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**RECOMMENDATION ON THE DESIGN AND OPERATION OF  
PASSENGER SHIPS TO RESPOND TO ELDERLY AND  
DISABLED PERSONS' NEEDS**

1 The Maritime Safety Committee, at its sixty-sixth session (28 May to 6 June 1996), noted that the Assembly, at its eighteenth session, bearing in mind that the training of personnel assigned to specified duties in case of an emergency in high-density passenger ships or ferries engaged in short international voyage is essential, adopted resolution A.770(18) on Minimum training requirements for personnel nominated to assist passengers in emergency situations on passenger ships.

2 The Committee, being conscious of the special attention that should be given to elderly and disabled persons in the contingency plans for a passenger ship and that crew training in the provision of attention to such passengers is a primary and indispensable element in emergency situations on board passenger ships, approved the Recommendation on the design and operation of passenger ships to respond to elderly and disabled persons' needs developed by the Sub-Committee on Ship Design and Equipment, as set out in the annex.

3 The Committee invited Member Governments to bring the aforementioned Recommendation to the attention of ship designers, shipowners and operators of passenger ships under their flag for action as appropriate.

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**ANNEX****RECOMMENDATION ON THE DESIGN AND OPERATION OF PASSENGER SHIPS TO RESPOND TO ELDERLY AND DISABLED PERSONS' NEEDS**

- 1 In an emergency on board a passenger ship most passengers are expected to be able to evacuate themselves from the passenger accommodation to the embarkation deck. The integration of persons with restricted mobility - including infirm, very young, elderly and disabled persons - with the other passengers should be given special consideration when designing a passenger ship and preparing contingency plans for such a ship.
- 2 For the purpose of safety, new passenger ships should to the extent possible be designed in such a way that there is barrier free passage for elderly and disabled persons in public spaces on board and in escape routes to muster stations.
- 3 Crew members required to assist passengers who may need assistance, should be given instructions in the kind of assistance needed by elderly and disabled persons on board.
- 4 In ships with passenger cabins:
  - .1 elderly and disabled persons who may need assistance in an emergency should preferably be assigned cabins situated in the proximity of the embarkation deck, so that they may be assisted to the assembly stations quickly and with minimal effort, and
  - .2 a list identifying the cabins occupied by passengers who would require assistance from the crew in an emergency should be prepared for each voyage.
- 5 The Appendix contains guidelines for the design and operation of new passenger ships to respond to elderly and disabled persons' needs. The emphasis in the guidelines is on ro-ro passenger ferries which are part of the public transport system. With necessary modifications the guidelines may also find use when planning the construction and operation of other types of passenger ships.

## APPENDIX

### **GUIDELINES FOR THE DESIGN AND OPERATION OF NEW PASSENGER SHIPS TO RESPOND TO ELDERLY AND DISABLED PERSONS' NEEDS**

1 There is a growing recognition of the difficulties faced by elderly and disabled persons in participating in the social and economic life and of the need to alleviate these difficulties. The integration of elderly and disabled persons with the other passengers requires special consideration when designing a new passenger ship. Passenger ships such as ro-ro ferries and cruise ships are very different in their design construction, ports of call, passenger profile, and operation mode and should be considered separately. The following contains recommendations on the design and operation of a new passenger ship with the emphasis on passenger ferries which are part of the public transport system.

#### **GENERAL INFORMATION BEFORE BOARDING THE SHIP**

2 General information about the services and assistance available to elderly and disabled persons on a particular route should be made known to the general public and potential passengers, and should be made available in formats suitable for people with impaired sight, for example, large print and audio tape.

#### **ACCESS TO THE TERMINAL**

3 When a passenger ship terminal is established, the needs of elderly and disabled passengers, including those who use wheelchairs, include:

- .1 to ensure to the extent possible the availability of public transport for elderly and disabled people at prices comparable to those paid by other members of the travelling public;
- .2 to facilitate to the extent possible the use of taxi services and private transport for this category of passengers;
- .3 to ensure barrier-free movement between entrances and exits of the terminal building, preferably without change of levels;
- .4 to ensure full access to all public areas such as duty-free shops, toilets, restaurants and other shops. Toilet facilities should also be available to wheelchair users accompanied by an attendant of either sex;
- .5 to ensure that the design of the toilets and drinking water fountains, telephones and elevator control panels are adapted to the needs of the mobility impaired as well as sensory impaired passengers;
- .6 to make available reserved seating areas for elderly and disabled people, including space for wheelchairs; seating should be of appropriate height with armrests to assist passengers with disabilities;
- .7 to provide specially marked parking spaces on the car decks of ro-ro ferries with unobstructed access to elevators for disabled passengers;

- .8 to ensure that all visual instructions (i.e. safety information) be displayed in as large and clear a form as possible for the hearing impaired and those with a degree of sight impairment and whenever necessary, spoken announcements, preceded by a tone to attract attention, should be provided for blind people and those with a high degree of sight impairment;
- .9 to ensure that appropriate means exist to communicate safety- and transport-related information to the hearing-impaired which may not otherwise be made known to them;
- .10 to improve communications to sensory impaired people by designating special areas where all required aids and interpretation facilities might be centralized and where possible provide a loop in the audible communications system for linking to hearing aids; and
- .11 to provide shipping company staff, port, immigration and customs personnel with suitable training and standardized information and instruction on how to assist disabled passengers.

#### **ACCESS TO THE SHIP**

4 The ship should be constructed and equipped in such a way that wheelchair users and other disabled persons can embark and disembark easily and safely, either unassisted or by means of ramps, elevators or lifts. The maximum slope of ramps for wheelchairs should be 1:20. There should be at least one access to the ship which is suitable for disabled persons and wheelchair users. The access should be without stairs and steps and be marked with the international symbol for installations, etc., suitable for disabled persons. Directions to this access should be posted at the other accesses to the ship and at other appropriate locations throughout the ship.

#### **MARSHALLING OF CARS**

5 For car ferries, cars with disabled drivers or passengers should be given a special marking at the gate ashore and be directed to a separate marshalling lane, before driving on board the ship. The gate attendant should have means to communicate with the person in charge of the marshalling area and the personnel on board the ship. There should be no kerb (differences in levels) in the marshalling lanes which could prevent a disabled person from getting out of a waiting car. The ship's crew should guide disabled passengers to a special parking space on board and give the necessary assistance, including taking any wheelchair out of the car. At the ship's destination the crew should also assist.

#### **CAR PARKING ON BOARD**

6 Special parking spaces from which it is possible for a wheelchair user to exit from the car should be available on board car ferries. The number of spaces may be variable as required. The parking spaces may also be used by disabled persons who are not wheelchair users. There should be barrier-free passage for wheelchair users from the parking spaces to passenger facilities.

## **ELEVATORS**

7 At least one elevator should lead from the car deck to a deck with barrier-free access to public spaces, cabins and toilets. The elevator floor should be at least 110 cm wide and 140 cm deep. The elevator should have automatic doors with a free door opening of at least 90 cm. A handrail 90-100 cm above floor level should be provided on three sides. Controls should be placed approximately 90-120 cm above the floor, at least 50 cm from the corner, and a handhold should be placed near the controls. A foldable seat should be available in a position from which the controls can be reached. The elevator floor should be level with the deck outside. The area in front of the elevator shall be level and at least 150 x 150 cm. Escalators cannot replace elevators.

8 Push buttons on the control panel should be at least 2 cm in diameter and have built in lighting. They should not be designed as flush, easy-touch buttons. The colour of the push buttons must be sharply contrasting the colour of the panel. Push buttons for emergency stop and alarm signal should have a form distinctively diverging from the ordinary push buttons of the elevator. The colour of the emergency stop should be red and the colour of the alarm signal should be yellow. The push buttons should be marked with large relief letters.

## **ACCOMMODATION**

9 Door openings to public spaces should be wide enough for wheelchairs to pass unimpeded with a free opening of at least 80 cm. Doors should be automatic or kept in open position where this does not interfere with safety requirements. Obstructions caused by coamings, etc., should be avoided in passenger spaces and eliminated elsewhere, for instance by means of ramps or retractable coamings. However, coamings required by the Load Line Convention or any other safety requirements must not be removed. Ramps and coamings should be marked in contrasting colours.

10 Stairways should be constructed in order to facilitate the climb for elderly and disabled persons. Stairways should not be steep and should be of a design with closed steps. Steps should give optimum safety with regard to height, depth, colour, lighting and risk of slipping. Out of consideration for elderly and persons with reduced vision, the front edge of each step should have a contrasting bright colour (approximately 25 mm wide on both vertical and horizontal faces). Handrails, round in section with diameter of 45-50 mm in easy to grip material and in a contrasting colour, should be provided on both sides and should extend beyond the top and bottom step by 300 mm. They should be fixed at a height of 850 mm above the tread. There should be a gap between the bulkhead and the rail of at least 45 mm. Tactile warnings should be provided at the top and bottom of each flight of steps.

11 For each 100 passengers the ship may carry, at least one place should be reserved for a wheelchair, so that the wheelchair user may travel sitting in the wheelchair together with other passengers. It should be possible to place the wheelchair safely.

12 At least 4% of the ship's passenger seats should be suitable for disabled persons. These seats should have sufficient space and be provided with suitable handholds in order that disabled persons may support themselves when sitting down or getting up from the seat. The handholds should be marked in a contrasting colour. If the space available does not have enough leg room for persons with stiff legs, the seat in front of the special seat should be a removable one. If seats are arranged in rows, armrests which may constitute an obstruction to a disabled person, should be of a type which can fold away. The seats for elderly and disabled persons should be situated near evacuation routes and toilets.

## **CORRIDORS, DOORS AND RAILS**

13 There should be sufficient space available for elderly and disabled persons to move about, especially on board ships at sea for longer periods of time. There should be handrails at a height 90 cm above the floor, preferably on both sides of the corridors. The handrail profile should be without edges and have a diameter of approximately 3.5 - 5 cm. Handrails should have a colour contrasting the background and consideration should be given to provision of tactile markings on the handrails to provide guidance/information to visually impaired passengers. Supports may also be needed elsewhere, especially in restaurants, the back of seats and in the toilet areas. Corridors should be wide enough for wheelchairs to pass other persons.

## **DECK AND FLOOR**

14 Decks and floors should be level and have slip resistant surface. If steps are necessary, they should not be higher than 3 cm, or a ramp of a fine-masked grid or equivalent and handholds should be arranged at the step.

## **CABINS**

15 On ships with cabins, a number of cabins suitable for wheelchair users should be available. The free space in front of the bed or resting place should be at least 140 cm. Beds should be used instead of bunks (low front edge), as the disabled person should be able to sit on the bed and undress. If bunks are used, the lower bunk should have a free height above it of at least 110 cm to permit a person to sit. The bed should be 50 cm above the floor. The switch for the reading light over the bed should be placed so that it can be reached from a wheel chair and from the bed. Electrical switches should be within easy reach and placed 90 cm above the floor. Handholds should be positioned at the bed. The cabin door should be of the side sliding type or swing outwards, unless enough space is available in the cabin to permit the door to swing inwards and for a wheelchair. The free door opening should be at least 90 cm. If a hand basin is placed in the cabin it should be arranged as a wash in a lavatory explained below. The cabin should be equipped with means of calling assistance.

## **LAVATORIES**

16 Compatible with the size and use of the ship, a number of toilets suitable for wheelchair users should be available, if possible on each passenger deck. The toilets may be positioned separate from other toilets and may be used by both genders. Directions to these toilets should be posted at the entrances to toilets not suitable for wheelchair users. Doors should swing outwards or slide sideways and it should be possible to unlock them from outside in an emergency by means of a key, even when the door signals "occupied". There should be at least 110 cm from the front of the toilet to the opposite wall or installations and 90 cm free space at one side of the toilet. The toilet seat should be 45-48 cm above the floor. Support which can fold up or swing aside should be placed at both sides of the toilet. The hand basin should be within reach from the toilet and placed no higher than 80 cm above the floor. The fixture of the hand basin should be strong enough for the hand basin to be used as support. A mirror should be placed at a suitable height, the lower edge 90 cm above the floor and the upper edge 190 cm above the floor. It should be possible to place the front of a wheelchair under the hand basin, the free height under the basin should be 70-75 cm. Soap, towels, etc., should be placed at a height of about 90-100 cm above the floor. Means to call assistance should be available in each lavatory.

## **ALLOCATION OF CABINS**

17 In ships with cabins, elderly and disabled persons who may need assistance in an emergency should be assigned cabins situated in the proximity of the embarkation deck, so that they may be assisted to the survival craft quickly and easily. A list of cabins occupied by passengers who may need assistance from the crew should be available.

18 Cabins and toilets suitable for wheelchair users should be placed in the open spaces which are found between cabin sections. Automatic doors are preferable. If doors are provided with door pumps, the doors should have automatic door opening. Ideally the sum of the width of the corridor plus the width of a corridor or door opening at a 90° angle to the corridor should be 220 cm. Corridors in the cabin section of the accommodation are traditionally 90 cm wide. The problem of cabin doors and toilet doors for wheelchair users in such corridors may as a last resort be solved by side sliding doors with a 100 cm free opening. The wider door opening is necessary to permit wheelchairs to turn and wheel into the cabin.

## **CREW TRAINING**

19 The crew should be given training and be issued with clear instructions about the assistance needed by elderly and disabled persons in an emergency.

## **MEASURES FOR ALLERGIC PERSONS**

20 The furnishings and bedding shall as far as possible be made from non-allergic materials. The use of some areas should be prohibited for passengers who are accompanied by furred animals.

## **INFORMATION**

21 If an information counter is available, the height of the counter should be no higher than 90 cm. An induction loop should be installed at the information counter.

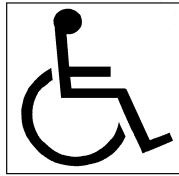
22 Easy-to-read posters and signs with necessary information to the passengers should be posted where relevant, especially at the accesses to the ship. Letters should be of a simple type, bold and large in a colour which contrasts with the background (e.g. black on yellow). The signs should be positioned at a suitable height above the floor, approximately 150-160 cm, and be well lit. Audible information should be spoken loud and clear. Information in alternative formats - braille, tactile or audio tape - should also be considered for blind and partially sighted persons.

23 The ship should have equipment which permits information to be given at each port in such a way, that both vision impaired persons and hearing impaired persons receive the information.

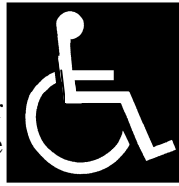
## **SERVICE**

24 It should be possible to buy any kind of ticket necessary for the voyage at the terminal gate or on board, on appropriate services.

25 In ships where food is available, it should be possible for elderly and disabled persons to have food served at the table. Tables should be of a design which allows unimpeded access for wheelchair users.



26 Guide-dogs  
access to passenger  
those areas where



27 Where  
available to passengers  
be accessible for  
and marked

should be allowed  
spaces, including  
food is available.

telephones are  
at least one should  
wheelchair users  
accordingly.



Signs indicating equipment, installations and facilities  
suitable for disabled persons.

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