

Subject:

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Requirements of 1983 Amendments
to SOLAS 74 for existing ships

NK **TECHNICAL** **INFORMATION**

No. 9 1

Date: 15 February 1991

To shipowners and shipbuilders concerned

Under 1983 amendments to SOLAS 74, existing ships are required to comply with certain requirements on lifesaving appliances not later than 1 July 1991.

Attached is a summary of those requirements and the respective explanation/interpretations adopted.

It is recommended that you review the attached summary and, if necessary, take proper actions for compliance with these requirements.

Attachment:

VOID



現存船舶（貨物船舶）に対する 83 SOLAS 改正の要件

83 SOLAS 改正の概要	要件の説明及び条文解釈	備 考
1. EPIRBs (Reg. III/6.2.3) 1. 第IV章第14-3規則の規定に適合する手動により起動する1の非常用の位置指示無線標識（生存艇EPIRB）を、各舷に備える。この標識は、この章の第2規則3.2 規定により要求される救命いかた（船首/船尾に設ける追加の救命いかた）以外の救命用の端艫及びいかたに迅速に設置することができるように備える。	パナマ、リベリア、パナマ、シンガポール及びバマアツ政府は、IMOの勧告に従って、2の生存艇EPIRBに代えて次の代替物を認めてよいことを通知してきている。 (i) 1の衛星EPIRB及び2のレーダー・トランスポンダー、又は、 (ii) 121.5/243MHz で運用されるLocating機能を有する1の衛星EPIRB	生存艇EPIRBはGMDSSの発効3年後即ち1995年2月1日以降に降船する必要がなくなる。GMDSSでは、1995年2月1日以降現行の救命無線設備に代えて次の設備が要求される。 (i) レーダー・トランスポンダー (ii) 双方向VHF無線電話装置 このため、IMOは、GMDSSでは1993年8月1日までに全ての船舶に1の衛星EPIRBが要求されることを考慮して、各主管庁が生存艇EPIRBに代えてGMDSSで要求されるこれらの設備を代替物として認めるよう勧告している。
2. 双方向無線電話装置 (Reg. III/6.2.4) 1. 第IV章第14-3規則の規定に適合する双方向無線電話装置を、救命用の端艫及びいかたの間の通信、救命用の端艫及びいかたと船舶との間の通信のために備える。すべての救命用の端艫及びいかたはこの装置を備えることを要しない。ただし、少なくとも3の装置を各船舶に備える。船上で使用する他の装置が第IV章第14-3規則の適当な要件を満たす場合には、この規定は、当該装置により満たすことができる。 2. 1996年7月1日前に建造された船舶については、双方向無線電話装置は第IV章第14-3規則の周波数の要件にのみ適合すればよい。	第IV章の周波数要件*に適合すれば、83 SOLAS改正における主管庁の型式承認品でなくとも良い。 * 本装置に使用できる周波数は次の通りである。 VHF帯： 156.75 MHz (ch 15), 156.85 MHz (ch 17) UHF帯： 457.525 MHz, 457.550 MHz, 457.575 MHz, 467.525 MHz, 467.550 MHz, 467.575 MHz	GMDSSにより、1995年2月1日以降はVHF帯で利用できる双方向無線電話装置が要求される。このためUHF帯使用のものは同日以降認められなくなる。また、GMDSSでは、VHF帯の周波数 156.8 MHz (ch 16) 及び少なくとも1つの追加チャンネルで運用できることが要求される。
3. 追加のLiferaft (Reg. III/26.3) 1. その収容能力の合計が乗客船者を収容するために十分である1又は2以上の救命いかたを積載する。救命いかたは、沈没しつつある船舶から自動的に救命いかたを離脱させる縛付け装置又はこれと同等の装置を備える。 2. 救命用の端艫及びいかたが船首又は船尾から100メートルを超え位置に積み付けられている場合には、前1.の規定により要求される救命いかたに加え、合理的かつ実行可能な限り1を前方若しくは後方に又は1を前方にかつ他の1を後方に積み付ける。前1.の規定にかかわらず、当該救命いかたは、手動により離脱し得るよう確実に縛り付けて差し支えない。	救命いかたの合計収容能力が従来の50%から100%になる。本規則では救命いかたが、新船に要求されているように、いずれの舷においても進水できるように迅速に移動できなければならないという要件については規定していない。 船首又は船尾からの距離は、船の船首端又は船尾端から最も近くにある救命艇又は救命いかたまでの水平距離をいう。	

83 SOLAS 改正の概要	要件の説明及び条文解釈	備 考
4. 救命胴衣灯 (Reg. III/27.2) 1. 救命胴衣には、第III章の第32規則3の規定に適合する灯火を取り付ける。	従前に使用していた救命胴衣に灯火を装着する場合、その方法は製造者の指示に従うこと。	
5. イマージョン・スーツ及び保温具 (Reg. III/27.3) 1. 救命艇ごとに、第III章の第33規則の規定に適合するイマージョン・スーツを少なくとも3備え又は、主管庁が必要かつ実行可能と認める場合には、イマージョン・スーツをすべての乗船者のために備える。イマージョン・スーツを与えられない乗船者のため第III章の第34規則の規定に適合する保温具を備える。ただし、船舶が次のいずれかの要件を満たす場合にはイマージョン・スーツ及び保温具を備えることを要しない。 (1) 各舷に、その収容能力の合計が総乗船者を収容するために十分である全閉型型の救命艇を積載すること。 (2) 船尾から自由降下進水することができ、かつ、その収容能力の合計が総乗船者を収容するために十分である全閉型型の救命艇で積み付け位置から直接乗り込むことができ、かつ、進水することができ、かつ、各舷に、その収容能力の合計が総乗船者を収容するために十分である救命いかだを積載すること。 (3) イマージョン・スーツは必要ないと主管庁が認める温暖な海域の航海に常時従事すること。 2. 第III章の第22規則1.3の規定に適合する貨物艀には、第III章の第33規則の規定に適合するイマージョン・スーツをすべての乗船者のために備える。ただし、船舶が次のいずれかの要件を満たす場合は、この限りでない。 (1) ダビット進水式の救命いかだを積載すること。 (2) 両舷で使用することができ、かつ、救命いかだに乗り込むために人が水中に飛び込む必要のない承認された進水装置によって取り扱う救命いかだを積載すること。 (3) イマージョン・スーツは必要ないと主管庁が認める温暖な海域の航海に常時従事すること。	備えるべき保温具の数は、総乗船者数からイマージョン・スーツの総数を減じたものとす。 例： Open-type lifeboatを2隻積載している船舶に対しては、次の数のイマージョン・スーツ及び保温具が要求される。 イマージョン・スーツ： 3×2 (Lifeboatの数) 保温具： SE証書に記載される最大乗船者数-6 (イマージョン・スーツの総数) リベリア及びパナマ政府の“温暖な海域”の解釈は次の通りである。 リベリア： 水温が15℃以上の海域 パナマ： 北緯32度と南緯32度間の海域	
6. 再帰反射材 (Reg. III/30.2.(7)) 1. 探知を容易にするために、救命設備には艀間の艀告による再帰反射材が取り付けられていること。	再帰反射材の取り付け方法はIMO Res.A.274(VII) (内規63編 (その1) D部3章3210参照) 又はIMO Res.A.658(16) に従うこととするが適用可能な場合には Res.A.658(16)によること。 これらのIMO Resolution の関連箇所を添付別紙に示す。	

**GUIDELINES CONCERNING THE USE AND FITTING OF
RETRO-REFLECTIVE MATERIAL ON LIFE-SAVING APPLIANCES**

1. Life-boats

Retro-reflective tapes should be fitted on top of the gunwale as well as on the outside of the boat as near the gunwale as possible. The tapes should be sufficiently wide and long (approximately 5 x 30 cm) and should be spaced at suitable intervals (approximately 50 cm). If a canopy is fitted it should not be allowed to obscure the tapes fitted on the outside of the boat and the top of the canopy should be fitted with retro-reflective tapes similar to those mentioned above but shaped in the form of a cross and spaced at suitable intervals (approximately 50 cm).

2. Life-rafts

Retro-reflective tapes should be fitted around the canopy of the raft at suitable intervals (approximately 50 cm) and at a suitable height above the waterline. On inflatable life-rafts retro-reflective tapes should also be fitted on the underside of the floor (four tapes fitted at equal intervals around the outer edges on the bottom of the life-rafts). The tapes should be sufficiently wide and long (approximately 5 x 30 cm). A suitable cross-shaped marking of two such tapes should also be applied to the top of the canopy. On rafts which are not equipped with canopies at least four such tapes should be attached to and evenly spaced on the buoyancy chamber in such a manner that they are visible both from the air and sea.

3. Lifebuoys

Retro-reflective tape of a sufficient width (approximately 5 cm) should be applied around or on both sides of the body of the buoy at four evenly-spaced points.

4. Buoyant apparatus

Buoyant apparatus should be fitted with retro-reflective tapes in the same manner as rafts without canopies, always depending on the size and shape of the object. The reflectors should be visible from both the air and sea.

5. Life-jackets

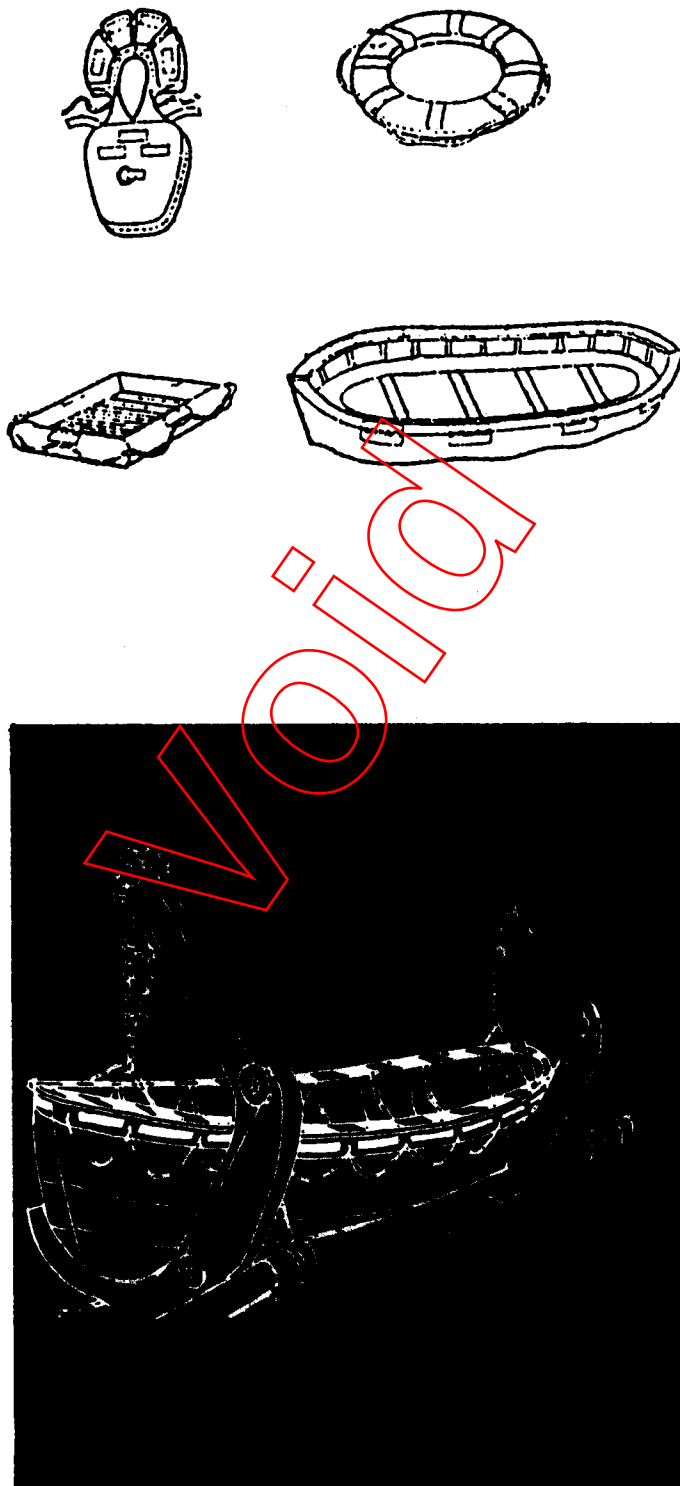
Unless its cover material is retro-reflective, a life-jacket should be fitted with retro-reflective tapes sufficiently wide and long (approximately 5 x 10 cm). These tapes should be placed as high up on the jacket as possible in at least six places on the outside of the jacket and in at least as many places on the inside of the same by virtue of the fact that life-jackets are reversible.

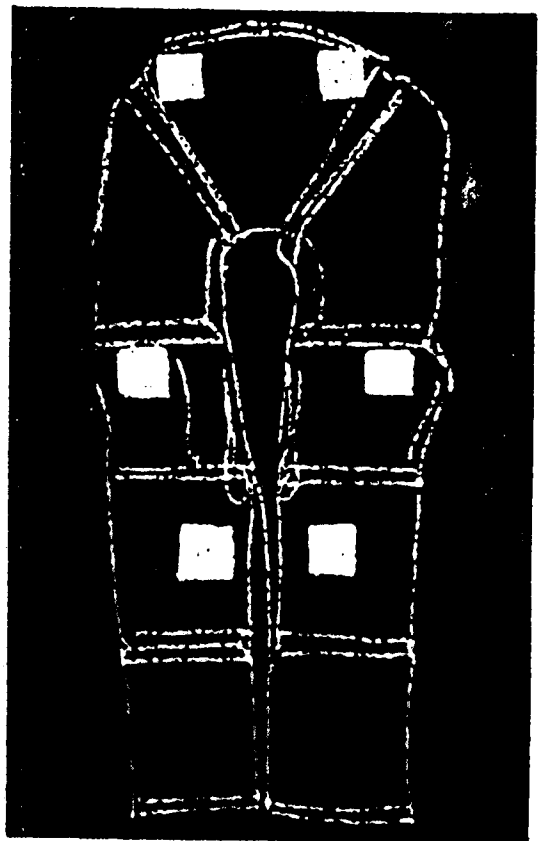
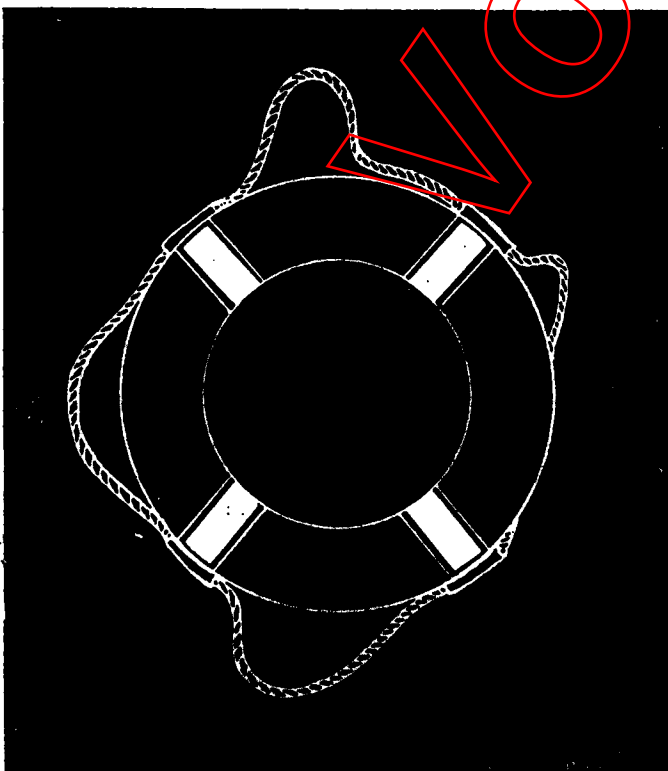
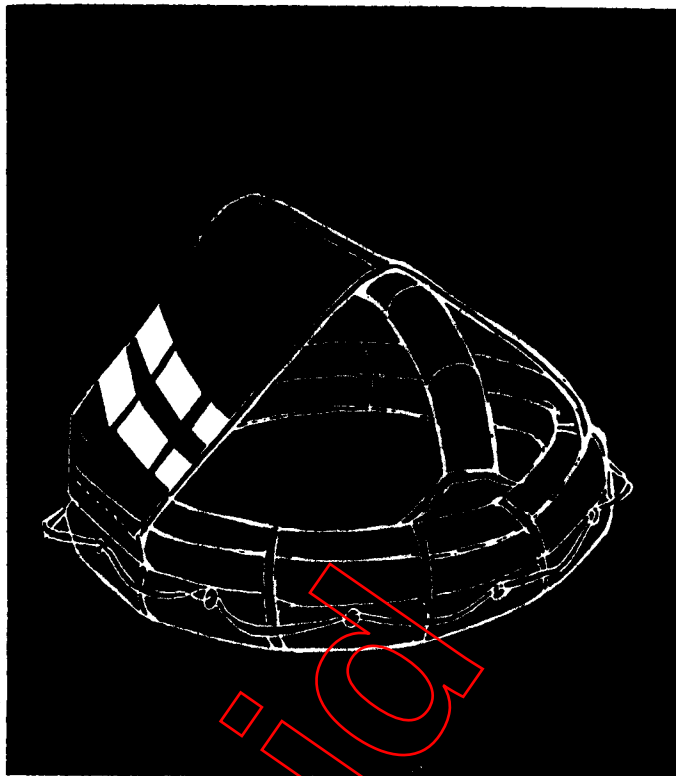
6. The retro-reflective material to be used should, if possible, be of a type which can also act as an effective radar reflector, e.g. a tape with a metal foil backing.

7. To ensure effective performance under all conditions Administrations concerned are advised until further notice to use retro-reflective material which meets the conditions set by the United States Government specification LS-300-A of January 1970, which *inter alia* contains requirements with regard to reflective power and durability.

The illustrations reproduced in the Appendix to this Recommendation are intended to provide the Administrations concerned with some ideas as regards various layouts which could be used in connexion with the fitting of retro-reflective tape in accordance with the above guidelines.

APPENDIX





RECOMMENDATION ON THE USE AND FITTING OF RETRO-REFLECTIVE MATERIALS ON LIFE-SAVING APPLIANCES

1 LIFEBOATS AND RESCUE BOATS

Retro-reflective materials should be fitted on top of the gunwale as well as on the outside of the boat as near the gunwale as possible. The materials should be sufficiently wide and long to give a minimum area of 150 cm² and should be spaced at suitable intervals (approximately 80 cm from centre to centre). If a canopy is fitted, it should not be allowed to obscure the materials fitted on the outside of the boat, and the top of the canopy should be fitted with retro-reflective materials similar to those mentioned above and spaced at suitable intervals (approximately 80 cm centre to centre). In the case of partially enclosed or totally enclosed lifeboats, such materials should be placed as follows:

- .1 for detection by horizontal light beams – at suitable intervals at half the height between the gunwale and the top of the fixed cover; and
- .2 for detection by vertical light beams (e.g. from helicopters) – at suitable intervals around the outer portion of the horizontal (or comparable) part of the top of the fixed cover;
- .3 retro-reflective materials should also be fitted on the bottom of lifeboats and rescue boats which are not self-righting.

2 LIFERAFTS

Retro-reflective materials should be fitted around the canopy of the liferaft. The material should be sufficiently wide and long to give a minimum area of 150 cm² and should be spaced at suitable intervals (approximately 80 cm from centre to centre) at a suitable height above the waterline, doorways included, if suitable. On inflatable liferafts, retro-reflective materials should also be fitted to the underside of the floor, cross-shaped in the centre. The dimension of the cross should be half the diameter of the liferaft, and a similar cross should be applied to the top of the canopy.

On liferafts which are not equipped with canopies, materials which should be sufficiently wide and long (to give a minimum area of 150 cm²) should be attached to the buoyancy chamber at suitable intervals (approximately 80 cm from centre to centre) in such a manner that they are visible both from the air and from a ship.

3 LIFEBOUYS

Retro-reflective materials of a sufficient width (approximately 5 cm) should be applied around or on both sides of the body of the lifebuoy at four evenly-spaced points.

4 BUOYANT APPARATUS

Buoyant apparatus should be fitted with retro-reflective materials in the same manner as liferafts without canopies, always depending on the size and shape of the object. Such materials should be visible both from the air and from a ship.

RECOMMENDATION ON THE USE AND FITTING OF RETRO-REFLECTIVE MATERIALS ON LIFE-SAVING APPLIANCES

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- .1 for detection by horizontal light beams – at suitable intervals at half the height between the gunwale and the top of the fixed cover; and
- .2 for detection by vertical light beams (e.g. from helicopters) – at suitable intervals around the outer portion of the horizontal (or comparable) part of the top of the fixed cover;
- .3 retro-reflective materials should also be fitted on the bottom of lifeboats and rescue boats which are not self-righting.

2 LIFERAFTS

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3 LIFEBOUOYS

Retro-reflective materials of a sufficient width (approximately 5 cm) should be applied around or on both sides of the body of the lifebuoy at four evenly-spaced points.

4 BUOYANT APPARATUS

Buoyant apparatus should be fitted with retro-reflective materials in the same manner as liferafts without canopies, always depending on the size and shape of the object. Such materials should be visible both from the air and from a ship.

5 LIFEJACKETS

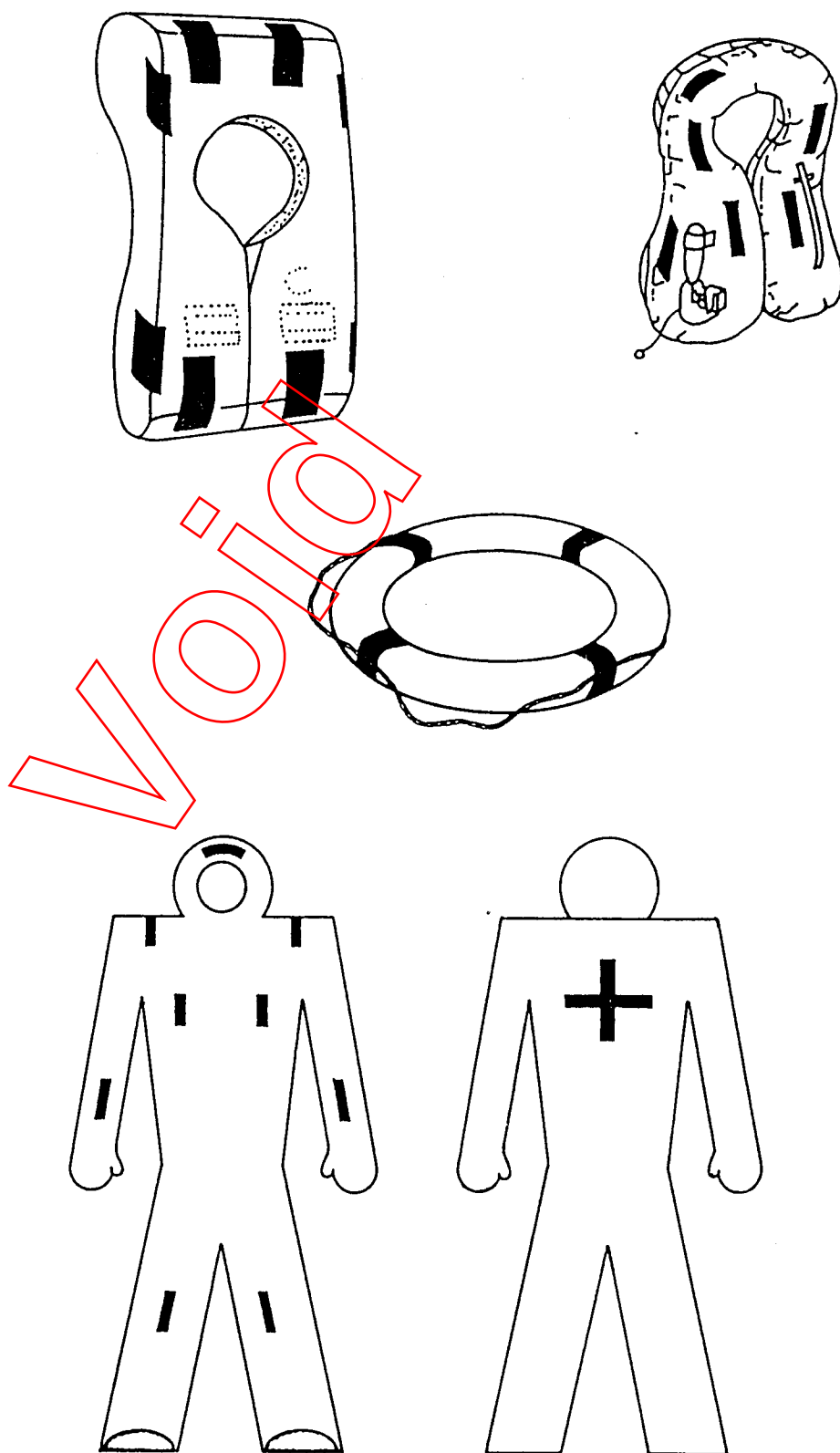
Lifejackets should be fitted with patches of retro-reflective materials with a total area of at least 400 cm² distributed so as to be useful for search from air and surface craft from all directions. In the case of a reversible lifejacket, the arrangement should be complied with no matter which way the lifejacket is put on. Such material should be placed as high up on the lifejacket as possible.

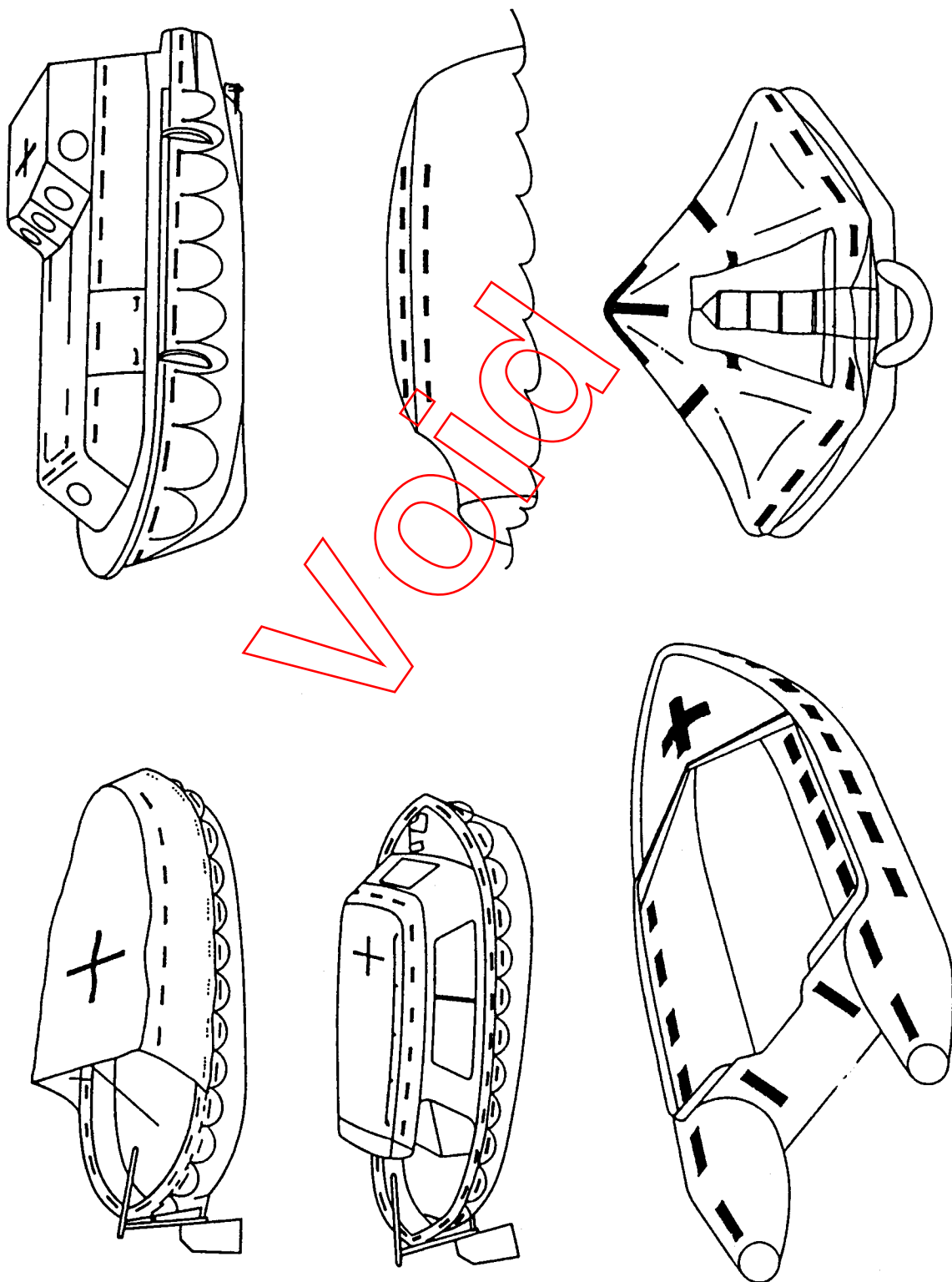
6 IMMERSION SUITS

Immersion suits should be fitted with patches of retro-reflective material with a total area of at least 400 cm² distributed so as to be useful for search from air and surface craft from all directions.

For an immersion suit that does not automatically turn the wearer face up, the back of the suit should be fitted with retro-reflective material with a total area of at least 100 cm².

VOID





Requirements of 1983 Amendments to SOLAS 74 for existing ships (cargo ships)

1983 Amendments to SOLAS 74	Explanation / Interpretations	Remarks
<u>1. EPIRBs (Reg. III/6.2.3)</u> 1. One manually activated emergency position-indicating radio beacon complying with the requirements of Reg. IV/14-1 should be carried on each side of the ship. They should be so stowed that they can be rapidly placed in any survival craft other than the liferaft or liferafts required by Reg. III/26.3.2.	The Governments of Bahamas, Liberia, Panama, Singapore, and Vanuatu have informed that the following alternative to two survival craft EPIRBs may be accepted according to the IMO recommendation: (i) one satellite EPIRB and two radar transponders, or (ii) one satellite EPIRB with a locating function operating on 121.5/243MHz	Survival craft EPIRBs will not have to be carried on board three years after the implementation date of GMDSS — 1 February 1986. After that date, GMDSS will require that the following equipment be carried on board instead of the radio life-saving appliances required by Reg. III/6.2 of the 1983 Amendments: (i) Radar transponders, (ii) Two-way VHF radiotelephone apparatus In this regard, IMO recommends that the Administration would accept the equipment required by GMDSS as an alternative to survival craft EPIRBs, considering that one satellite EPIRB should be installed for all ships by 1 August 1983 under GMDSS.
<u>2. Two-way radiotelephone apparatus (Reg. III/6.2.4)</u> 1. Two-way radiotelephone apparatus complying with the requirements of Reg. IV/14-3 should be provided for communication between survival craft and between survival craft and ship. An apparatus need not be provided for every survival craft; however, at least three apparatus should be provided on each ship. This requirement may be complied with by other apparatus used on board provided such apparatus is not incompatible with the appropriate requirements of Reg. IV/14-3. 2. For ships constructed before 1 July 1986 such apparatus need only comply with the frequency requirements of Reg. IV/14-3.	If two-way radiotelephone apparatus meets the frequency requirements of Reg. IV/14-3, it need not be of a type approved under the 1983 Amendments by the Administration. The following frequency may be used in operating the apparatus: VHF band: 156.75MHz (ch 15), 156.83MHz (ch 17) UHF band: 457.525MHz, 457.550MHz, 457.575MHz, 467.525MHz, 467.550MHz, 467.575MHz	Under GMDSS, two-way radiotelephone apparatus will be required to be operable in VHF band after 1 February 1986. Two-way radiotelephone apparatus operable in UHF band will not be accepted after that date. GMDSS requires that the two-way radiotelephone apparatus be operable on the frequency 156.8MHz (ch 16) and at least one additional channel in VHF band.

1983 Amendments to SOLAS 74	Explanation / Interpretations	Remarks
<u>3. Liferaft (Reg.III/26.3)</u> In addition to their lifeboats, ships should carry: 1. One or more liferafts of such aggregate capacity as will accommodate the total number of persons on board. The liferaft or liferafts should be equipped with a lashing or an equivalent means of securing the liferaft which will automatically release it from a sinking ship; 2. Where the survival craft are stowed in a position which is more than 100 m from the stem or stern, in addition to the liferafts required by paragraph 1, a liferaft stowed as far forward or aft, or one as far forward and another as far aft, as is reasonable and practicable. Notwithstanding the requirements of paragraph 1, such liferaft or liferafts may be securely fastened so as to permit manual release.	Ships are required to carry liferafts for 100% of the persons permitted on board, in lieu of the present 50% capacity. This regulation does not refer to the requirement that liferafts be readily transferred for launching on either side of the ship as required for new ships. The distance from the stem or stern is the horizontal distance measured between the appropriate extreme end of the ship and the closest end of the nearest lifeboat or liferaft.	
<u>4. Lifejacket lights (Reg.III/27.2)</u> 1. Each lifejacket shall be fitted with a light complying with the requirements of Reg.III/32.3.	Where the light is fitted on a present lifejacket, how to fit should be in accordance with instructions of the manufacturer.	
<u>5. Immersion suits and thermal protective aids (Reg.III/27.3)</u> 1. Ships should carry for each lifeboat on the ship at least three immersion suits complying with the requirements of Reg.III/33 or, if the Administration considers it necessary and practicable, one immersion suit complying with the requirements of Reg.III/33 for every person on board the ship. The ship should carry thermal protective aids complying with the requirements of Reg.III/34 for persons on board not provided with immersion suits. These immersion suits and thermal protective aids need not be required if the ship: (1) has totally enclosed lifeboats on each side of the ship of such aggregate capacity as will accommodate the total number of persons on board; or (To be continued)	The number of thermal protective aids to be carried is figured out by deducting the total number of immersion suits from that of the persons permitted on board.	(Example) If a ship is provided with two open-type lifeboats, immersion suits and thermal protective aids should be on board as follows: Immersion suits: 3 × 2 (the number of lifeboats) Thermal protective aids: Max. person permitted in SE certificate—6 (the total number of immersion suits)

1983 Amendments to SOLAS 74	Explanation / Interpretations	Remarks
(2) has totally enclosed lifeboats capable of being launched by free-fall over the stern of the ship of such aggregate capacity as will accommodate the total number of persons on board and which are boarded and launched directly from the stowed position, together with liferafts on each side of the ship of such aggregate capacity as will accommodate the total number of persons on board; or (3) is constantly engaged on voyages in warm climates where, in the opinion of the Administration, immersion suits unnecessary. 2. Ships complying with the requirements of Reg. III/26.1.3 should carry immersion suits complying with the requirements of Reg. III/33 for every person on board unless the ship; (1) has davit-launched liferafts; or (2) has liferafts served by equivalent approved appliances capable of being used on both sides of the ship and which do not require entry into the water to board the liferaft; or (3) is constantly engaged on voyages in warm climates where, in the opinion of the Administration, immersion suits are unnecessary.	This Society will handle this exemption on a ship by ship basis consulting with the flag Government. This requirement applies to ships which are accepted to carry liferafts instead of lifeboats.	The Liberian and Panamanian Governments, in principle, interpret "voyage in warm climates" as follows: Liberia: voyage in water with sea water temperatures above 15 °C Panama voyage in water within the latitudes of 32 degrees north and 32 degrees south.
6. <u>Retro-reflective material (Reg. III/30.2.7)</u> 1. Life-saving appliances should be fitted with retro-reflective material where it will assist in detection and in accordance with the recommendations of the Organization.	The way of fitting retro-reflective material may be in accordance with IMO Res.A.274(VIII) or A.658(16) but, where applicable, should be in accordance with IMO Res.658(16). A copy of these resolutions are attaching hereto.	

GUIDELINES CONCERNING THE USE AND FITTING OF
RETRO-REFLECTIVE MATERIAL ON LIFE-SAVING APPLIANCES

1. Life-boats

Retro-reflective tapes should be fitted on top of the gunwale as well as on the outside of the boat as near the gunwale as possible. The tapes should be sufficiently wide and long (approximately 5 x 30 cm) and should be spaced at suitable intervals (approximately 50 cm). If a canopy is fitted it should not be allowed to obscure the tapes fitted on the outside of the boat and the top of the canopy should be fitted with retro-reflective tapes similar to those mentioned above but shaped in the form of a cross and spaced at suitable intervals (approximately 50 cm).

2. Life-rafts

Retro-reflective tapes should be fitted around the canopy of the raft at suitable intervals (approximately 50 cm) and at a suitable height above the waterline. On inflatable life-rafts retro-reflective tapes should also be fitted on the underside of the floor (four tapes fitted at equal intervals around the outer edges on the bottom of the life-rafts). The tapes should be sufficiently wide and long (approximately 5 x 30 cm). A suitable cross-shaped marking of two such tapes should also be applied to the top of the canopy. On rafts which are not equipped with canopies at least four such tapes should be attached to and evenly spaced on the buoyancy chamber in such a manner that they are visible both from the air and sea.

3. Lifebuoys

Retro-reflective tape of a sufficient width (approximately 5 cm) should be applied around or on both sides of the body of the buoy at four evenly-spaced points.

4. Buoyant apparatus

Buoyant apparatus should be fitted with retro-reflective tapes in the same manner as rafts without canopies, always depending on the size and shape of the object. The reflectors should be visible from both the air and sea.

5. Life-jackets

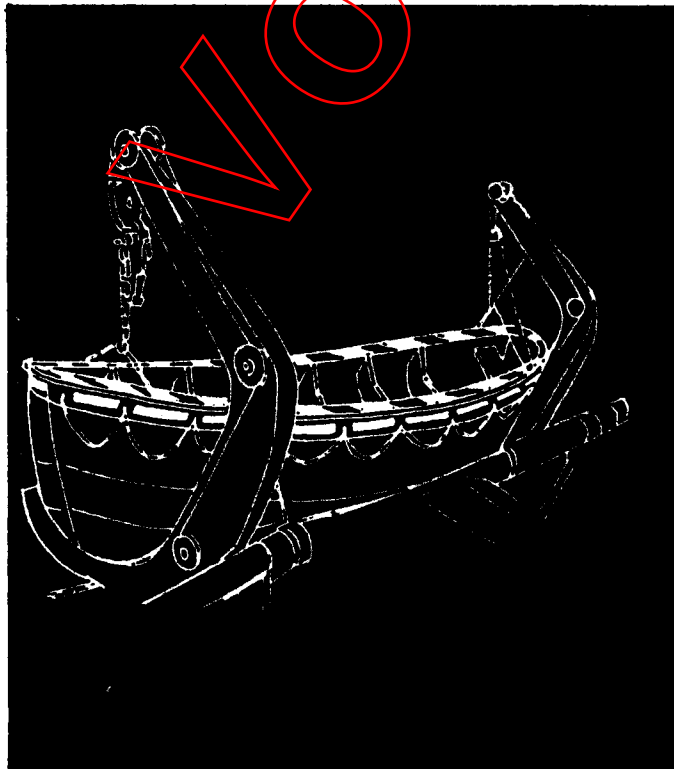
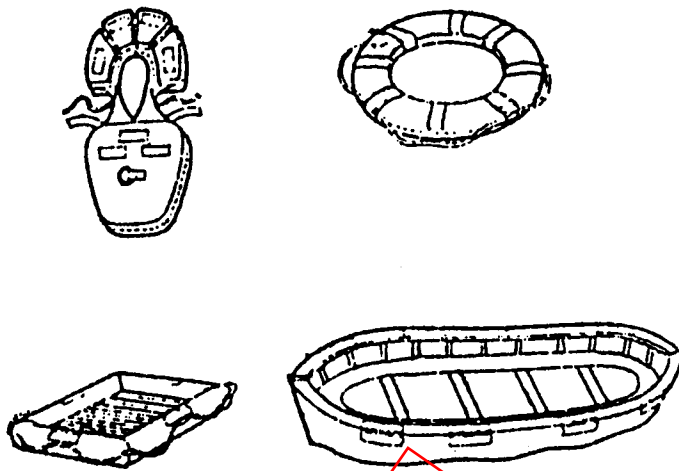
Unless its cover material is retro-reflective, a life-jacket should be fitted with retro-reflective tapes sufficiently wide and long (approximately 5 x 10 cm). These tapes should be placed as high up on the jacket as possible in at least six places on the outside of the jacket and in at least as many places on the inside of the same by virtue of the fact that life-jackets are reversible.

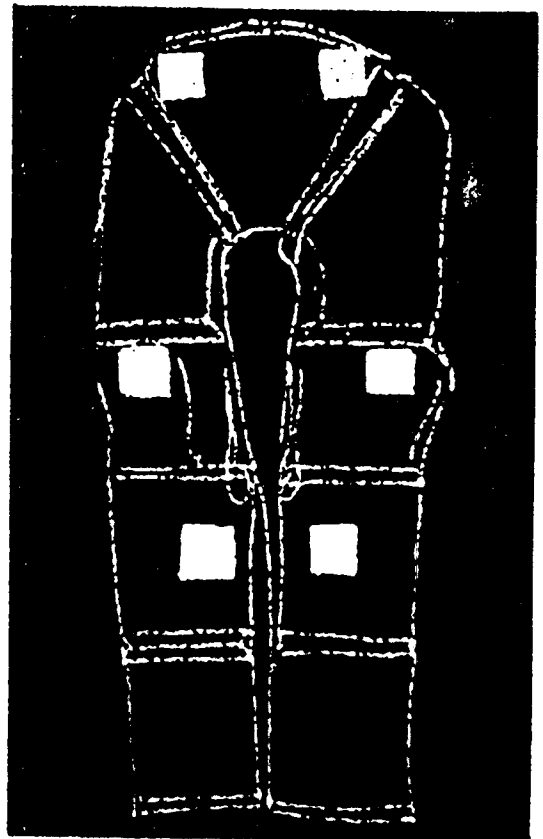
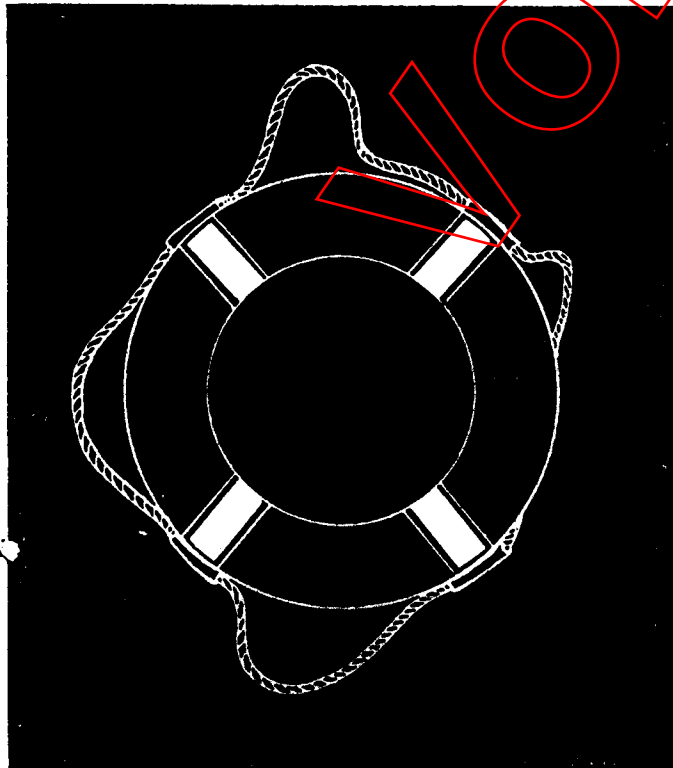
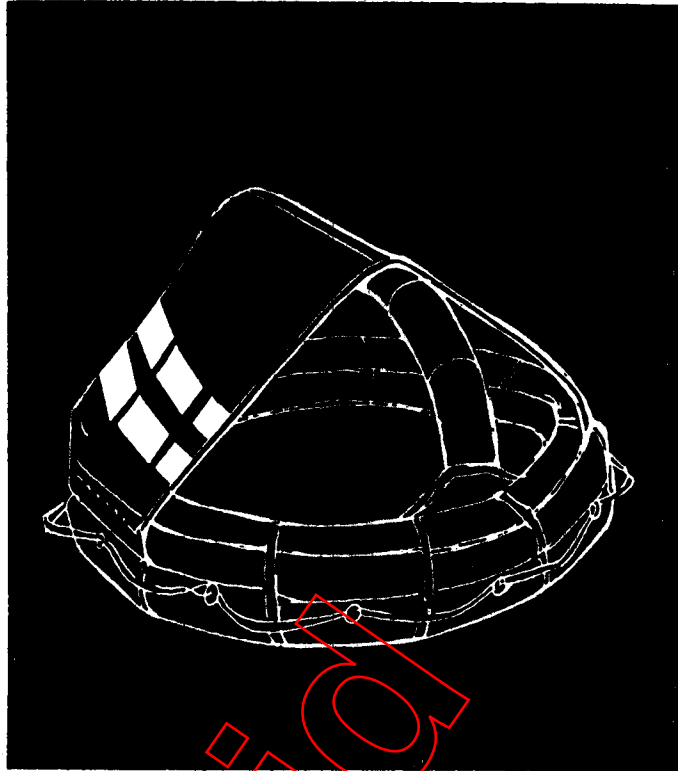
6. The retro-reflective material to be used should, if possible, be of a type which can also act as an effective radar reflector, e.g. a tape with a metal foil backing.

7. To ensure effective performance under all conditions Administrations concerned are advised until further notice to use retro-reflective material which meets the conditions set by the United States Government specification LS-300-A of January 1970, which *inter alia* contains requirements with regard to reflective power and durability.

The illustrations reproduced in the Appendix to this Recommendation are intended to provide the Administrations concerned with some ideas as regards various layouts which could be used in connexion with the fitting of retro-reflective tape in accordance with the above guidelines.

APPENDIX





RECOMMENDATION ON THE USE AND FITTING OF RETRO-REFLECTIVE MATERIALS ON LIFE-SAVING APPLIANCES

1 LIFEBOATS AND RESCUE BOATS

Retro-reflective materials should be fitted on top of the gunwale as well as on the outside of the boat as near the gunwale as possible. The materials should be sufficiently wide and long to give a minimum area of 150 cm² and should be spaced at suitable intervals (approximately 80 cm from centre to centre). If a canopy is fitted, it should not be allowed to obscure the materials fitted on the outside of the boat, and the top of the canopy should be fitted with retro-reflective materials similar to those mentioned above and spaced at suitable intervals (approximately 80 cm centre to centre). In the case of partially enclosed or totally enclosed lifeboats, such materials should be placed as follows:

- .1 for detection by horizontal light beams – at suitable intervals at half the height between the gunwale and the top of the fixed cover; and
- .2 for detection by vertical light beams (e.g. from helicopters) – at suitable intervals around the outer portion of the horizontal (or comparable) part of the top of the fixed cover;
- .3 retro-reflective materials should also be fitted on the bottom of lifeboats and rescue boats which are not self-righting.

2 LIFERAFTS

Retro-reflective materials should be fitted around the canopy of the liferaft. The material should be sufficiently wide and long to give a minimum area of 150 cm² and should be spaced at suitable intervals (approximately 80 cm from centre to centre) at a suitable height above the waterline, doorways included, if suitable. On inflatable liferafts, retro-reflective materials should also be fitted to the underside of the floor, cross-shaped in the centre. The dimension of the cross should be half the diameter of the liferaft, and a similar cross should be applied to the top of the canopy.

On liferafts which are not equipped with canopies, materials which should be sufficiently wide and long (to give a minimum area of 150 cm²) should be attached to the buoyancy chamber at suitable intervals (approximately 80 cm from centre to centre) in such a manner that they are visible both from the air and from a ship.

3 LIFEBOUYS

Retro-reflective materials of a sufficient width (approximately 5 cm) should be applied around or on both sides of the body of the lifebuoy at four evenly-spaced points.

4 BUOYANT APPARATUS

Buoyant apparatus should be fitted with retro-reflective materials in the same manner as liferafts without canopies, always depending on the size and shape of the object. Such materials should be visible both from the air and from a ship.

5 LIFEJACKETS

Lif jackets should be fitted with patches of retro-reflective materials with a total area of at least 400 cm² distributed so as to be useful for search from air and surface craft from all directions. In the case of a reversible lifejacket, the arrangement should be complied with no matter which way the lifejacket is put on. Such material should be placed as high up on the lifejacket as possible.

6 IMMERSION SUITS

Immersion suits should be fitted with patches of retro-reflective material with a total area of at least 400 cm² distributed so as to be useful for search from air and surface craft from all directions.

For an immersion suit that does not automatically turn the wearer face up, the back of the suit should be fitted with retro-reflective material with a total area of at least 100 cm².

VOID

