

Karolina Lis, MSc.

General Tadeusz Kościuszko Military University of Land Forces in Wrocław

DOI: 10.5604/01.3001.0014.3230

Analysis of Calls Made to Emergency Number 112

Abstract

This article presents the division of calls that are made to public safety answering points in the Republic of Poland. Next those calls were analysed starting from the very beginning of the operation of the emergency notification system, taking into account their percentage division into justified, false and cancelled calls. Factors that influence the number and type of registered calls were also presented. The last part of the article refers to proposed changes that could be made to reduce the number of false calls.

Keywords: security, emergency number 112, emergency call, public safety answering point

Received: 25.03.2020; Reviewed: 18.06.2020; Accepted: 18.06.2020

Analiza zgłoszeń kierowanych do numeru alarmowego 112

Abstrakt

W niniejszym artykule przedstawiono podział zgłoszeń, które kierowane są do centrów powiadamiania ratunkowego na terenie Rzeczypospolitej Polskiej. Następnie dokonano analizy tych zgłoszeń od początku funkcjonowania systemu powiadamiania ratunkowego, uwzględniając ich procentowy podział na zgłoszenia zasadne, niezasadne i anulowane. Przedstawiono również czynniki, które wpływają na ilość i rodzaj zarejestrowanych zgłoszeń. Ostatnia część artykułu odnosi się do propozycji zmian, które można wprowadzić w celu zmniejszenia liczby zgłoszeń niezasadnych.

Słowa kluczowe: bezpieczeństwo, numer alarmowy 112, zgłoszenie alarmowe, centrum powiadamiania ratunkowego

Przyjęty: 25.03.2020; Zrecenzowany: 18.06.2020; Zatwierdzony: 18.06.2020

Аналіз зголошень спрямованих на номер екстреної допомоги 112

Анотація

У цій статті представлено розподіл зголошень, які спрямовані до центрів оповіщення про надзвичайні ситуації в Республіці Польща. Ці повідомлення було проаналізовано з самого початку роботи системи оповіщення про надзвичайні ситуації, враховуючи їх відсотковий поділ на обґрунтовані, необґрунтовані та скасовані зголошення. Також було представлено фактори, що впливають на кількість та тип зареєстрованих зголошень. В останній частині статті запропоновано зміни, які можна внести для зменшення кількості необґрунтованих зголошень.

Ключові слова: безпека, номер екстреної допомоги 112, зголошення екстреної допомоги, центр оповіщення про надзвичайні ситуації

Прийнятий: 25.03.2020; Рецензованої: 18.06.2020; Затверджений: 18.06.2020

1. Introduction

The basic obligation of each country is to assure security to its citizens. This security consists of protecting human life and health, their property as well as the natural environment and public order [10, p. 22]. The effective notification of services, inspections and guards of the existence of a hazard, and then their capacity to immediate and efficient response assures to the society a feeling of safety and comfort. The above mentioned task is assured by the State among others by running the emergency notification system, which assures access of every citizen to rescue entities and public order services to obtain the necessary assistance.

The concept of establishing a consistent system of emergency notification arose from the need of enhancing the level of rescue organisation in Poland. A further cause was Poland's accession to European Union structures, which in turn imposed the necessity of setting up a single European emergency number 112. The Member States could choose a model under which this number would be functioning. After several years of setting up of the emergency notification system in Poland a decision has been made to integrate notifications to a single entity in a province – and namely

the public safety answering point, which is to assure efficient information flow to all formations, entities and institutions to make sure that the indispensable assistance is dispatched to the location of the incident in the shortest possible time.

In Poland the emergency notification system consists of public safety answering points (PSAPs), which handle calls made to emergency numbers 112, 997, 998 and 999 [1, art. 3]. The above definition has been comprised by legal regulations, such as the act on the emergency notification system. Nevertheless it should be pointed out that currently the answering points handle the emergency number 112 and the number of the Police – 997. The remaining emergency numbers in Poland – number of the State Fire Service (998) and the number of Medical Emergency Service (999) are still being handled by duty officers and dispatchers of those entities. The PSAPs operate in a 24/7 system and take in calls from all over Poland. It should be emphasised that all centres operate on the basis of standardised rules and procedures. This ensures that a call made to the emergency number should be handled according to the same standards.

It should be emphasised that right from the beginning of its functioning, the emergency notification system has been contributing in a significant way to societal security. This may be proven in the first place by the number of calls registered in PSAPs. Consequently the objective of the paper is to carry out an analysis of calls made to the alarm number 112 in the years 2014–2018, as well as their classification. Also identification of certain factors that affect the number and type registered calls has proven to be of importance. The last part of the paper presents proposals of changes and solutions which could contribute to increasing the number of justified calls, i.e. those in the case of which the caller really is in need of help.

2. Division of calls made to the emergency number

In the broadest sense, a telephone call to the emergency number 112, which is automatically registered in the IT system of the public safety answering point. To be more specific, this is information given by the caller phoning the emergency number of a certain situation. On the basis of this information the received calls are categorised. Their basic division is based on the legitimacy of taking up interventions by rescue and order services. Calls that do not require the intervention of services are terminated. On the other hand, once the necessary information has been compiled, the emergency call is sent over via the IT system to relevant rescue and public order entities, concurrently automatically changing the rank to an incident.

The act on the emergency notification system defines an emergency call as “information on the occurrence or suspicion of occurrence of a sudden hazard to life or health, including an act of violence, as well as an unexpected threat to the environment or property as well as hazards to public security and order, addressed at numbers handled as part of the emergency notification system, by the provider of generally accessible telephone services, from external monitoring systems or with the use of communication means that allow immediate passing on of such information to the public safety answering point” [1, art. 12].

Based on the above, two main categories of calls may be distinguished in the work of public safety answering points: emergency calls (justified) and non-emergency calls (nonjustified). In the public safety answering point an emergency situation is understood as oral or written information concerning an incident that has either already taken place or will take place, which is passed on to dispatchers of particular rescue and public order entities to allow dispatching of relevant units of the Police, the State Fire Service and medical rescue teams to the scene of the incident. The PSAPs also work with several additional services, such as the Mountain Volunteer Search and Rescue, the Tatra Volunteer Search and Rescue, General Directorate for National Roads and Moorways and the Railway Protection Service. However, the legislator has not provided a definition of unjustified calls. In reports on the operation of the emergency notification system devised by the Ministry of the Interior and Administration non-emergency calls comprise: false calls, prank calls or dead calls [2, p. 15]. However, this division does not reflect the actual essence of those calls, and in addition they may cause their erroneous understanding. This is due to the fact that a “false call” may suggest that at the beginning this call had been registered as justified emergency call, and after an intervention by relevant entities it turned out to be a lie or a hoax. It should be emphasised that such incidents do happen, yet public safety answering points do not receive feedback concerning the undertaken interventions, their progress or ending. This shows that the division of calls that contain false calls is incorrect.

The paper has adopted the following division of calls:

1. Justified calls
 - a. emergency calls – the call is generally in the competence of rescue and orderly entities, and the reported situation requires immediate and direct dispatch of indispensable forces and means,
 - b. non-emergency calls – the call is comprised by tasks of rescue and orderly formations, yet their immediate intervention is not required.

2. Unjustified calls

- a. blocking of emergency number – calls made to the emergency number during which the caller has no intention of providing any information concerning an emergency situation requiring the provision of assistance;
- b. dead calls – those are calls that are disconnected /cancelled by the caller before being answered by the emergency number operator or calls during which the caller did not speak while such call was being handled.

The above presented division of calls points to one more task of PSAPs, and namely they act as a verifier of calls made to the emergency number [9, p. 200]. This element is of a great importance, because it enables eliminating of unjustified calls, to make sure that relevant rescue and public order entities only receive information on actual emergency situations.

3. Review of calls recorded in public safety answering points

A review of calls made to PSAPs allows the assessment of the scale at which the emergency number 112 is used by the people. Reports on the operation of the emergency notification system devised by the Ministry of the Interior and Administration serve as a source of information concerning the number of incoming calls made to the PSAPs from the time of their establishing.

Public safety answering points commenced handling calls from the entire territory of Poland for the first time in 2014. In the first year of its operation a total of 21 326 746 incoming calls were registered, of which almost a half – 10 340 761 (48% of call calls) were unjustified calls [2, p. 20]. Furthermore, 7 386 614 calls (35% of all calls) are cases in which the caller disconnected the call before its answering by the emergency number operator. The answering points recorded 3 452 354 emergency events, which comes up to only 17% of all calls. The Police was informed of 1 730 644 calls, the State Fire Service – of 211 426, and medical rescue dispatchers of 1 334 546 calls. From public safety answering points information was passed on concerning 175 738 incidents to auxiliary entities [2, p. 20]. The breakdown of calls registered in 2014 expressed as percentage values is presented in fig. 1.

As regards the number of calls, the year 2015 was similar to the preceding year. In all answering points a total of 21 004 785 calls have been recorded (fig. 2). Unjustified calls decreased by 3%, which means that in 2015 blocking of the emergency number was constituted by 45% of all calls – 9 389 261. The number of cancelled calls, which

constituted 37% of all calls – 7 780 657 has grown. Rescue and orderly entities received information of 3 651 251 incidents, and consequently justified calls came up to 18% of all calls. The Police received information concerning 1 631 254 emergency situations, 261 522 calls were routed to the State Fire Service, and 1 490 884 calls to medical dispatchers [3, p. 5].

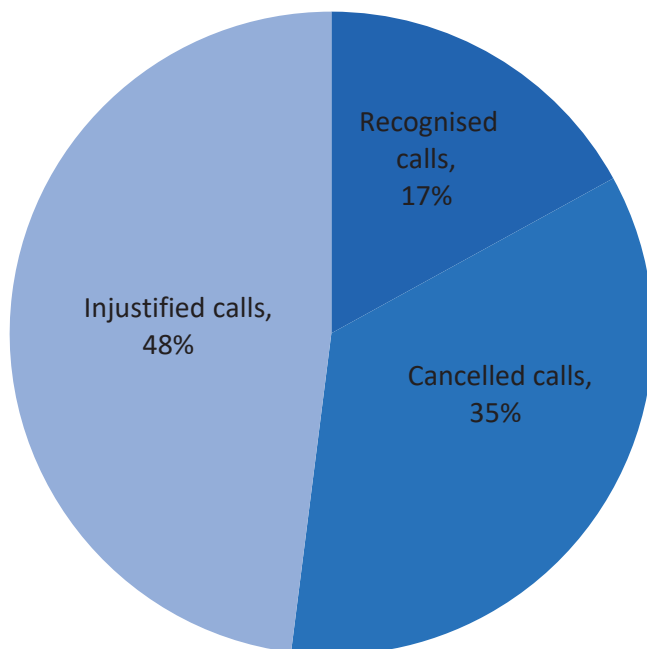


Fig. 1. Breakdown into percentage values of calls to the emergency number 112 in 2014

Source: own study based on [2, p. 20]

In 2016 a total of 19 482 287 calls were registered [4, p. 3], which suggests that as compared to preceding years an insignificant decrease took place of the total number of calls (fig. 3). The biggest part was still constituted by unjustified calls, which amounted to 47% of all calls – 9 084 595. Calls disconnected before their handling constituted 34% of all recorded calls – 6 644 424. Rescue and order services received 3 392 728 calls informing of incidents – to the Police 1 494 883, to the State Fire Service 517 673, and 1 602 489 to medical emergency dispatchers. Auxiliary units have received 391 864 calls pertaining to incidents [4, p. 4].

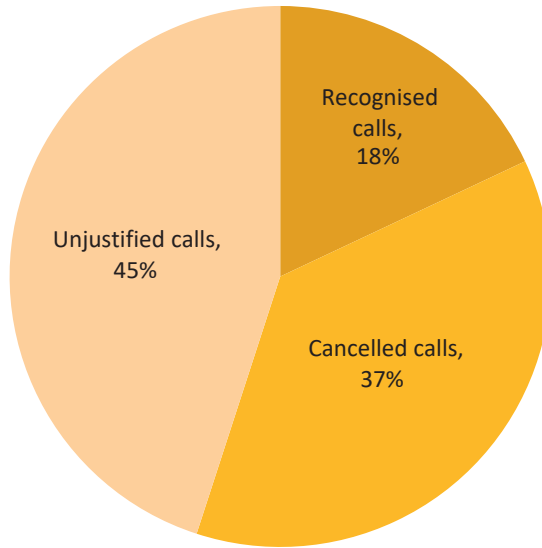


Fig. 2. Breakdown into percentage values of calls to the emergency number 112 in 2015

Source: own study based on [3, p. 5]

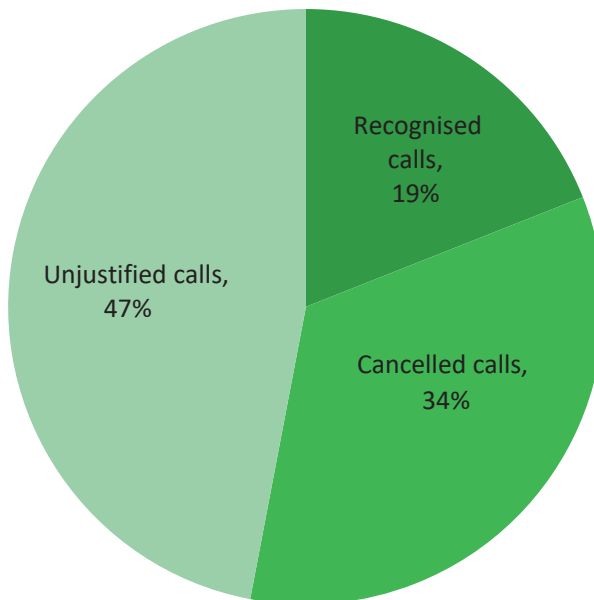


Fig. 3. Breakdown into percentage values of calls to the emergency number 112 in 2016

Source: own study based on [4, p. 3]

In 2017 a total of 18 997 544 of calls were recorded [5, p. 3], which means that the downtrend in the total number of calls made to the emergency number was maintained (fig. 4). From among all calls, 45% (8 463 820) were calls in which the caller did not need the help of rescue or order services. Furthermore 35% (6 621 363) of all calls were cases in which the connection was disconnected during the first few seconds. In 2017 emergency calls came up to 21% of all calls to the emergency number. A total of 5 454 003 calls were routed to emergency and public order units – to the Police 1 641 989, to the State Fire Service 598 485, and to dispatchers of medical rescue – 2 833 747. Auxiliary institutions received 379 782 calls with information on emergency situations [5, p. 4].

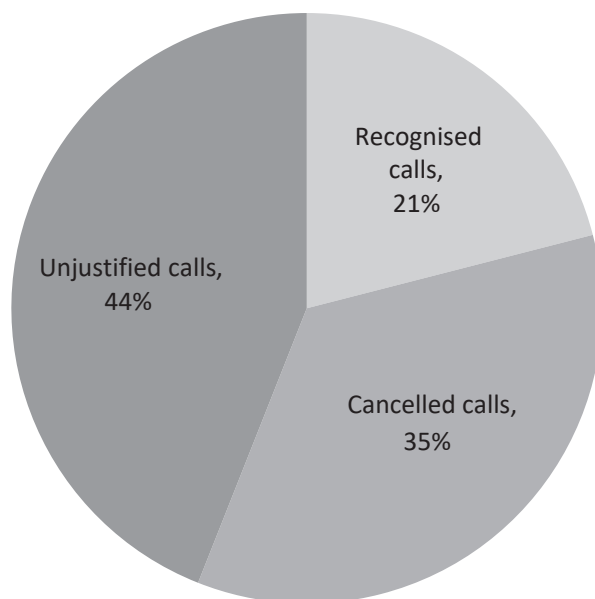


Fig. 4. Breakdown into percentage values of calls to the emergency number 112 in 2017

Source: own study based on [5, p. 3]

In 2018 in all public safety answering points recorded a total of 19 980 817 calls [6, p. 12]. As compared to the preceding year the number of calls grew by 983 273 [6, p. 20]. In addition in 2018 the percentage of unjustified calls was the lowest from the beginning of operation of the emergency notification system and came up to 42% of all calls (8 415 824). Furthermore, cancelled calls were reduced by 1.66%, and came up to 33% of all calls (6 632 175). This led to an increase in justified calls by 4%, which in

2018 achieved for the very first time the level of 25% of all calls received (fig. 5). Rescue and orderly units received information about 7 230 225 incidents – 2 592 452 incidents were routed to the Police, 581 493 to the State Fire Service, 4 056 280 to dispatchers of medical emergency service, and 376 559 notifications to auxiliary institutions [6, p. 37].

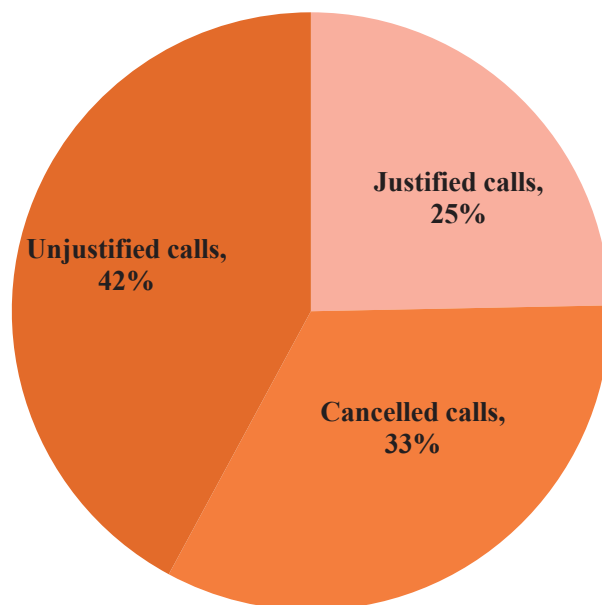


Fig. 5. Breakdown into percentage values of calls to the emergency number 112 in 2018

Source: own study based on [6, p. 17]

The above presented analysis of calls made to the emergency number 112 points to the important role played by the emergency notification system in the Republic of Poland. Yet it should be emphasised that the people tend to use the emergency number too extensively, treating it not only as an emergency line, but also for diverse forms of abuse. This may be proven first of all by the high number of unjustified calls, which from the beginning of functioning of the system practically comes up to half of all calls registered in PSAPs.

4. Factors affecting the number and type of registered calls

Each call made to the emergency number is a process that comprises obtaining and management of information. For PSAPs the crucial element is information. Obtaining

credible information from a caller on an emergency situation serves as a basis for further actions of rescue and orderly entities.

Information considerably affects the course of the hazard, and lack of effective management of information may cause the crisis to become intensified. For this reason it is very important to assure an efficient information flow between all participants of an emergency incident and officials or employees of particular formations and institutions, which have been established to counteract it. At this point it should be emphasised that in the case of each call addressed at public safety answering points there is a necessity of coordinating information between the information submitter (the caller), the emergency number operator and officers on duty/dispatchers of rescue and public order entities. It should also be borne in mind that “information, which is passed on by the caller to the emergency number operator, is not an actual reflection of the situation, but much more its distorted picture deformed by the caller – by his/her subjective feelings.” [7, p. 94]. This factor has a considerable impact on the quality of received information in public safety answering points. This is due to the fact that the caller is involved in an indirect or direct way in a certain crisis situation, and is exposed to strong emotions that may give rise to barriers in communication and make the information submitted untrue, unreliable and inconsistent with the actual situation [11, p. 7]. To conclude, it may seem that the information being submitted may be a reflection of reality in the awareness of the caller, but the features of the incident may become deformed by subjective emotions of such a person.

A further important factor with considerable impact on the operation of the emergency number operator is the ability of passing on information concerning emergency incidents by the caller. Education in this respect should be a priority for the state [8, p. 50], because knowledge allows adopting rational solutions during emergency situations [15, p. 7]. The society must at least have a vague idea as to how to report information, which number to call and the type of information that may be provided. An equally important issue is the ability of describing the caller's location. Erroneous or insufficiently precise description of the scene of incident extends the time needed to handle the call, and may also cause significant delay in taking up rescue and order activities by relevant entities. Rational solutions may be adopted in emergency (crisis) situations on the basis of knowledge.

Other factors that could affect obtaining information are connected with personality traits of the caller. They may include for example shyness, difficulty in responding

to questions, excessive emotional involvement, difficulty in controlling emotions, inability to concentrate or a negative and disrespectful attitude to the emergency number operator. Other barriers which occur during the communication process also comprise noise, the number of people involved in the emergency situation, the pressure of time, the time of day or a damaged phone or failure of telephone or computer systems.

It should be emphasised that apart from the caller, the effectiveness of handling of emergency calls also depends to a large extent on the emergency number operator. This is a key element in the communication process, which serves as a binding element between the society and formations and institutions responsible for protection of life and health, property and the environment. What is more, this is the only person who collects all important information from the caller and later on passes on such information to all rescue and orderly entities as required.

To conclude the above deliberations pertaining to the presented factors that affect the number and type of calls registered by public safety answering points, at this point it should be emphasised that these factors depend mainly on the society. The ability of passing on information by persons calling the emergency number serves as a necessary basis during effective and quick handling of emergency calls. Equally important is the awareness of the citizens [12, p. 105] as to what situations should be reported to the emergency number and which information is indispensable to take yo rescue and orderly actions.

5. Proposal of changes for emergency calls

The presented analysis of calls made to public safety answering points clearly shows the existence of a strong need for adopting changes in using the emergency number by the society. The changes must primarily comprise incessant blocking of the emergency line.

In the Republic of Poland there are legal regulations that define the consequences of blocking the emergency line. On 19 November 2017 an amendment was introduced to art. 66 of the Code of Offences, which acquires the following new wording: “Any person who:

- 1) attempts to trigger an unnecessary measure by misleading a public utility institution or security protection body, public order or health by providing untrue information or in another way,

- 2) intentionally, without having a justified reason, keeps blocking the telephone emergency number, in such a way hindering the correct functioning of the public safety answering point,
- is subject to punishment by arrest, restriction of liberty or a fine up to PLN 1500” [13, art. 66].

Unfortunately, given the unfeasibility of enforcing punishments applicable for blocking of the emergency line, as well as due to insufficient awareness of the society with respect to usage of the emergency number, the number of unjustified calls has not been considerably reduced.

The author recommends to study and review any method that could considerably contribute to achieving a change in the division of calls made to the emergency number to make sure that emergency calls could constitute the major part of all calls. In such a situation it would be worthwhile to review solutions adopted in other European Union Member States, because the emergency 112 is a general European number. Consequently based on available research it should be pointed out that Member States of the European Communities are also struggling to a bigger or smaller extent with a high number of unjustified calls, and respond to the analysed problem in different ways [14, p. 9–20].

Interesting solutions have been adopted among others in Great Britain, Lithuania and France, where making calls to the emergency number from telephones without the SIM card has been totally blocked. A different solution was adopted by Finland, where a longer announcement is used for this type of connections, and moreover an alternative additional number has been established for non-emergency calls. On the other hand, Holland decided to counteract the number of unjustified calls, by introducing in 2011 the possibility of blocking access to the emergency number if the emergency line is blocked in a persistent way. Also worthy of attention is the adoption of warning text message introduced by Spain and Holland – if the same number generates a lot of non-emergency calls, the system sends an SMS response containing a warning [14, p. 9–20].

The above mentioned solutions adopted by certain countries may also be introduced in Poland. The author is convinced that this could significantly contribute to reducing the volume of non-emergency calls.

6. Conclusions

The adoption of a single European emergency number 112 was done in response to the changing world. It also allowed Poland to achieve a significant change and improvement of the hitherto operating emergency notification. The new system started full operation in 2014, but attention should be drawn to one field that requires enhancing. Right from the start of operation of the emergency notification system the number of unjustified calls came up to almost half of all incoming calls. Over 30% of all calls are dead ones. This means that calls in which the caller really needs immediate assistance comes up to 20–25% of all calls. According to the presented statistics we may see the extent to which the Polish society is unaware of the actual designation of the emergency number. This is even further aggravated by lack of penalties for common and persistent blocking of the emergency line.

Based on an analysis of calls made to the emergency number, the paper attempted to depict the scale of usage of the emergency line. Also presented were selected factors that affect such a state of affairs. The above information clearly point to the urgent need of civic education as to when, how and why should a call be made to the emergency number 112. What is more, the outlined solutions adopted by European Union Member States related to reducing the number of unjustified calls, could considerable contribute to solving this problem in Poland.

References

- [1] Act of 22 November 2013 *on the emergency notification system* (i.e. Polish Journal of Laws/ Dz.U. of 2013 item 1077).
- [2] Report on operation of the emergency notification system in 2014, Ministry of Administration and Digitalisation, Warsaw 2015.
- [3] Report on the functioning of the emergency notification system in 2015, Ministry of the Interior and Administration, Warsaw 2016.
- [4] Report on the functioning of the emergency notification system in 2016, Ministry of the Interior and Administration, Warsaw 2017.
- [5] Report on the functioning of the emergency notification system in 2017, Ministry of the Interior and Administration, Warsaw 2018.
- [6] Report on the functioning of the emergency notification system in 2018, Ministry of the Interior and Administration, Warsaw 2019.

- [7] Lis K., *Determinanty zarządzania informacją w centrum powiadamiania ratunkowego*, "Zeszyty Naukowe PWSZ" 2018, No. 28(3).
- [8] Dąbrowska M., Lis K., *Edukacja dla bezpieczeństwa a zgłoszenia alarmowe* [in:] *Wielowymiarowość edukacji dla bezpieczeństwa*, W. Horyń (scientific editor), Wyd. AWL, Wrocław 2018.
- [9] Lis K., *Działalność centrum powiadamiania ratunkowego w sytuacjach kryzysowych* [in:] *Bezpieczeństwo w terenach przygranicznych*, vol. II, B. Kaczmarczyk (scientific editor), Wyd. Adam Marszałek, Toruń 2017.
- [10] Kaczmarczyk B., *Bezpieczeństwo i jego typologie*, "Bezpieczeństwo i Technika Pożarowa" 2013, Vol. No. 3, Vol. 31, Issue 3.
- [11] Kaczmarczyk B., *Bezpieczeństwo i zagrożenia w teorii oraz praktyce*, SA PSP, Kraków 2015.
- [12] Kaczmarczyk B., *Selected problems of education for safety in the changing environment of threats*, "Zeszyty Naukowe PWSZ" 2018, No. 26(1).
- [13] Act of 20 May 1971. *Code of Petty Offences* (i.e. Polish Journal of Laws/ Dz.U. of 2019 item 821 as later amended).
- [14] *Implementation of the European emergency number 112 – Results of the eleventh data-gathering round*, European Commission Directorate-General for Communications Networks, Content and Technology, Brussels 2014.
- [15] Wiśniewski B., Koziół J., Falecki J., *Podejmowanie decyzji w sytuacjach kryzysowych*, Wyd. WSPol, Szczytno 2017.

Karolina Lis – 2016–2019 operator of emergency numbers in a branch of the public safety answering point of the Department of Security and Crisis Management of the Lower Silesian Authority, as of 2017 PhD student in the Department of Security Sciences of the General Tadeusz Kościuszko Military University of Land Forces in Wrocław, honorary member of the Student Research Group for Education and Promotion of Security of the Military University of Land Forces in Wrocław, author and co-author of several studies related to information security and management.

ORCID: 0000-0002-4432-8628

mgr Karolina Lis – 2016–2019 operator numerów alarmowych oddziału Centrum Powiadamiania Ratunkowego Wydziału Bezpieczeństwa i Zarządzania Kryzysowego

Dolnośląskiego Urzędu Wojewódzkiego, od 2017 r. doktorantka na Wydziale Nauk o Bezpieczeństwie Akademii Wojsk Lądowych imienia generała Tadeusza Kościuszki we Wrocławiu, honorowy członek Naukowego Koła Edukacji i Promocji Bezpieczeństwa AWL, autorka i współautorka kilkunastu opracowań z zakresu bezpieczeństwa i zarządzania informacją.