

Marek Ł. GRABANIA

SZYBKOBIEŻNE POJAZDY GAŚIENICOWE AS AN ELEMENT OF KNOWLEDGE TRANSFER IN THE AREA OF DEFENCE SYSTEMS

Abstract. The article presents changes that the *Szybkobieźne Pojazdy Gaśienicowe (SPG)* magazine had undergone during the 25 years of its existence in the Polish market. Its role in the spreading of the results of scientific studies and of research and development work in the area of defence systems is shown along with the principal recipients/readers of the journal. The characteristics of the *SPG* magazine published by OBRUM are described in the aspect of applicable definitions. The criteria that a scientific magazine should meet in the process of evaluation by the Ministry of Science and Higher Education are discussed. The article outlines the trends in organizational changes aimed at improving the appreciation of the magazine and at strengthening its position as a peer-reviewed scientific journal.

Keywords: defence systems, scientific journal, peer-reviewed journals, appraisalment of a research unit, *Szybkobieźne Pojazdy Gaśienicowe*, *SPG*, journal appraisalment procedure.

1. INTRODUCTION

Since the beginnings of *SPG*, its editors have laid stress on broad collaboration and exchange of knowledge in the field of defence by publishing papers of authors from OBRUM and from research institutions and organizations cooperating with OBRUM. The publications presented the results of work conducted by OBRUM and by other research units. Reviews of the state of the art in selected areas of defence were also published, particularly those relating to military installations and equipment.

Szybkobieźne Pojazdy Gaśienicowe (SPG), published by OBRUM in Gliwice, exists in the Polish market [1] [2] since 1989 as a specialized scientific and technical journal. *SPG* is the only Polish journal fully dedicated to the issues of the design of armoured equipment and development of vehicles and construction of special devices.

At present *SPG* is published semi-annually with support from the Ministry of Science and Higher Education. It is distributed nation-wide.

Scientific workers and R&D employees of OBRUM present the results of their most important projects. The periodical also features articles by invited experts and scholars from military schools and institutes and from civilian universities on subjects covered by the profile of the magazine. The Editorial Office accepts for publishing original works that constitute the intellectual property of their authors, not published and not submitted for publication elsewhere before. All papers accepted for publication are peer reviewed by two independent reviewers. Before printing the papers undergo a linguistic verification. Each paper includes a title, abstract and keywords.

The periodical deals with the issues of design, modernization, testing and operation of armoured equipment and of development of military devices and ordnance. The principal topics cover equipment for ground forces (armoured and mechanized troops) and for engineer troops. The published articles present structures of innovative design, discuss the complex computer

aided design processes based on 3D technology (virtual prototyping). The processes of verifying high strength structural designs (using finite elements method (FEM) strength calculations) based on experimental results are also presented. Results of research and development projects associated with other military applications, such as simulation training techniques, training equipment (simulators, trainer machines) are also published in the magazine. Single topic issues of the magazine are devoted to selected problems of signal transmission networks, CANbus, automation and control systems in land vehicles.

Starting from 2014, articles in the journal are published in two languages: Polish and English.

Szybkobieżne Pojazdy Gąsienicowe are included and are indexed in two Polish journal databases:

- BazTech;
- Index Copernicus.

2. DISTRIBUTION OF SPG

According to the Ordinance of the Minister of Culture and Art [3] on legal deposits, copies of *SPG* issues published by OBRUM are submitted to the libraries listed in the Ordinance.

Szybkobieżne Pojazdy Gąsienicowe are received by:

- ▶ National Library in Warsaw;
- ▶ Jagiellonian Library in Cracow;
- ▶ Maria Curie-Skłodowska University Library in Lublin;
- ▶ University of Łódź Library in Łódź;
- ▶ Nicolaus Copernicus University Library in Toruń;
- ▶ Adam Mickiewicz University Library in Poznań;
- ▶ Warsaw University Library in Warsaw;
- ▶ University of Wrocław Library in Wrocław;
- ▶ Silesian Library in Katowice;
- ▶ City of Warsaw Library;
- ▶ Pomeranian Library in Szczecin;
- ▶ University of Gdańsk Library in Sopot;
- ▶ Catholic University of Lublin Library in Lublin;
- ▶ University of Opole Library in Opole;
- ▶ Podlaskie Library in Białystok.

Copies of the journal are also sent to:

- Main Library of the Silesian University of Technology in Gliwice;
- Main Library of the Military University of Technology in Warsaw;
- Central Military Library in Warsaw.

Regular recipients of the journal include:

- National Security Bureau, Warsaw;

- General Staff of the Ministry of National Defence;
- Armament Inspectorate of the Ministry of National Defence;
- National Defence University, Warsaw;
- Military Institute of Armour and Vehicle Engineering, Sulejówek;
- Military Institute of Armament Technology, Zielonka;
- Military Institute of Engineer Technology, Wrocław;
- Military University of Technology, Warsaw;
- Military Academy of Land Forces, Wrocław.

In order to integrate the industrial circles that form the Polish Defence Holding (PHO), *SPG* is sent to the Management Board of PHO and to the Presidents of all of the member companies of the group.

Copies of the journal are also received by the members of the Scientific Advisory Board, authors of articles, unit managers in the Development Section of OBRUM.

Occasionally, during the International Defence Industry Exhibition (MSPO) in Kielce, *SPG* magazine forms one of the elements of publicity for research and development projects carried out at OBRUM.

3. SCIENTIFIC AND RESEARCH COLLABORATION

The magazine maintains extensive contacts with numerous scientific institutions: research institutes (military and civilian), universities and research and development units. One of the forms of collaboration are publications in *SPG*.

SPG has published 146 papers written by scientists and researchers from institutions other than OBRUM.

The authors of publications in *SPG* represented institutions such as:

- Military University of Technology in Warsaw;
- National Defence University in Warsaw;
- Military Academy of Land Forces in Wrocław;
- Armament Inspectorate of the Ministry of National Defence in Warsaw;
- Military Institute of Armament Technology in Zielonka;
- Military Institute of Engineer Technology in Wrocław;
- Polish Air Force Academy in Dęblin;
- Warsaw University of Technology;
- Silesian University of Technology in Gliwice;
- Wrocław University of Technology;
- Rzeszów University of Technology;
- AGH University of Science and Technology in Cracow;
- Industrial Research Institute for Automation and Measurements in Warsaw;
- HSW Centrum Produkcji Wojskowej in Stalowa Wola;

- “Bumar-Łabędy” SA Mechanical Works in Gliwice;
- Tarnów SA Mechanical Works in Tarnów;
- AMZ Kutno sp. z o.o. in Kutno;
- WB ELECTRONICS sp. z o.o. in Ożarów Mazowiecki;
- SPECOPS sp. z o.o. in Gdynia;
- Bosch Rexroth sp. z o.o. in Warsaw;
- HYDAC sp. z o.o. in Mikołów;
- CAN in Automation GmbH in Nuremberg;
- Vector Informatik GmbH in Stuttgart;
- Micro Control, GmbH & Co. KG in Troisdorf;
- JENOPTIK.ESW GmbH in Wedel;
- National Instruments Poland sp. z o.o. in Warsaw.

4. SZYBKOBIEŻNE POJAZDY GĄSIENICOWE AS A SCIENTIFIC JOURNAL

One of the requirements set on scientific entities (universities, institutes, units of the Polish Academy of Sciences, research and development units) is the dissemination of knowledge acquired and created using various means. These may include scientific publications, papers given on conferences and symposia, school and university textbooks, manuals, monographs or articles in scientific and popular science magazines.

Scientific publications are defined in the literature [4] as:

"scientific publications present the results of the authors' scientific work; they include fundamental works that present the whole knowledge in the given field or individual issues, or even just contributions, these, however, having a revealing nature, and also reference works, such as encyclopaedias, bibliographies, respectable dictionaries, reports of some of the scientific institutions".

The requirement of knowledge dissemination/transfer is reflected in the criteria of appraisal of institutions [5] [6] seeking to be classified as scientific. One of the criteria of parametric assessment of a research unit is the number of points awarded for publications in scientific journals listed by the Ministry of Science and Higher Education. Such journals must have a scientific nature and be peer-reviewed. According to the definition given by the State Committee for Scientific Research (KBN) [7]:

"Peer-reviewed journal or publication means a scientific journal or publication which accepts papers for publication based on the opinion of expert reviewers: journal's rank is determined by the affiliation of the authors, number of citations and circulation".

The *Szybkobieżne Pojazdy Gąsienicowe* magazine published by OBRUM, defined in its first issue as a *"Technical Information Brochure"* (Polish: *Informator techniczny*), and afterwards as a *"Scientific and Technical Bulletin"* (Polish: *Biuletyn naukowo-techniczny*) is a peer reviewed scientific publication.

OBRUM defined the publication's mission in its first issue [1]:

"We intend to publish works, articles, communications of scientific nature, technical papers, as well as summaries of translations of articles in other publications, communications of scientific and engineering organizations. We ask representatives of engineering circles involved in the

issues of high-speed tracked vehicles, in their broad meaning, to participate in the editing of the publication".

The *Szybkobieźne Pojazdy Gąsienicowe* magazine is classified among the journals of the Ministry of Science and Higher Education (MS&HE) with no Impact Factor (IF) [8] which are included in part B of the list of scientific journals.

4.1. Criteria of journal appraisalment

To be listed by the MS&HE, a journal must be subjected to an assessment procedure by submitting an application questionnaire [9]. Scientific journals are assessed in a two-stage procedure [10], and the criteria of appraisalment are evaluative in nature. The Panel for Appraisalment of Scientific Journals is appointed by the Minister of Science and Higher Education.

4.1.1. First stage of journal appraisalment

Journals are assessed in two stages, wherein the second stage is entered when the following initial criteria are met.

4.1.2. Initial criteria

- Presentation of the list of publication reviewers on the journal's website or in the printed issue at least once a year.
- Application of the review procedure described on the journal's website or in the printed issue.
- Maintaining an active and regularly updated website of the scientific journal.
- At least 50% of the reviewers of scientific publications are third-party reviewers.
- **Scientific nature of the journal.**
- Supplementing each research paper published during two years preceding the submission of the questionnaire with at least a title and abstract in English.
- Circulation stability during two years preceding the submission of the questionnaire.
- Implementation of a procedure protecting against ghostwriting.
- **Declaration of original version.**

The necessary condition for initiating the second stage of appraisalment is the fulfilment of two key criteria:

- **scientific nature of the journal;**
- **declaration of original version;**

and 5 out of the 7 other criteria.

4.1.3. Second stage of journal appraisalment

At this stage a detailed verification of compliance with the criteria given below is carried out. It should be pointed out that the criteria listed [8] apply to the areas of appraisalment of journals proposed in 2014.

These criteria are:

- Predicted Impact Factor (PIF);
- Polish Impact Factor;
- foreign affiliation of the authors of scientific publications;

- indexation in databases;
- number of scientific articles published per year;
- internationalization of reviewers;
- publication frequency;
- language of publication;
- internationalization of the Scientific Advisory Board;
- on-line version;
- linguistic editors;
- statistical editor;
- subject editors.

In order to receive the highest possible rating and to satisfy the above criteria to the highest possible degree, the editors of *SPG*, in consultation with the management of OBRUM, are making organizational moves and introducing changes [11] in the functioning of the journal and the Editorial Office.

5. *SPG* – SELECTED STATISTICAL DATA

One element that helps *SPG* maintain its position in the market, in addition to support from the Ministry of Science and Higher Education and approbation from OBRUM's management, is the participation in the work of the Editorial Office of people with many years of service. One should mention:

- Marek Ł. Grabania – collaboration in the years 1993 – 2014;
- Zbigniew Raczyński – collaboration in the years 1993 – 2014;
- Urszula Kaźmierczak – collaboration in the years 1994 – 2014;
- Zofia Nosal – collaboration in the years 2002 – 2014;
- Rafał Waszkielewicz – collaboration in the years 2010 – 2014.

Also, there have only been three Editors-in-chief during the history of the magazine:

- Andrzej Nalepa – Editor-in-chief in the years 1989 – 1993;
- Jacek Spalek – Editor-in-chief in the years 1994 – 2009;
- Marek Ł. Grabania – Editor-in-chief in the years 2010 – 2014.

During the 25 years of *SPG* presence in the Polish market:

- in total 35 issues of *SPG* have been published (including two double issues: no. 10/11 and nos. 22/1 and 22/2);
- there were interruptions in the publication of the journal in 1991, 1992 and 2006;
- all issues of the journal have in total about 4700 A4-size pages;
- 461 articles have been published;
- 315 articles were by OBRUM employees.

6. SUMMARY

Major recipients of the *SPG* magazine are listed in section 2, whereas section 3 lists institutions represented by the authors, showing their broad range. *SPG* has readers in both military circles, as well as civilians. The magazine is also available at the publisher's website – www.obrum.gliwice.pl, *SPG* BULLETIN tab, making the body of readers even larger.

OBRUM, having the status of a research and development centre, is subject to parametric assessment [5, 6] carried out by the Ministry of Science and Higher Education. As a result of the most recent parametric assessment conducted within the groups of common assessment (GWO), the Centre has been awarded scientific category A.

The strategy adopted by OBRUM's management board calls for increased participation of research personnel in publishing activities, which should improve the Centre's rating after the next parametric assessment.

Other steps are also taken to improve the appreciation of the magazine (points ranking of the publications in *SPG*) by fulfilling the other criteria described in section 4. In the first place this involves invitation of foreign authors to publish scientific articles in the magazine, internationalization of reviewers and internationalization of the Scientific Advisory Board.

New development projects currently in progress at OBRUM, among them:

- Direct Fire Support Vehicle;
- Additional modular armour for wheeled personnel carriers and tracked platforms;
- Unmanned land platform;
- Multitask engineering vehicle with hybrid drive;

form a perfect base for publication of research results.

Because of the developments in new technologies, including computer simulation and simulators, *SPG* will certainly gain new readers, particularly websurfers interested in new IT solutions.

Publication of the two-language, Polish and English, version of the journal (starting from this issue) should also increase *SPG* readership.

This will strengthen the position of the scientific journal, *Szybkobieźne Pojazdy Gąsienicowe*, among other Polish scientific publications.

7. REFERENCES

- [1] *Szybkobieźne Pojazdy Gąsienicowe*. Informator techniczny. No. 1/1989. OBRUM sp. z o.o. Gliwice, 1989.
- [2] Grabania M., Nosal. Z.: 20 - lecie Szybkobieźnych Pojazdów Gąsienicowych (*20 years of Szybkobieźne Pojazdy Gąsienicowe*). *Szybkobieźne Pojazdy Gąsienicowe* (26) No. 2, 2010. OBRUM sp. z o.o., Gliwice, September 2010. ISSN 0860-8369.
- [3] Ordinance of the Minister of Culture and Art of 24 May 1999 amending the ordinance on the list of libraries entitled to receive mandatory copies of publications and on the rules and manner of provision thereof. *Dziennik Ustaw* 1999. No. 50, item 513.

- [4] Marszałek L.: Edytorstwo publikacji naukowych. Polskie Wydawnictwo Naukowe. Warszawa 1986.
- [5] Ordinance of the Minister of Science and Higher Education of 13 July 2012 on the criteria and manner of awarding a scientific category to research units. DU RP. Item 877. Warsaw, 1 August 2012.
- [6] Ordinance of the Minister of Science and Higher Education of 7 February 2013 amending the ordinance on the criteria and manner of awarding a scientific category to research units. DU RP. Item 191. Warsaw, 11 February 2012.
- [7] Ordinance of the President of the State Committee for Scientific Research of 30 November 2001 on the criteria and manner of assigning and accounting of funds allocated for science in the state budget. State Committee for Scientific Research. Warsaw, November 2001.
- [8] Impact factor. http://pl.wikipedia.org/wiki/Impact_factor. March 2014.
- [9] Ocena czasopism naukowych w roku 2013. (*Appraisal of scientific journals in 2013*) <http://www.nauka.gov.pl/nauka/ocena-czasopism-naukowych-w-roku-2013.html>. July 2013.
- [10] Kulczycki E.: Omówienie najnowszych kryteriów i trybu oceny czasopism naukowych. (*Discussion of most recent criteria and manner of appraising scientific journals*). Materials of the 2nd seminar "Zasady redagowania i wydawania czasopism naukowych" (*Rules of editing and publishing scientific journals*). Warsaw, 4 December 2013.
- [11] Regulation No. 6/203 of the President of the Board, Manager General of OBRUM of 21 October 2013 on "Szybkobieżne Pojazdy Gąsienicowe" Bulletin. OBRUM sp. z o.o. Gliwice, October 2013. /unpublished/.