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THE FUNCTIONING OF THE MARITIME MEDICAL RESCUE TEAM: THE EXAMPLE OF SLUPSK EMERGENCY MEDICAL SERVICE WATER AMBULANCE

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ABSTRACT

As people walk different paths they require qualified help either when they are in the mountains, by the sea or a lake. Although medical rescue procedures are the same for all patients, the specific environment of coastal area forces rescue services to use different modes of transportation for paramedics and equipment. The aim of this paper is to show the exceptional nature of the work of the Maritime Medical Rescue Team as part of the National Medical Rescue System. Members of this unit are not only qualified paramedics but also specialists in the field of navigation and rescue operations at sea.

KEY WORDS: medical rescue team, sea rescue, paramedic

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INTRODUCTION

In 2011, at the initiative of the Director of the Rescue Service in Słupsk, a medical rescue service was established, functioning within the Provincial Action Plan of the National Emergency Medical Service of the Pomeranian Provincial Office [1]. The staff of the Emergency Rescue Station in Słupsk were appointed the unit's dispatchers, and it was stationed in the port of Ustka. As with every unit operation within the State Emergency Medical Rescue System, the water rescue team also operates under the National Emergency Medical Service Act of September 8th, 2006 [2].The Ustka team, operating under the code number G1512W, was the first maritime rescue team operating within the framework of the National Emergency Medical Service. Although the unit is only active periodically, it always functions during periods of increased tourist traffic, and during heightened EMS needs. The uniqueness of this team is not only due to the fact that it is one of only two such EMS units in Poland, but also because of other differences that separate it from traditional, ground EMS teams. The distinguishing features of the G1512W team are: the operating conditions under which the water ambulance is used, ambulance crew requirements, how it is dispatched, and the way in which the patient is transported to the hospital emergency room (ER).

The aim of this paper is to shed some light on the exceptional job of a paramedic working with infrequently used equipment, namely, the water ambulance.

OPERATING CONDITIONS AND PURPOSE

Because of its specific operating conditions, the MMRT requires close cooperation with other rescue services, mainly during its maritime operations.

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Among the services the Ustka Water Rescue Team has daily contact with are: the harbourmaster, who mainly provides port services, navigation, weather, and port traffic information during rescue operations; the Maritime Search and Rescue Service (MSAR) [3]; as well as the Volunteer Water Rescue Service, as a co-operating unit within the system, established under the provisions of the August 18th, 2011 Safety of Persons Living in Water Areas Act [4]. With regards to patient transport to the ER, the Water Rescue Team cooperates with ground rescue teams and HEMS (Helicopter Emergency Medical Services). One of the water ambulance's basic tasks is assisting water rescuers in providing emergency medical help to people in life-threatening situations in coastal waters during the summer season, and shortening the transport time of the victim to the ER. The G1512W Water Rescue Team ambulance (Fig.1) is a vessel that meets the requirements of both the medical dispatcher, and the Polish Register of Shipping (PRS) [5]. It is a rigid-hulled boat with a pneumatic buoyancy buoy attached around the hull with a rubber guard, with safety floats filter connected with ropes for easy boarding. The unit's front hull is reinforced and allows for docking on sandy beaches. The deck has a built-in room with separate steering and medical compartments. Just beyond the stern of the boat is a rescue platform, allowing for the easy anchoring of floating stretchers and transferring them aboard. The unit measures 10 m in length, 3.70 m in width, and 2.75 m in height, and is made mostly from and polyester-fibreglass laminate. Its self-ventilating, planing hull is protected by antifouling paint. Additionally, the boat is equipped with an anchor-mooring device [according to the Polish Register of Ships (PRS)] and a device for pulling boats off of sandbanks. The boats own weight does not exceed 4000 kg, and provides a minimum load capacity of 850 kg, with a submersion of 0.6 m. The load capacity includes the crew, other personnel (such as patients or other medical personnel), and supplies (fuel and fresh water). The unit is capable of operating up to 40 NM (Nautical Miles), i.e. approximately 74 km, from port, and in an operational area up to 6 NM (about 11 km).

The unit is propelled by two independent stationary diesel engines with jet propulsion, providing a minimum speed of 25 knots in deep, calm water, assuming five people are on board, and it is loaded with all necessary supplies (fuel, water, and equipment).

The water ambulance is equipped with the following navigational equipment: a depth sounder, a magnetic compass, GPS with a map plotter, a VHF radio, radar, signalling equipment (6 red parachute flares), a radar reflector, and navigational illumination. In addition, the boat is equipped with life-saving equipment, namely: 5 pieces of displacement foam protection suits, pneumatic waistcoats, a lifebuoy with rope, and a searchlight.

The skipper's cabin (Fig. 2) is a two-seater space with two side-by-side seats fitted with seat-belts and armrests. One armchair is rotatable which allows one to perform medical procedures on the patient. The windowed cabin is equipped with two side weathertight doors, and windows allowing for observation of the water near the hull. Ceiling mounts are provided so the crew can easily navigate around the cabin. For improved safety, the windows in the skipper's cabin are made of acrylic glass.

The medical compartment (Fig. 3), measures 3.25 m in length, 1.75 m in width, and 1.85 m in height, and is an extension of the skipper's cabin.

FIGURE 1. The G1512W Maritime Medical Rescue Team in the port of Ustka

FIGURE 2. The skipper's cabin

FIGURE 3. The medical compartment

The floor is reinforced, resistant to loads occurring during the operation of the boat, while the inner lining of the walls and ceiling is made of an easily washable material. The entrance to the medical compartment is secured by a two-wing, weathertight door with a sill, which allows for easy loading of a stretcher and the medical team. The medical compartment is heated, air-conditioned, and ventilated, while the sunroof also functions as an emergency exit.

The ambulance's basic medical equipment is specified in Annex No. 3 of Directive No. 71/2011/DSM of the President of the National Health Fund dated October 20th, 2011 [6]. The unit is adapted for the transport of patients in coastal waters, lakes and rivers, and for undertaking medical rescue operations in these areas. Construction of the medical compartment allows for the transport of at least a two-member medical rescue team, and at least one patient on a stretcher. The modern ventilation system allows heating of the air in the medical compartment from 0°C to +18°C within 10 minutes, at an outside temperature of 0°C. For the comfort and ergonomics of the team, the space of the medical compartment is equipped with a 300 lux interior light, with the ability to reduce the illumination to 10 lux. The requirements for equipment in medical transports are in accordance with the current Polish Standard PN-EN 1789:2008, which utilizes European harmonized standards and the guidelines of the Ministry of Health.

REQUIREMENTS OF THE CREW/PERSONNEL OF THE MARITIME MEDICAL RESCUE TEAM

The water ambulance has been adapted for the transport of 5 people — 2 crew members in the skipper's cabin, and 3 people in the medical compartment, including the patient. The G1512W works as a base unit. Daily shift duty on the unit is filled by 3 medical rescuers, including the captain/skipper and two medical personnel, of which at least one is authorized as a second skipper. The Medical Rescuer on duty must have additional certifications, depending on their function:

Captain of the Unit — Skipper

— Senior helmsman certification;
— Certificate of training in the use of radar and ARPA (Automatic Radar Plotting Aid), operating level;
— Short-range communications operator certification;
— Certificate of personal safety and joint responsibility training;
— Certificate of training in individual rescue techniques;
— Certificate of elementary medical training;
— Certificate of basic fire protection training;
— Qualification to use short-distance transport equipment.

Deputy Captain of the Unit — Second Skipper — Medical Rescuer

— Helmsman certification;
— Certificate of training in the use of radar and ARPA, operational level;
— Short-range communications operator certification;
— Certificate of personal safety and joint responsibility training;
— Certificate of training in individual rescue techniques;
— Certificate of basic fire protection training.

Medical Personnel — Maritime Office requirements

— Certificate of personal safety and joint responsibility training;
— Certificate of training in individual rescue techniques;
— Certificate of basic fire protection training.

Although the range of activities of the medical personnel is not much different from the requirements of regular, ground ERTs, working in marine conditions in practice often requires the use of water rescue skills. On the other hand, the tasks of the captain/skipper while stationed in port have been

specified by the unit dispatcher, and include, among others things:

— External boat inspection;
— Checking the levels of technical fluids and their possible supplementation;
— Starting the engines and controlling their parameters;
— Starting and checking the functionality of the helm, radar, GPS, electronic map, and radio station by establishing contact with the MD (medical dispatcher) and harbourmaster;
— Maintaining safe docking of the vessel (control of lines and power supply from land).

RESCUE EVENT PROCEDURES AND PATIENT TRANSFER

The decision to send the water team is made by the medical dispatcher (MD), based on standard procedure for accepting calls. The MD, together with the MMRT are obliged to strictly observe the rules concerning the transfer of calls and their realization. If information concerning an ongoing life-threatening situation is delivered directly the crew — for example, by the harbourmaster or VWRS rescuers — it must first be relayed to the medical dispatcher through the 999 emergency number, who will, in turn, register it and send immediate instructions to dispatch, in accordance with current regulations. The dispatcher is then obliged to make an ambulance available, or, if the need arises, HEMS, to transfer the patient to the nearest ER.

Upon receiving a signal to dispatch from the MMRT supervisor, the skipper establishes communication with the harbourmaster in order to obtain permission to leave port [7]. The harbourmaster, in turn, uses an emergency protocol to close all entrances and exits to the port, and gives permission to go out to sea. As soon as the engines and other mechanisms are active, the unit can dock off. The skipper places the position of the event on the map plotter. If the destination is a beach, the skipper anchors the unit on approach. If the patient is being transferred from another vessel, the boats are set to board in a direction previously agreed upon with the captain of the unit transferring the patient. The medical rescuers then reach the patient and provide medical emergency services, after which the patient is transported to the MMRT with the use of floating stretchers under the supervision of two rescuers.

When the patient is on board, the skipper hoists the anchor and returns to the port in Ustka. Determining the place of docking, and, if necessary, stopping other port traffic, is up to the harbourmaster. The patient is transferred, along with a medical emergency card (MEC), to a team who continues the transport to the ER.

CONCLUSION

There is no doubt that the G1512W Water Rescue Team is an exceptional unit, because of both the mission it carries out, and its crew members, who are simultaneously sailors and medical rescuers. This team may serve as the link between the seafaring rescue units, such as MSARs, as well as carry out independent rescue operations in the coastal zone. Units such as G1512W greatly increase the safety of tourists visiting the seaside, during the summer months, whose numbers often greatly exceed permanent residents, and whose presence significantly increases the need for an EMS presence, both on land and in the water.

Conflict of interest: None declared.

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