

Job Class Profile: Marine Engineer (Third Class)

Pay Level: CG-29 **Point Band:** 622-675

Factor	Knowledge	Interpersonal Skills	Physical Effort	Concentration	Complexity	Accountability & Decision Making	Impact	Development and Leadership	Environmental Working Conditions	Total Points
Rating	5	3	5	6	3	3	4	1	6	
Points	233	50	32	29	90	65	83	21	64	667

JOB SUMMARY

The Marine Engineer (Third Class) performs technical work in the engine room and its auxiliaries of a passenger/vehicle ferry between coastal points throughout Newfoundland. Depending on the vessel requirements, work may include acting as engineer in charge of the engine room and its auxiliaries.

List A Brief Description of Specific Duties

- Ensures conformance with the departmental preventative maintenance schedules while maintaining an adequate supply of standard parts, oils and grease.
- Performs water and fire watch activities.
- Ensures fuel levels are sufficient at all time.
- Inspects, cleans and performs minor and routine electrical, plumbing, mechanical and hydraulic repairs as required to generators, compressors, pumps and deck machinery, equipment and facilities to maintain effective operation and functioning.
- Keeps a machinery log at all times.
- Participates in security watches during non-operational periods.
- Ensures the safe and efficient operation and functioning of all machinery and equipment (i.e. controls panel, generators, compressors, pumps, deck machinery and facility) on the vessel.
- Disassembles machinery and related equipment to replace parts and makes repairs and/or adjustments when required.
- Performs cleaning and preventative maintenance repairs to electrical, electronic, plumbing, mechanical and hydraulic systems.
- When functioning as Engineer-in-Charge, maintains control of the engine room and auxiliaries through the supervision of, and participation in, activating, operating and controlling the speed of the main engine.
- May accompany the vessel during refit and assists personnel in carrying out repairs and alterations.
- Performs routine inspections of primary machinery, equipment and back-up systems to ensure functionality.
- Greases and oils machines and equipment.
- Performs periodic inspections of heating system to ensure functionality and adequate fuel supply and monitoring of all fire-fighting and safety equipment.

SKILL

Knowledge

General and Specific Knowledge:

- Knowledge of operation and maintenance of marine diesel, hydraulic and electrical equipment.
- Knowledge of electrical codes and subsequent changes.

Formal Education and/or Certification(s):

- Minimum: 4-Year Post Secondary Diploma in Marine Engineering Technology. Possession of a Third Class Motor Engineer's Certificate as issued by Transport Canada and associated endorsements such as MED (Marine Equipment Directive) Certificate; Marine Basic First Aid and Marine Medical.

Years of Experience:

- Minimum: 4 - 5 years.

Competencies:

Ability to apply established techniques to the completion of activities.

Ability to coordinate a range of related work or project activities when acting as engineer in charge.

Ability to develop new solutions to deal with new problems.

Ability to design/develop new methods, procedures.

Ability to provide advice to others on how to solve a problem or address an issue.

Ability to repair, calibrate and operate machinery; and conduct analysis or assessment.

Written and verbal communication skills.

Interpersonal Skills

- A range of interpersonal skills are used such as listening, asking questions, providing routine and specialized information; gaining the cooperation of others and providing expert advice when dealing with engineering staff regarding machinery operation and malfunctions; and from time to time negotiating contracts and agreements, providing training and coaching or mentoring.
- Most significant contacts are with: Chief Engineer or Marine Superintendent (when acting as engineer in charge, to discuss mechanical problems that arise); Captain (to obtain daily orders/assignments); and Marine Buyer (to discuss ordering of supplies, parts, etc.).

EFFORT

Physical Effort

- The demands of the job regularly results in considerable fatigue, requiring periods of rest.
- Lifting or moving objects over 50 lbs such as oil drums and working in cramped positions for the purpose of removing piping, pumps and motors is occasionally required. Physically handling materials or other objects such as piping and pulling on wrenches and sockets occurs on a constant basis.
- Sitting, standing, walking and climbing are all required in the performance of daily tasks and activities.

- The use of fine finger/precision work, using hand tools that require accurate control and steadiness, using gross motor skills and maintaining physical balance are a constant occurrence.
- Occasionally uses machinery or equipment that requires very controlled movement.

Concentration

- **Visual** concentration is required when studying service manuals, reviewing electrical printouts, using micrometers and making adjustments to pressure switches.
- **Auditory** demands are required to listen for unusual noises anywhere on the vessel, especially in the engine room which is a high noise environment.
- Other sensory demands such as **touch** and **smell** are used to determine if machinery is malfunctioning or overheating.
- Activities such as starting engines and pumps to ensure working order can be **repetitious and require alertness** as work always requires being cognizant of machinery and system failures.
- **Higher than normal level of attentiveness/alertness** is required when an engine is overhauled or when experiencing rough seas which can cause a vessel to hit the dock and/or lose balance.
- **Time pressures and deadlines** are experienced as a result of route schedules. When a vessel is on refit a **lack of control over work pace** is experienced.
- Making adjustments to machinery; determining its temperature through **touch** and using a voltage meter requires **eye/hand coordination**.
- **Exact results and precision** are required when installing piping to ensure it does not leak; performing engine inspections or maintenance; setting up overload switches when installing new electrical equipment using very fine measuring tools; and making repairs.

Complexity

- Tasks and activities are different but allow the use of similar skills and knowledge. While work is performed with defined and standard work processes, tasks and activities are highly technical and periodically must be defined and practical solutions found.
- Positions are required to keep abreast of changes to relevant standards and codes.
- Challenges/problems/issues can be addressed by discussing with other engineers in a team setting.
- Reference material available includes service manuals, Occupational Health & Safety Regulations, departmental policies and procedures, Transport Canada Shipping Act, etc.

RESPONSIBILITY

Accountability and Decision-Making

- Work tasks and activities are generally prescribed or controlled and are regulated by Transport Canada.
- Work is performed with technical responsibility under control of the Chief Engineer of the vessel in accordance with provincial and federal codes and standards. Will assist the Chief Engineer by taking responsibility for the engine room and its auxiliaries.
- Work is reviewed through discussions, reports and observation of overall results achieved.

Impact

- Impacts are felt internally within the immediate work area/department/government as well as

externally by vessel passengers.

- Work activities impact resources such as equipment, finances, facilities, material resources, health/safety and corporate image. If the vessel is not in operation due to mechanical failure, it affects all of the above. If certain machinery has failed, it can affect crew members or in some cases the Captain with handling of the vessel.
- The consequences of a mistake or error can have a moderate to extreme impact on the immediate work area and on customers and the general public as it affects transportation with increased costs being incurred as a result of providing a back-up vessel.
- The risk or consequences of an error that occurs can be mitigated by following standard preventative maintenance standards and procedures and providing immediate attention to problems as they arise.

Development and Leadership of Others

- Typically work is of a non-supervisory nature and there is no requirement for development and leadership responsibilities.

WORKING CONDITIONS

Environmental Working Conditions

- Safety equipment such as safety harness, face shields, glasses, ear protection, welding jacket, gloves and other personal protective equipment are required.
- There is a moderate likelihood for minor cuts, bruises, abrasions or minor illnesses and limited likelihood of injuries or occupational illnesses resulting from hazards given that all health and safety regulations are followed.
- Exposure to unusual/distracting noise, dirt, dust, filth or garbage, fumes, limited ventilation and lighting, vibration, toxic or poisonous substances, odours, wet or slippery surfaces, awkward or confining workspaces and temperature extremes occurs on a constant basis as a result of working in an engine room. Occasionally exposed to glare, bodily fluids and waste, dangerous heights or depths, lack of privacy, isolation, radiation, physical dangers, sharp objects, heavy machinery, adverse weather conditions and travel.