Global Maritime and Transportation School
At the United States Merchant Marine Academy

Assessment of Staten Island Ferry Operations

Prepared for: New York City
Department of Transportation

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Note that comments and remarks provided in this report are based on observations made during on-site assessments and reflect conditions as they existed at that time. Specific conditions discussed in this report may not exist in a similar condition today.

This report is a review and assessment of Staten Island Ferry operations only as they existed at the time of observation. It is not a comprehensive safety inspection or accident investigation. This report shall not imply any form of certification or approval of any operation or indicate compliance with any applicable international, federal, state, or local laws or regulations.

It is also critical to understand that the comments and remarks provided herein may be subject to modification and/or change based on further and more thorough examination of ferry operations as this assessment continues to evolve and proceed.

Executive Summary

Following the tragic Staten Island Ferry accident on October 15, 2003, the New York City Department of Transportation (NYC DOT) requested the Global Maritime and Transportation School (GMATS) at the United States Merchant Marine Academy (USMMA) develop a proposal to conduct an assessment of Staten Island Ferry Operations. By the end of October 2003, the GMATS and the NYC DOT had agreed in principal for the GMATS to conduct the assessment in four main topical areas: vessel operations, human factors, safety, and management.

On November 3, 2003, the NYC DOT signed a Letter of Intent/Notice to Proceed for assessment of the Staten Island Ferry Operations. GMATS began work on the project immediately and commissioned two assessment teams to conduct an initial review of operations, management, policies, procedures, manuals, and other documents related to the operation of the Staten Island Ferry. Both assessment teams performed on-site surveys (including discussions with ferry crews and shore-based management as well as observations aboard underway ferries) during November 2003 through mid-January 2004. The first team focused on overall operations and management; engineering; safety; and conformity with regulatory schemes and maritime industry best practices and standards. The second assessment team focused primarily on human factors and bridge team management.

Based on these assessments, the goal of this report is to provide a framework and suggested guidance for operation and management of a world-class Staten Island Ferry system that is safe, secure, fiscally sound, and environmentally sensible.

To its credit, the Staten Island Ferry system appears to be a good operation overall considering 1) the limited levels of funding and human resources the organization has at its disposal and 2) the existence of a corporate culture within the ferry organization which may not be conducive to operating a first-rate marine transportation system.

GMATS feels the NYC DOT is committed to operating a ferry service that inspires public confidence in that system and is dedicated to making improvements and changes in the following areas:

- **Safety Management System (SMS)** - The foundation of the revitalization of the Staten Island Ferry system will be the establishment of a Safety Management System (SMS) – in accordance with the International Management Code for the Safe Operation of Ships and for Pollution Prevention (more widely known as the International Safety Management (ISM) Code). Implementation of a SMS has become a maritime industry standard around the world and critical in making the Staten Island Ferry system mainstream with its best passenger-carrying contemporaries in the global arena. SMS application within the Staten Island Ferry system will forge a new era of safety and environmental protection benefiting

passengers, crew, and the City of New York. The functional requirements of a SMS (as outlined in the ISM Code) for the Staten Island Ferry system will incorporate:

a) a safety and environmental protection policy;
b) instructions and procedures to ensure safe operation of ferries and protection of the environment in compliance with relevant international, national, and local laws and regulations;
c) defined levels of authority and lines of communication between, and amongst, shore-based and ferry personnel;
d) procedures for reporting accidents and non-conformities with the provisions of the SMS;
e) procedures to prepare for and respond to emergency situations; and
f) procedures for internal audits and management reviews.

The goal of a Staten Island Ferry SMS is to assure that ferry system best practices are clearly defined, that documented practices conform to regulatory requirements, and the opportunity for continuous improvement is available to all who are covered by the Staten Island Ferry SMS. Refer to Long-term Areas of Focus section (pages 6-7) for further information.

- **Bridge Team Management** – GMATS recommends establishment of a new 3-member bridge team comprised of licensed deck officers to 1) provide enhanced safe navigation of Staten Island Ferry vessels, suitable rest breaks, and support for more comprehensive watch relief procedures; 2) meet new vessel security officer and other maritime security statutory requirements to be implemented by July 1, 2004; and 3) incorporate additional tasks and responsibilities mandated under the SMS (all while maintaining a minimum of 2 licensed deck officers in the pilothouse at all times when underway). Additional personnel (from the existing on-watch crew) may be required to support the 3-member bridge team during operations in foul weather and adverse environmental conditions.

  As part of this bridge team program, all personnel required to be present on the navigation bridge while underway will be assigned specific duties and responsibilities so that all human resource capacity is effectively engaged in a coordinated, managed, and more efficient manner. Each bridge team member will also be adequately trained and qualified in the operation and capabilities of all navigation, communication, and other pilothouse equipment and technologies.

  Further assessment and development of the bridge team management structure specific to the Staten Island Ferry system will be required in order to formulate the best practices in this area. The first step in this process will be to conduct an inventory of all bridge team tasks required for operation of the ferries in various conditions and situations. The second step will be to develop a formal, bridge team

operations manual which will be part of the SMS. The final phase in this process will be to develop and deliver a bridge resource management course. This curriculum will be customized to meet the unique operational characteristics of the Staten Island Ferry system. Refer to Specific Comments and Observations for Immediate Consideration Section (page 15) for further information.

- **Organizational Structure and Human Resources** – GMATS feels the immediate hiring of a Chief Operations Officer (COO) to provide leadership and direction for the operation of the Staten Island Ferry system is absolutely critical in guiding the organization through this period of renewal, transition, and implementation of a Safety Management System. GMATS recognizes a person of this caliber (refer to Appendix A for a detailed job description) serving as COO in a comparable maritime organization would typically be compensated with an annual salary of $160,000 to $180,000 per annum. In order to attract the best person for this position, NYCDOT may have to authorize relocation benefits as well. Further, GMATS feels a long-term commitment (e.g. 5 years) for the COO position would serve the NYCDOT well.

  Further, it is clearly evident, based on this initial review of documents and observations, the operations function of the ferry system is 95 persons short of staffing levels required to implement a safety management system and to provide for other enhancements. These staffing shortfalls result in large overtime expenditures as well as a potential for increase in fatigue, reduction in safety, decline in service, or any combination of all four of these issues. This recommendation for additional staffing was based on three central issues: 1) the ferry system is currently not staffed to support a safety management system, 2) more senior personnel need to be on board the vessels in command positions, and 3) as people are sent for training and compliance issues there will be a need for additional personnel in the system to offset any fatigue, hours of labor issues, etc. that will come up during the training process. Refer to Long-term Areas of Focus section (pages 7-10) for further information.

- **Technical Training and Professional Development** – The need for a comprehensive technical training and professional development program for vessel crews and shore-based personnel will be an integral component of the SMS. The Staten Island Ferry should establish and maintain procedures for identifying training which may be required in support of the SMS and ensure that such training is provided for all personnel concerned. Professionally trained personnel are an asset to the SMS and the Staten Island Ferry system. Maintaining one of the Kennedy-class vessels (in a fully-operational status) after delivery of the new ferries will be crucial in meeting the needs of this comprehensive training program. Refer to Long-term Areas of Focus section (page 10) and Specific Comments and Observations for Immediate Consideration Section (page 16) for further information.

- **Operations Procedures –**

    - Staten Island Ferry needs to conduct a full review of at-sea casualty and emergency response plan (including search and rescue operations) and plan coordinated, table-top and other exercise scenarios with external response assets (NYPD Harbor Units, FDNY Marine Units, U.S. Coast Guard, NJ State Marine Police, private harbor tugs, etc.).
    - Develop operational checklists (vessel departures, arrivals, foul weather, emergencies, etc.) required to be used by afloat personnel.
    - Establish formal, internal policies and procedures for and publicize an alternate ferry service operational schedule for foul weather and adverse environmental conditions (i.e. reduced visibility, high winds, excessive wave and/or current action, etc.).

  Refer to Specific Comments and Observations for Immediate Consideration Section (pages 16-17) for further information.

- **Security -** Begin planning for implementation of Vessel and Facility Security Plans as soon as practicable and provide related training to appropriate vessel crew and shore-based staff. Vessel and Facility Security Plans have been submitted to the Coast Guard for approval. Changes and/or modifications may have to be made to the plans based on feedback from the Coast Guard. *** Implementation and subsequent changes/modifications (post U.S. Coast Guard approval) may result in a requirement for hiring of additional crew and shoreside personnel to put the facility and the vessel security plans in effect by July 1, 2004 as required. ***

- **Utilization of Advanced Marine Technologies** – Equipment to be updated or newly installed aboard Staten Island Ferries include RADAR, Automated RADAR Plotting Aids (ARPA), Electronic Chart Display and Information System (ECDIS), Automatic Identification System (AIS), and digital, multi-directional vessel speed indicators with alarm functions (which allows vessel personnel to monitor vessel speed fore/aft and athwartships including approach speeds to berths). Installation of integrated navigation bridge systems aboard all ferries will be crucial to provide enhanced safe navigation of the vessels.

Long-term Areas of Focus (12 –36 months)

GMATS recommends the following organizational strategies receive the highest priority in way of design, development, formalization, and implementation.

- **Safety Management System (SMS)**

  The foundation of the revitalization of the Staten Island Ferry system will be the establishment of a Safety Management System (SMS) – in accordance with the International Management Code for the Safe Operation of Ships and for Pollution Prevention (more widely known as the International Safety Management (ISM) Code). The main objectives of a SMS (as outlined in the ISM Code) for the Staten Island Ferry system are to:

  a) provide for safe practices in ferry operations and a safe working environment;
  b) establish safeguards against all identified risks; and
  c) continuously improve safety management skills of personnel ashore and aboard ferries, including preparing for emergencies related both to safety and environmental protection.

  Implementation of a SMS has become a maritime industry standard around the world and critical in making the Staten Island Ferry system mainstream with its best passenger-carrying contemporaries in the global arena. SMS application within the Staten Island Ferry system will forge a new era of safety and environmental protection benefiting passengers, crew, and the City of New York. The functional requirements of a SMS (as outlined in the ISM Code) for the Staten Island Ferry system will incorporate:

  a) a safety and environmental protection policy;
  b) instructions and procedures to ensure safe operation of ferries and protection of the environment in compliance with relevant international, national, and local laws and regulations;
  c) defined levels of authority and lines of communication between, and amongst, shore-based and ferry personnel;
  d) procedures for reporting accidents and non-conformities with the provisions of the SMS;
  e) procedures to prepare for and respond to emergency situations; and
  f) procedures for internal audits and management reviews.

  On November 4, 1993, The International Maritime Organization adopted Resolution A.741(18), the International Safety Management (ISM) Code for the Safe Operation of Ships and for Pollution Prevention. An integral part of the Code is the requirement that vessel operators establish a Safety Management System (SMS). The goal of a SMS is to assure the best practices are clearly defined, that documented practices conform to regulatory requirements, and the opportunity for continuous improvement is available to all who are covered by the Safety Management System. The SMS is to provide “best practice”

guidelines for all members of the Staten Island Ferry system (employees) in a standardized approach to routine, critical and emergent activities. SMS policies and procedures provide a structure within which managers and employees are expected to use sound judgment in the performance of their duties. An effective SMS will ensure safety, prevention of human injury or loss of life and avoidance of damage to the environment, in particular to the marine environment and to property. The SMS will incorporate crisis management, incident response, training and standard operating procedures covering every aspect of operation and maintenance of the vessels and terminals. The Staten Island Ferry system and the traveling public will both benefit from its creation by:

a) ensuring that all industry standards and best practices are complied with;
b) helping to prevent accidents from occurring;
c) ensuring procedures are in place for dealing with any emergency situation aboard the ferries;
d) ensuring there are adequate communications between ferry and shore-based personnel;
e) ensuring that all individuals know their role and responsibility and are adequately trained and have the appropriate resources to do their job; and
f) ensuring that all activities and operations are planned, controlled, and verified.

- **Organizational Structure**

GMATS feels the immediate hiring of a Chief Operations Officer (COO) to provide leadership and direction for the operation of the Staten Island Ferry system is absolutely critical in guiding the organization through this period of renewal, transition, and implementation of a Safety Management System. The COO candidate (refer to Appendix A for a detailed job description) needs to be the strongest advocate of a SMS.

The Safety Management System will establish a corporate culture that is committed enthusiastically to the policy's success from the highest level of Staten Island Ferry management. The management should define and document the responsibility, authority and interrelation of all personnel who manage, perform and verify work relating to and affecting safety and pollution prevention. Management will be responsible to ensure that adequate resources and shore-based support are provided to enable all levels of the organization to carry out their functions under the SMS. A short-term management organization matrix conducive to this goal might look like the chart in Appendix B. A long-term organizational matrix might look like the chart in Appendix C.

Prior to implementation of the short-term management organization matrix, several key shore-based management personnel need to be hired or realigned in order to introduce a new SMS. These position descriptions are outlined in Appendices D-F.

- **Human Resources**

  In broad terms, ferry personnel who were interviewed by the assessment teams put their best foot forward and had the desire to do well in the workplace. However, without the proper funding, staffing, and professional training programs, these inherent individual aspirations will not be sufficient and little will change to improve safety.

  A similar situation exists for shore-based management staff. During on-site interviews and observations, it was a rare moment when a manager being interviewed was not being paged or responding to telephone calls. The pace is such that decisions are being made reactively instead of proactively; long term planning appears to be a luxury, not a staple. Again, the prevalence of inadequate staffing and funding levels seems to have contributed to the apparent erosion of the overall ferry system organization.

  Originally GMATS was tasked with observing and making recommendations. We made our recommendations based on the existing labor contracts (which incorporate a 30-hour work week). A change of work hours, from 30 to 40, should make an impact on these recommendations. However, the impact may be smaller than expected. The first category of new hires (24 of the recommended 95 new personnel additions) will enable the Staten Island Ferry system to run all vessels under the current operating schedule without requiring crew members to work inordinate amounts of overtime in order to meet minimum vessel manning requirements. The remaining 71 new personnel are needed to create a labor pool to provide critical support to:

  - the design, development, and implementation of the SMS (this may take as long as 24 months utilizing existing vessel personnel);
  - surge training and professional development requirements as a result of the implementation of the SMS (this may take as long as 36 months and require vessel crew members to be withdrawn from their regular watchstanding duties to attend training sessions – on-call crew personnel will be required to fill-in these positions);
  - a new 3-member bridge team structure incorporating enhanced bridge team management functions;
  - increased crew responsibilities to meet maritime security regulations;
  - work/rest break rotations and watch reliefs; and
  - increased interaction between vessel crew members and ferry passengers (i.e. customers).

  GMATS feels that following implementation of the new safety management system and after surge training requirements are fulfilled, there may or may not be a need for maintaining the recommended overall crew staffing levels discussed above (i.e. 71 of the 95 new positions). There most likely will be a gradual “weaning” process take place within the ranks of the afloat personnel over the next several years. In GMATS’ estimation, 1) some current employees will not feel comfortable with the new system and will retire or move on, 2) some current employees will find that in the new way of doing things they will want to become

part of the management structure instead of the crew, and 3) normal attrition. In the same vein, some of the "new hires" will not work out and will not be retained. A thorough analysis of afloat personnel staffing needs should be conducted following SMS implementation and completion of surge training requirements (in 24-36 months) to determine appropriate crewing requirements at that point.

Additional Personnel Requirements (as soon as practicable)

First Category (24 of 95 total personnel) - to enable the Staten Island Ferry system to operate all vessels under the current operating schedule without requiring crew members to work inordinate amounts of overtime in order to meet minimum vessel manning requirements.

1 x Captain
1 x Assistant Captain
1 x Mate
1 x Ferry Terminal Supervisor
15 x Deckhands
1 x Chief Marine Engineer
4 x Marine Oilers

Second Category (71 of 95 personnel) – develop labor pool vital to accomplishing SMS, training, and other areas of critical support noted previously.

8 x Assistant Captains
10 x Mates
13 x Deckhands
1 x Marine Engineer
1 x Senior Port Captain (shore-based, non-union)
1 x Senior Port Engineer (shore-based, non-union)
4 x Relief Captains
4 x Relief Assistant Captains
4 x Relief Mates
9 x Relief Deckhands
4 x Relief Chief Marine Engineers
4 x Relief Marine Engineers
8 x Relief Marine Oilers

The Senior Port Engineer and Senior Port Captain are to be utilized for day-to-day management of the ferries. This will allow for long-term planning and proactive decision-making by upper management staff.

GMATS feels that appropriate opportunities be given to well-qualified personnel from within the Staten Island Ferry system to fill these positions. The Deckhands will be brought in from outside the Staten Island Ferry system as this is an entry-level position.

Specifically, the Relief positions will be utilized to allow the permanent crew to be focused on their 1) training while maintaining a level of safety on the boats, and 2) to allow regular personnel to be utilized for any "Special Projects" where their expertise may be better utilized for the benefit of the Staten Island Ferry system.

Whatever decision is made concerning the employment of these additional personnel, GMATS strongly believes that due consideration be given to upgrading licensed employees from within the fleet. This may mean the waiver of existing civil service testing and hiring procedures for current employees. New hires filling upgrades could be tested as per usual. The reason for this is to improve morale within the fleet. The cooperation and enthusiastic acceptance by Staten Island Ferry employees of a new SMS system is key in the success of that system.

*****Note, additional staffing beyond what is noted above may be required to implement facility and vessel security plans as required by the International Ship and Port Facility Code (ISPS Code), the Maritime Transportation Security Act of 2002 (MTSA), and United States Coast Guard's maritime security regulations by July 1, 2004.*****

- **Technical Training and Professional Education**

The need for a comprehensive technical training and professional development program for vessel crews and shore-based personnel is obvious. The desire among ferry system personnel to participate in educational programs is apparent. Additionally, the need for an infusion and acceptance of "new blood" is equally evident as it appears the corporate culture has prevented professional growth in the ferry system's workforce.

The Staten Island Ferry system needs to ensure that each vessel is manned with qualified, certificated, and medically fit personnel with the implementation of the Safety Management System. The SMS will establish procedures so that new personnel and personnel transferred to new assignments related to safety and protection of the environment are given proper familiarization with their duties. The Staten Island Ferry system should establish and maintain procedures for identifying any training which may be required in support of the SMS and ensure that such training is provided for all personnel concerned. Professionally trained personnel are an asset to the SMS and the Staten Island Ferry system. As such, all costs pertaining to the professional education of its workforce should be the burden of the Staten Island Ferry System. Ferry personnel should not be required to use vacation time to attend needed training.

- **Work Schedules and Employee Compensation**

  During negotiations with labor unions, every effort should be made to eliminate built-in overtime. It is imperative to move to a standard forty (40) hour week for employees to reduce labor costs. Failing a compromise, vessel schedules can be arranged to accomplish this goal. In hiring new employees, NYC DOT needs to provide professionally documented, certified, medically fit, and qualified personnel to the Staten Island Ferry system.

  A marine industry salary survey should also be undertaken to ensure the Staten Island Ferry system compensation structure is closely aligned with similar domestic ferry operations (e.g. Washington State Ferries). This will help to positively impact recruiting, retention, and morale.

- **Budget and Finance**

  New revenue sources need to be found to carry out the mission of Staten Island Ferry system. This could include new vessel and terminal concession contracts or other alternative revenue sources. Long-term recommendations in this report are going to require long term funding sources dedicated to Staten Island Ferry operations and maintenance. Capital programs need to be clearly defined for both the short- and long-term and managed directly by the Staten Island Ferry system.

  Software systems need to be acquired that link management to the budget and provides for real-time reporting on expenditures of labor and materials. Each division head within the Staten Island Ferry system should formulate a fiscal year budget he or she is directly accountable for managing.

Specific Comments and Observations for Immediate Consideration

Safety

- Strengthen relations with United States Coast Guard (USCG) Sector New York (previously known as Activities New York) wherein USCG marine inspection elements recognize Staten Island Ferry vessels as 46 CFR Subchapter H – Passenger Vessels.

- Conduct a full review of at-sea casualty and emergency response plan (including search and rescue operations) and plan coordinated, table-top and other exercise scenarios with external response assets (NYPD Harbor Units, FDNY Marine Units, U.S. Coast Guard, NJ State Marine Police, private harbor tugs, etc.).

  Current emergency contingency plans rely too heavily on external resources, the ability to conduct a vessel-to-vessel transfer at-sea, and the capacity to bring a ferry in the harbor back to one of the ferry landing piers. While the existence and close proximity of extensive and very capable external response resources are critical and should remain an integral component of any ferry contingency plan, it is prudent to have the internal capacity to deal with all possible emergency scenarios as a "first responder." Circumstances may dictate that a ferry-to-ferry transfer of passengers, moving a vessel to a pier, or use of external response resources does not provide for a practical, safe, or timely response scenario.

- Increase lifesaving resources (lifeboats, liferafts, rescue craft, and inherently buoyant apparatus) on all vessels sufficient for 80% of passenger carrying capacity (this amount would be above and beyond what is required for similar types of passenger vessels subject to Coast Guard inspection).

  These resources are currently not required for the Staten Island ferries by the U.S. Code of Federal Regulations, but may be critical to prevent loss of life and/or serious injury to passengers and crew in certain emergency contingencies. Also, consider replacing existing davit-launched, antiquated, low-freeboard, manually-powered rowboat with a quick–launching, Zodiac-type rigid hull inflatable with a 50-horsepower outboard propulsion motor.

- Install marine evacuation slides on all vessels.

  In conjunction with the increase of lifesaving resources listed above, installation of marine evacuation slides may greatly decrease the risk of loss of life and/or serious injury to passengers and crew in certain crisis scenarios by keeping people out of the water during these events.

- Install additional Personal Flotation Device (PFD) storage compartments on car deck tunnels of Kennedy class vessels.

  During some emergency scenarios, passengers and crew may need to assemble on the car deck and PFDs should be accessible in that location as well -- provided a comprehensive risk assessment is completed considering safety versus security issues in allowing passengers easy, open access to the car decks – see related comment below regarding removal of metal gates/fencing/screen on car decks.

- Confirm each vessel has enough PFDs to meet or exceed 100% passenger and crew carrying capacity.

  During testing for alternate compliance (wherein a simulated transfer of passengers between ferries took place), GMATS observed PFDs from different vessels on the crew members. It is possible that PFDs assigned to a particular vessel may be utilized aboard other vessels in the fleet.

- Replace scissor-type gates currently used for crowd control aboard the vessels with rolling, expanded metal gates to afford additional protection for children.

  These gates currently are approximately 14" above the deck. This gap opens the possibility for a child to "scoot" out over the side without any protective barrier.

- Move passengers away from the bow "picklefork" areas while vessel is docking.

  This has already been partially implemented. A small rope has been installed. Passengers outside are exposed to risk of injury should a collision or hard landing occur. Passengers should be prohibited from "picklefork" area while vessel is landing to prevent injury or loss of life.

- Remove expanded metal gates/fencing/screen on car decks of Kennedy class ferries.

  This allows for assembly of passengers prior to evacuation. *** A comprehensive risk assessment must be conducted to consider an appropriate balance between safety and security in allowing passengers easy, open access to the car decks in the event of an emergency situation. Removal of these security measures may not be viable.***

- Provide complete set of blueprints, vessel plans, and engineering equipment manuals for each engine room.

  Currently there are no plans in the engine room. In case of an emergency, the engineers would not have the availability to utilize prints for damage control or manuals to conduct underway diagnosis, maintenance, and repairs.

- Post fire and emergency control plan/schematic in the engine room and on the navigation bridge of each vessel.

  Regulations require and accepted industry practice dictates a Fire and Emergency Plan be posted in these areas.

- Confirm fire main shore connections on all vessels are appropriately marked and easily accessed and identifiable by New York City Fire Department (FDNY) as well as other regional fire emergency response personnel that may respond to an emergency situation aboard the ferries.

  Currently, markings for the FDNY shore connection are located on a large, bolted panel well above the actual shore connection device. This could lead to confusion or delay in an emergency situation. Also, both shore connections aboard the Kennedy-class vessels are located behind the locked gates referred to previously. Further, it appears that the shore connection is co-located with an individual fire station and may not directly tie into the central fire main piping as required.

- Provide Self-Contained Breathing Apparatus (SCBA) aboard each vessel enough for each crew member below the rank of Captain.

  Accepted industry practice dictates proper firefighting resources be provided to crew members to include SCBAs.

- Accelerate installation of pre-recorded, automated safety and emergency announcements for delivery over public address systems prior to departure and while approaching pier landing area before docking.

  These formalized safety announcements may be critical in saving lives prior to an emergency.

- Improve medical response and first aid capabilities aboard ferries.

  Increase crew medical knowledge and training and supply sufficient equipment to provide adequate first response to a wide-range of possible medical-related emergencies and non-emergency situations.

- The NYC DOT and the US Coast Guard should work together to examine all the safety recommendations listed above to determine appropriateness for each particular ferry. The table top exercises described on page 12 may be helpful in this activity.

Bridge Team Management

- Create multiple, standardized watchstanding conditions requiring extra manning during adverse environmental and weather situations.

- Require and enforce that all navigation bridge electronics and communications gear be energized and fully operational at all times while underway regardless of weather conditions and sea state unless special circumstances exist.

- Update navigation bridge equipment and improve layout.

  Existing layout of navigation bridge equipment does not provide for the most efficient monitoring of critical sensor, communications, and navigation gear by persons responsible for the safe navigation and piloting of the ferries. Equipment to be updated or newly installed include RADAR, Automated RADAR Plotting Aids (ARPA), Electronic Chart Display and Information System (ECDIS), Automatic Identification System (AIS), and digital, multi-directional vessel speed indicators with alarm functions (which allows vessel personnel to monitor vessel speed fore/aft and athwartships including approach speeds to berths). Consider installation of integrated navigation bridge systems aboard all ferries.

- Develop operational checklists (vessel departures, arrivals, foul weather, emergencies, etc.) required to be used by afloat personnel.

  Use of formal operations checklists will be part of the safety management system and reduces potential for complacency, tedium, and creates error traps.

- Provide specific navigation bridge equipment operations training.

  All vessel personnel with responsibility for the safe navigation and piloting of the ferries should have initial as well as periodic refresher training in the capabilities, limitations, and operation of all navigation bridge equipment.

Training

- Establish a formal process and methodology for documenting mariner and shoreside personnel training and qualifications.

  This is to promote qualified training and to eliminate the possibility of nepotism and discrimination.

- Provide formal Situational Awareness and Human Factors training to all personnel responsible for ferry operations including shoreside personnel.

  These programs will be part of a comprehensive, long-term training and education plan which will be an integral component of the safety management system.

- Provide crisis management training (including crowd management and control training) to all vessel personnel including galley employees in accordance with U.S. and international regulatory requirements and accepted industry practices.

  Currently, vessel personnel have no formal training in crowd control procedures and techniques. This training may be critical to saving lives in an emergency.

Operations

- Establish formal, internal policies and procedures for and publicize an alternate ferry service operational schedule for foul weather and adverse environmental conditions (i.e. reduced visibility, high winds, excessive wave and/or current action, etc.)

  U.S. navigation law requires that foul weather and other adverse environmental operating conditions be considered when determining a safe vessel speed. Normal ferry service speed while operating in these conditions is not appropriate. Making sure the riding public is made aware of the impacts of these factors on ferry operations including necessitated changes to the schedule is crucial in order for customers to make the most informed decisions about their travel.

- Institute constant and continuous safety and security rounds by the deckhands while ferries are underway.

  GMATS observations indicate that deck crews do not make routine rounds for safety, security, and to enforce posted policies (e.g. smoking and alcohol consumption).

- Expand the content and delivery method of the existing passenger survey program.

- Accelerate schedule to uniform deckhands and all engine room employees; make distinction between oilers and CME/ME with traditional maritime uniforms.

  At present time, crew members are difficult to distinguish from passengers. In a crisis, the passengers will look for clear direction from uniformed crew members.

- Modify existing work schedules and crew exchanges for afloat personnel to provide for proper amounts of rest and to reduce fatigue.

  Current watch rotations and work schedules may be negatively impacting ability for crew to gain appropriate rest time to maintain the highest levels of alertness.

- Establish formal procedures and standing orders and develop methods for monitoring to ensure compliance with these procedures and orders.

  This will be part of the safety management system and subject to change based on a more thorough assessment and implementation of a bridge team organization. However, development of standing orders and procedures and a system to monitor compliance can be done now.

- Limit radio communications aboard the ferries (especially during approach, docking, and undocking evolutions) to operational necessities.

  GMATS observed communication exchanges between shoreside staff and afloat crew during critical operational periods described above. The substance of these conversations related to overtime and other administrative topical matters.

Other Areas

- Provide public safety and security resources for all vessels and terminals in the Staten Island Ferry system through formal arrangements with agencies to facilitate utilization of federal, state, and local law enforcement elements.

Management Position Description

Title: Chief Operations Officer – Staten Island Ferries

The Chief Operations Officer (COO) – Staten Island Ferry reports directly to the Deputy Commissioner, Passenger Transport Division, New York City Department of Transportation (NYCDOT). The COO provides the leadership and direction for the operation of Staten Island Ferry vessels and terminals. A key role of the COO is to ensure the Staten Island Ferry operates as a first-class marine transportation system that is safe, secure, fiscally sound, and environmentally sensible while providing superb customer service for the citizens of the City of New York and others who utilize the Staten Island Ferry marine transportation system.

Principal Duties and Responsibilities

1) Overall management and control of Staten Island Ferry system and NYCDOT terminal operations.
2) Direct activities of and provide policy direction and guidance to senior Staten Island Ferry management personnel, specifically, subordinate Directors of Finance, Human Resources, Maintenance, Marine Operations, and Terminal Engineering.
3) Manage appropriated funding to successfully accomplish Staten Island Ferry mission statement.
   a) Ensure adequate resources are made available to provide for an effective safety management system (SMS) and proper maintenance of vessel fleet and shore-side facilities, infrastructure, and equipment, and other NYCDOT-controlled assets.
   b) Protect existing funding sources and recommend alternative sources to ensure proper funds required to maintain and upgrade the Staten Island Ferry system.
   c) Identify areas of operational cost reductions, when feasible.
4) Provide overall direction for and ensure compliance with established safety management system (SMS).
5) Ensure safety, security, health, and environmental standards are met throughout the operation.
6) Promote and maintain a workforce culture of good order, discipline, high morale, and ethical soundness within the Staten Island Ferry system.
   a) Ensure NYCDOT policies and procedures are applied consistently and fairly within the Staten Island Ferry organization.
   b) Ensure all Staten Island Ferry system employees have working knowledge and understanding of all applicable NYCDOT policies and procedures.
   c) Meet with employees as necessary to clarify and discuss policy, procedures, and rules issues.

7) Facilitate continuous professional growth of Staten Island Ferry system employees through professional education, technical training, and mentorship programs.
8) Manage the Staten Island Ferry system in accordance with all applicable laws, regulations, and industry best practices.
   a) Maintain close liaison with the NYCDOT legal staff and obtain legal opinions on decisions as necessary.
9) Translate broad goals articulated by the NYCDOT Commissioner into Staten Island Ferry action plans.
10) Provide customer service levels commensurate with demand and goals.
11) Act as senior advisor on maritime matters to the NYCDOT Commissioner and/or Deputy Commissioner as well as other individuals or organizations as directed by the Commissioner.
12) Apprise the Commissioner of significant events and potential problem areas within the Staten Island Ferry system in a timely manner. Coordinate Staten Island Ferry system activities with key NYCDOT staff.
13) Promote and maintain close working relationships with federal, state, and local government agencies, including the U.S. Coast Guard and the Metropolitan Transportation Authority (MTA) – Staten Island Ferry system's intermodal connections.
14) Prepare and deliver testimony and reports as directed by the Commissioner.
15) In close coordination with the NYCDOT Offices of the Commissioner and Public Information, serve as primary representative of the Staten Island Ferry system to the public.
   a) Provide fast, factual, and frank information for response to media inquires.
   b) Speak at public functions representing the Staten Island Ferry system.
   c) Maintain liaison and facilitate positive working relations with key citizen and other stakeholder groups.

Knowledge, Skills, and Abilities

Education: Requires a college degree in operations management, business management, marine transportation, nautical science, marine engineering, or related discipline. Industry relevant work experience may be substituted for college degree.

License: United States Coast Guard license as Master or Chief Engineer.

Experience: Requires at least seven to ten years experience with a large passenger ferry system in a management capacity with significant experience in labor relations and contract negotiations. Requires at least five to ten years experience serving as either Captain and/or Chief Engineer aboard large passenger ferries.

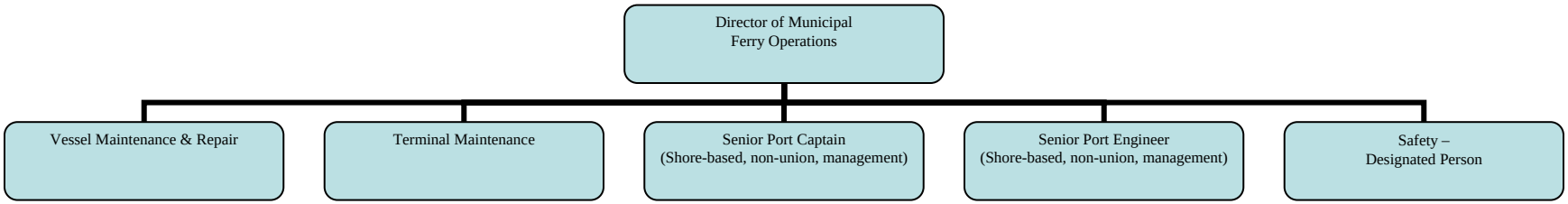
Specialized Knowledge:

1. Must have extensive knowledge of ferry terminal and ferry operations. This includes marine engineering and vessel maintenance and repair.
2. Must have a working knowledge of proven managerial and leadership principles, with the ability to influence other management team members and lead a department of technically proficient individuals.
3. Must have extensive knowledge of safety, health, and environmental issues as they affect the workplace, including all applicable regulatory schemes. Must be familiar with maritime and admiralty law.
4. Must have knowledge of safety management system principles, policies, and procedures and the ability to effectively implement them.
5. Must have working knowledge of budget preparation, financial management, and their applications. This includes an understanding of basic accounting, statistics, problem solving, goal setting, and business applications.

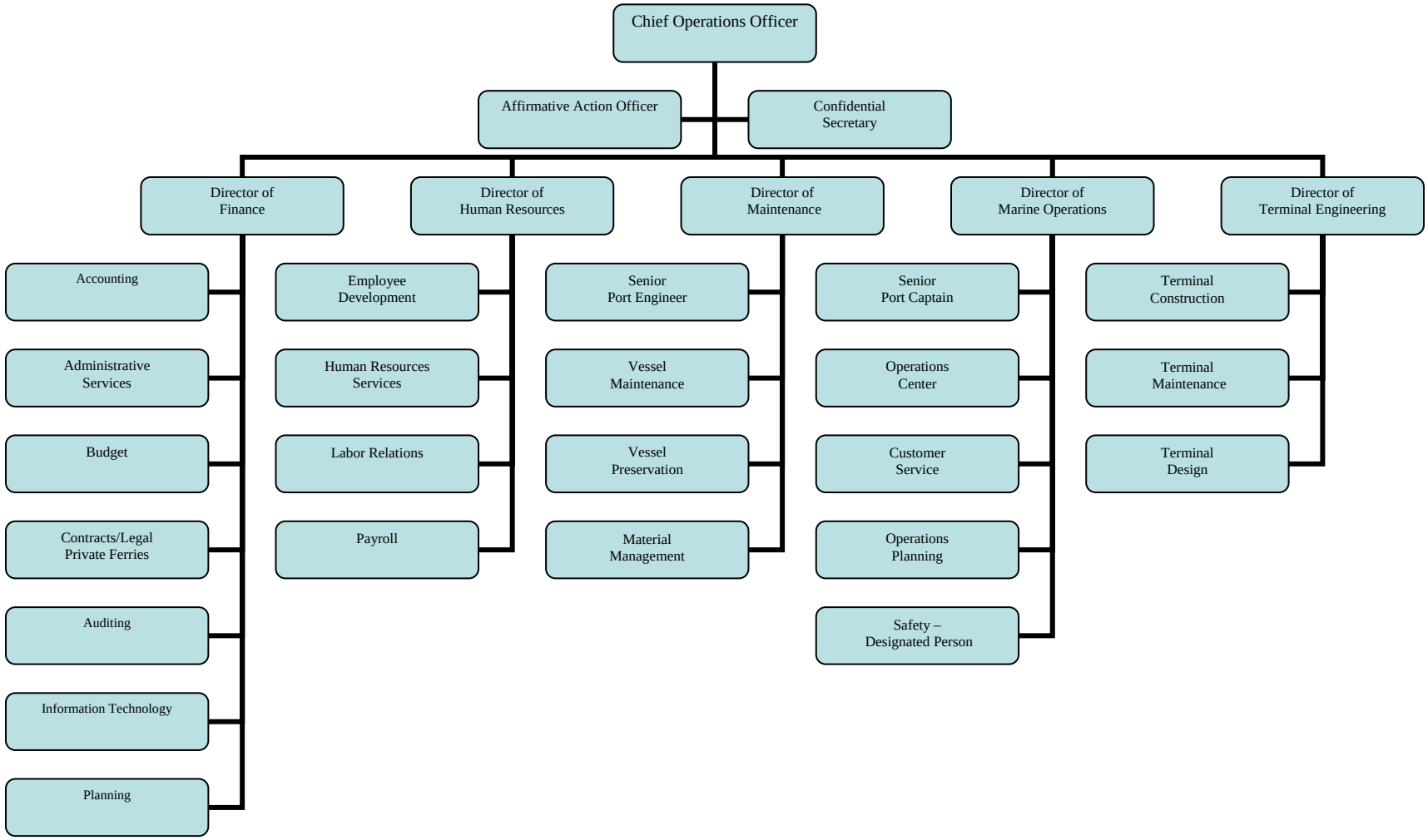
Skills:

1. Must be able to demonstrate strong leadership, influencing, and motivation skills.
2. Must have demonstrated negotiation skills.
3. Must be able to exercise sound business judgment in order to set direction and establish priorities.
4. Requires excellent managerial skills, including planning, organizing, and directing work.
5. Requires advanced level verbal and written communications skills in English, in addition to effective interpersonal skills.
6. Requires excellent analytical skills, including the ability to extract and analyze data.
7. Requires exceptional time management, due to fast-moving, demanding work environment.
8. Must be able to create and deliver effective presentations.
9. Must be able to exercise discretion and good judgment, with an ability to understand the effect of decisions in the overall organization.
10. Must be able to use a desktop and laptop computer and standard business software applications with ease.
11. Requires the ability to successfully represent the Staten Island Ferry system to the public, the City of New York, government agencies, and other stakeholders.
12. Requires the ability to positively interface with customers and employees with tact and courtesy.
13. Must be adept in corporate communications and public relations.

Sample Short-term Management Organization Matrix



Sample Long-term Management Organization Matrix



Management Position Description

Title: Senior Port Captain

Position Objective

Manage day to day marine operations including vessel traffic, licensed and unlicensed deck personnel, and facilities, to assure ferry system reliability and efficiency. Set standards for safety of crew and passengers in accordance with all applicable safety rules, regulations, industry standards, and best practices. Directly supervise and provide leadership to all deck department ferry personnel. Coordinate regulatory interaction with ferry system. Develop budget for input to Director of Municipal Ferry Operations.

This position reports to the Director of Municipal Ferry Operations

Qualifications

The Senior Port Captain must possess a wide range of operating knowledge of all the ferry systems. The position calls for inspired leadership to motivate shipboard and shore side personnel with an emphasis on regulatory agency compliance. Possess a strong background in a Safety Management System environment. Experienced in labor relations, negotiations and grievance resolution. Must be able to work within the community to develop good community relations.

Must possess a United States Coast Guard License as Master.

Nature and Scope

This is a mission critical position responsible for the day to day management of the Staten Island Ferry deck departments and deck personnel. This position supervises all phases of deck operations and personnel. As Senior Port Captain, responsible to coordinate all activities of vessels and operating personnel from an operational perspective. Candidate will interact with regulatory agencies and civil authorities to keep vessels and personnel in compliance with all known regulations. Will be the lead technical advisor to Director of Municipal Ferry Operations for labor negotiations. Will prepare budgets and supervise expenditures related to the deck department. Will directly oversee all operational functions including, but not limited to, certification of personnel. Is the first point of contact for issues relating to the deck department.

Principal Responsibilities

Manage day to day ferry system deck operations.

Maintain deck department crewing schedules within the framework of a Safety Management System.

Supervise deck department personnel and staffing on a 24 hour a day basis.

Approve labor, materials, supplies, equipment and parts within vessel deck department operating budgets.

Evaluate routine deck department work orders, stores requests and labor expenditures to assure they comply with budgetary constraints.

Manage vessel regulatory compliance for nautical and radio areas.

Be the technical advisor to the CEO for corporate communications involving the deck department.

Management Position Description

Title: Senior Port Engineer

Position Objective

Manage day to day engine department operations and maintenance, including facilities and personnel, to assure vessel propulsion system reliability and efficiency. Maintain vessels for safety of crew and passengers in accordance with all applicable safety rules, regulations, industry standards, and best practices. Directly supervise and provide leadership to licensed and unlicensed engine department professional marine engineers and oilers. Schedule vessel maintenance with Staten Island Ferry repair yard or commercial yards and direct routine vessel maintenance programs. Coordinate regulatory interaction with vessel engine departments.

This position reports to the Director of Municipal Ferry Operations

Qualifications

The Senior Port Engineer must possess a wide range of operating knowledge of engine room operation and maintenance practices of a large marine passenger ferry operation. The position calls for shipyard contract management experience with an emphasis on regulatory agency compliance. Possess a strong background in a Safety Management System environment. Experienced in labor relations, negotiations and grievance resolution.

Must possess a United States Coast Guard License as Chief Engineer.

Nature and Scope

This is a mission critical position responsible for the day to day management of the Staten Island Ferry engine rooms and personnel. This position supervises all licensed and unlicensed engine room personnel. As Senior Port Engineer, responsible to coordinate all maintenance items related to the vessels, to include commercial yard and repair facilities. First point of contact in dealing with regulatory agencies to keep vessels and personnel in compliance with all known regulations. Ensure vessels are crewed, stored and maintained to meet and complete Staten Island Ferries scheduled runs.

Principal Responsibilities

Manage day to day engine operations and maintenance.

Maintain vessels within the framework of a Safety Management System.

Supervise engine room personnel and staffing on a 24 hour a day basis.

Approve labor, materials, supplies, equipment and parts within vessel engine department operating budgets.

Evaluate routine work orders, stores requests and labor expenditures to assure they comply with budgetary constraints.

Manage vessel regulatory compliance.

Management Position Description

Title: Safety Manager/Designated Person

Position Objective

Directs the Safety Management System (SMS) for Staten Island Ferries and oversees the Corrective Action Reporting (CAR) Program and the SMS internal audit system. Manage the day to day coordination of the Safety Management System to ensure the Staten Island Ferries are in full compliance with the International Safety Management (ISM) Code for the Safe Operation of Ships and for Pollution Prevention. Supervise compliance with 46 CFR Subchapter W, Part 199.630, Alternatives for Passenger Vessels. Develops and supervises formal training of vessel personnel to comply with alternative provisions of the ISM Code.

This position reports to the Director of Municipal Ferry Operations and to the Deputy Commissioner as required by the ISM Code.

Qualifications

Thorough knowledge of all international and domestic regulatory requirements, application of marine safety management system programs and must possess a Master's or Chief Engineer's license. Knowledge of policies and procedures in the operation and maintenance of a large marine passenger ferry organization. Ability to plan strategic and effective positions for a successful and safe operating program.

Nature and Scope

This mission critical position is responsible for identifying and recommending solutions for SMS policy issues across the organization and has access to the CEO for SMS policy issues that demand the highest level of organizational action.

Principal Responsibilities

Functions as the Designated Person for Staten Island Ferries and directs the Safety Management System.

Is the key link between vessel and shore in Staten Island Ferries SMS program, holding authority to inspect all SMS records and work sites, hold drills and bring SMS problems to the attention of appropriate personnel.

Directs labor and non-labor budget planning and management for the Safety Office.

Participates in vessel casualty investigations.

Participates in investigations involving injury to passengers or crew.

Participates in investigations involving pollution of the environment.

Supervises the content of SMS documentation and advises the CEO of SMS matters that require the highest level of attention.

Oversees the Corrective Action Reporting System and conducts timely audits of vessels and terminals.

Keep current all formal training of Staten Island Ferry personnel to comply with SMS requirements.