

International Hazard Datasheets on Occupation



Seaman, Merchant Marine

What is a Hazard Datasheet on Occupation?

This datasheet is one of the International Datasheets on Occupations. It is intended for those professionally concerned with health and safety at work: occupational physicians and nurses, safety engineers, hygienists, education and Information specialists, inspectors, employers' representatives, workers' representatives, safety officers and other competent persons.

This datasheet lists, in a standard format, different hazards to which seaman, merchant marines may be exposed in the course of their normal work. This datasheet is a source of information rather than advice. With the knowledge of what causes injuries and diseases, is easier to design and implement suitable measures towards prevention.

This datasheet consists of four pages:

- Page 1: Information on the most relevant hazards related to the occupation.
- Page 2: A more detailed and systematized presentation on the **different hazards** related to the job with indicators for preventive measures (marked  and explained on the third page).
- Page 3: Suggestions for **preventive measures** for selected hazards.
- Page 4: **Specialized information**, relevant primarily to occupational safety and health professionals and including information such as a brief job description, a list of tasks, notes and references.

Who is a seaman?

A deck-hand that works aboard ship, mostly on deck and holds, and carries out a variety of tasks, usually of an unprofessional nature, and assists the sailors in their work

What is dangerous about this job?

- The most life-threatening situation for every seafarer is a shipwreck. This datasheet however relates to hazards that may be encountered during normal operation of a merchant ship at sea or in port. Seamen work aboard ships and therefore share hazards common to all seafarers: falling outboard and drowning, slipping, tripping and falling on deck, from gangways or ladders at sea or in port, constant lack of stable ground under feet, long separation from families and friends, lower sides of port life, etc.
- Most of Seamen's duties involve work on deck, where they may be injured by mooring lines, hatches, hinged doors, etc. They must be prepared to withstand sun or rain, tropical heat or polar cold, incessant noise and vibration
- While handling cargo, Seamen may be caved in holds, injured or crushed by heavy items, containers, loading mechanisms, etc.

Hazards related to this job

Specific preventive measures can be seen by clicking on the respective  in the third column of the table.

Accident hazards	<ul style="list-style-type: none">• Fall from ship into water (the most significant single hazard in this occupation (see Note 1)	
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	Fall from ship structures, esp. gangways and ladders, onto deck and into holds (see Note 2)	1
	<ul style="list-style-type: none">Fall from gangway into water or onto pier while boarding the ship in port	
	<ul style="list-style-type: none">Fall on deck or other surface, esp. in the following circumstances: inside cramped ship quarters; while running in emergency situation; in stormy weather; during sudden maneuvers of ship, etc.	2
	<ul style="list-style-type: none">Cave-in by cargo (esp. bulk cargo) while working in hold	
	<ul style="list-style-type: none">Struck by falling objects (esp. during cargo handling and in stormy weather)	
	<ul style="list-style-type: none">Striking against ship structures, esp. in the events listed above for the hazard of fall on surface	2
	<ul style="list-style-type: none">Struck by moving objects, esp. mooring lines, hatches, hinged doors, cargo (see Note 3), or (unintentionally) by other crew members	
	<ul style="list-style-type: none">Caught and entangled in mooring lines, as well as between ship structures, stationary items of cargo, moving items of cargo, or moving parts of mechanisms	
	<ul style="list-style-type: none">Overexertion while handling cargo, operating manually-driven ship mechanisms, or performing strenuous on-deck works (e.g., shoveling ice)	
	<ul style="list-style-type: none">Burns caused by steam, engine exhaust, etc.	3
	<ul style="list-style-type: none">Severe cold injury caused by metal parts, while working on deck or on ship structures in very cold weather	3
	<ul style="list-style-type: none">Electrical shock caused by contact with defective or faulty (esp. in stormy weather or as a result of collision etc.) electrical equipment	4
	<ul style="list-style-type: none">Acute poisoning caused by exposure (inhalation, eye contact, or other) to hazardous cargo, cleaning or other solvents	5
	<ul style="list-style-type: none">Acute poisoning by spoiled or contaminated food and potable water, or by marine organisms	5
	<ul style="list-style-type: none">Fires, esp. involving flammable cargo	
	<ul style="list-style-type: none">Explosions of explosive cargo (incl. dusts and fumes in holds)	
	<ul style="list-style-type: none">Explosions and implosions of pressure vessels and lines	
	<ul style="list-style-type: none">Cuts, stabs and amputations caused by sharp parts of cargo, ship mechanisms, mooring lines, ropes, chains, etc.	2
Physical hazards	<ul style="list-style-type: none">Exposure to UV radiation while working on deck under direct sunlight	
	<ul style="list-style-type: none">Exposure to microwave electromagnetic fields (MW EMF) emitted by ship radar and communication equipment	
	<ul style="list-style-type: none">Vibration (incessant, high frequency, small amplitude) of the whole body caused by ship engines and transmitted by deck surfaces and other ship structures	



	Vibration-like motions (low frequency, large amplitude) of the whole body caused by ship rolling and pitching, esp. in high seas, possibly resulting in vestibular disturbances	
	<ul style="list-style-type: none"> Exposure to excessive incessant noise caused by ship engines 	
	<ul style="list-style-type: none"> Exposure to extreme ambient environmental factors while working on deck: cold, heat, high humidity, squall winds, torrent rains, etc. 	6
	<ul style="list-style-type: none"> Exposure to heat while working or resting in ship's inner quarters not equipped with air conditioning 	
Chemical hazards	<ul style="list-style-type: none"> Exposure to chemical substances (cleaning solvents, detergents, fuel, welding fumes, paints, pesticides, fumigants, etc.) routinely used aboard ship for operation and maintenance purposes 	
	<ul style="list-style-type: none"> Exposure to chemical substances carried by ship as cargo (e.g., petrochemicals, LNG, acrylonitrile, butadiene, carbon tetrachloride, ethylene dibromide, etc.) 	7
Biological hazards	<ul style="list-style-type: none"> Exposure to biologically active (incl. poisonous) substances carried by ship as cargo (e.g., grain dust, raw wood products, cotton bales, bulk fruit or meat, etc.) 	7
	<ul style="list-style-type: none"> Exposure to toxic marine living organisms while working on deck 	
	<ul style="list-style-type: none"> Chronic poisoning and diseases caused by contaminated food and potable water 	
	<ul style="list-style-type: none"> Risk of communicable diseases transmitted by pests, vermin, rodents, insects and other animals that may infest the ship 	
	<ul style="list-style-type: none"> Risk of communicable diseases transmitted by crewmembers or contracted ashore: tuberculosis, sexually transmitted diseases (incl. AIDS, syphilis, etc.), hepatitis A and B, respiratory infections, etc. 	
Ergonomic, psychosocial and organizational factors	<ul style="list-style-type: none"> Cumulative trauma disorders, esp. of upper extremities and back, caused by handling of heavy loads and by continuous strenuous movements during routine deck maintenance works, cargo loading and unloading, and alarm situations 	8
	<ul style="list-style-type: none"> Various factors of physical and psychological discomfort caused by crowded and unstable living environment aboard ship, incl. lack of privacy, confined quarters, inadequate (by the shore standards) amenities, exposure to nuisance noise and smells, etc. 	9
	<ul style="list-style-type: none"> Psychological stress and personal problems caused by specific aspects of seaman's work, such as: continuous exposure to seafaring dangers; prolonged separation from family and from a stable social and cultural environment; sleep and rest abnormalities due to standing watches, etc. 	
	<ul style="list-style-type: none"> Problems of interpersonal relations (sometimes resulting in violence) with other crewmembers, aggravated by such specific factors as: strict discipline aboard ship; inability to avoid undesirable contacts; language and cultural differences among multinational crews 	
	<ul style="list-style-type: none"> Monotonic and boring character of duties (esp. aboard highly automated ships), often resulting in loss of alertness 	9
	<ul style="list-style-type: none"> Exposure to typical hazards of port districts while leaving the ship at port: crime, alcohol, drugs, prostitution, etc. 	

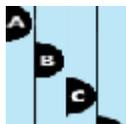
Preventive measures

- 1 Inspect ladder before climbing. Never climb on a shaky ladder or a ladder with slippery or broken rungs, be very careful when climbing a rope ladder
 - 2 Always wear adequate personal protective equipment, in particular safety helmets, safety shoes or boots with metal caps and non-slip soles (sport shoes, mountaineering shoes, etc. are NOT safety shoes), goggles, etc.
 - 3 Use gloves to avoid contact of skin to sharp edges, lubricants or cleaning formulations; do not use latex-containing gloves if an allergy to latex has been diagnosed; do NOT use gloves when working near moving or rotating parts of machinery
 - 4 Check electrical equipment for safety before use. Take faulty or suspect electrical equipment to a qualified electrician for testing and repair
 - 5 Ventilate the work station site, according to need; if necessary wear a gas mask
 - 6 Wear adequate clothing and head - gear for protection in adverse weather
 - 7 Use personal protection equipment, fit for the work being carried-out
 - 8 Learn and use safe lifting and moving techniques for heavy or awkward loads; use mechanical aids to assist in lifting
 - 9 Do NOT enter dark or poorly-illuminated spaces; use portable light sources
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Specialized information

Synonyms Able seaman; able-bodied seaman; deckhand; ordinary seaman; sailor; watchstander

Definitions and/or description Performs following tasks on board ship to watch for obstructions in vessel's path and to maintain equipment and structures: Stands watch at bow or on wing of bridge to look for obstructions in path of vessel. Measures depth of water in shallow or unfamiliar waters, using leadline, and telephones or shouts information to bridge. Turns wheel on bridge or uses emergency steering apparatus to steer vessel as directed by MATE, SHIP. Breaks out, rigs, overhauls, and stows cargo-handling gear, stationary rigging, and running gear.



Overhauls lifeboats and lifeboat gear and lowers or raises lifeboats with winch or falls. Paints and chips rust on deck or superstructure of ship. May stow or remove cargo from ship's hold. May be concerned with only one phase of duties, as maintenance of ship's gear and decks or watch duties. [Acc. to DOT, Able Seaman]

Related and specific occupations Boatswain; master, ship; mate, ship; stevedore

Tasks Breaking out (cargo-handling gear); chipping (rust); cleaning; lowering and raising (life-boats); measuring (depth); mooring; mopping; overhauling; painting; removing (cargo from hold, etc.); repairing; rigging; scraping; securing (lines, ropes, etc.); shouting (information to bridge); shoveling (ice); splicing (wire ropes); standing watch; steering; stowing; telephoning; tying and untying; turning (wheel, etc.); washing; watching; wire-brushing

Primary equipment used

Broom; brushes (painting); cargo-handling gear; cradle (for painting and similar jobs); crowbar; lines, ropes, chains and cables; hammers; hoist; leadline; mop; rigging gear; screw log; shovel; telephone and other communication and signaling equipment; winch; wire-brushes

Workplaces where the occupation is common

Merchant ships

Notes

1. Quite frequently the seaman carries-out his work without sufficient supervision, without superior's approval, and many times without any knowledge about the properties of the materials (esp., chemicals) he is working with, and without knowledge of the required operations needed to minimize the damage in the event of an accident.
 2. Ladders must be secured by appropriate tying, especially when they are used as work-platforms; in such a case an additional worker must be at the place to watch the worker.
 3. A considerable number of accidents happen when the seaman is engaged in securing cargo to the deck, when the surface upon which he is working is full with obstacles that make movement quite difficult; or when the seaman is checking the temperature of elevated containers - a task that requires "acrobatically talents" from the seaman. This is even more severe due to the fact that quite frequently the worker is alone without any other crewman that can help in need! Very severe accidents may happen throughout the tying or untying of the ship, when the limited number of the crew prevents the necessary care and supervision required for such a dangerous work.
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References

Encyclopaedia of Occupational Health and Safety, 4th Ed., ILO, Geneva, 1998, Vol.3, p. 102.39 - 102.44.



Encyclopaedia of Occupational Health and Safety, 3rd Ed., ILO, Geneva, 1984, Vol.2, p. 1327 - 1332.

Personal Safety on Ships. Canadian Coast Guard, Ottawa, 1984 [CISDOC 85-1729].
