

MULTI-AGENT RESPONSIBILITY FOR A TRAGIC ACCIDENT IN WATER

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ABSTRACT

In relation to EU countries, the level of safety on Polish waters is still low. The drowning rate in our country is two times higher. Since 2013, there has even been an increase in the number of drownings. Typically, following each incident, attention is focused on the quality of work of the rescue services, however, there are multiple factors to be considered when seeking where responsibility for this state of affairs actually lies. In contemplations, the main subjects of analysis were external threats (atmospheric conditions, legal conditions, trends in water recreation) and threats generated by various groups of water-related subjects (administrators, service providers, rescuers, cleaning and medical services, participants enjoying recreation on or in the water). The purpose of this article is to present the issues of water safety from the perspective of the responsibility of various subjects, which are active in this environment.

The attractiveness of recreation in or on water results largely from the emotions caused by increased risk. Often the greater the danger, the greater the attraction. At the same time, it is accompanied by an increased sense of security, excessive self-confidence and excessive trust, which weakens the natural defense mechanism. Hence, so many accidents in the water are caused by the victims themselves. In the article we are looking for an answer to the question about the reasons for such a phenomenon.

Keywords: recreation in water, safety, dangers, responsibility.

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INTRODUCTION

The most objective, and at the same time the most diagnostic indicator for assessing the quality of a water safety system, is the statistics on the number of drownings. The World Health Organization lists show that approximately 372,000 people die each year in water. This means that every hour 40 people drown. These are mostly young people up to the age of 25. Drownings are classified in the top ten non-natural deaths in this age group. In the group of up to 15 years, more than 140,000 drownings are registered, which puts them among the top three child killers in the world (after meningitis and HIV). Twice more men than women die of drowning. Alcohol, consumed by the water, is the most serious risk factor in most countries [1].

The danger to life as a result of accidental drowning in Poland is significantly higher than the European Union average (standardized mortality rate of 2.2 per 100 000 population in Poland vs. 1.2 in the EU in 2012). In Poland, the risk of dying from drowning among men is five times higher than among women, and one in four drowning victims were affected by alcohol [2].

Statistics on drowning in Poland are collected by the Central Statistical Office and the Police Headquarters.

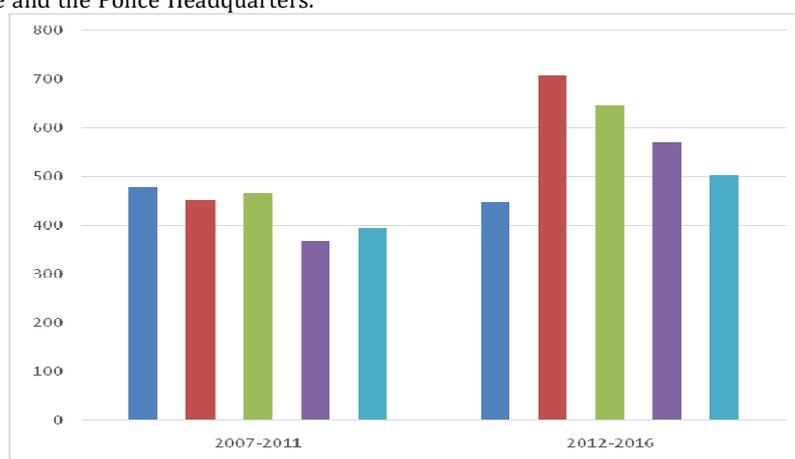


Fig. 1 Summary of drowning in Poland based on statistical data of the Police Headquarters [3].

Is it possible to clearly identify who is responsible for such a low level of security in Polish waters? Liability is treated as the consequences of one's own actions, primarily legal. Because it is the legal regulations that precisely define sanctions for the negative effects of illegal acts. We will also not avoid moral considerations in our considerations. The considerations have taken into account the logical link between action (or failure) and effect.

The nature of such considerations is primarily educational. Drownings are classified by the WHO as preventable fatalities – with the use of educational and preventive measures [1]. The purpose of this article is to present the results of the study on the causes of drowning and to identify those responsible for this condition.

RESPONSIBILITY OF PEOPLE RELAXING BY THE WATER

The relatively high risk of drowning in Poland can be minimized by following the logic of risk management procedures. Analysis of the risk of a tragic accident precedes the identification of possible threats.

According to the data from the Central Police Headquarters, 396 people drowned in 2011, preceding the introduction of new legislation in Poland, and the average for the preceding five years was 432.8 years [3]. For the next three years (2012-2014), since the new legal system has been in operation, the average has risen to more than 600 drownings a year. We have a noticeable increase in this phenomenon (Figure No. 1). Perhaps these are the first disturbing symptoms of deterioration of the safety of recreation in Polish waters.

In the next two years, 571 and 504 drownings were registered, and in the current year, from April to September, there were 290 drownings. The final number of drownings is influenced by many variables, including the weather conditions in Poland in the period in question, as they determine the number of people in the water. The more sunny the year, the longer the season, and the more people enjoy their recreation time in or on the water, which can result in a proportionally higher number of drownings [3].

Knowledge about drownings and their condition in Poland seems to be insufficient, as evidenced by the negligible number of publications devoted to the epidemiological analysis of these events [2].

For each type of threat, it is necessary to prepare appropriate behaviour strategies for its occurrence. Risk management includes the following actions:

- Risk identification;
- Risk analysis;
- Planning for ways to deal with risk;
- Risk tracking [4, 5].

Identifying the risk of drowning involves recognition of factors that can lead to such a tragedy. Making such a list implies all subsequent actions in the process of widely understood education for security. Mastering the risk management skills will effectively control the negative effects of the hazards of recreation in, on or around water. This thesis requires, of course, empirical confirmation.

The analysis of causes of accidents on or around water shows that they most often started out with the victim simply resting by the water, often having consumed excessive amounts of alcohol. It is common practice not to follow the rules of safe bathing. Disregard of rules, regulations and prohibitions is one of the most common internal threats. For this you should add a low level of swimming ability, lack of risk assessment skills,

mindlessness and inebriation. In 2014 at one of the Aquaparks in Sopot, despite the explicit ban, a woman took a downhill ride on a slide when the pool to which the pipe was going had not yet been filled with water. The impact of the body to the bottom of the pool resulted in a broken hand. Excessive risk was taken by an older man at a waterslide in Karpacz - he fainted during the exit and remained at the bottom of the pool. He died in hospital (2012). In 2015, in Kalisz, a young man slid at high speed landing on a boy just ahead of him. The victim was hospitalized with serious injury to the internal organs [6].

The phenomenon of safety around water is conditioned by the attitude and behavior of the bathers themselves. It is clear in such situations, that among those responsible for the tragic events in the water are the people who enjoy it, including the victims themselves.

Those affected by more or less conscious risky behavior in the water, must take full responsibility for the consequences of their behavior. The search for intense experiences and the tendency to increased risk can be interpreted on the basis of Marvin Zuckerman's search for sensation seeking [7]. Often, however, the dangerous activities of people recreating by the water result from a lack of any sense of danger. Paradoxically, a tendency for an increased risky behaviour may be affected by existing security measures. This phenomenon is known as the Peltzman effect [8]. It is therefore necessary to anticipate the consequences of this excessive trust. Both theories may explain the motives of those who take the increased risks, but in no way release them from responsibility.

A model example, however, of taking responsibility for one's own actions in the water environment are certainly open water swimmers. In spite of the high level of danger - huge pools, water dynamics, hypothermia, marine animals, ships, limited orientation and very long times in the water - they are excellently prepared for extreme water stress. Proper adaptive training, applied safety measures and precisely programmed logistics minimize the risk involved.

The responsibility of people who witness tragic events in the water is slightly different. They are expected to have the proper attitude and reaction in the form of basic rescue operations. This is primarily a moral imperative, both rigorous and liberal. Irrespective of the accepted moral principles, the obligation to provide assistance is sanctioned in criminal law. Failure to

provide assistance is a criminal responsibility which is punishable [9].

RESPONSIBILITY OF ENTITIES PROVIDING PROTECTION OF RECREATIONAL WATER FACILITIES

The manager of the designated water area is responsible for its safety. In the location where sports or recreation activities are carried out, the manager may be a normal everyday person, a legal person or perhaps an organizational unit without a legal personality that carries out business in that area. Whereas in the other areas - the manager is a local mayor (the mayor, the president of the city), and in the national or landscape park - the director of the park [10]. A new law has reduced the monopoly of the Water Volunteer Rescue Service and resulted in the emergence of a water rescue service market [10]. Will this have an impact on the quality of rescue work? - time will tell. The duties and responsibilities of rescuers, despite changing legal regulations, are obvious.

Water rescuers are the most visible group of people ensuring the safety of people enjoying time in the water. During tragic events, the responsibility of the emergency services for the safety of the bathers is most often analyzed, sometimes through prosecutors. I think that most rescuers do their work honestly and with devotion. However, it is important to remember that the quality of the work of the rescue services is to a large extent dependent on the management of the designated water area. The management entity is responsible for the employment of rescuers and the organization of their work.

Guardians (teachers, tutors, instructors, pilots, etc.) of the groups which spend their time by the water are responsible for their safety. Those who bring school groups and tours to the water park must exercise particularly effective supervision of the pupils. In most tragic cases involving victims of collective trips to the water park, the procedures were not followed. This also applies to parents who often do not properly care for their children. The following chart contains examples of tragic events that show irregularities in actions of rescuers, group carers or management (Table 1).

Selected events pointing to the responsibility of the safety authorities in the water parks. Examples.

LOCATION	INCIDENT	RESPONSIBILITY ¹
2012 Poznań, PL Maltańskie Thermes.	A 10-year-old boy from Śrem, choked on water in an artificial wave pool. He died after a week at the hospital	<ul style="list-style-type: none"> • An indictment against three rescuers. • Incorrect organization of the children group • Design defects of the object.
2006 Kraków Water Park	An 11-year-old Kamil, from Lipnica Wielka, drowned	<ul style="list-style-type: none"> • Charges pressed against the water rescue manager. • Charges pressed against the group tutors.
2014 Sopot Water Park	An 8-year-old girl drowned.	Charges were pressed against the rescuer and the carer of the group of children
2015 Dąbrowa Górnicza Nemo Water Park	16-year-old helper of the lifeguard hit a closed hatch of a water slide; He went to hospital	Irresponsibility of emergency services
2017 Wisła Water Park	Two boys from Zgierz were found at the bottom of a swimming pool, one of them did not survive	<ul style="list-style-type: none"> • Responsibility of the facility manager • Responsibility of a person without rescue licence • Responsibility of the group leader
2011-2013 Kutno Aquapark	A 9-year-old girl drowned in a swimming pool and after a rescue operation spent several weeks in critical condition in hospital	<ul style="list-style-type: none"> • Charges for 10 rescuer working without required licence. One of the women couldn't swim! • Charges to local President of the Polish Life Saving Federation (WOPR) • Responsibility of the facility manager

All state safety services and formations - the police, the city guard, the security of the facility and the medical services - are clearly responsible for the safety at the water areas, just like everywhere else. The responsibility of these entities is not the subject of this work.

RESPONSIBILITIES OF ENTITIES PROVIDING RECREATIONAL WATER SERVICES

Many people who enjoy time in and around the water need new, risky attractions. This is explained by the previously mentioned interpretation of risky behavior (Zuckerman) [7]. Designers offer an abundance of attractive solutions that are supposed to produce strong emotions, often including fear and horror. Finding more and more attractive and exciting forms of fun in the water makes them more and more dangerous at the same time. This is a trend, in which the offers need to be the biggest, slide - the longest and the fastest, pool - the deepest, waves - the highest, etc.

The best example is water slides. Objects of bigger height (up to 50 m) are constantly being created, with various lengths (several hundred meters), complicated geometry (near 90 degrees) and the speed of the descent, which can be over 100 km / h (Turbo slide). Despite the safeguards used, the threat is real. The most dramatic event happened in August 2016 at the Verrückt water slide in the Schlitterbahn water park in Kansas. The slide is over 50 meters high and the pontoons reach speeds of over 110 km / h. During a ride on one of the

slides, a 10-year-old boy was killed. The media reported, that during the accident the slide had even decapitated him.

The prosecution has not yet been completed, but the park manager has already decided to dismantle the slide². Another such dangerous attraction on offer at water parks is the artificial wave, which often exceeds the standards of safe bathing required in coastal bathing areas. Currently it is 70 cm [11]. In addition, the wave makes it difficult for rescuers to observe the waters. Similarly, there are devices imitating rivers in which the flowing water sometimes exceeds the norms adopted for bathing in rivers. Water speed should not exceed 1 m/sec [11].

The so-called water playgrounds include inflatable climbing walls, rope bridges, trampolines, catapults, swings and much more. The most dangerous constructions are the most attractive - climbing tower, iceberg, catapults and trampolines. The biggest risk is the possibility of uncontrolled jumps to the water from a height of about 3 meters.

The offer of attractive forms of activity in open waters is equally rich and includes high-risk disciplines. Among them are water skiing, mountain kayaking, water scooters, flyboard, canyoning, kitesurfing, rafting, skimboard, kneeboard, surfing, wakeboard, windsurfing and much more. Underwater activities (e.g. cave diving, wreck diving, etc.) are certainly among them as well.

Proposing new, exciting water attractions should go hand in hand with finding more and more effective forms of protection. The responsible service

provider of such an offer should ensure high quality of services provided by the company, the highest quality of equipment, and fair performance of duties by the company's employees. The greatest threats are always created when the need for profit surpasses the precedent value - the life and health of the people who use the offer.

RESPONSIBILITY IN NATURAL AND CIVILIZATIONAL HAZARDS

The list of threats related to drowning also includes external factors, which exist objectively. They are not dependent of the bathers. They may be of a natural or civilizational character. The first ones occur primarily in open waters, e.g. changing atmospheric conditions, causing changes in the dynamics of water (waves, swirls, fast water currents, changes in the shape of the water area, etc.). The extreme form of these threats are floods, violent winds or ocean waves (tsu-nami). Tsu-nami, which ravaged the coast of Indonesia in 2004, killed more than 200,000 people [12].

Responsibility for such tragic consequences can only be political, systemic and even global, with the effect of anticipating weather changes and preparing for a threat. Objective external threats should be foreseen and taken into account in the rescue area. Among the civilizational threats that may occur in the aquatic environment, we can find catastrophes, failures, environmental pollution, but also armed conflicts or acts of terror. They have a social background and are derived from all human activities. A tragic catastrophe occurred in 2012 when 32 passengers drowned after the sinking of Costa Concordia vessel, and 157 were injured. The ship hit the rocks near the island Giglio. Francesco Schettino, the captain, has been named responsible for this tragedy [13]. In February 2004, the roof in the Moscow water park collapsed, in a result of excessive snowfall. This building catastrophe caused several dozen fatalities and more than 150 people were injured. An investigation is under way, in order to identify the culprits of this disaster [14].

Water areas have also been affected by the occurrence of terrorism. Terrorist attacks have taken place in recent years in Egypt, Turkey and Tunisia. The Ministry of Foreign Affairs observes them [15].

Responsibility for the tragic consequences of civilizational hazards must be attributed to people,

sometimes very specific people. However sometimes, responsibility is only of a social character.

SUMMARY

In the considerations, the problem of responsibility, mainly in the legal dimension, has been raised. It is worth discussing in the summary, about the aspect of moral responsibility relating to duty obligations. Moral responsibility occurs when a person commits his or her actions consciously and voluntarily. Action awareness means that people act deliberately and anticipate the effects of their actions [16]. Important findings on axiological education are formulated by Konaszewicz [17]. He believes that the choice and realization of certain values requires an effort of the individual and the need to defeat a system of obstacles. The author concludes that the axiological maturity of man depends on the level of his autonomy, subjectivity and reliability in understanding the motives of his conduct [17].

Reflections on the analysis of drownings and the responsibility for such incidents of various subjects, lead to the conclusion that in many cases there are several causes for detriment. This applies at the time to the principle of joint responsibility, according to which each entity is responsible for the consequences of its own behavior. It also makes sense according to the civil law. [18] It is possible to speak of multi-subject responsibility.

Responsibility for safety in water areas should be analyzed at every stage of risk management, when recognizing and analyzing hazards, as well as estimating its effects. Subsequently, responsibility covers the planning of safe preventive and rescue actions. This requires educational action. The strategic goal of such education is to reduce the number of drownings and ensure the safety of the water areas.

The type of water recreation, the level of culture and the safe behavior in water, can be effectively created by pedagogical means. From a pedagogical perspective, the impact we will have on society will depend on the effectiveness of education. Society is the subject, and only with this assumption can we undertake effective educational activities. Among the various goals and objectives of education for water safety are education of swimming, legal education, physical education, education of environmental education or axiological education.

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