Basic ship's information

1.	Name of ship	YourShip
2.	Register number	xxxxxx
3.	IMO number	xxxxxxx
4.	Call sign	xxxxxxx
5.	Place of build	Finland, Rauma
6.	Flag	Sent-Vincent and Grenadines
7.	Port of registry	Kingstown
8.	Class	KM ✪ Arc4 Timber carrier
9.	Type	General cargo
10.	Trade area	In accordance with class of ship

Contents

1. Introduction

1.1 Fire Safety Training Manual is a document which prescribes content and schedule of preventive fire fighting measures aboard of the ship as well as fire fighting procedures and handling of fire fighting appliances by crew;

1.2 This Manual is elaborated in accordance with regulations 14, 15 and 16 of Part E, Chapter II-2 of SOLAS-74 as amended in 2002;

1.3 Fire Safety Operation Booklet provides for necessary information and instructions of safety operation of the ship in port and at sea. The Booklet is combined with above mentioned Manual and also elaborated in accordance with requirements of Safety Training Manual (РД 31.60.14-81) – НБЖС, 1999;

1.4 Fire Safety Training Manual and Fire Safety Operation Booklet written on russian and english languages;

1.5 Above mentioned Manual and Booklet are stored in crew messroom. Second copies of the documents are stored on master's cabin.

2. Chapter I

Fire Safety Training Manual

2.1 Basic practice of fire safety and precautions concerning of smoking, using of electro power and flammable liquids etc.

2.1.1 Basic conditions to provide for fire safety of the ship

1. Each crew member has to keeps of Code of serve aboard of ships as well as other requirements of fire safety documents;
2. Each crew member should be duly familiarized with his duties, appointed in muster list (fire emergency) and must be able to perform such duties;
3. Each crew member should strongly keeps of fire safety regulations on the ship and precautions concerning of smoking, using of electrical power, flammable liquids and materials;
4. Any crew member who observed a fire or just signs of fire should immediately inform watch officer.

2.1.2 Precautions concerning of smoking

1. Negligence when smoke is serious danger of fire;

   Smoke in bed is prohibited.
   Throwing of cigarette butt and matches on the deck in accommodation and open deck is prohibited;
   Throwing of burning cigarettes and matches out of board is also prohibited.

2. Smoking is allowed in places appointed by master's order;

   Such specially appointed places must be equipped by bins with water, ash-trays and other capacities performed from inflammable materials;
   Cabins and other accommodating spaces where smoking is allowed by master's order are to be equipped with ash-trays performed from inflammable material.

3. In all cases smoking is prohibited in following places:

   - in engine room;
   - in steering room;
   - in EDG room;
   - in cabins
   - in following stores:
     - boatswain store;
     - paint store;
   - in other stores, where smoking is prohibited by ship's authority.

4. Warning posters complying with standard ОСТ 31.0013-96 "Цвета сигнальные и знаки безопасности" and mean "smoking is prohibited" must be exhibited on:

   - outer and inner sides of engine room door;
   - fore (or stern) boundary of engine room;
   - fore bulkhead of tiller room;
   - outer and inner sides of stores doors listed in clause 3 above.

2.1.3 Precautions concerning of using for electrical power

1. Correct and duly organized operation of electrical equipment is basis for fire safety when using of electro power.
2. Temperature of generator's parts and electrical motors are to be dully controlled according to technical characteristics of the equipment.
   Measurements of insulation resistance should be done systematically to avoid overheating of equipment over the maximal limit.
   Due measures should be done to avoid of water or oil penetration on the equipment.

Cleaning of equipment should be done only by inflammable cleaners.

3. Temperature of transformers under load should be controlled and to avoid it's overheating higher than maximal limit.
4. Accumulators should be systematically controlled, missing of heating of accumulator's cleats by switchboard to be ensured; technical condition of ventilation for accumulator's room (or place of location for accumulator's) should be checked; blocking system of mechanical ventilation and accumulator's charging device to be checked (if there are aboard). It should be noted that discharging and accumulating of oxygen in closed space are combustible and flammable when ventilation system failure. Open fire or spark formation are not allowed near the accumulators.
5. Technical condition of main switchboard and other switchboards should be systematically controlled. Measurements of insulation resistance of switchboards should be done systematically to ensure that it is within allowable limits. Connecting cleats of switchboards should not be slacked.
   Technical condition of spark-extinguishing chambers of dispatch devices and spark-extinguishing chambers of start controllers should be controlled.
   Conditions of current and voltage tunings in automatic fuses, relays, filaments of fuses for switchboards and other equipment should be systematically controlled.
   It is strongly prohibited to use of not original fuses and filaments of fuses.
6. Technical condition of wiring is to be systematically controlled. Special attention should be given for condition of insulation covering of wires and obtaining of possible damages, missing of proper fixing of wire due to corrosion and absence of connection boxes on wire connections.
   A measurement of ship's wiring insulation resistance should be systematically controlled to ensure that it is within allowable limits.
   Special attention upon systematical inspection should be given on heating of wiring which can be a result of overload of electrical system, in this case preventive measures should be done.
   Cables (flexible lighten insulated wires) destined for portable lamps or devices should not be coiled if under the load to avoid its overheating and ignition.
   These cables (electrical wires) should not have any damages of insulation cover.
   Resistance of wring (electrical wires) insulation should be systematically checked.
7. It is not allowed to remove protective caps from lanterns of main and emergency illumination.
8. Table lamps in cabins should not be fitted with caps performed from flammable materials.
9. It is prohibited to use not original electrical space heating appliances in ship's accommodations and other spaces.
10. It is allowed to use aboard of stationary space heating and cooking appliances which comply with requirements of Chapter 15 Part XI "Electrical Equipment" Rules for the classification and construction of sea-going ships, 2007.
11. Fire protective caps should be fitted on electrical space heating and cooking appliances to exclude possibility of placement for other items on undue devices, cloth and other items.
12. Electrical tools and also welding equipment must not be left under load without attendance of the personnel in charge.
13. Unattended spaces on the ship must be dead wired.
14. Technical condition of heat and smoke detectors of fire alarm system as well as manually operated call points must be sequentially checked.

2.1.4 Precautions concerning of using for flammable liquids, materials and substances. Precautions when mechanisms and ship's plants operation.

1. Upon bunkering and de-bunkering operations appropriate technical rules and instructions for sea-going ships should be strongly kept. Bunkering, de-bunkering and oil transferring operations should be done only by ship's qualified personnel in charge under attendance of 3rd engineer. Overall attendance should be carried out by chief engineer.
   Fire preventive measures should be initiated and fire fighting appliances should be made ready before bunkering, de-bunkering and oil transferring operations. Extinguishers and portable foam applicator must be located close to bunkering inlet (or outlet).
   Control for the level of oil in tanks being filled should be performed upon bunkering and reliable feedback should be set with a bunker ship (bunker ship and shore).

Bunkering and transferring operations should be terminated until complete fulfillment of tanks to avoid of overflow and pollution of oil from air and sounding pipes.

2. Any capability of spilled oil from air and sounding pipes located in engine room should be excluded upon bunkering and transferring operations to avoid of ingress the oil on hot surfaces of mechanisms, equipment and manifolds as it results for danger of fire in the engine room.
3. Oil manifolds stretching beneath of hot surfaces of mechanisms, equipment and other manifolds should not have any oil leakages as well as it also results for danger of fire.
4. Any leakages from oil manifolds and it's hydrants are not allowed. If there are any damages of pipes and hydrants aroused it must be immediately repaired by personnel in charge from engine room crew or by qualified personnel from shore.
5. Oil spilled on ship's open decks, decks in spaces, in bilges of engine room should be immediately removed using of all available means and materials. After cleaning, such spaces should by duly ventilated.
6. Flammable liquids (petroleum, gasoline etc.) should be stored in specially equipped tanks or iron cans with tight closed caps.
   Storage of flammable liquids in places which are not specially equipped is prohibited.
7. Spillage of lubricating oil from manifolds, it's valves and oil sumps should be immediately removed by engine room personnel.
   Lubricating oil spilled on the deck, in accommodation, on deck flooring and in bilges of engine room should also be immediately removed using of rags and other materials.
8. Paints, lacquers and thinners should be stored in special stores and in durable cans with tight closing.
9. Storage of combustive-lubricating and other flammable materials set abroach is prohibited.
10. Storage of oakum, rags and other materials, impregnated in fuel, oil, paints, lacquers, thinners and other combustible materials is prohibited.
    Used waste materials are prohibited to be thrown over board. Such materials are to be disposed ashore in due order. When at sea a waste materials are to be collected in closed inflammable capacities and than it is t be disposed in shore facility.
11. Oily sludge mixtures are to be drained from exhaust silencers and exhaust manifolds of ship's engines in due time as well as an exhaust silencer are to be sequentially cleaned and when necessary cleaning of exhaust manifolds is to be performed to prevent for ignition of oily sludge from exhaust silencer and exhaust manifolds.
    Exhaust manifolds and funnels of auxiliary boiler operated on oil to prevent of soot ignition from exhaust manifolds and funnels.
12. It is not allowed to open for hatches of engine's crankcases immediately after the stoppage to avoid of oily dust explosion and fire in engine room. Exact time of the prohibition is indicated in maintenance manual and in operation manual of the engine.
    Oily dust detector located in the crankcase (if engine is equipped with it) must always be in operational condition.
13. Furnace plants of automatic steam-boilers should be equipped with fixed operational protection system snaps in to action within no more than1 sec., which also stops fuel transferring to injectors for prevent of fuel and fuel gases explosion as well as fire in engine room:
    - in case of air transferring stoppage of small air pressure;
    - in case of flameout of injectors.

    Moreover, transferring of fuel should be automatically stopped by protection system in case if fuel is not ignited, transferring of air for ignition is stopped, flameout of injectors or blockout of electrical system within 5 sec. accounted from start of ignition.
14. To prevent of fuel or fuel gases explosion and fire when operating of non automatic steam-boiler (or hot-water boiler) before ignition of boiler following safety measures are to be done:
    - ensure that there is no spilled fuel in fire-chamber (s) of a boiler;
    - ensure of air pressure in .fire-chamber (s) of a boiler;
    - ventilate of fire-chamber (s) of a boiler.
15. Pyrotechnic equipment should be stored in locked iron boxes or cupboards equipped with special shelves prevents for friction of stowed items.
    Pyrotechnic equipment with expired date should be stored aboard until first port of call where it must be disposed ashore.
    Faulted pyrotechnic equipment must be destroyed by sinking.

2.2 Basic instruction for fire preventive actions and fire fighting procedures

2.2.1 Basic instruction for fire preventive actions

1. Fire safety is defined as facility of the ship to resist against of fire and explosion occurrence and spreading and against it's influence for the ship and cargo.
2. Fire preventive actions are defined as timely active and qualified actions of the crew to prevent of fire and explosion occurrence and spreading as well as fighting against fire, smoke and to provide permanent readiness of fire fighting appliances.
3. Parties responsible for fire-extinguishing are organized to fight against a fire and smoke aboard of ship. Number of members for party is appointed by Master. Second mate assigned as commander of party.
   Also, there is party responsible for fire-extinguishing organized in engine room and number of members is assigned by the Master and Chief engineer. Second engineer assigned as commander of party.
4. Muster list, particularly in case of fire emergency, assigns of responsibilities of each crew member when alarm sounds.
   Master of the ship performs overall command to provide of tenacity of life through Chief Mate and Chief Engineer and can head of the command for seaworthiness of the ship.
   Chief Engineer carries out of command for engine room crew to provide of worthiness of engines and safety in engine spaces, carries out overall command for parties responsible for fire-extinguishing and parties responsible for fire-extinguishing in engine room.
   Muster list should be complied in cooperation with Chief Engineer and Chief Officer and approved by the Master. Typical muster list elaborated by Company (if exists) should be taken as base of exact muster list.
   Muster list should always being improved and corrected in scope of responsibilities of each crew member.
   Copies of muster lists must be posted in ship's accommodation.
5. Chief Officer must familiarize of newly embarked crew members with the ship's rules of fire safety.
6. Welding works and operations with open fire when at sea can be performed only after maser's permission, in port – only after port's fire department permission.
7. Welding works and operations with open fire performed only under attendance of watch officer. Master should assign responsible person from one of ship's officers before beginning of such works.
   Person responsible for such works must:
   - inspect of spaces where the works are planned and also it's adjacent spaces, indicate routs of escape for the personnel being inside;
   - prepare of fire-fighting appliances for readiness through crew members on watch;
   - provide by extinguishers of spaces where welding works or operations with fire are planned;
   - ensure that water extinguishing system is ready and closest fire main hydrant is under due pressure;
   - set watchmen in space where such works are being performed and, if necessary, in adjacent spaces and give them proper instructions;
   - report to watch officer and inspect of the spaces together with him and receive permission for works when spaces are ready;
   - report to watch officer when the works are terminated, inspect spaces for fire safety, than overhand the spaces to personnel in duty if provided that permission of watch officer is received and leave watchmen;
8. Staff on watch must periodically inspect for the spaces and adjacent spaces where welding works or operations with open fire was carried out long period of 12 hours after termination. Commencement and termination of such works should be fixed in log book.
9. Chief Officer of Chief Engineer should be assigned as person responsible for welding works and operations with open fire in enclosed spaces when at sea.

2.2.2 Instructions for fire fighting actions

1. Fire fighting aboard is commanded by the Master from Control Station and destined to obtain of place, serious and character of fire, determination for routs for escape from spaces in fire, evacuation of personnel, restriction of fire spreading, prevention of explosion and elimination of consequences.
   Control station – place on Navigation Bridge or on it's open spaces where the Master carries out of overall command.
2. Procedure of fire notification consists of:
   Any crew member observed fire or just signs of fire should immediately report to watch officer via either manually operated call point or by any other way and begin to fight with fire (ignition) with available means.
   Watch officer must immediately sound of fire alarm (see 2.3) when signal from any manually operated call point or report of fire is received or automatic fire detection and fire alarm systems snapped into action, then indicate exact location of fire and crew must immediately act according to muster list.
3. Ship is equipped with automatic fire detection and fire alarm systems and manually operated call points.
   Fire detection and fire alarm system is destined for fire or ignition detection and reporting of fire location.
4. Automatic fire detection and fire alarm systems should always be kept in operational condition.
   Receiving station of the system is located on navigation bridge.
   The system equipped with heat detectors snap into action due to heat increasing and with a smoke detectors snap into action due to smoke presence.
   Listed bellow detectors assembled in ship's accommodations:
   - 6 automatic heat detectors (type TKS-70);
   - 18 automatic smoke detectors (types SGD-8, NID-38).

   Location of detectors is indicated in ship's Fire Plan.
   Automatic detectors are assembled in accommodation and service spaces, corridors and tambours of superstructure, in cargo spaces and engine room.
5. There are manually operated call points are assembled aboard in amount of 22 units typed PTA 22KL and PKB 22111 51.
   Exact location of detectors in accommodation is indicated in Fire Plan.
   Manually operated call points are assembled in engine room spaces, corridors and tambours.
   When detectors are snapped into action visual and sound signals are initiated on counter of control station.
   Crew member should break for glass cap on one of manually operated call points and press the button to initiate of fire signal.
6. When general emergency alarm sounds, crew should react fast and resolutely to liquidate fire sources (or ignition) by all available extinguishing means and keeps all orders from control station.
   When general emergency alarm sounds following must be immediately done:
   - stop a ship motion and, if necessary, turn the ship to blow off the fire by wind out of board;
   - tighten the fire doors and fire flaps carefully;
   - switch of ventilation;
   - watertight the ship, duly tight of proper marked water-gas-proof openings, manholes, ventilation openings, if provided that all people escaped off the spaces;
   - prepare to immediate operation of fire–extinguishing system and fire fighting appliances;
   - switch off power supply within location of fire if allowed by Master;
   - commander of party responsible for fire extinguishing (or one of officers appointed by Master) should send investigation group to location of fire;
   - investigation group should determine location and serious of fire, number of injured and blocked by fire people, seriously of fire and possible ways of fire spreading, fire danger for adjacent spaces and people aboard;
   - commander of party responsible for fire extinguishing (or one of officers appointed by Master) should report to control station results of fire exploring and necessary actions to extinguish of

fire upon reception for report of investigation group, send a people and fire fighting means to extinguish of fire and provide of adjacent spaces exploring.

7. Master and officers should be guided by Fire Plan and use "Наставление по борьбе за живучесть судов", (РД 31.60.14-81) НБЖС, 1999 and by instructions of technical maintenance and operation manuals of fire-fighting systems and appliances when organize of fire-fighting actions.
8. Crew members sent to location of fire, smoked spaces or for work close of heat constructions and materials must be equipped with fire-fighter's outfit and if necessary with contained breathing apparatus.
9. Emergency escape breathing apparatus (EEBD) – should be properly placed in accommodations and engine room. Location of placement for EEBD should by clearly indicated. Number of EEBD and it location indicated on fire fighting scheme and fire-fighting appliances location scheme.
   There are 8 units of emergency breathing apparatus – EEBD located aboard as follows:
   - in store room on boat deck – 1 unit (training unit);
   - in mess room – 2 training units;
   - in engine room – 5 units.

   There are 8 units of EEBD having aboard.
   Location of EEBD can be changed if it will be necessary in further.

2.2.3 Methods of fire extinguishing and choice of proper extinguishing mean

1. Methods of fire extinguishing are divided on to surface and volume methods. Both based on isolation of fire source of the air support.
   Extinguishing is performed due to covering of a surface by extinguishing substance when surface method is applied. Water is taken as such substance aboard. Water supply is performed from ship's fire main to transfer water to location of fire.
   Extinguishing is performed due to termination of air supply to the space in fire and filling of the space volume with gases which not support fire and eject of oxygen out.
   Carbon acid is taken as such gas and used for volume extinguishing (in engine room, EDG room, cargo holds from CO^2 extinguishing system and also galley and paint room from local CO^2 stations).
2. Portable extinguishers are used for liquidate of ignitions and small sources of fire (see 2.2.3.3, 2.4.1, 2.4.6).
3. Type of extinguishing means depends of type of fire, type of material ignited and location of fire.
   - Water is used for extinguishing of solid flammable substances and materials, heavy oil, water fence creation and cooling of hot objects located close to fire, flammable liquids.
     Water is electroconductive therefore all electrical appliances and electrical chains must be deenergized prior to extinguishing, also proper measures should be initiated to prevent of people electrical injuries within area of ignition.
   - Carbon acid is a mean of volume extinguishing and used for liquidate of fire in engine room, EDG room, cargo spaces, galley and paint room.
   - There is also a local CO^2 extinguishing station in crankcase and receiver of main engine.
     Carbonic gas (acid) is used for extinguishing of ignited electrical chain and electrical equipment under load as carbon acid is not electroconductive.
   - Portable extinguishers, which are used as primary means of fire extinguishing, basically divided onto following types:
     - powder-type extinguishers destined for fight with small fire sources include electrical equipment and chains under load;
     - portable carbon acid extinguishers destined for fight with small fire sources include electrical equipment and chains under load;
     - portable foam extinguishers destined for fight with ignition of shouldering materials include electrical equipment and chains under load.
   - Portable foam applicator consists of portable tank containing of foam-forming liquid, foam mixer and foam nozzle. Set is connected to the fire main.

4. Peculiarities of fire extinguishing in engine room are in following:
   - Machinery spaces are most dangerous in scope of fire;
   - Often reasons of fire in engine room are fuel or oil ignition when contact with heated surfaces or with source of open fire, fuel manifolds evaporation, fuel overflow via air and soundings pipes, fuel equipment and furnace plant of auxiliary boiler fault, faulty of exhaust manifolds of external combustion engines, electrical chains, electrical switchboard and equipment;
   - If fire in engine room is detected it should be immediately reported to control station, notify via one of manually operated call points, switch off ventilation of engine room, close all fire doors and begin to extinguish a fire using all available fire-fighting means. Fire and emergency fire pump must be started, main engine should be stopped provided that master's permission is received, area in fire deenergized. If a fire is not under control, quick close valves of fuel tanks should be remotely closed upon order of chief engineer and start emergency diesel generator. All personnel should escape from engine room. If necessary emergency breathing devices (EEBD) placed in engine room should be used. Machinery spaces should be tight-closed for use of volume extinguishing means (see 2.2.3.6).
     Chief engineer is assigned as person responsible for above measures or - watch engineer upon missing of chief engineer.

   See also operational extinguishing plans.
5. Following is recommended to be used as addition to cl. 2.2.3.4:
   - fire under floor cover of engine room should be extinguished with portable and movable extinguishers. If there danger of fire spreading exists, volume extinguishing means should be used, see cl. 2.2.3.6;
   - upon ignition under auxiliary boiler fuel transferring to boiler should be stopped and switched off an automatic fuel injector. Portable and movable extinguishers should be used. If there danger of fire spreading exists, volume extinguishing means should be used, see cl. 2.2.3.6;
   - pressurized air containing capacities, fuel and oil tanks should be cooled to prevent of explosion and fire spreading when fire in engine room;
   - ignited electrical equipment under load should be deenergized prior to be extinguished;
   - if there is not possibility to deenergized of ignited electrical equipment it should be extinguished only by carbon acid or foam extinguishers. Personnel taking part in such extinguishing should be dressed in dialectical gloves and shoes and use of rubber carpets;
   - local CO^2 station should be used upon ignition in crankcase and main engine receiver.
6. Following sequence of actions is recommended when volume extinguishing system is used:
   - chief engineer reports to control station about impossibility to liquidate of fire by crew means and about necessity of using for volume extinguishing system;
   - master orders to chief engineer to get a volume extinguishing system ready depends of existing situation;
   - All mechanisms in engine room should be stopped, emergency diesel generator started and quick closing valves remotely closed;
   - ventilation of machinery spaces should be stopped (if it was running before);
   - machinery spaces should be tight-closed;
   - all machinery staff and party responsible for fire-extinguishing should escape of such spaces. EEBD should be used if necessary;
   - chief engineer should report to control station about readiness of machinery spaces for volume fir-extinguishing;
   - master orders to start CO^2 system when report from chief engineer is received. Start is performed from local CO^2 and control station on navigation bridge.

   See also operational extinguishing plans.
7. Fire extinguishing in accommodations and service spaces.
   Accommodation spaces are located on the stern part on upper deck and in superstructure within fr. -4 - 31. Service spaces are also located under the poop deck within fr. 118-123.
   For fire extinguishing in accommodations and service spaces water extinguishing system and portable extinguishers should be used.
   It is not recommended to open the doors upon fire extinguishing in service spaces to prevent fire spreading and intensification. Fire hoses should be laid through manholes or through specially breached holes in the doors.
   Before extinguishing spaces in fire should be deenergized and ventilation should be stopped.