of automatic or remote control systems should not prevent the use of the manual override.

FR 6: Means for safe operation of steam boilers, boiler feed system and steam piping system should be provided. This will be accomplished by ensuring:

EP 6-1: Means should be provided to prevent the steam pressure from exceeding the design pressure.

EP 6-2: All pressure components for steam and feed water systems should be designed and installed with an adequate safety margin.

EP 6-3: Steam piping system should have sufficient strength and safety means to avoid over-pressure and water hammer actions.

FR7: Sufficient air supply to machinery spaces should be provided for operation of machinery and crew comfort. This will be accomplished by ensuring:

EP 7-1: Ventilation systems in machinery space should be designed with sufficient capacity for all the machinery operations and crew in the space.

FR 8: An efficient bilge pumping system capable of pumping from and draining any watertight compartment under all conditions should be provided. This will be accomplished by ensuring:

EP 8-1: Sufficient capacity of system (pump, piping), redundancy of system (pump) should be provided.

EP 8-2: Unnecessary discharging/intaking/ingress of bilge from one compartment to another compartment should be avoided.

EP 8-3: For passenger ships, the bilge system should be operable when any one compartment is flooded or damaged.

FR 9: Sufficient and non-interrupted means of communication should be provided between machinery control room and the location where lookout and conning function take place. Sufficient means for calling engineers should be provided. This will be accomplished by ensuring:

EP 9-1: Two independent means of communication between machinery control room and the location where lookout and conning function take place should be provided.

EP 9-2: An engineer's alarm should be provided from the machinery control position.

FR 10: Emergency power installation in passenger ships should be located in a safe position. This will be accomplished by ensuring:

EP 10-1: Machineries for use in emergency in passenger ships should be located in a safe position.

GOALS, FUNCTIONAL REQUIREMENTS AND EXPECTED PERFORMANCE CRITERIA FOR SOLAS CHAPTER II-1 (Part D) (ELECTRICAL INSTALLATIONS)

Goal: To ensure adequate availability of electrically-powered services for the safe operation of the ship and to protect the persons on board from hazards of electrical origin in normal and emergency conditions.

FR1: Sufficient power supply to electrical loads in normal and emergency conditions should be provided and maintained. This will be accomplished by ensuring:

EP 1-1: Sufficient power supply to essential services and to maintain habitable conditions should be provided and maintained.

EP 1-2: Adequate power supply to emergency services should be ensured.

EP 1-3: Power supply for essential services should be maintained regardless of speed and direction of rotation of propulsion machinery or shafting.

EP 1-4: Means for monitoring availability of emergency source of electrical power and its distribution system should be provided.

EP 1-5: Power supply to emergency services should be ensured for at least the time duration as required by SOLAS chapter II-1 part D.

EP 1-6: For passenger ships, steady and uninterrupted power supply to emergency services should be ensured.

EP 1-7: Power supply for normal operation of propulsion, steering gear, illumination and other essential systems for overall safety and minimum habitability should be provided even in case of malfunction of one power source.

EP 1-8: Adequate power supply should be provided to recover from dead ship condition within a time duration not more than 30 minutes after blackout.

EP 1-9: Power supply to emergency services should be provided in at least the following conditions:

A) inclined at any angle of list up to 22.5°;

B) inclined up to 10° either in the force or aft direction; and

C) any combination of above angles within those limits.

EP 1-10: Power supply to emergency services should not be impaired by malfunction in non-essential services.

EP 1-11: A single failure in the distribution system should not result in an unacceptable loss of electrical power in essential systems.

FR 2: Electrical power supply should be restored after malfunction. This will be accomplished by ensuring:

EP 2-1: Power should be made available automatically within 45 seconds to emergency services.

EP 2-2: Emergency services should be automatically connected to available electrical power supply.

EP 2-3: For emergency services for which an interruption to electrical power supply is unacceptable, means of transitional electrical power supply should be provided with sufficient capacity and duration (a minimum time of 30 minutes).

EP 2-4: Reliable and quick starting arrangement for electrical power supply for emergency services should be provided.

EP 2-5: Emergency services should be available in case of any single failure of the main electrical supply.

FR 3: Impact of incidents that are not originated from electrical systems should be limited. This will be accomplished by ensuring:

EP 3-1: Availability of emergency power supply in case of flooding of any one compartment should be maintained.

EP 3-2: Impact of heat, fire and mechanical or accidental damage should be minimized.

EP 3-3: Main and emergency cabling should be separated.

EP 3-4: Means to prevent spread of fire through cables and cable entries should be provided.

EP 3-5: Power supply to emergency services should be maintained in case of fire in any one compartment which contains a main source of electrical power.

EP 3-6: Risk of malfunction due to the impact of Electromagnetic Interference (EMI) should be minimized.

EP 3-7: Appropriate degree of ingress protection (IP Class) should be provided.

FR 4: Shock, fire and other hazards of electrical origin should be prevented. This will be accomplished by ensuring:

EP 4-1: Protection against sustained electrical overloads should be provided.

EP 4-2: Protection against short circuit should be provided.

EP 4-3: Means to prevent short circuit should be provided.

EP 4-4: Means to detect abnormal condition of emergency source of electrical power and distribution system should be provided.

EP 4-5: Means to protect against and isolate faulty circuit should be provided.

EP 4-6: Suitable arrangements for the safe installation, application and maintenance of energy storage devices should be provided.

EP 4-7: Means to prevent electrical leakage and earth fault should be provided.

EP 4-8: Means to detect earth fault should be provided.

EP 4-9: Means to prevent ignition of flammable or combustible materials should be provided.

EP 4-10: Means to prevent explosion should be provided.

EP 4-11: Means to prevent persons from contacting live electrical circuits should be provided.

EP 4-12: Appropriate signs for dangerous voltage warning purposes should be provided.

EP 4-13: Battery energy storage system for essential systems should be designed to recognized standards and, where appropriate, a battery management system should be provided.

FR 5: Adequate illumination for normal and emergency conditions should be provided and maintained. This will be accomplished by ensuring:

(Illumination for normal condition)

EP 5-1: Illumination with sufficient intensity (LUX) should be provided in all areas normally accessible by passengers and crew.

EP 5-2: Sufficient illumination intensity (LUX) with redundancy should be provided in all essential areas normally accessible by passengers and crew.

(Illumination for emergency condition)

EP 5-3: Sufficient illumination intensity (LUX) with redundancy should be provided in all essential locations on the ship for safe emergency operations.

EP 5-4: For passenger ships, illumination in cabins should be provided to indicate the exit for at least 30 minutes when power to normal cabin lighting is lost.

EP 5-5: Means to check the conditions of all lighting systems for emergency use should be provided.

EP 5-6: For ro-ro passenger ships, illumination for escape of passengers should be provided with independent power supply for at least three hours.

GOALS, FUNCTIONAL REQUIREMENTS AND EXPECTED PERFORMANCE CRITERIA FOR SOLAS CHAPTER II-1 (Part E) (ADDITIONAL REQUIREMENTS FOR PERIODICALLY UNATTENDED MACHINERY SPACES)

Goal: Ensure adequate design, construction and availability of machinery installations in periodically unattended machinery spaces so that the safety of the ship in expected operating conditions, including manoeuvring, is equivalent to that of a ship having continuously attended machinery spaces.

FR 1: Measures should be taken to ensure that the equipment is functioning in a reliable manner and that satisfactory arrangements are made for regular inspections and routine tests to ensure continuous reliable operation. This will be accomplished by ensuring:

EP 1-1: The systems and equipment for remote or automatic control of systems in periodically unattended machinery spaces should be adequately designed and installed.

EP 1-2: The systems and equipment for remote or automatic control of systems installed in periodically unattended machinery spaces should be tested and inspected regularly.

FR 2: The ship should be provided with documentary evidence of its fitness to operate with periodically unattended machinery spaces. This will be accomplished by ensuring:

EP 2-1: Documentary evidence of fitness of the system and equipment for periodically unattended machinery spaces should be provided.

FR 3: A fail-safe alarm system should be provided indicating any fault requiring attention. This will be accomplished by ensuring:

EP 3-1: Alarm systems should be adequately designed, constructed and installed.

EP 3-2: Machinery system faults should be detected and adequately informed to person in charge on board. Alarms should activate audible and visible signals in machinery control room, the location where lookout and conning function take place and places where engineers are on watch.

EP 3-3: Means to detect and alarm conditions that may result in crankcase fire or explosion should be provided.

FR 4: The propulsion machinery including manoeuvring capability should be adequately monitored and controlled from the navigation bridge, and the control should be indicated in the machinery control room. This will be accomplished by ensuring:

EP 4-1: Adequate monitoring and control of the propulsion system from the navigation bridge should be ensured.

EP 4-2: The monitoring and control system for periodically unattended machinery control room should be single failure tolerant.

EP 4-3: Local manual control of propulsion machinery should be provided in the event of failure of the remote control system. The remote control of the propulsion machinery should be possible only from one location at a time, and at each location there should be an indicator showing which location is in control of the propulsion machinery.

EP 4-4: Means independent of navigating bridge control system should be provided for emergency stopping of propulsion machinery.

FR 5: The communication between navigation bridge and machinery control room should be ensured at all times. This will be accomplished by ensuring:

EP 5-1: Adequate communication means between the machinery control room, the navigation bridge, engineer's public rooms and engineer's cabins are provided.

FR 6: A safety system should be provided to ensure that serious malfunction in machinery or boiler operations initiates an alarm and automatic shutdown of that part of the plant. This will be accomplished by ensuring:

EP 6-1: The complete shutdown of the propulsion system should not be automatically activated except in cases which could lead to serious damage, complete breakdown, or explosion.

EP 6-2: Shutdown of the propulsion system should be controlled effectively, and results in continuity of safe operation of the ship.

EP 6-3: Automatic controls of valves should be designed to fail-safe in the event of a loss of power supply.

FR 7: Electric power should be provided to all essential components in order to ensure the integrity of power supply to those services required for propulsion and steering as well as the safety of the ship. This will be accomplished by ensuring:

EP 7-1: Special consideration should be given for system overloads and load shedding.

EP 7-2: Electric power system should be adequately designed, constructed and installed.

EP 7-3: Electric power system should provide adequate power to machineries including propulsion, essential auxiliaries and steering systems.

FR 8: Periodically unattended machinery spaces should be provided with adequate means for protection against flooding. This will be accomplished by the following:

EP 8-1: Bilge wells in periodically unattended machinery spaces should be provided with means to detect accumulation of liquids at normal angles of trim and heel with a visual and audible alarm on the navigation bridge and machinery control room.

EP 8-2: For a bilge pumping system having arrangement to start automatically, means should be provided to indicate that the influx of water is exceeding the pumping capacity.

EP 8-3: The control of any valves serving a sea inlet and discharge below waterline should be designed and arranged to remain accessible in case of excessive influx of water into unattended machinery space."

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ANNEX 5

DRAFT MSC CIRCULAR*

UNIFIED INTERPRETATIONS OF SOLAS CHAPTERS II-1 AND XII; THE TECHNICAL PROVISIONS FOR MEANS OF ACCESS FOR INSPECTIONS (RESOLUTION MSC.158(78)); AND THE PERFORMANCE STANDARDS FOR WATER LEVEL DETECTORS ON SHIPS SUBJECT TO SOLAS REGULATIONS II-1/25 AND 25-1, AND XII/12 (RESOLUTION MSC.188(79)/REV.2)

1 The Maritime Safety Committee, at its ninety-second session (12 to 21 June 2013), approved unified interpretations of the provisions of SOLAS chapters II-1 and XII, of the *Technical provisions for means of access for inspections* (resolution MSC.158(78)) and of the *Performance standards for water level detectors on bulk carriers and single hold cargo ships other than bulk carriers* (resolution MSC.188(79)), as set out in the annex to MSC.1/Circ.1464/Rev.1 and Corr.1, following the recommendations made by the Sub-Committee on Ship Design and Equipment at its fifty-seventh session, with a view to ensuring a uniform approach towards the application of the provisions of SOLAS chapters II-1 and XII.

2 The Maritime Safety Committee, at its ninety-fifth session (3 to 12 June 2015), with a view to providing more specific guidance on the application of SOLAS regulation II-1/3-6.3.1, as amended, and the revised *Technical provisions for means of access for inspections* (resolution MSC.158(78)), approved amendments to the *Unified interpretations of the provisions of SOLAS chapters II-1 and XII, of the Technical provisions for means of access for inspections (resolution MSC.158(78)) and of the Performance standards for water level detectors on bulk carriers and single hold cargo ships other than bulk carriers (resolution MSC.188(79))* (MSC.1/Circ.1464/Rev.1), as prepared by the Sub-Committee on Ship Design and Construction, at its second session (16 to 20 February 2015), as set out in the annex to MSC.1/Circ.1507.

3 The Maritime Safety Committee, at its ninety-sixth session (11 to 20 May 2016), approved the unified interpretations relating to the application of SOLAS regulation II-1/3-6, as amended, and the *Revised technical provisions for means of access for inspections* (resolution MSC.158(78)), prepared by the Sub-Committee on Ship Design and Construction, at its third session (18 to 22 January 2016), as set out in the annex to MSC.1/Circ.1545, with a view to ensuring a uniform approach towards the application of the provisions of SOLAS regulation II-1/3-6. Having approved MSC.1/Circ.1545 and considered the need to consequentially amend MSC.1/Circ.1464/Rev.1 and its Corr.1, as amended by MSC.1/Circ.1507, the Committee requested the Secretariat to prepare a consolidated MSC circular containing the provisions of MSC.1/Circ.1464/Rev.1 and Corr.1, as amended by MSC.1/Circ.1507, and MSC.1/Circ.1545.

4 The Maritime Safety Committee, at its ninety-eighth session (7 to 16 June 2017), approved the unified interpretations of the provisions of SOLAS chapters II-1 and XII, of the *Revised technical provisions for means of access for inspections* (resolution MSC.158(78)) and of the *Performance standards for water level detectors on bulk carriers and single hold cargo ships other than bulk carriers* (resolution MSC.188(79)), containing the provisions of MSC.1/Circ.1464/Rev.1 and Corr.1, as amended by MSC.1/Circ.1507, and MSC.1/Circ.1545.

* For dissemination as MSC.1/Circ.1572/Rev.2.

5 The Maritime Safety Committee, at its 102nd session (4 to 11 November 2020), approved amendments to section 3, prepared by the Sub-Committee on Ship Design and Construction, at its seventh session (3 to 7 February 2020). ~~The revised unified interpretations are set out in the annex.~~

6 The Maritime Safety Committee, at its 108th session (15 to 24 May 2024), approved amendments to sections 1 and 9, prepared by the Sub-Committee on Ship Design and Construction, at its tenth session (22 to 26 January 2024).

~~6~~ 7 Except for sections 1 and 9, Member States are invited to use the annexed interpretations when applying relevant provisions of SOLAS chapters II-1 and XII to ships constructed on or after 9 June 2017~~, and to bring them to the attention of all parties concerned~~.

8 The interpretations in section 1 should apply to inspections conducted by the crew or competent inspectors on or after 1 January 2025.

9 The interpretations in section 9 should apply to detectors which are installed on:

(a) new ships for which the building contract is placed on or after 1 January 2025, or in the absence of the contract, the keel of which is laid or which are at a similar stage of construction on or after 1 January 2025; or

(b) ships other than those ships prescribed in (a), with a contractual delivery date for the equipment to the ship on or after 1 January 2025, or in the absence of a contractual delivery date to the ship, actually delivered to the ship on or after 1 January 2025.

10 Member States are invited to bring the interpretations to the attention of all parties concerned.

11 This circular supersedes MSC.1/Circ.1572/Rev.1.

ANNEX

AMENDMENTS TO BE INCORPORATED IN CONSOLIDATED REVISED UNIFIED INTERPRETATIONS

1 The title of the annex to MSC.1/Circ.1572/Rev.1 is amended as follows:

"UNIFIED INTERPRETATIONS OF SOLAS CHAPTERS II-1 AND XII; THE TECHNICAL PROVISIONS FOR MEANS OF ACCESS FOR INSPECTIONS (RESOLUTION MSC.158(78)); AND THE PERFORMANCE STANDARDS FOR WATER LEVEL DETECTORS ON ~~BULK CARRIERS AND SINGLE HOLD CARGO SHIPS OTHER THANBULK CARRIERS~~ SHIPS SUBJECT TO SOLAS REGULATIONS II-1/25, II-1/25-1 AND XII/12 (RESOLUTION MSC.188(79)/REV.2) "

2 Section 1.4 is amended as follows:

"1.4 SOLAS REGULATION II-1/3-6, PARAGRAPH 2.3

Interpretation

Inspection

The means of access arrangements, including portable equipment and attachments, should be ~~periodically~~ annually inspected by the crew or competent inspectors ~~as and when it is going to be used to confirm that the means of access remain in serviceable condition~~ and the inspections should be recorded in Part 2 of the Ships Structure Access Manual. In addition prior to any space examinations that utilized the permanent means of access, an inspection to confirm the condition of the permanent means of access should be recorded for each space.

Procedures

1 Any Company authorized person using the means of access should assume the role of inspector and check for obvious damage prior to using the access arrangements. Whilst using the means of access, the inspector should verify the condition of the sections used by close-up examination of those sections and note any deterioration in the provisions. Should any damage or deterioration be found, the effect of such deterioration including loss of coating and wastage should be assessed as to whether the damage or deterioration affects the safety for continued use of the access. Deterioration found that is considered to affect safe use should be determined as "substantial damage" and measures should be put in place to ensure that the affected section(s) are not to be further used prior to effective repair. Substantial damage should be reported in Part 2 of the Ship Structure Access Manual.

2 Statutory survey of any space that contains means of access should include verification of the continued effectiveness of the means of access in that space. Survey of the means of access should not be expected to exceed the scope and extent of the survey being undertaken. If the means of access is found deficient the scope of survey should be extended if this is considered appropriate.

3 Records of all inspections should be established based on the requirements detailed in the ship's Safety Management System. The records should be readily available to persons using the means of access and a copy attached to the Ship Structure Access Manual. The latest record for the portion of the means of access inspected should include as a minimum the date of the inspection, the name and title of the inspector, a confirmation signature, the sections of means of access inspected, verification of continued serviceable condition or details of any deterioration or substantial damage found and repairs carried out. A file of permits issued should be maintained for verification. Inspection records of permanent means of access should be made available to classification society surveyors prior to survey.

Technical background

It is recognized that means of access may be subject to deterioration in the long term due to corrosive environment and external forces from ship motions and sloshing of liquid contained in the tank, and mechanical damage in cargo hold. Means of access therefore should be inspected at every opportunity of tank/space entry, but at a minimum annually. The above interpretation should be contained in a section of the Ship Structure Access Manual."

3 The paragraph under the chapeau of section 9 is amended as follows:

"**9 SOLAS REGULATION XII/12 – HOLD, BALLAST, AND DRY SPACE WATER INGRESS ALARMS**

"When water level detectors are installed on bulk carriers in compliance with regulation XII/12, the *Performance standards for water level detectors on ~~bulk carriers and single hold cargo ships other than bulk carriers~~ ships subject to SOLAS regulations II-1/25, II-1/25-1 and XII/12*, annexed to resolution MSC.188(79)/Rev.2 adopted on ~~3 December 2004~~ 8 June 2023, should be applied, taking into account the following interpretations to the paragraph of the Performance standards. "

4 Section 9.1 is amended as follows:

"**9.1 PERFORMANCE STANDARDS FOR WATER LEVEL DETECTORS ON ~~BULK CARRIERS AND SINGLE HOLD CARGO SHIPS OTHER THANS BULK CARRIES~~ SHIPS SUBJECT TO SOLAS REGULATIONS II-1/25, II-1/25-1 AND XII/12, PARAGRAPH 3.2.3**

Interpretation

Detection equipment includes the sensor and any filter and protection arrangements for the detector installed in cargo holds and other spaces as required by regulation XII/12.1."

5 Section 9.2 is amended as follows:

"**9.2 PERFORMANCE STANDARDS FOR WATER LEVEL DETECTORS ON ~~BULK CARRIERS AND SINGLE HOLD CARGO SHIPS OTHER THANS BULK CARRIES~~ SHIPS SUBJECT TO SOLAS REGULATIONS II-1/25, II-1/25-1 AND XII/12, PARAGRAPH 3.2.5**

Interpretation

1 In general, the ~~construction and type testing~~ equipment in cargo area should be ~~in accordance with publication IEC 60079: Electrical Equipment for Explosive Gas Atmospheres to a minimum requirement of EX(ia)~~ suitable for installation in hazardous area comparable with Zone 1) as defined in IEC 60092-506, Clause 3.1. The equipment should be suitable for the explosive gas atmosphere and/or combustible dust that can be present, depending on the cargo carried.

2 The equipment should be manufactured, tested, marked and installed in accordance with IEC 60079-series or other equivalent recognized international standard.

3 Where certified safe type equipment is installed, the equipment should be adequately protected against mechanical damage from the cargo so as to maintain its EX properties.

4 Where a ship is designed only for the carriage of cargoes that cannot create a combustible or explosive atmosphere then the requirement for ~~intrinsically safe circuitry~~ certified safe type equipment should not be insisted upon, provided the operational instructions included in the Manual required by 4.1 of the appendix to the annex specifically exclude the carriage of cargoes that could produce a potential explosive atmosphere. Any exclusion of cargoes identified in the annex should be consistent with the ship's Cargo Book and any Certification relating to the carriage of specifically identified cargoes.

~~2~~5 ~~The maximum surface temperature of equipment installed within cargo spaces should be appropriate for the combustible dusts and/or explosive gases likely to be encountered.~~ Where the characteristics of the dust and/or gases are unknown, ~~the maximum surface temperature of equipment should not exceed 85ºC~~ temperature class T6, gas group IIC and/or either dust group IIIC or IP5X, are to be used as appropriate.

~~3 Where intrinsically safe equipment is installed, it should be of a certified safe type.~~

~~4~~6 Where detector systems include ~~intrinsically safe circuits~~ certified safe type equipment, plans of the arrangements should be appraised/approved by individual classification societies."

6 The title of section 9.3 is amended as follows:

"**9.3 PERFORMANCE STANDARDS FOR WATER LEVEL DETECTORS ON ~~BULK CARRIERS AND SINGLE HOLD CARGO SHIPS OTHER THAN BULK CARRIERS~~ SHIPS SUBJECT TO SOLAS REGULATIONS II-1/25, II-1/25-1 and XII/12, PARAGRAPH 3.3.2**

Interpretation

The pre-alarm, as primary alarm, should indicate a condition that requires prompt attention to prevent an emergency condition and the main alarm, as an emergency alarm should indicate that immediate actions must be taken to prevent danger to human life or to the ship. "

7 The title of section 9.4 is amended as follows:

"**9.4 PERFORMANCE STANDARDS FOR WATER LEVEL DETECTORS ON ~~BULK CARRIERS AND SINGLE HOLD CARGO SHIPS OTHER THAN BULK CARRIERS~~ SHIPS SUBJECT TO SOLAS REGULATIONS II-1/25, II-1/25-1 and XII/12, PARAGRAPH 3.3.~~7~~6**

Interpretation
Fault monitoring should address faults associated with the system that include open circuit, short circuit, as well as arrangement details that would include loss of power supplies and CPU failure for computer-based alarm/monitoring system, etc. "

8 The title of section 9.5 is amended as follows:

"**9.5 PERFORMANCE STANDARDS FOR WATER LEVEL DETECTORS ON ~~BULK CARRIERS AND SINGLE HOLD CARGO SHIPS OTHER THAN BULK CARRIERS~~ SHIPS SUBJECT TO SOLAS REGULATIONS II-1/25, II-1/25-1 and XII/12, PARAGRAPH 3.3.~~8~~7**

Interpretation

1 The electrical power supply should be from two separate sources, one should be the main source of electrical power and the other should be the emergency source, unless a continuously charged dedicated accumulator battery is fitted, having arrangement, location, and endurance equivalent to that of the emergency source (18 hours). The battery supply may be an internal battery in the water level detector system.

2 The changeover arrangement of supply from one electrical source to another need not be integrated into the water level detector system.

3 Where batteries are used for the secondary power supply, failure alarms for both power supplies should be provided."

9 The title of section 9.6 is amended as follows:

"**9.5 PERFORMANCE STANDARDS FOR WATER LEVEL DETECTORS ON ~~BULK CARRIERS AND SINGLE HOLD CARGO SHIPS OTHER THAN BULK CARRIERS~~ SHIPS SUBJECT TO SOLAS REGULATIONS II-1/25, II-1/25-1 and XII/12, PARAGRAPH 3.4.1**

Interpretation

1 IACS UR E10 may be used as an equivalent test standard to IEC 60092-504.

2 The range of tests should include the following:

For alarm/monitoring panel:

.1 functional tests in accordance with resolution MSC.188(79)/Rev.2 on the *Performance standards for water level detectors on ships ~~bulk carriers and single hold cargo ships other than bulk carriers~~ subject to SOLAS regulations II-1/25, II-1/25-1 and XII/12*;

.2 electrical power supply failure test;

.3 power supply variation test;

.4 dry heat tests;

.5 damp heat tests;

.6 vibration test;

.7 EMC tests;

.8 insulation resistance test;

.9 high-voltage test; and

.10 static and dynamic inclinations tests, if moving parts are contained.

For IS barrier unit, if located in the wheelhouse: in addition to the certificate issued by a computer independent testing laboratory, EMC tests should also be carried out.

For water ingress detectors:

.1 functional tests in accordance with resolution MSC.188(79)/Rev.2 on the *Performance standards for water level detectors on ships ~~bulk carriers and single hold cargo ships other than bulk carriers~~ subject to SOLAS regulations II-1/25, II-1/25-1 and XII/12*;

.2 electrical power supply failure test;

.3 power supply variation test;

.4 dry heat tests;

.5 damp heat tests;

.6 vibration test;

.7 enclosure class in accordance with resolution MSC.188(79)/Rev.2 on the *Performance standards for water level detectors on ships ~~bulk carriers and single hold cargo ships other than bulk carriers~~ subject to SOLAS regulations II-1/25, II-1/25-1 and XII/12*;

.8 insulation resistance test;

.9 high-voltage test; and

.10 static and dynamic inclinations tests (if the detectors contain moving parts). "

10 The title of section 9.7 is amended as follows:

"**9.7 PERFORMANCE STANDARDS FOR WATER LEVEL DETECTORS ON ~~BULK CARRIERS AND SINGLE HOLD CARGO SHIPS OTHER THAN BULK CARRIERS~~ SHIPS SUBJECT TO SOLAS REGULATIONS II-1/25, II-1/25-1 and XII/12, APPENDIX, PARAGRAPH 2.1.1**

Interpretation

The test procedure should satisfy the following criteria:

.1 The type tests should be witnessed by a classification society surveyor if the tests are not carried out by a competent independent test facility.

.2 type tests should be carried out on a prototype or randomly selected item(s) which are representative of the manufactured item that is being type tested; and

.3 type tests should be documented (type test reports) by the manufacturer and submitted for review by classification societies. "

11 The title of section 9.8 is amended as follows:

"**9.8 PERFORMANCE STANDARDS FOR WATER LEVEL DETECTORS ON ~~BULK CARRIERS AND SINGLE HOLD CARGO SHIPS OTHER THAN BULK CARRIERS~~ SHIPS SUBJECT TO SOLAS REGULATIONS II-1/25, II-1/25-1 and XII/12, APPENDIX, PARAGRAPH 2.1.1.1**

Interpretation

1 The submerged test period for electrical components intended to be installed in ballast tanks and cargo tanks used as ballast tanks should be not less than 20 days.

2 The submerged test period for electrical components intended to be installed in dry spaces and cargo holds not intended to be used as ballast tanks should be not less than 24 hours.

3 Where a detector and/or cable connecting device (e.g. junction box, etc.) is installed in a space adjacent to a cargo hold (e.g. lower stool, etc.) and the space is considered to be flooded under damage stability calculations, the detectors and equipment should satisfy the requirements of IP68 for a water head equal to the hold depth for a period of 20 days or 24 hours on the basis of whether or not the cargo hold is intended to be used as a ballast tank as described in the previous paragraphs."

12 The title of section 9.9 is amended as follows:

"**9.9 PERFORMANCE STANDARDS FOR WATER LEVEL DETECTORS ON ~~BULK CARRIERS AND SINGLE HOLD CARGO SHIPS OTHER THAN BULK CARRIERS~~ SHIPS SUBJECT TO SOLAS REGULATIONS II-1/25, II-1/25-1 and XII/12, APPENDIX, PARAGRAPH 2.1.1.2**

Interpretation

1 The type test required for the sensor should be in accordance with the following:

.1 The test container for the cargo/water mixture should be dimensioned so that its height and volume are such that the sensor and any filtration fitted can be totally submerged for the repeated functionality tests required by paragraph 2.1.1.2 and the static and dynamic inclination tests identified in the previous interpretation.

.2 The sensor and any filtration fitted that should be submerged and should be arranged in the container as they would be installed in accordance with the installation instructions required by paragraph 4.4.

.3 The pressure in the container for testing the complete detector should be not more than 0.2 bar at the sensor and any filter arrangement. The pressure may be realized by pressurization or by using a container of sufficient height.

.4 The cargo/water mixture should be pumped into the test container and suitable agitation of the mixture provided to keep the solids in suspension. The effect of pumping the cargo/water mixture into the container should not affect the operation of the sensor and filter arrangements.

.5 The cargo/water mixture should be pumped into the test container to a predetermined level that submerges the detector and the operation of the alarm observed.

.6 The test container should then be drained and the deactivation of the alarm condition observed.

.7 The test container and sensor with any filter arrangement should be allowed to dry without physical intervention.

.8 The test procedure should be repeated consecutively 10 times without cleaning any filter arrangement that may be fitted in accordance with the manufacturer's installation instructions (see also 2.1.1.2).

.9 Satisfactory alarm activation and deactivation at each of the 10 consecutive tests will demonstrate satisfactory type testing.

2 The cargo/water mixture used for type testing should be representative of the range of cargoes within the following groups and should include the cargo with the smallest particles expected to be found from a typical representative sample:

.1 iron ore particles and seawater;

.2 coal particles and seawater;

.3 grain particles and seawater; and

.4 aggregate (sand) particles and seawater.

The smallest and largest particle size together with the density of the dry mixture should be ascertained and recorded. The particles should be evenly distributed throughout the mixture. Type testing with representative particles will in general qualify all types of cargoes within the four groupings shown above.

The following provides guidance on the selection of particles for testing purposes: "

13 The title of section 9.10 is amended as follows:

"**9.10 PERFORMANCE STANDARDS FOR WATER LEVEL DETECTORS ON ~~BULK CARRIERS AND SINGLE HOLD CARGO SHIPS OTHER THAN BULK CARRIERS~~ SHIPS SUBJECT TO SOLAS REGULATIONS II-1/25, II-1/25-1 and XII/12, APPENDIX, PARAGRAPH 3.1.1**

Interpretation

The test procedure should satisfy the following criteria:

.1 type tests should be witnessed by a classification society surveyor if the tests are not carried out by a competent independent test facility;

.2 type tests should be carried out on a prototype or randomly selected item(s) which are representative of the manufactured item that is being type tested; and

.3 type tests should be documented (type test reports) by the manufacturer and submitted for review by classification societies."

14 The title of section 9.11 is amended as follows:

"**9.11 PERFORMANCE STANDARDS FOR WATER LEVEL DETECTORS ON ~~BULK CARRIERS AND SINGLE HOLD CARGO SHIPS OTHER THAN BULK CARRIERS~~ SHIPS SUBJECT TO SOLAS REGULATIONS II-1/25, II-1/25-1 and XII/12, APPENDIX, SECTION 4 – MANUALS**

Interpretation

For each ship, a copy of the manual should be made available to the surveyor at least 24 hours prior to survey of the water-level detection installation. Each classification society should ensure that any plans required for classification purposes have been appraised/approved as appropriate. "

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ANNEX 6

DRAFT MSC CIRCULAR

UNIFIED INTERPRETATIONS OF SOLAS REGULATION XV/5.1 AND PARAGRAPH 3.5 OF PART 1 OF THE INTERNATIONAL CODE OF SAFETY FOR SHIPS CARRYING INDUSTRIAL PERSONNEL (IP CODE) ON THE HARMONIZATION OF THE INDUSTRIAL PERSONNEL SAFETY CERTIFICATE WITH SOLAS SAFETY CERTIFICATES

1 The Maritime Safety Committee[, at its 108th session (15 to 24 May 2024)], approved the *Unified interpretation of SOLAS regulation XV/5.1 and paragraph 3.5 of part 1 of the International Code of Safety for Ships Carrying Industrial Personnel (IP Code) Code on the harmonization of the Industrial Personnel Safety Certificate with SOLAS safety certificates,* with a view to providing more specific guidance on the initial and maintenance surveys as required in SOLAS regulations XV/3.2, 3.3 and 5.1, as set out in the annex.

2 Member States are invited to use the annexed unified interpretations as guidance when applying SOLAS regulations XV/3.23.3 and 5.1 and to bring them to the attention of all parties concerned.

ANNEX

UNIFIED INTERPRETATIONS OF SOLAS REGULATION XV/5.1 AND PARAGRAPH 3.5 OF PART 1 OF THE INTERNATIONAL CODE OF SAFETY FOR SHIPS CARRYING INDUSTRIAL PERSONNEL (IP CODE)ON THE HARMONIZATION OF THE INDUSTRIAL PERSONNEL SAFETY CERTIFICATE WITH SOLAS SAFETY CERTIFICATES

The implementation of initial and maintenance surveys as required in SOLAS regulations XV/3.2, 3.3 and XV/5.1 (resolution MSC.521(106)) and paragraph 3 of part I of the International Code of Safety for Ships Carrying Industrial Personnel (IP Code) (resolution MSC.527(106)) should be interpreted as indicated in the following table:

Initial and maintenance surveys pertaining to SOLAS chapter XV and the IP Code

1 SHIPS UNDER HARMONIZED SYSTEM OF SURVEY AND CERTIFICATION (HSSC) SCHEME			
Type of ship	Initial survey for issuance of the Industrial Personnel Safety Certificate	Surveys for the maintenance of the Industrial Personnel Safety Certificate	Surveys for renewal of the Industrial Personnel Safety Certificate
Cargo ship	First Safety Construction intermediate survey or renewal survey, as required by SOLAS regulation I/10, whichever occurs first after 1 July 2024.	a) Aligned with maintenance survey (annual or intermediate) related to the Cargo Ship Safety Certificate. The Industrial Personnel Safety Certificate should be endorsed upon satisfactory results of the maintenance survey related to the IP Code and Cargo Ship Safety; or b) Aligned with maintenance survey (annual or intermediate) related to the Cargo Ship Safety Construction Certificate. The Industrial Personnel Safety Certificate should be endorsed upon satisfactory results of the maintenance survey (annual or intermediate) related to the IP Code and Safety Construction, provided that valid Cargo Ship Safety Equipment Certificate is held by a ship.	a) Aligned with renewal survey related to the Cargo Ship Safety Certificate. The Industrial Personnel Safety Certificate should be issued upon satisfactory results of the renewal survey related to the IP Code and Cargo Ship Safety; or b) Aligned with renewal Survey of Safety Construction. The Industrial Personnel Safety Certificate should be issued upon satisfactory results of the renewal survey related to the IP Code and Safety Construction, provided that valid Cargo Ship Safety Equipment Certificate is held by a ship.
High-speed cargo craft	The third periodical or first renewal survey, as required by the 2000 HSC Code, paragraph 1.5, whichever occurs first after 1 July 2024.	Aligned with periodical survey related to the High-Speed Craft Safety Certificate. The Industrial Personnel Safety Certificate should be endorsed upon satisfactory results of the periodical survey related to the IP Code and High-Speed Craft Safety.	Aligned with renewal survey related to the High-Speed Craft Safety Certificate. The Industrial Personnel Safety Certificate should be issued upon satisfactory results of the renewal survey related to the IP Code and High-Speed Craft Safety.

2 SHIPS NOT UNDER THE HSSC SCHEME			
Type of ship	Initial Survey for issuance of the Industrial Personnel Safety Certificate	Surveys for the maintenance of the Industrial Personnel Safety Certificate	Surveys for renewal of the Industrial Personnel Safety Certificate
Cargo ship	First Safety Construction renewal survey as required by SOLAS regulation I/10, which occurs after 1 July 2024 but, in any case, not later than 30 September 2027.	Aligned with maintenance survey (annual or intermediate) related to the Cargo Ship Safety Construction Certificate. The Industrial Personnel Safety Certificate should be endorsed upon satisfactory results of maintenance survey (annual or intermediate) related to the IP Code and Safety Construction, provided that valid Cargo Ship Safety Equipment Certificate is held by a ship.	Aligned with renewal Survey of Safety Construction. The Industrial Personnel Safety Certificate should be issued upon satisfactory results of the renewal survey related to the IP Code and Safety Construction, provided that valid Cargo Ship Safety Equipment Certificate is held by a ship.
High-speed cargo craft	The third periodical or first renewal survey, as required by the 2000 HSC Code, paragraph 1.5, whichever occurs first after 1 July 2024.	Aligned with periodical survey related to the High-Speed Craft Safety Certificate. The Industrial Personnel Safety Certificate should be endorsed upon satisfactory results of the periodical survey related to the IP Code and High-Speed Craft Safety.	Aligned with renewal survey related to the High-Speed Craft Safety Certificate. The Industrial Personnel Safety Certificate should be issued upon satisfactory results of the renewal survey related to the IP Code and High-Speed Craft Safety.

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ANNEX 7

DRAFT MSC CIRCULAR*

UNIFIED INTERPRETATIONS OF THE CODE ON NOISE LEVELS ON BOARD SHIPS (RESOLUTION MSC.337(91))

1 The Maritime Safety Committee, at its ninety-fifth session (3 to 12 June 2015), in order to facilitate its global and consistent implementation of the Code on Noise Levels on Board Ships, as adopted by resolution MSC.337(91), approved *Unified interpretation of the Code on Noise Levels on board Ships (resolution MSC.337(91))*(MSC.1/Circ.1509), as prepared by the Sub-Committee on Ship Design and Construction, at its second session (16 to 20 February 2015).

2 The Maritime Safety Committee, at its [108th session (15 to 24 May 2024)], with a view to providing more specific guidance on calibration for sound level meters and calibrators, approved the amendments to the unified interpretation of section 2 of the *Code on noise levels on board ships* (resolution MSC.337(91)), prepared by the Sub-Committee on Ship Design and Construction, at its tenth session (22 to 26 January 2024), as set out in the annex.

23~~Member Governments are invited to use the annexed unified interpretation as guidance when applying Code on Noise Levels on board Ships and to bring the unified interpretation to the attention of all parties concerned.~~ Member Governments are invited to use the annexed unified interpretation as guidance when applying the Code on Noise Levels on Board ships (resolution MSC.337(91)) for sound level meters and calibrators at their next calibration due date, but not later than two years after the date of approval of this unified interpretation.

4 This circular revokes MSC.1/Circ.1509.

* Tracked changes are indicated using "strikeout" for deleted text and "grey shading" to highlight new insertions and all modifications, including deleted text.

ANNEX

UNIFIED INTERPRETATIONS OF THE CODE ON NOISE LEVELS ON BOARD SHIPS (RESOLUTION MSC.337(91))

CHAPTER 1 – GENERAL

Paragraph 1.3.8

Passenger spaces where they are also occupied by crew such as recreation rooms and open recreation areas should be considered as "other passenger spaces", and therefore are not subject to the Code. However, bulkhead and decks of crew cabins and hospitals adjacent to such rooms/areas should have the weighted sound reduction index (Rw) in compliance with paragraph 6.2 of chapter 6.

Paragraph 1.4.21

Navigating bridge wings include enclosed navigating bridge spaces.

CHAPTER 2 – MEASURING EQUIPMENT

"2.1 Equipment specifications

2.1.1 Sound level meters

Measurement of sound pressure levels shall be carried out using precision integrating sound level meters subject to the requirements of this chapter. Such meters shall be manufactured to IEC 61672-1(2002-05)[1] type/class 1 standard as applicable, or to an equivalent standard acceptable to the Administration.[2]

[1] Recommendation for sound level meters.

[2] Sound level meters class/type 1 manufactured according to IEC 651/IEC 804 may be used until 1 July 2016.

2.2 Use of equipment

2.2.1 Calibration

Sound calibrators shall comply with the standard IEC 60942 (2003-01) and shall be approved by the manufacturer of the sound level meter used.

2.2.2 Check of measuring instrument and calibrator

Calibrator and sound level meter shall be verified at least every two years by a national standard laboratory or a competent laboratory accredited according to ISO 17025 (2005) as corrected by (Cor 1:2006)."

Interpretation

The calibration should be carried out in accordance with IEC 61672-3 for sound level meters and IEC 60942 Appendix B for field calibrators. The edition of the calibration standard should correspond with the edition of the manufacturing standard for the instruments. The measurement company should provide documentation about the standard which has been

met if not clearly marked on the sound level meter or field calibrator. The documentation or marking should include a clear statement of the results of the periodic tests and which performance class the instrument meets after calibration.

CHAPTER 3 – MEASUREMENT

Paragraph 3.3.5

Air conditioning vents should be kept open during the taking of noise measurements on board, unless they are designed to be kept closed in the normal operating condition.

Paragraph 3.3.6

Closing devices of ventilation grilles/louvres of cabin doors should be kept open during the taking of noise measurements on board, unless they are designed to be kept closed in the normal operating condition.

Paragraph 3.3.9
The wording "40% of maximum thruster power" means exactly "40% of maximum" and does not mean "40% of 80% as required by paragraph 3.3.2 of the Code".

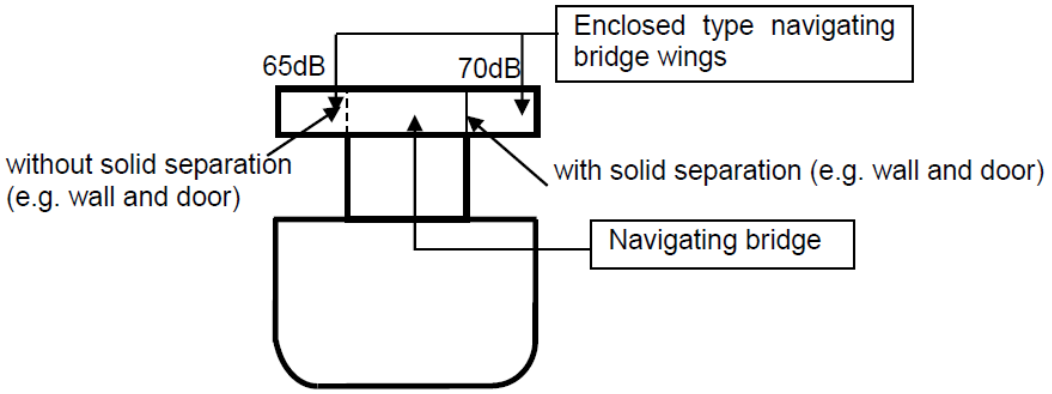
Paragraph 3.9
This provision only "acknowledges" the uncertainty; it does not represent any "allowance".

CHAPTER 4 – MAXIMUM ACCEPTABLE SOUND PRESSURE LEVELS

Paragraph 4.2

1 A navigating bridge provided with radio equipment should be regarded as a "navigating bridge" (65dB(A))."Radio rooms" mean separate rooms dedicated for sending/receiving radio messages.

2



3 If a cabin is completely separated by more than one bulkhead from the airborne sound source, those bulkheads are not required to have the airborne sound insulation properties as required in chapter 6. For this purpose, bathroom/toilet/lavatory is not regarded as a cabin but regarded as the origin of airborne sound to another cabin.

4 A room consisting of day-room and bedroom should be regarded as a single "cabin" (60dB(A)/55dB(A)) in cases where the room is for single occupancy. For this purpose, partitions (panel and door) between day-room and bedroom need not have the airborne sound insulation properties as required in chapter 6.

CHAPTER 6 – ACOUSTIC INSULATION BETWEEN ACCOMMODATION SPACES

Paragraph 6.2.1

1 The requirements regarding airborne sound insulation properties for bulkheads also apply to components installed in bulkheads (e.g. corridors to cabin doors).

2 In applying this requirement to bulkheads including components as mentioned in the above, the following may apply:

.1 In cases of bulkheads consisting of acoustic insulation panels and doors, this requirement is considered satisfactory where each component forming the surface of bulkheads (acoustic insulation panels and doors, etc.) has at least the required Rw.

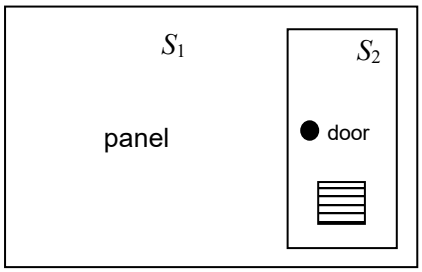
.2 In cases where either acoustic insulation panels or doors forming part of bulkheads have weighted sound reduction index inferior to that required by section 6.2.1 of the Code, this requirement is considered satisfactory provided that the Rw of bulkheads is not inferior to the required value, i.e. the Rw of bulkhead calculated using both the airborne sound insulation properties of the doors and those of the panels is not inferior to the required value. As guidance on evaluation of the Rw of bulkheads, the following formulae can be used:

$$\bar{R} = 10\log_{10}\left[S/\sum_{i=1}^{n}\left(S_i \cdot 10^{-R_i/10}\right)\right]$$

where S: the area of the concerned bulkhead
n: the number of components forming the concerned bulkhead
R_i: the sound reduction index of the component number *i*
S_i: the area of single component

Note: R_i has frequency elements in frequency range from 100 to 5000 [Hz]

Example: bulkhead consisting of acoustic insulation panels and doors:



n = 2
S_1: the area of the panel
S_2: the area of the door
S: the area of concerned bulkhead ($S = S_1 + S_2$)
R_1: the sound reduction index of the panel
R_2: the sound reduction index of the door

3 The requirements regarding airborne sound insulation properties for decks should also apply to decks together with coverings and should, therefore, be tested in laboratory as in the onboard arrangement. However, they need not apply to ceiling panels.

Paragraph 6.2.2

1 Closing devices of ventilation grilles/louvres of cabin doors should be kept open during laboratory tests.

2 Doors should be tested together with the associated door frame. In cases where there is no sill being part of the door frame, the doors should be tested with the gap specified by manufacturers and with sealing materials, if fitted.

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ANNEX 8

DRAFT MSC CIRCULAR*

UNIFIED INTERPRETATIONS OF SOLAS REGULATIONS II-2/9 AND 13

1 The Maritime Safety Committee, at its ninety-fifth session (3 to 12 June 2015), with a view to providing more specific guidance on the application of SOLAS regulations II-2/9 and 13, approved Unified interpretations of SOLAS regulations II-2/9 and 13 (MSC.1/Circ.1511), as prepared by the Sub-Committee on Ship Design and Construction, at its second session (16 to 20 February 2015)~~, as set out in the annex~~.

2 The Maritime Safety Committee, at its [108th session (15 to 24 May 2024)], with a view to providing more specific guidance on "safe position" in SOLAS regulation II-2/13.4, approved amendments to the unified interpretation, prepared by the Sub-Committee on Ship Design and Construction, at its tenth session (22 to 26 January 2024), as set out in the annex.

~~2~~ 3 Member Governments are invited to apply the Unified interpretations of SOLAS regulations II-2/9 and 13 and to bring them to the attention of all parties concerned.

4 This circular revokes MSC.1/Circ.1511.

* Tracked changes are indicated using "strikeout" for deleted text and "grey shading" to highlight new insertions and all modifications, including deleted text.

ANNEX

UNIFIED INTERPRETATIONS OF SOLAS REGULATIONS II-2/9 AND 13

REGULATION II-2/9 – CONTAINMENT OF FIRE

Tables 9.5 and 9.6:

1 Decks and bulkheads

Decks and bulkheads to be insulated to "A-30" fire integrity are those boundaries of single spaces protected by their own fire-extinguishing system.

2 Hatches

Class "A" fire integrity respectively does not apply to hatches fitted on open deck adjacent to ro-ro/vehicle spaces and on decks separating ro-ro/vehicle spaces, provided that such hatches are constructed of steel.

3 Access doors

"A-0" fire integrity does not apply to access doors to ro-ro/vehicle spaces fitted on open decks, provided that such access doors are constructed of steel.

4 Movable ramps

Movable ramps installed on decks referred to in Interpretation1 above which form boundaries of "A-30" fire integrity shall be constructed of steel and shall be insulated to "A-30" fire integrity, except for the "working parts" of such movable ramps (e.g. hydraulic cylinders, associated pipes/accessories) and members supporting such fittings which do not contribute to the structural strength of the boundary. Such movable ramps need not be subject to fire test. This is applicable to non-watertight doors used for loading/unloading of vehicles.

5 Ventilation ducts

Where ducts for a ro-ro/vehicle spaces pass through other ro-ro/vehicle spaces without serving those spaces, each duct shall be insulated all along itself to "A-30" fire integrity in ways of other ro-ro/vehicle spaces unless the sleeves and fire dampers in compliance with SOLAS regulation II-2/9.7.3.1 in order to prevent spread of fire through the ducts are fitted.

6 Ventilators

"A-0" fire integrity does not apply to ventilators constructed of steel fitted on open decks adjacent to ro-ro/vehicle spaces.

REGULATION II-2/13 – MEANS OF ESCAPE

Regulations 13.3.3.2 and 13.3.3.3

The "Lowest open deck" should be a category (10) "Open deck" (as defined in SOLAS chapter II-2, regulations 9.2.3.3.2.2 and 9.2.4.2.2.2) at the lowest height from baseline in way of accommodation spaces.

Regulations 13.4.1.4, 13.4.1.6, 13.4.2.5 and 13.4.2.6

1 Main workshop

A "main workshop" means a compartment enclosed on at least three sides by bulkheads or gratings, usually containing welding equipment, metal working machinery and workbenches.

2 Machinery control rooms

A "machinery control room" means a space which serves for control and/or monitoring of machinery used for ship's main propulsion.

3 Continuous fire shelter

A "continuous fire shelter" means a route from a main workshop, or from a machinery control room, which allows safe escape, without entering the machinery space, to a location outside the machinery space. Such a continuous fire shelter need not be a protected enclosure as envisaged by SOLAS regulation II-2/13.4.1.1 or II-2/13.4.2.1.1. The boundaries of the continuous fire shelter shall be at least "A-0" class divisions and be protected by self-closing "A-0" class doors. The continuous fire shelter shall have minimum internal dimensions of at least 800 mm x 800 mm for vertical trunks and 600 mm in width for horizontal trunks, and shall have emergency lighting provisions. The figures below represent typical arrangements of the continuous fire shelters through trunks or through spaces/rooms to a location outside the machinery space, which should be considered as effective.

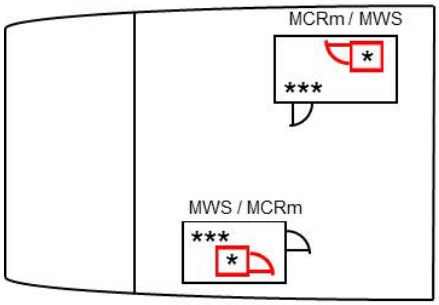


Figure 1 - Single room escape via trunk

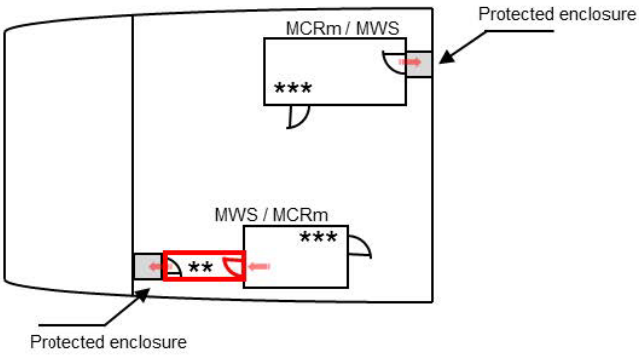


Figure 2 - Single room escape via protected enclosure

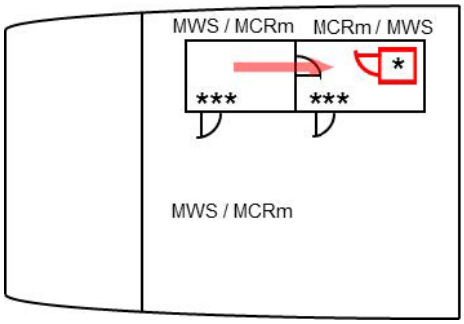


Figure 3 - Room to room escape via trunk

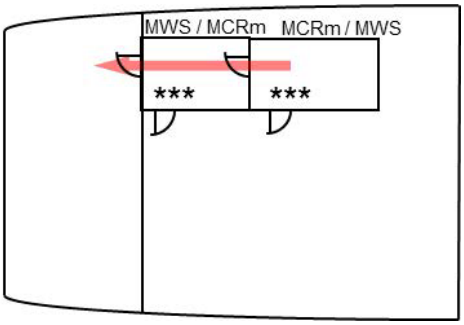


Figure 4 - Room to room direct escape

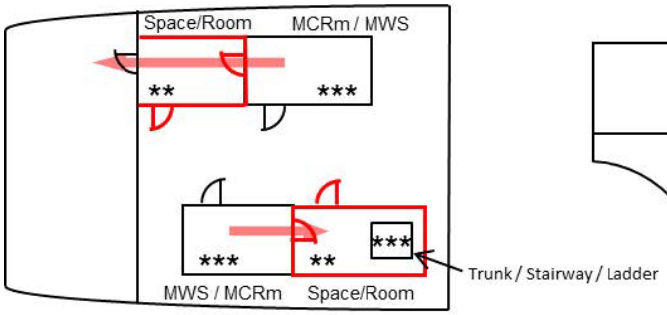


Figure 5 - Room to room escape via other space/room

MCRm: Machinery Control Room
MWS: Main Workshop

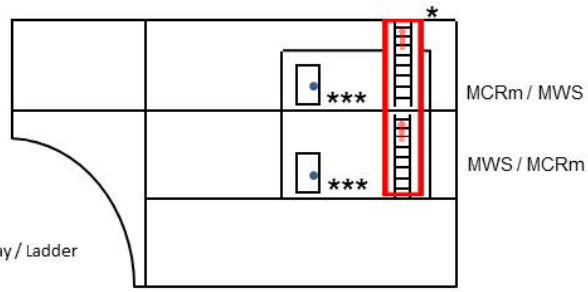


Figure 6- Room to room escape via trunk (different decks)

* Vertical trunk (minimum dimensions: 800 mm x 800 mm) enclosing ladders or stairways to be at least "A-0" class divisions and to be protected by self-closing "A-0" class doors

** Horizontal trunk (minimum width: 600 mm) to be at least "A-0" class divisions and to be protected by self-closing "A-0" class doors

*** Fire integrity not required

Regulations 13.4.1

1 A "safe position" can be any space, ~~excluding lockers and storerooms irrespective of their area, cargo spaces and spaces where flammable liquids are stowed, but including special category spaces and ro-ro spaces, from which access is provided and maintained clear of obstacles to the embarkation decks (regulations II-2/13.4.1.1.1 and 13.4.1.4).~~ such as steering gear spaces where hydraulic oils for the steering gear equipment are stowed, and special category spaces and ro-ro spaces, from which access is provided and maintained clear of obstacles to the embarkation decks. This excludes lockers and storerooms, cargo spaces and spaces where flammable liquids are stowed.

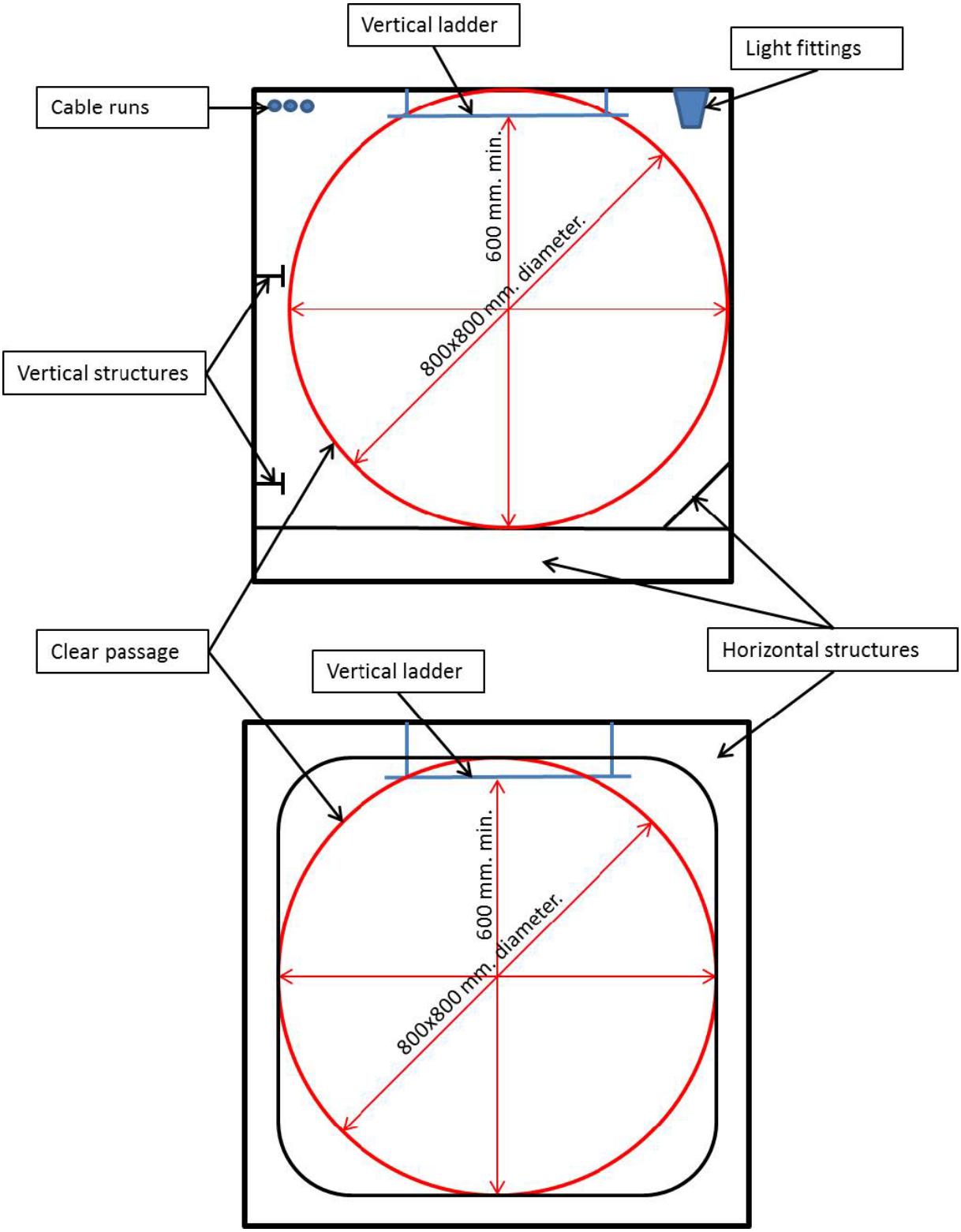
2 Inclined ladders/stairways in machinery spaces being part of, or providing access to, escape routes but not located within a protected enclosure should not have an inclination greater than 60° and should not be less than 600 mm in clear width. Such requirement need not be applied to ladders/stairways not forming part of an escape route, only provided for access to equipment or components, or similar areas, from one of the main platforms or deck levels within such spaces (regulation II-2/13.4.1).

3 Machinery spaces may include working platforms and passageways, or intermediate decks at more than one deck level. In such case, the lower part of the space should be regarded as the lowest deck level, platform or passageway within the space. At deck levels, other than the lowest one, where only one means of escape other than the protected enclosure is provided, self-closing fire doors should be fitted in the protected enclosure at that deck level. Smaller working platforms in-between deck levels, or only for access to equipment or components, need not be provided with two means of escape (regulation II-2/13.4.1.1).

4 A protected enclosure providing escape from machinery spaces to an open deck may be fitted with a hatch as means of egress from the enclosure to the open deck. The hatch should have minimum internal dimensions of 800 mm x 800 mm (regulation II-2/13.4.1.1.1).

5 Internal dimensions should be interpreted as clear width, so that a passage having diameter of 800 mm is available throughout the vertical enclosure, as shown in figure 7, clear of ship's structure, with insulation and equipment, if any. The ladder within the enclosure can be included in the internal dimensions of the enclosure. When protected enclosures include horizontal portions their clear width should not be less than 600 mm. Figure 7 is given as example of some possible arrangements which may be in line with the above interpretation (regulation II-2/13.4.1.1.1).

Figure 7


Vertical ladder
Light fittings
Cable runs
600 mm. min.
800x800 mm. diameter.
Vertical structures
Clear passage
Horizontal structures
Vertical ladder
600 mm. min.
800x800 mm. diameter.

Regulations 13.4.2

1 A "safe position" can be any space, ~~excluding cargo spaces, lockers and storerooms irrespective of their area, cargo pump-rooms and spaces where flammable liquids are stowed, but including vehicle and ro-ro spaces, from which access is provided and maintained clear of obstacles to the open deck (regulation II-2/13.4.2.1.1)."~~ such as steering gear spaces where hydraulic oils for the steering gear equipment are stowed, and vehicle and ro-ro spaces, from which access is provided and maintained clear of obstacles to the open deck. This excludes cargo spaces, lockers and storerooms, cargo pump-rooms and spaces where flammable liquids are stowed.

2 Inclined ladders/stairways in machinery spaces being part of, or providing access to, escape routes, but not located within a protected enclosure should not have an inclination greater than 60° and should not be less than 600 mm in clear width. Such requirement need not be applied to ladders/stairways not forming part of an escape route, only provided for access to equipment or components, or similar areas, from one of the main platforms or deck levels within such spaces (regulation II-2/13.4.2.1).

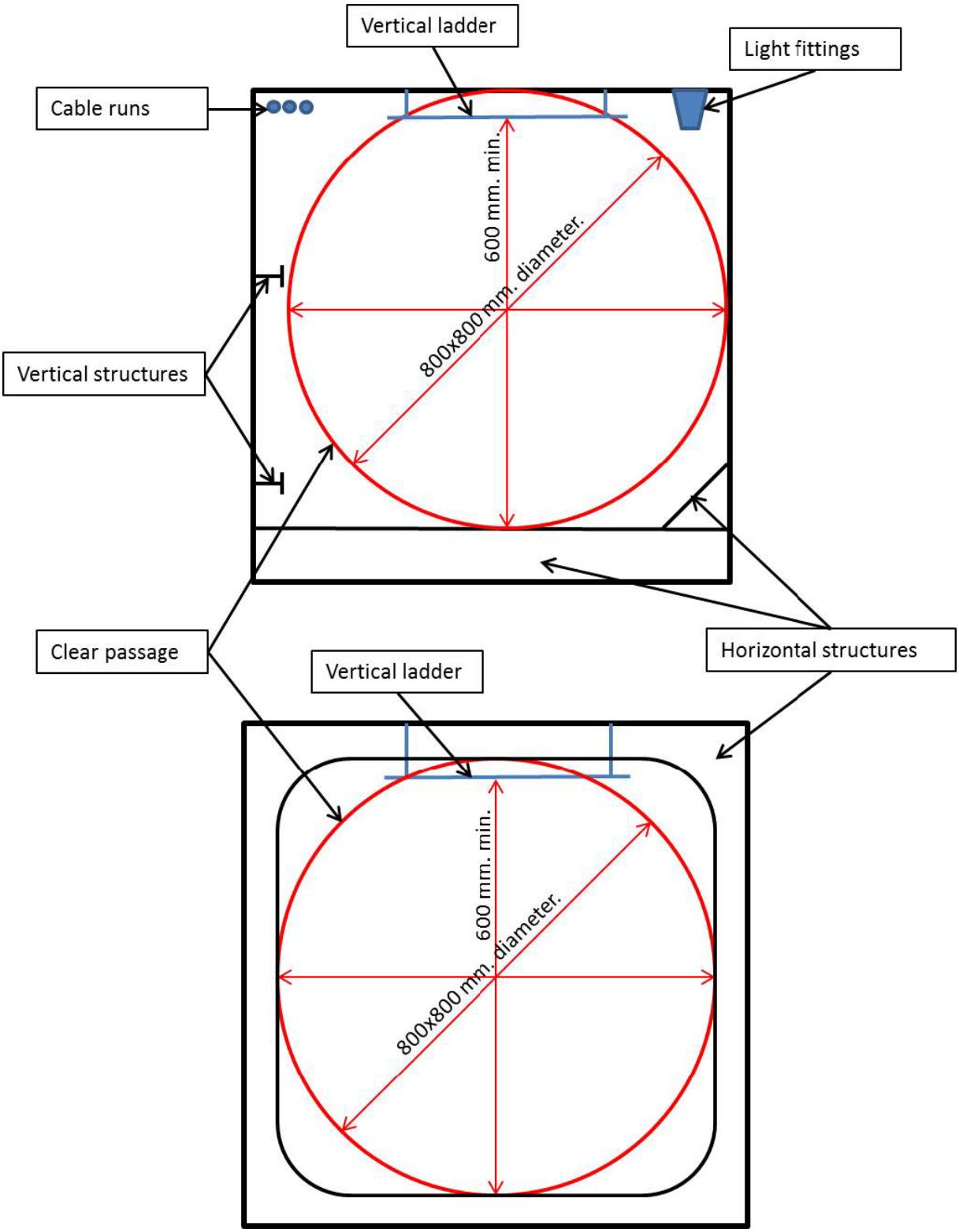
3 Machinery spaces of category A may include working platforms and passageways, or intermediate decks at more than one deck level. In such case, the lower part of the space should be regarded as the lowest deck level, platform or passageway within the space. At deck levels, other than the lowest one, where only one means of escape other than the protected enclosure is provided, self-closing fire doors should be fitted in the protected enclosure at that deck level. Smaller working platforms in-between deck levels, or only for access to equipment or components, need not be provided with two means of escape (regulation II-2/13.4.2.1).

4 A protected enclosure providing escape from machinery spaces of category A to an open deck may be fitted with a hatch as means of egress from the enclosure to the open deck. The hatch should have minimum internal dimensions of 800 mm x 800 mm (regulation II-2/13.4.2.1.1).

5 Internal dimensions should be interpreted as clear width, so that a passage having diameter of 800 mm is available throughout the vertical enclosure, as shown in figure 8, clear of ship's structure, with insulation and equipment, if any. The ladder within the enclosure can be included in the internal dimensions of the enclosure. When protected enclosures include horizontal portions their clear width should not be less than 600 mm. Figure 8 is given as example of some possible arrangements which may be in line with the above interpretation (regulation II-2/13.4.2.1.1).

6 In Machinery spaces other than those of category A, which are not entered only occasionally, the travel distance should be measured from any point normally accessible to the crew, taking into account machinery and equipment within the space (regulation II-2/13.4.2.3).

Figure 8


Vertical ladder
Light fittings
Cable runs
600 mm. min.
800x800 mm. diameter.
Vertical structures
Clear passage
Horizontal structures
Vertical ladder
600 mm. min.
800x800 mm. diameter.

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ANNEX 9

STATUS REPORT FOR THE 2024-2025 BIENNIUM

Sub-Committee on Ship Design and Construction (SDC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
1. Improve implementation	1.16	Review of the 2014 Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life (MEPC.1/Circ.833) (2014 Guidelines) and identification of next steps	2024	MEPC	SDC		Completed		MEPC 76/15, para. 12.3.1; SDC 8/18, section 14; SDC 9/16, section 5; SDC 10/17, section 5
Note: SDC 10 requested MEPC 81 to change the output title to "Experience-building phase for the reduction of underwater radiated noise (MEPC.1/Circ.906)" and to extend the target completion year to 2026									
2. Integrate new and advancing technologies in the regulatory framework	2.3	~~Amendments to the IGF Code and development of guidelines for low-flashpoint fuels~~ Amendments to the IGF Code and development of guidelines for alternative fuels and related technologies	Continuous	MSC	HTW, PPR, SDC	CCC	No work requested		MSC 94/21, paras. 18.5 and 18.6; MSC 96/25, paras. 10.1 to 10.3; MSC 102/24, para. 21.4 MSC 105/20, para. 14.2 MSC 106/19, para. 16.42.
Note: MSC 106 changed description in order to accommodate the consideration of alternative fuels not having a low-flashpoint. This resulted the deletion of output 2.24 on "Development of guidelines for the safety of ships using ammonia as fuel" to avoid duplication.									

Sub-Committee on Ship Design and Construction (SDC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.4	Further development of the IP Code and associated guidance	2025	MSC	SDC		Ongoing		MSC 95/22, para. 19.25; MSC 96/25, paras. 7.10 and 7.12; MSC 102/24, paras. 17.13 to 17.20; MSC 103/21, paras. 15.5 and 15.6; MSC 104/18, para. 11.5; SDC 8/18, section 4; MSC 105/20, section 15; SDC 9/16, section 4; SDC 10/17, section 4
2. Integrate new and advancing technologies in the regulatory framework	2.5	Safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapter II-1	2024	MSC	SSE	SDC	Completed		MSC 82/24, para. 3.92; MSC 98/23, annex 38; MSC 102/24, para. 19.16. SDC 8/18, section 9; SDC 9/16, section 7; SDC 10/17, section 7
2. Integrate new and advancing technologies in the regulatory framework	2.6	Guidelines for use of Fibre-Reinforced Plastics (FRP) within ship structures	2025	MSC		SDC	Ongoing		MSC 107/20/Add.1, annex 41; SDC 10/17, section 12

Sub-Committee on Ship Design and Construction (SDC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
2. Integrate new and advancing technologies in the regulatory framework	2.9	Revision of SOLAS chapters II-1 (part C) and V, and related instruments regarding steering and propulsion requirements, to address both traditional and non-traditional propulsion and steering systems	2025	MSC	SSE	SDC	Ongoing		MSC 107/20, para. 12.4; SDC 10/17, section 8
Note: MSC 107 decided to transfer the output, for which the SSE Sub-Committee had been initially assigned as the coordinating organ, from its post-biennial agenda to SDC									
2. Integrate new and advancing technologies in the regulatory framework	2.20	Development of Guidelines for emergency towing arrangements for ships other than tankers and revision of appendices A and B of MSC.1/Circ.1175/Rev.1	2025	MSC	SDC		Ongoing		MSC 103/21, paras.18.15 and 18.16 SDC 8/18, section; SDC 9/16, section 9; SDC 10/17, section 3
Note: The SDC 10-proposed amended output reflects the proposed merger between existing output 2.20 and output 214 on the post-biennial agenda on "Revision of appendices A and B of the revised guidance on shipboard towing and mooring equipment (MSC.1/Circ.1175/Rev.1), subject to agreement by MSC 108									
3. Respond to climate change	3.8	Development of a safety regulatory framework to support the reduction of GHG emissions from ships using new technologies and alternative fuels	Continuous	MSC	MEPC CCC, HTW, III, SDC, SSE	MSC	No work requested		

Sub-Committee on Ship Design and Construction (SDC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
6. Address the human element	6.1	Role of the human element	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR	HTW	Ongoing		MSC 76/23, para. 20.3; MSC 78/26, para. 22.12; SDC 9/16, para. 15.15
6. Address the human element	6.2	Validated model training courses	Continuous	MSC / MEPC	III / PPR / CCC / SDC / SSE / NCSR	HTW	No work requested		MSC 100/20, paras. 10.3 to 10.6 and 17.27
6. Address the human element	6.15	Revision of resolution A.1050(27) to ensure the safety of personnel entering enclosed spaces on board ships	2024	MSC	III, HTW, PPR, SDC and SSE	CCC	No work requested		MSC 106/19, para. 16.31
7. Ensure regulatory effectiveness	7.1	Unified interpretation of provisions of IMO safety, security, environment, facilitation, liability and compensation-related conventions	Continuous	MSC / MEPC / FAL / LEG	III / PPR / CCC / SDC / SSE / NCSR		Ongoing		MSC 76/23, para. 20.3; MSC 78/26, para. 22.12; SDC 8/18, section 10; SDC 9/16, section 10; SDC 10/17, section 10
7. Ensure regulatory effectiveness	7.20	Develop measures to prevent the loss of containers at sea	2025	MSC	HTW, III, NCSR, SDC	CCC	No work requested		MSC 107/20, para.17.37
7. Ensure regulatory effectiveness	7.21	Amendments to the 2011 ESP Code	Continuous	MSC	SDC		Ongoing		MSC 92/26, para. 13.31; SDC 8/18, section 6; SDC 9/16, section 6; SDC 10/17, section 6
Note:	Regular updates to the 2011 ESP Code agreed by MSC 92 (MSC 92/26, paragraph 13.31)								

Sub-Committee on Ship Design and Construction (SDC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
7. Ensure regulatory effectiveness	7.25	Amendment to regulation 25 of the of the 1988 Load Line Protocol regarding the requirement for setting of guard rails on the deck structure	~~2024~~ 2025	MSC	SDC				MSC 107/20, para.17.50; SDC 10/17, section 11
Note: SDC 10 requested MSC 108 to extent the TCY of the output to 2025									
7. Ensure regulatory effectiveness	7.35	Amendments to the Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation (MSC.1/Circ.1331) concerning the rigging of safety netting on accommodation ladders and gangways	~~2024~~ 2025	MSC	SSE	SDC			MSC 107/20, para.3.8.2; SDC 10/17, section 9
Note: SDC 10 requested MSC 108 to extent the TCY of the output to 2025									
7. Ensure regulatory effectiveness	7.42	Revision of the Interim explanatory notes for the assessment of passenger ship systems' capabilities after a fire or flooding casualty (MSC.1/Circ.1369) and related circulars	~~2024~~ 2025	MSC	SSE / HTW	SDC	Ongoing		SDC 8/18, para.15.4; MSC 105/20, para.15.24.2; SDC 9/16, section 11; SDC 10/17, section 13
Note: SDC 10 requested MSC 108 to extent the TCY to 2025									

Sub-Committee on Ship Design and Construction (SDC)									
Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ	Status of output for Year 1	Status of output for Year 2	References
7. Ensure regulatory effectiveness	tbc	Review of the 2009 Code on Alerts and Indicators	2026	MSC	SSE, NCSR	SDC			SDC 10/17, section 14
Note: SDC 10 agreed to the proposal to transfer the output "Review of the 2009 Code on Alerts and Indicators" from the SSE Sub-Committee to the provisional agenda of SDC 11, subject to concurrence by SSE 10									

OUTPUTS ON THE COMMITTEE'S POST-BIENNIAL AGENDA THAT FALL UNDER THE PURVIEW OF THE SUB-COMMITTEE

Sub-Committee on Ship Design and Construction (SDC)								
ACCEPTED POST-BIENNIAL OUTPUTS				**Parent organ(s)**	**Associated organ(s)**	**Coordinating organ**	**Timescale (sessions)**	**Reference**
Number	**Biennium**	**Reference to strategic direction, if applicable**	**Description**					
~~214~~	~~2022-2023~~		~~Revision of appendices A and B of the Revised guidance on shipboard towing and mooring equipment (MSC.1/Circ.1175/Rev.1)~~	~~MSC~~	~~SDC~~		~~1~~	~~MSC 107/20, para. 17.14~~
Note: SDC 10 agreed to propose to lift the output from the post-biennial agenda of the Committee and to merge it with output 2.20 for inclusion in the provisional agenda of SDC 11								
217	2024-2025	7	Safety measures for non-SOLAS ships operating in polar waters	MSC	SDC		2	SDC 9/16, annex 14, page 6, footnote; MSC 107/12, para.3; MSC 107/20, para. 17.80 and annex 38

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ANNEX 10

PROPOSED PROVISIONAL AGENDA FOR SDC 11

Opening of the session

1 Adoption of the agenda

2 Decisions of other IMO bodies

3 Development of Guidelines for emergency towing arrangements for ships other than tankers [and revision of appendices A and B of MSC.1/Circ.1175/Rev.1] (2.20)

4 Further development of the IP Code and associated guidance (2.4)

5 Revision of the Interim explanatory notes for the assessment of passenger ship systems' capabilities after a fire or flooding casualty (MSC.1/Circ.1369) and related circulars (7.42)

6 Amendments to the 2011 ESP Code (6.22)

7 Amendments to the Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation (MSC.1/Circ.1331) concerning the rigging of safety netting on accommodation ladders and gangways (7.35)

8 Revision of SOLAS chapters II-1 (part C) and V, and related instruments regarding steering and propulsion requirements, to address both traditional and non-traditional propulsion and steering systems (2.9)

9 Amendment to regulation 25 of the 1988 Load Line Protocol regarding the requirement for setting of guard rails on the deck structure (7.25)

10 Unified interpretation of provisions of IMO safety, security, environment, facilitation, liability and compensation-related conventions (7.1)

11 Guidelines for use of Fibre-Reinforced Plastics (FRP) within ship structures (2.6)

[12 Review of the 2009 Code on Alerts and Indicators]

13 Biennial status report and provisional agenda for SDC 12

14 Election of Chair and Vice-Chair for 2026

15 Any other business

16 Report to the Maritime Safety Committee

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ANNEX 11

RECTIFICATION OF TYPOGRAPHICAL ERRORS IN THE EXPLANATORY NOTES TO THE INTERIM GUIDELINES ON THE SECOND GENERATION INTACT STABILITY CRITERIA (MSC.1/CIRC.1652)

The following typographical errors in the *Explanatory notes to the Interim guidelines on the second generation intact stability criteria* (MSC.1/Circ.1652) should be corrected as set out below:

.1 The captions of figure 2.4.1 and figure 2.4.2 in appendix 4
false : "a natural roll period of 0.199 rad/s"
true : "a natural roll frequency of 0.199 rad/s"

.2 Paragraph 3.7.10 in Appendix 4

3.7.10 To check for the absence of the self-repetition of waves, the autocovariance function $R_w(\tau)$ of wave elevation is computed as

$$R_w(\tau) = \int_0^{\infty} S_{ZZ}(\omega)\cos(\omega\tau)d\omega \approx \sum_{i=1}^{N} S_{ZZi}\cos(\omega_{wi}\tau) \qquad (3.7.2)$$

where τ is time lag.

T_1 and T_2 should be deleted.
Formula " $\approx \sum_{i=1}^{N} S_{zzi}cos(\omega_{wi}\tau)$ "should be read as
"$\approx \sum_{i=1}^{N} S_{zz}(\omega_i)cos(\omega_i\tau)$ ".

.3 The 3rd line of paragraph 4.6.7 in appendix 4

false : "from figure 4.4.3 to 4.4.6"
true : "from figure 4.6.2 to 4.6.3".

.4 The 1st line of paragraph 2.2.1 in appendix 5

false : "a C11 class containers ship"
true : "a C11 class containership".

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ANNEX 12

STATEMENTS BY DELEGATIONS AND OBSERVERS*

OPENING

Statement by the delegation of Australia

Australia supports the interventions of Bahamas, Malta, Japan and others.
We applaud the Secretary-General's remarks as these attacks are a direct and immediate threat to seafarers of all nations. The matter is also of clear and immediate interest to this Organization.
Australia joins the international community in unreservedly condemning Houthi attacks on commercial shipping. These attacks constitute a threat to the safety of seafarers of all nations, navigational rights and freedoms, and international trade.
Australia remains committed to upholding the rules-based order on the high seas and the central principle of freedom of navigation. We will continue to work with our international partners to uphold international rules and norms across the globe.

Statement by the delegation of Belgium

Monsieur le Président ;
Distingués délégués ;
Nous tenons à féliciter une nouvelle fois Monsieur Arsenio Dominguez pour sa nomination au poste de Secrétaire général de l'OMI.
Monsieur le Secrétaire Général, nous sommes honorés de participer à cette première réunion officielle de l'OMI dans vos nouvelles fonctions et nous sommes convaincus que vous remplirez votre rôle parfaitement.
La tâche qui nous attend n'est pas facile, la navigation se trouve au début d'une grande transition, mais nous sommes assurés que, sous votre direction, nous traverserons cette transition sans encombre.
La Belgique exprime son entière solidarité avec Malte ainsi qu'avec les autres Etats du pavillon visés par les attaques récentes menées par les Houthis. Nos pensées vont en particulier aux gens de mer qui sont devenus les victimes innocentes d'actes de piraterie et d'agression intolérables.
La Belgique condamne fermement les attaques des Houthis contre les navires commerciaux. Ces attaques constituent des violations inacceptables du droit international.
Nous nous faisons l'écho de la demande du Conseil de Sécurité des Nations Unies pour que ces attaques cessent immédiatement. Elles entravent le commerce mondial, mettent en péril les chaînes d'approvisionnement vitales, en particulier les victimes les plus vulnérables de notre communauté de nations, et portent atteinte aux droits de navigation ainsi qu'à la paix et à la sécurité régionales.
Plus important encore, nous demandons la libération immédiate et inconditionnelle des marins du **Galaxy Leader** et du **Ruen**...
Nous demandons que cette déclaration soit jointe au rapport de ce sous-comité.
Merci Monsieur le Président.

* Statements have been included in this annex in the order in which they are listed in the report, sorted by agenda items, and in the language of submission (including translation into any other language if such translation was provided).

Statement by the delegation of Canada

Thank you Chair, and thank you to the Secretary General for his important statement on the situation in the Red Sea. Canada condemns the illegal and unjustifiable attacks by Houthi militants against commercial vessels transiting the Red Sea. These attacks pose a direct threat to the freedom of navigation in one of the world's most critical waterways and are causing major disruptions to regional and global trade, are impeding the movement of critical food, fuel, humanitarian assistance and other essential goods throughout the world, and are jeopardizing the safety of seafarers.

To keep this brief, Canada wishes to align with the intervention of the United States, the United Kingdom, Belgium and others and call on the Houthis to seize these attacks immediately.
We ask that our statement be included in the report.

Statement by the delegation of Germany

Thank you Chair
Germany associates itself with statements given by Belgium, the Bahamas and others. We express our full solidarity with Malta and those flag States targeted by the Houthi attacks. Our thoughts are with the seafarers and their families. The attacks by the Houthi endanger the life of innocent seafarers.

Germany strongly condemns the Houthi attacks on commercial ships. These are not justifiable my any means.

Upholding freedom of navigation in the Red Sea is vital to the free flow of global commerce and regional security.
The violent attacks by the Houthis on civilian merchant ships are contrary to international law and massively interfere with the security of international shipping. They endanger global trade routes and harm German and international security interests as well.
They are completely unacceptable and must stop immediately.
Please include our statement to the report.
Thank you Chair

Statement by the delegation of Malta

Malta expresses serious concerns regarding the ongoing developing situation in the Red Sea and the Gulf of Aden. In particular, we condemn the escalating attacks on commercial vessels in the region, which have been posing threats to the safety and security of seafarers, as well as towards vessels and their cargoes.

To date, four Malta-flagged ships have been the subject of attacks in the said region.
On 24th November 2023, the vessel **CMA CGM Symi** (IMO 9867839), was hit by an unidentified object which exploded, causing damage to the ship but not injuring any of its crew.
On 14th December 2023, the vessel **Ruen** (IMO 9754903) was subject to a piracy attack, during which a crew member was injured and was consequently evacuated to an Indian navy ship for treatment. The ship still remains under control of the pirates.

On 3rd January 2024, a missile reportedly exploded about 1 to 5 nautical miles away from the stern of the **CMA CGM Tage** (IMO9674555). No damages were reported to the crew and vessel.

On 16th January 2024, the **Zografia** (IMO 9486013) was hit by a missile attack, causing damage to the ship but not injuring any of its crew.
The said ships were competently manned by seafarers of various nationalities.

The situation is dire, and particularly for seafarers, this is an uncalled-for additional hazard that is now being faced over and above the inherent perils in their regular call of duty. Furthermore, these illicit actions disrupt the free flow of international commerce and shipping, making it particularly difficult to reach the Mediterranean. In this respect, we call for a swift and peaceful solution to the crisis.

Statement by the delegation of Spain

España se suma a las muestras de condena contra los ataques a los buques mercantes en el mar Rojo y en ese sentido apoya lo manifestado por la delegación de Bélgica, en particular, el llamamiento para la liberación inmediata del buque **Galaxy Leader** y muestras su solidaridad con los estados de bandera afectados por los ataques.
España agradece al secretario general su intervención en el consejo de seguridad de naciones unidas y por la información facilitada hasta el momento y le alienta a que siga manteniendo al día a la organización en relación con cualquier novedad que pueda producirse.
España comparte totalmente lo tres mensajes que usted, secretario general, acaba de compartir con el subcomité. A saber: la seguridad de la gente de mar como cuestión primordial como víctimas inocentes de esta situación, el mantenimiento de la libertad de navegación para garantizar el comercio mundial y el flujo de mercancías, y por último, la necesidad de limitar y no escalar la situación en la región.
Solicitamos adjuntar está declaración como anexo al informe final del subcomité.

Statement by the delegation of United Kingdom

Thank you, Chair
Recognising the broad consensus as expressed by 44 countries around the world on December 19, 2023, as well as the statement by the UN Security Council on December 1, 2023, condemning Houthi attacks against commercial vessels transiting the Red Sea, and in light of ongoing attacks, including a significant escalation over the past week targeting commercial vessels, with missiles, small boats, and attempted hijackings, we hereby reiterate the following and warn the Houthis against further attacks:
Ongoing Houthi attacks in the Red Sea are illegal, unacceptable, and profoundly destabilising. There is no lawful justification for intentionally targeting civilian shipping and naval vessels.
Attacks on vessels, including commercial vessels, using unmanned aerial vehicles, small boats, and missiles, including the historic first use of anti-ship ballistic missiles against such vessels, are a direct threat to the freedom of navigation that serves as the bedrock of global trade in one of the world's most critical waterways.
These attacks threaten innocent lives from all over the world and constitute a significant international problem that demands collective action.
We remain committed to the international rules-based order and are determined to hold malign actors accountable for unlawful seizures and attacks.
Thank you, Chair

Statement by the delegation of the United States

The United States condemns in the strongest terms continuing Houthi attacks on commercial ships and seafarers in the Red Sea and Gulf of Aden.
These reckless attacks significantly harm the security of commercial ships and the safety and welfare of mariners that this organization is charged to protect.
We appreciate the Secretary-General Mr. Dominguez discussing this issue at the January 3 special session of the UN Security Council and calling attention again this issue in his opening remarks.

We were pleased the Security Council adopted resolution 2722 on January 10 underscoring support for navigational rights and freedoms of vessels in the Red Sea in accordance with international law.

Houthi attacks on commercial ships jeopardize the safety of seafarers onboard these vessels, international commerce, the marine environment, and navigational safety.
We deplore the targeting and seizure of commercial vessels as well as Iran's support for these activities.

The United States seeks a resumption of safe transit through the Bab al Mandeb, and the return of unimpeded global commerce for the United States and for the more than 50 nations affected thus far by Houthi attacks.

We join other member states in calling for the immediate and unconditional release of the seized vessel **MV Galaxy Leader** and its 25 crew members.
We demand that the Houthis cease these attacks and we underscore the importance of enhancing international and regional cooperation to counter Houthi threats to peace and security in the region.

AGENDA ITEM 8

Statement by the delegation of IACS

MSC 104/15/37 (China) Comments on document MSC 104/15/8 (21068m, PSU21039, PM16903c)

IACS thanks China for submitting paper MSC 104/15/37. Regarding the views expressed in paragraph 13 of their document that "…it was difficult for surveyors to find problems of steering gear and steering gear control systems during on-site survey" given the provisions of the HSSC Guidelines, IACS wishes to advise the following:

1. at a new-build stage surveyors confirm steering gear and control systems are installed in accordance with approved plans and that the system operates in accordance with requirements.

2. at the annual survey, the steering gear is generally examined to confirm its condition, and the correct function of the steering gear is witnessed and confirmed. At that time the logbook is checked to confirm the required entries have been made by the master regarding the functioning of the steering gear.

3. at a renewal survey, surveyors will undertake a more extensive examination of the steering gear and a more thorough check of the function of its control system, so as to confirm satisfactory condition and operation.

In view of the foregoing, IACS believes that it is not difficult for surveyors to find problems of steering gear and steering gear control system during on-site surveys, should such problems exist. Surveyors will be able to observe any deficiencies present at the time of their surveys and confirm suitable corrective actions are taken.

However, it is recognised that deficiencies can occur at any time between surveys, so the following duties were imposed on the ship's crew by SOLAS Convention. Specifically,

- the ship's crew is responsible for carrying out steering gear and steering control system tests within 12 hours of departure in accordance with SOLAS regulation V/26.

- the ship's crew shall test the manual steering after prolonged use of heading and/or track control systems, and before entering areas where navigation demands special caution in accordance with SOLAS regulation V/34.

- operating and maintenance instruction and engineering drawings for ship machinery and equipment essential to the safe operation of the ship are required in accordance with SOLAS regulation II-1/27.

AGENDA ITEM 16

Statement for SDC 10/16 (Denmark and WSC) by Japan

Thank you, Chair.

This delegation herewith expresses its sincere appreciation to the distinguished delegations from Denmark and WSC for sharing their experience that a large containership suffered serious cargo loss accident due to parametric rolling despite the compliance with the check 2 of the vulnerability level 2 criterion of the second generation intact stability criteria, which is currently under its trial use.

Japan appreciates the information provided as valuable inputs towards future revision of the guidelines which will take place following accumulation of sufficient data and experiences throughout the ongoing trial phase.

On this specific accident pointed out in SDC 10/16, Japan would like to offer our observation as follows.

For investigating the reason why the new criteria for parametric rolling fails to explain such accident, this delegation carefully examined the DMAIB report referred in the document SDC 10/16. As a result, this delegation reached the conclusion that this erroneous judgement of the check 2 of the vulnerability level 2 criterion for parametric rolling is due to the under estimation of the natural roll period of the accident containership. In the absence of the reliable data of the natural roll period of the subject ship, the interim guideline of the second generation intact stability criteria, in its paragraph 2.7.1.2, allows the use of the calculation formula in the weather criterion of the 2008 IS Code. If we apply this formula to the accident ship, the natural roll period is about 29 seconds, but its real value was about 40 seconds as shown in Figure 1 of the document SDC 10/16. The DMAIB report notes that the encounter wave period estimated with the wave hindcast data was about 19 seconds, which is almost half the real natural roll period. Thus, the parametric rolling condition is satisfied with this roll period, but it is not with the roll period from the weather criterion formula.

The weather criterion formula was developed by using actual Japanese ships date, in which the longest ship is 140 metres long. Since the accident containership is 350 metres long, it is outside the applicable range with respect to the ship length. For the IMO discussion for developing the weather criterion, Japan prepared another empirical formula without the ship length. If we apply it to the accident ship, the natural roll period is calculated as about 40 seconds, which is equal to the real value and is enough to explain the danger of parametric rolling. Obviously, this is the reason why the check 2 of the vulnerability level 2 criteria for parametric rolling fails to explain the accident reported here. In addition, the explanatory notes include other two alternative formulae using the deck cargo layout so that the use of these can be recommended.

Thus, the other items mentioned in the document SDC 10/16 could be discussed after the stage that the results of recalculation of the check 2 of the vulnerability level 2 criteria with the actual roll period of 40 degrees are available.

In conclusion, Japan is of the opinion that the roll period formula in the weather criterion is not suitable to ships longer than 140 metres. Therefore, Japan suggests that the Sub-Committee report exclusively this roll period issue to the Committee. In this regard, Japan is ready to provide the alternative empirical formula without the ship length in written for the Organization at the future session of the Committee.

Based on our observation, a possible way forward would be to:

- note the information provided at this session;

- report to the Committee that the roll period formula in the weather criterion is not suitable to ships longer than 140 metres;

- further invite member states to submit relevant information to the future session of the Committee; and

- and refer to such information, including document SDC 10/16 at the future revision of the guidelines following the ongoing trial phase.

Thank you, Chair.