



SUB-COMMITTEE ON STANDARDS OF
TRAINING AND WATCHKEEPING
32nd session
Agenda item 5

STW 32/5
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FOLLOW-UP ACTION TO THE 1995 STCW CONFERENCE

Review of training-related resolutions and circulars with a view to revoking

Note by the Secretariat

SUMMARY

- Executive summary:*** This document provides a draft Assembly resolution containing a consolidated text of health, safety and training standards for personnel to whom the STCW Convention is not applicable
- Action to be taken:*** Paragraph 3
- Related documents:*** STW 31/WP.5 and STW 31/17

1 The Sub-Committee, at its thirty-first session (10 to 14 January 2000), considered the draft Assembly resolution and MSC circular related to personnel to whom the STCW Convention is not applicable. The Sub-Committee expressed general agreement to the contents of the annexes of the draft resolution and circular but, noting that the planned revocations of Assembly resolutions and MSC circulars related to the STCW Convention do not come into force until 1 February 2002, considered that the text could be consolidated into one instrument and instructed the Secretariat to prepare a draft for consideration at its next session.

2 Attached hereto at annex is the consolidated text of health, safety and training standards for personnel to whom the STCW Convention is not applicable.

Action requested of the Sub-Committee

3 The Sub-Committee is invited to note the information provided and take action as appropriate.

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ANNEX**DRAFT ASSEMBLY RESOLUTION****HEALTH, SAFETY AND TRAINING STANDARDS FOR PERSONNEL TO WHOM
THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING,
CERTIFICATION AND WATCHKEEPING FOR SEAFARERS, 1978,
AS AMENDED, IS NOT APPLICABLE**

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions for the Assembly in relation to regulations and guidelines concerning maritime safety,

RECOGNIZING that the International Convention on Standards for Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended, is applicable to seafarers serving on board sea-going ships in accordance with Article III,

NOTING that whilst a number of Assembly resolutions and circulars (issued by the Maritime Safety Committee) have been fully incorporated in the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended, the contents of the resolutions and circulars may still be useful for personnel, who go to sea, to whom the International Convention on Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended is not applicable,

RECOGNIZING the need to provide guidance to Member Governments on health, safety and training standards for personnel serving on board ships to whom the International Convention on Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended, is not applicable,

ALSO NOTING that the STCW Code contains training standards guidance which may be helpful in the development of training programmes for those personnel to whom the International Convention on Standards of Training, Certification and Watchkeeping (STCW) for Seafarer, 1978, as amended, is not applicable.

HAVING CONSIDERED the recommendation of the Maritime Safety Committee at its [seventy-fourth session];

1 URGES Member Governments when establishing health and safety standards and developing training programmes for those maritime personnel not subject to the requirements specified in the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended, to consider the use of the standards specified in the Appendices to the present resolution, as appropriate;

2 RECOMMENDS that Member Governments to bring this recommendation to the attention of all parties concerned.

Appendix 1

PRINCIPLES AND GUIDELINES CONCERNING DRUG AND ALCOHOL ABUSE PROGRAMMES

Principles

1 Drug and alcohol abuse are considered to directly affect fitness or ability of maritime personnel to perform shipboard functions. Therefore, careful consideration must be given to the screening of maritime personnel prior to their employment. A maritime personnel under the influence of drugs or alcohol would be considered disqualified from further duties until no longer impaired in his abilities to perform his duties, or rehabilitated and found fit for service.

2 In recognition of the international concern for the perceived problem, it is urged that the scope of any drug or alcohol abuse amongst maritime personnel should be scientifically researched and monitored.

3 Screening is a critical element of any prevention programme. Any comprehensive work programme should also include rehabilitation, education and counselling as principal elements within a formulated policy on drug and alcohol abuse.

4 Screening serves several purposes, including identifying individuals, who, due to unfitness, are not qualified to be maritime personnel; detecting these individuals before they present a threat to their own safety or the safety of others, and property; discouraging drug and alcohol abuse; and identifying maritime personnel in need of rehabilitation.

Drug and alcohol abuse screening programme guidelines

1 The Administration should ensure that adequate measures are taken to prevent alcohol and drugs causing harm on board. Any screening programmes should be established and implemented under flag authority as necessary.

2 Screening should include procedures that identify drug and alcohol abuse.

3 Screening procedures should respect the dignity, privacy, confidentiality and fundamental legal rights of the individuals concerned.

4 Any specimens which might be collected should be suitably safeguarded, and analysis should be performed by competent persons or independent agencies.

5 Accuracy of testing and analysis procedures should be maintained by rigorous quality control procedures.

6 Where undertaken, positive body fluid test results should be interpreted by a medically competent person acceptable to the flag State.

7 Unless separate agreements are in effect between States, there should be no screening of mariners onboard foreign-flag ships unless the ship has been involved in a marine casualty or pollution incident in waters subjects to the coastal State's jurisdiction. Only mariners considered to be directly involved in the incident should be subject to any screening.

Minimum Safety Standards

1 Member Governments should consider developing national legislation prescribing a maximum of 0.08 % BAC during duty as a minimum safety standard on their ships and to improve programmes for prevention of blood drug misuse.

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Appendix 2

MINIMUM EYESIGHT STANDARDS

1 In the absence of mandatory eyesight standards for maritime personnel, Parties should regard the minimum in-service eyesight set out in paragraphs 2 to 6 and attached table hereunder as the minimum for safe operation of ships, and report of maritime casualties where poor eyesight has contributed to such incidents.

2 Each Administration has the discretionary authority to grant variance or waiver of any medical standards set out in the table hereunder, based on an assessment of a medical evaluation and any other relevant information concerning an individual's adjustment to the condition and proven ability to satisfactorily perform assigned shipboard functions. However, if aided distant acuity of either eye is less than the standard, the aided distant acuity in the better eye should be at least 0.2 higher than the standard indicated in the table. The unaided distant visual acuity in the better eye should be at least 0.1.

3 Persons requiring the use of spectacles or contact lenses to perform duties should have a spare pair conveniently available on board the ship. Any need to wear visual aids to meet required standards should be recorded on each certificate and endorsement issued.

4 Eyes of seafarers should be free of disease. Any permanent or progressing debilitating pathology without recovery should be a cause for determination of unfitness.

5 All tests needed to determine the visual fitness of a seafarer must be reliable and performed by a competent person recognised by the Administration.

6 Notwithstanding these provisions, the Administration may require higher standards than those given in the table below.

MINIMUM IN-SERVICE EYESIGHT STANDARDS

Category of seafarer	Distant vision		Near/immediate vision	Colour vision	Visual Fields	Night Blindness	Diplopia (double vision)
	One eye	Other eye	Both eyes together Aided or unaided				
Seafarers required to undertake lookout duties			Vision required for ship's navigation (e.g. chart and nautical publications reference, use of bridge equipment, and identification of aids to navigation)		Normal visual fields	Vision required to perform all necessary functions in darkness without compromise	No significant condition evident
Aided	0.5	0.5					
Unaided	0.1	0.1					
Seafarer required to undertake engine-room duties			Vision required to read instruments in close proximity, to operate equipment, and to identify systems/components as necessary		Sufficient visual fields	Vision required to perform all necessary functions in darkness without compromise	No significant condition evident
Aided	0.4	0.4					
Unaided	0.1	0.1					
Seafarers required to undertake radio, electrical or electronic functions			Vision required to read instruments in close proximity, to operate equipment, and to identify systems/components as necessary		Sufficient visual fields	Vision required to perform all necessary functions in darkness without compromise	No significant condition evident
Aided	0.4	0.4					
Unaided	0.1	0.1					

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Appendix 3

BASIC TRAINING IN FIRE-FIGHTING

1 Basic fire-fighting training should include at least the following theoretical and practical elements.

2 Theory

2.1 The three elements of fire and explosion (the fire triangle):

- .1 fuel;
- .2 source of ignition; and
- .3 oxygen.

2.2 Ignition sources:

- .1 chemical;
- .2 biological; and
- .3 physical.

2.3 Flammable materials:

- .1 flammability;
- .2 ignition point;
- .3 burning temperature;
- .4 burning speed;
- .5 thermal value;
- .6 lower flammable limit (LFL);
- .7 upper flammable limit (UFL);
- .8 flammable range;
- .9 inerting;
- .10 static electricity;
- .11 flashpoint; and
- .12 auto-ignition.

2.4 Fire hazard and spread of fire:

- .1 by radiation;
- .2 by convection; and
- .3 by conduction.

2.5 Reactivity

2.6 Classification of fire and applicable extinguishing agents.

2.7 Main causes of fire on board ships:

- .1 oil leakage in engine room;
- .2 cigarettes;
- .3 overheating (bearings);
- .4 galley appliances (stoves, flues, fryers, hotplates, etc.);
- .5 spontaneous ignition (cargo, wastes, etc.);
- .6 hot work (welding, cutting, etc.);
- .7 electrical apparatus (short circuit, non-professional repairs); and
- .8 reaction, self-heating and auto-ignition.

2.8 Fire prevention.

2.9 Fire detection:

- .1 fire and smoke detection systems; and
- .2 automatic fire alarm.

2.10 Fire-fighting equipment:

- .1 fixed installations on board and locations:
- .2 fire mains, hydrants;
- .3 international shore connection;
- .4 smothering installations, carbon dioxide (CO₂) foam;
- .5 halogenated hydrocarbons;
- .6 pressure water spray system in special category spaces, etc.;
- .7 automatic sprinkler system;
- .8 emergency fire pump, emergency generator;
- .9 chemical powder applicants;
- .10 general outline of required and available mobile apparatus;
 - .1 fireman's outfits and personal equipment, location on board:
 - .2 fireman's outfit, personal equipment;
 - .3 breathing apparatus;
 - .4 resuscitation apparatus;
 - .5 smoke helmet or mask; and
 - .6 fireproof life-line and harness;
- .11 general equipment:
 - .1 fire hoses, nozzles, connections, fire axes;
 - .2 portable fire extinguishers; and
 - .3 fire blankets.

2.11 Construction and arrangements:

- .1 escape routes;
- .2 means for gas freeing tanks;

- .3 Class A, B and C divisions; and
- .4 inert gas systems.

2.12 Ship fire-fighting organization:

- .1 general alarm;
- .2 fire control plans, muster stations and duties of individuals;
- .3 communications, including ship-shore when in port;
- .4 personnel safety procedures;
- .5 periodic shipboard drills; and
- .6 patrol systems.

2.13 Practical knowledge of resuscitation methods.

2.14 Fire-fighting methods:

- .1 sounding the alarm;
- .2 locating and isolating;
- .3 jettisoning;
- .4 inhibiting;
- .5 cooling;
- .6 smothering;
- .7 extinguishing; and
- .8 reflash watch.

2.15 Fire-fighting agents:

- .1 water, solid jet, spray, fog, flooding;
- .2 foam, high, medium and low expansion;
- .3 carbon dioxide (CO₂);
- .4 halon;
- .5 aqueous film forming foam (AFFF); and
- .6 dry chemical powder.

3 Practice

Personnel should undergo the following practical training to ensure that they possess the ability to:

- .1 use various types of portable fire extinguishers;
- .2 use self-contained breathing apparatus;
- .3 extinguish smaller fires, e.g. electrical fires, oil fires, propane fires;
- .4 extinguish extensive fires with water (jet and spray nozzles);
- .5 extinguish fires with either foam, powder or any other suitable chemical agent;

- .6 enter and pass through with life-line but without breathing apparatus a compartment into which high expansion foam has been injected;
- .7 fight fire in smoke-filled enclosed spaces wearing self-contained breathing apparatus;
- .8 extinguish fire with water fog, or any other suitable fire-fighting agent in an accommodation room or simulated engine room with fire and heavy smoke;
- .9 extinguish oil fire with fog applicator and spray nozzles, dry chemical powder or foam applicators; and
- .10 effect a rescue in a smoke-filled space wearing breathing apparatus.

4 Personnel should be aware of the necessity of maintaining a state of readiness on board.

5 The practical training listed should take place in spaces which provide truly realistic training conditions, e.g. simulated shipboard conditions, and whenever possible and practical should also be carried out in darkness.

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Appendix 4

ADVANCED TRAINING IN FIRE-FIGHTING

1 Having completed the training outlined in Appendix 1, key personnel who may also have to control fire-fighting should be given additional advanced training which should include the following:

- .1 fire control aboard ships;
- .2 the organization of fire parties;
- .3 training of fire parties
- .4 fire-fighting procedures at sea;
- .5 fire-fighting procedures in port;
- .6 the hazards associated with the storage and handling of materials (paints, etc.);
- .7 inspection and servicing of fixed fire-extinguishing systems;
- .8 inspection and servicing of fire detection systems;
- .9 inspection and servicing of portable and mobile fire-extinguishing equipment;
- .10 inspection and servicing of other fire-fighting equipment;
- .11 use of water for fire extinguishing, the effect on ship stability, precautions and corrective procedures;
- .12 ventilation control;
- .13 control of fuel and electrical system;
- .14 fire-fighting process hazards (dry distillation, chemical reactions, boiler uptake fires, etc.);
- .15 first aid including cardio-pulmonary resuscitation;
- .16 fire investigation and reporting; and
- .17 fire-fighting involving dangerous goods.

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Appendix 5

RECOMMENDED TRAINING PROGRAMME IN RADAR OBSERVATION AND PLOTTING

1 GENERAL

1.1 In order to achieve the practical aims of this programme, demonstrations of and practice in radar observation should be undertaken where appropriate on live marine radar equipment, including the use of simulators or other effective means approved by the Administration. Plotting exercises should preferably be under-taken in real-time in order to increase the student's awareness of the hazards of the improper use of radar data and improve his plotting techniques to achieve a standard of radar plotting commensurate to that necessary for the safe execution of collision avoidance manoeuvring under actual sea-going conditions.

2 THEORY

2.1 Factors affecting performance and accuracy

2.1.1 Elementary understanding of the principles of radar; range and bearing measurement. Characteristics of the radar set which determine the quality of the radar display; the radar antenna,- polar diagrams. the effects of power radiated in directions outside the main beam; non-technical description of the radar system including variations in the features encountered in different types of radar set. Performance monitors. Equipment factors which affect maximum and minimum detection ranges and accuracy of information.

2.1.2 Marine radar performance specifications (Assembly resolution A.477(XII) and A.823(19)).

2.1.3 Effects of the siting of the radar antenna, shadow sectors and arcs of reduced sensitivity, false echoes, effects of antenna height on detection ranges, etc. Siting radar units and storing spares near magnetic compasses; magnetic safe distances.

2.1.4 Radiation hazards. Safety precautions to be taken in the vicinity of antenna and open waveguides.

2.2 Detection of misrepresentation of information including false echoes and sea returns

2.2.1 A knowledge of the limitations to target detection is essential to enable the observer to estimate the dangers of failure to detect targets. The following factors should be emphasized:

- .1 performance standard of the equipment;
- .2 brilliance, gain and video processor control settings;
- .3 radar horizon;
- .4 size, shape, aspect and composition of targets;
- .5 effects of the motion of the ship in a sea-way;
- .6 propagation conditions;
- .7 meteorological conditions; sea clutter and rain clutter;
- .8 anti-clutter control settings;

- .9 shadow sectors; and
- .10 radar-to-radar interference.

2.2.2 Factors which might lead to faulty interpretation: false echoes, effects of nearby pylons and large structures, effects of power lines crossing rivers and estuaries, echoes from distant targets occurring on second or later traces.

2.2.3 Aids to interpretation: corner reflectors, radar beacons. Detection and recognition of land targets; the effects of topographical features; effects of pulse length and beamwidth. Radar conspicuous and inconspicuous targets; factors which affect the echo strength from targets.

3 PRACTICE

3.1 Setting up and maintaining displays

3.1.1 The various types of radar display mode; unstabilized ship's-head-up relative motion, ship's-head up and north-up stabilized relative motion, true motion.

3.1.2 The effects of errors on the accuracy of information displayed; effects of transmitting compass errors on stabilized and true motion displays, effects of transmitting log errors on a true motion display, effects of inaccurate speed settings on a true motion display.

3.1.3 Methods of detecting inaccurate speed settings on true motion controls. Effects of receiver noise limiting ability to display weak echo returns, effects of saturation by receiver noise, etc. Adjustments of operational controls; criteria which indicate optimum points of adjustment, importance of proper sequence, etc. Effects of maladjusted controls, detection of maladjustments and correction to

- .1 controls affecting detection ranges; and
- .2 controls affecting accuracy.

3.1.4 Dangers of using radar equipment with maladjusted controls.

3.1.5 Need for frequent regular checking of performance, relationship of performance indicator to range performance of the radar set.

3.2 Range and bearing

3.2.1 Methods of measuring ranges; fixed range markers, variable range marker. Accuracy of each method and the relative accuracy of the different methods. How range data are displayed; ranges at stated intervals, digital counter, graduated scale, etc. Methods of measuring bearings; rotatable cursor on transparent disc covering the display, electronic bearing cursor and other methods. Bearing accuracy. Inaccuracies due to: parallax, heading marker displacement, centre maladjustment; how bearing data are displayed; graduated scale, digital counter, etc.

3.2.2 Need for regular checking of the accuracy of ranges and bearing, methods of checking for inaccuracies and correcting or allowing for inaccuracies.

4 PLOTTING TECHNIQUES AND RELATIVE MOTION CONCEPTS

4.1 Practice in manual plotting techniques including the use of reflection plotters should have the objective of establishing a thorough understanding of the interrelated motion between own ship and other ships, including the effects of manoeuvring to avoid collision. At the preliminary stages of this training, simple plotting exercises should be designed to establish a sound appreciation of plotting geometry and relative motion concepts. The degree of complexity of exercises should increase throughout the training course until the trainee has mastered all aspects of the subject. Competence can best be enhanced by exposing the trainee to real-time exercises performed on a simulator or using other effective means.

4.2 Identification of critical echoes

4.2.1 Position fixing by radar from land targets and sea marks.

4.2.2 Accuracy of position fixing by ranges and by bearings.

4.2.3 Importance of cross checking accuracy of radar against other navigational aids.

4.2.4 The value of recording ranges and bearings at frequent, regular intervals when using radar as an aid to collision avoidance.

4.3 Course and speed of other ships

4.3.1 Different methods by which course and speed of other ships can be obtained from recorded ranges and bearings.

- .1 unstabilized relative plot;
- .2 stabilized relative plot; and
- .3 true plot.

4.3.2 Relationship between visual and radar observations; detail, accuracy of estimates of course and speed of other ships. Detection of changes in movements of other ships.

4.4 Time and distance of closest approach of crossing, meeting or overtaking ships

4.4.1 Use of recorded data to obtain:

- .1 measurement of closest approach distance and bearing; and
- .2 time to closest approach.

4.4.2 The importance of frequent, regular observations.

4.5 Detecting course and speed changes of other ships

4.5.1 Effects of changes of course or speed by other ships on their tracks across the display.

4.5.2 Delay between change of course or speed and detection of that change.

4.5.3 Hazards of small changes as compared with substantial changes of course or speed in relation to rate and accuracy of detection.

4.6 Effects of changes in own ship's course and speed or both

4.6.1 On a relative motion display- effects of own ship's movements, effects of other ships' movements; advantages of compass stabilization of a relative display.

4.6.2 On a true motion display.

4.6.3 Effects of inaccuracies; of speed and course settings on a true motion display, of compass stabilization data driving a stabilized relative motion display.

4.6.4 Effects of changes in course or speed by own ship on tracks of other ships on the display.

4.6.5 Relationship of speed to frequency of observations.

5 APPLICATION OF THE INTERNATIONAL REGULATIONS FOR PREVENTING COLLISIONS AT SEA

5.1 Relationship of the Regulations for Preventing Collisions at Sea to the use of radar.

5.2 Action to avoid collision- dangers of assumptions made on inadequate information and the hazards of small alterations of course or speed. The advantages of safe speed when using radar to avoid collision. The relationship of speed to closest approach distance and time and to the manoeuvring characteristics of various types of ships.

5.3 The importance of radar observation reports being well defined,- radar reporting procedures.

5.4 Use of radar in clear weather, to obtain an appreciation of its capabilities and limitations, compare radar and visual observations and obtain an assessment of the relative accuracy of information.

5.5 The need for early use of radar in clear weather at night and when there are indications that visibility may deteriorate. Comparison of features displayed by radar with charted features. Comparison of the effects of differences between range scales.

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Appendix 6

RECOMMENDED TRAINING IN THE USE OF AUTOMATIC RADAR PLOTTING AIDS (ARPA)

1 GENERAL

1.1 In addition to the minimum knowledge of radar equipment personnel should be capable of demonstrating, to the satisfaction of the Administration, a knowledge of the fundamentals and operation of ARPA equipment and the interpretation and analysis of information obtained from this equipment.

1.2 Training facilities should include simulators or other effective means approved by the Administration capable of demonstrating the capabilities, limitations and possible errors of ARPA.

1.3 The facilities mentioned above should provide a capability such that trainees undergo a series of real-time exercises where the displayed radar information, at the choice of the trainee or as required by the instructor, is either in the ARPA format or in the basic radar format. Such flexibility of presentation will enable realistic exercises to be undertaken, providing for each group of trainees the widest range of displayed information available to the user and thus consolidating his ability to use effectively either basic radar or ARPA systems.

1.4 The ARPA training programme should include all items listed in paragraphs 3 and 4 below.

2 TRAINING PROGRAMME DEVELOPMENT

2.1 Where ARPA training is provided as part of the general training requirements personnel should understand the factors involved in decision making based on the information supplied by ARPA in association with other navigational data inputs, having a similar appreciation of the operational aspects and of system errors of modern electronic navigational systems. This training should be progressive in nature commensurate with abilities of the individual.

3 THEORY AND DEMONSTRATION

3.1 The possible risks of over-reliance on ARPA

3.1.1 Appreciation that ARPA is only a navigational aid and that its limitations, including those of its sensors, make over-reliance on ARPA dangerous, in particular for keeping a look-out. Need to comply at all times with the basic principles and operational guidance for officers in charge of a navigational watch.

3.2 The principal types of ARPA systems and their display characteristics

3.2.1 Knowledge of the principal types of ARPA systems in use- their various display characteristics and an understanding of when to use ground or sea stabilized modes and north-up, course-up or head-up presentations.

3.3 IMO performance standards for ARPA

3.3.1 An appreciation of the IMO performance standards for ARPA, in particular the standards relating to accuracy.

3.4 Factors affecting system performance and accuracy

3.4.1 Knowledge of ARPA sensor input performance parameters - radar, compass and speed inputs; effects of sensor malfunction on the accuracy of ARPA data.

3.4.2 Effects of the limitations of radar range and bearing discrimination and accuracy; the limitations of compass and speed input accuracies on the accuracy of ARPA data.

3.4.3 Knowledge of factors which influence vector accuracy.

3.5 Tracking capabilities and limitations

3.5.1 Knowledge of the criteria for the selection of targets by automatic acquisition.

3.5.2 Factors leading to the correct choice of targets for manual acquisition.

3.5.3 Effects on tracking of "lost" targets and target fading.

3.5.4 Circumstances causing "target swop" and its effects on displayed data.

3.6 Processing delays

3.6.1 The delays inherent in the display of processed ARPA information, particularly on acquisition and re-acquisition or when a tracked target manoeuvres.

3.7 When and how to use the operational warnings, their benefits and limitations

3.7.1 Appreciation of the uses, benefits and limitations of ARPA operational warnings; correct setting, where applicable, to avoid spurious interference.

3.8 System operational tests

3.8.1 Methods of testing for malfunctions of ARPA systems including functional self-testing.

3.8.2 Precautions to be taken after a malfunction occurs.

3.9 Manual and automatic acquisition of targets and their respective limitations

3.9.1 Knowledge of the limits imposed on both types of acquisition in multi-target scenarios, effects on acquisition of target fading and target swap.

3.10 When and how to use true and relative vectors and typical graphic representation of target information and danger areas

3.10.1 Thorough knowledge of true and relative vectors; derivation of targets' true courses and speeds.

3.10.2 Threat assessment; derivation of predicted closest point of approach and predicted time to closest point of approach from forward extrapolation of vectors, the use of graphic representation of danger areas.

3.10.3 Effects of alterations of course and/or speed of own ship and/or targets on predicted closest point of approach and predicted time to closest point of approach and danger areas.

3.10.4 Effects of incorrect vectors and danger areas.

3.10.5 Benefit of switching between true and relative vectors.

3.11 When and how to use information on past position of targets being tracked

3.11.1 Knowledge of the derivation of past positions of targets being tracked, recognition of historic data as a means of indicating recent manoeuvring of targets and as a method of checking the validity of the ARPA's tracking.

4 PRACTICE

4.1 Setting up and maintaining displays

4.1.1 The correct starting procedure to obtain the optimum display of ARPA information.

4.1.2 Choice of display presentation; stabilized relative motion displays and true motion displays.

4.1.3 Correct adjustment of all variable radar display controls for optimum display of data.

4.1.4 Selection, as appropriate, of required speed input to ARPA.

4.1.5 Selection of ARPA plotting controls, manual/automatic acquisition, vector/graphic display of data.

4.1.6 Selection of the time scale of vectors/graphics.

4.1.7 Use of exclusion areas when automatic acquisition is employed by ARPA.

4.1.8 Performance checks of radar, compass, speed input sensors and ARPA.

4.2 System operational tests

4.2.1 System checks and determining data accuracy of ARPA including the trial manoeuvre facility by checking against basic radar plot.

4.3 When and how to obtain information from ARPA display

4.3.1 Demonstrate ability to obtain information in both relative and true motion modes of display, including:

- .1 identification of critical echoes;
- .2 speed and direction of target's relative movement;
- .3 time to, and predicted range at, target's closest point of approach;
- .4 courses and speeds of targets;
- .5 detecting course and speed changes of targets and the limitations of such information;
- .6 effect of changes in own ship's course or speed or both; and
- .7 operation of the trial manoeuvre.

4.4 Application of the International Regulations for Preventing Collisions at Sea

4.4.1 Analysis of potential collision situations from displayed information, determination and execution of action to avoid close quarter situations in accordance with International Regulations for Preventing Collisions at Sea.

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Appendix 6

SIMULATOR TRAINING

Administrations are urged to encourage all types of simulator training for seafarers and, taking into account the additional benefits to, and expertise provided by, such special training to those who attended approved courses involving the use of simulators, where appropriate, to favourably consider its use in developing training programmes for seafarers to whom the STCW Convention does not apply.
