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# INFORMATION SUPPORT OF COMPLEX IMPROVING OF SECURITY AT THE ENTERPRISE LEVEL

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## ABSTRACT

In this article is shown a great need in creation automated information system - The State Register of victims which were injured during work or have got occupational diseases. Being built on the base of conceptual reasoning of the main tasks, structure and functions and also thanks to modern information systems, the Register gives a chance to follow the cause-and-effect relationships and to control the risks of injury during work. The program «Analysis\_of\_accidents 1.0» is developed for registration accidents and injuries in production according to the reports of form H-1 and it was built in C++.

### Keywords:

*Injuries at work, accidents, information system, risks.*

## INTRODUCTION

It's clearly seen that reformation of the system of the occupational safety and health management in Ukraine can't be provided without usage of branch-wise computer network, Internet resources and implementation of uniform information technologies.

Nowadays we have got some experience in applying computers in the automated systems of the occupational safety and health management (ASOS&HM), but such experience is incomplete. Here is a great example: while in the 1990s the number of the confirmed occupational diseases (intoxications) had extremely increased among the food industry workers, there hadn't been any kind of analysis of the occupational diseases not on the workplaces, neither in the Ministry of Healthcare of Ukraine, that's why appeared a great need in the automation of process registration and further data processing. Time demanded urgent action, so according to the order of the Ministry of Healthcare of Ukraine, the Ukrainian Scientific-Research Institute of Industrial Medicine created a computer-based integrated at all levels the automated system of registration and analysis of the occupational morbidity (AIS «ProfMorbidity»). The other countries also have an interesting experience in this sphere. For example, in the Great Britain the usage of application packages for registration and analysis accidents is widespread, so different forms of monitoring safety precautions can be provided. In France the leading corporations and companies (metallurgical, of the transport equipment, engineering, mineral) are developing such AIS according to their needs. They contain complex and technical development for preventing accidents in the workplaces; in the implementation of these programs are actively involved committees of hygiene and the occupational safety.

Consider the experience of creating a cumulative database of accidents abroad and in some Ukrainian branches, there is need for the Ukrainian food industry in developing an automated information system of registration and exchanging of data banks about accidents on the food industry companies.

## THE TOPICALITY

Management process is inseparable from the systematic exchange of information between

the components of the control system (object management) and food enterprises. Information enables engineers of the occupation safety on the food technologies enterprises to have representation about the state of labor safety in various companies, so managing the security of the technical operations employees in the workplace includes registration and analysis of the information about accidents, their characteristics, and also gives a chance to analyze the primary source of their appearance.

## RESULTS AND DISCUSSIONS

To automate the processing of statistical data and reduce the time to process them, and also for rapid development of preventive measures was developed the computer program «Analysis\_of\_accidents 1.0» in «C++» medium. The program is based on data of accidents according to H-1 form acts.

Failure to comply injury prevention rules in a result causes traumas and accidents will eventually lead to injuries and accidents in the workplace, and usually the victims of these accidents are themselves employees of enterprises [1]. Accident at work law regards as a time-limited event or sudden exposure of an employee of the production factors or circumstances, that happened during the performance of work duties, which caused significant harm or death [4]. Therefore, the employer must consider the accidents at work, as a signal of poor state efforts to prevent injuries to one or another production site.

Materials of investigations and reporting data on accidents permit to evaluate the state of safety and provide a framework for actions to enhance efforts to prevent occupational injuries. The H-5 and H-1 forms of acts are the primary instruments for recording, analysis and development activities to eliminate the main reasons of injuries. The form of the accident's act is developed to make possible to analyze in depth the causes of injuries and on this basis to develop and implement effective measures to reduce it. Information in the act can reveal the real picture of the events and bring benefit only if they are made properly and objectively on the basis of properly conducted investigation of the accident. Even a small inaccuracy, omission and haste in the preparation of an act can lead to the wrong conclusion, and therefore the purpose of investigation will not be achieved.

Experience shows that even at the regional level it is rare where you can find that data to acts of H-1 is processed and analyzed, and the databank accumulates information on accidents. State inspectors also do not pay proper attention for supervision of work, though, according to [2-3] all the primary information should come to them. Because statistics clearly show that most accidents happen every year for the same reasons, under typical circumstances. [2-3]

To develop measures of reducing occupational injuries is crucial timely flow of reliable information about the accidents that have occurred in the workplace. The act of H-5 and the act of the accident of H-1 form, report about accident investigation according to form H-2, as well as annual reports are the main carriers of the knowledge base, as well as the primary statistical documents in the online account and analysis of occupational injuries.

Organization of information flow is adapted to the existing methods [2-3] of data accumulation on injuries. Accordingly, after the preparation and approval at company the acts of forms H-5 and H-1, they are sent by mail to the State Inspectorate for Supervision of Labour Protection. The admission of acts is the main message of the accident, the additional H-2 message is sent after the close of sick leave of injured worker.

Social insurance against industrial accidents and occupational diseases and industrial control offices that monitor preventive measures in specific workplaces should obtain all the initial data.

The timely flow of information on the actual injuries is crucial for solving the tasks of

injury reduction. We can observe that there is a great problem of delays processing and receipts acts from enterprises, which are also improperly designed.

Long delay in the administration acts and total ignoring of this measure or incomplete sending, incomplete, not correct and not an objective mapping of circumstances of accidents in the materials of the investigation do not give an opportunity to discover the real causes of injury and quickly resolve them.

*The aim* of project is to develop a software product for personal computers for the recording of accidents in the food industry. That will give the opportunity to create a data bank of information acts H-1 for further analysis of causes and circumstances of occupational injuries in the food industry and the timely flow of information acts H-5 and H-1 to e-mail for social insurance against industrial accidents and occupational diseases.

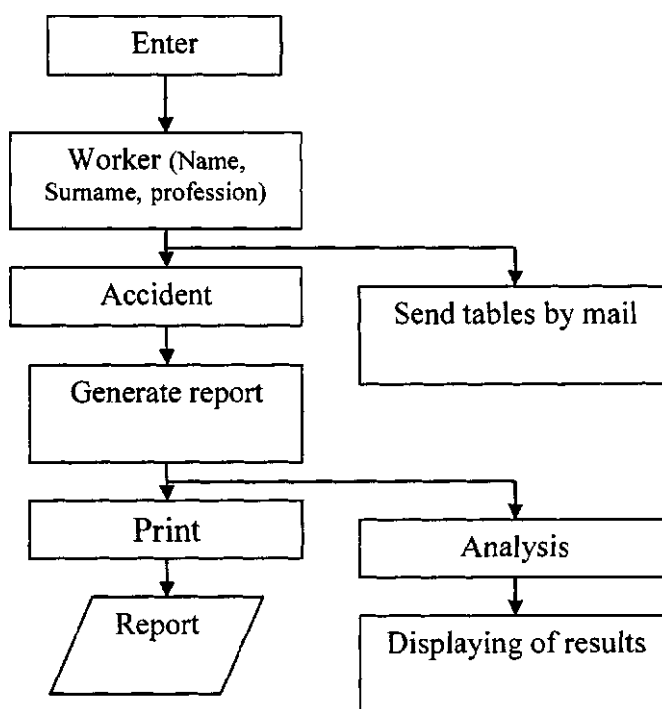
*The aim 2.* Improve the system of safety management for food businesses by developing and improving the automated collection and analysis of information on accidents.

To automate the processing of statistical data and reduce the time to process them, and also for rapid development of preventive measures was developed the computer program «Analysis\_of\_accidents 1.0» in «C++» medium. The program is based on data of accidents according to H-1 form acts [4-5].

System requirements to computer:

OS Windows 98/Me/2000/XP/Vista/Windows 7, 128Mb of memory, 64Mb videocard.

The scheme of the project is presented in Figure 1. The main menu contains the following items: «Enter», «Browsing», «Exit».



**Pic. 1** The scheme of project «Analysis\_of\_accidents 1.0»

To run the program you have to press twice left mouse button (or press the «Enter», which is on the keyboard) on the file «Analysis\_of\_accidents.exe», which brings up the main mem where you enter the initial data for the collection of information on injuries in the enterprise.

The program «Analysis\_of\_accidents.exe» provides for the creation of new records, edi the ones that already exist or remove (buttons "add", which control, "change", "delete").

For the accumulation of information in a database, you must click "add", a window appears in which laid a menu command. When you select a specific command opens a submenu where it operates a general description of the accident. Data for filling are divided into four categories: "Person", "Company", "Terms" and "People and events."

In the category of "person" are included: the personal data of the victim, the time and date of the accident, general information about the accident, including the equipment.

In the category "Enterprise" is shown the information about the enterprise of the employer, including the company where the accident took place, and in accordance with [3, p. 8] must be selected the type of event, cause and type of accident.

The data about the passage of briefings, medical examination, diagnosis, and a sheet of inoperability is entered to the category "Terms". Information about witnesses of accident and offenders of legislation, and also measures to prevent accidents are included to the category "People and events".

After filling out the menu the screen appears that is designed to create a common list of data on victims in the enterprise.

One element of the toolbar is "Generate Report". For this you should select the row with information about the victim and to click on that element, as a result the report H-1 will be generated.

There are three active elements on toolbar: "Open", "Save" and "Print a report". The first element is "Open". This element allows you to upload the needed report. Report files have the extension \*.acr. The second element is "Save". It's displayed a dialog box asking for the input file name in which the report will be saved. And the last element is "Print a report". It's displayed a dialog box for selection of printer.

As a conclusion in the program is offered the opportunity to test injury, getting rates of incidence of injury, severity of injury, malfunction. Such data are necessary to process the quarterly report "Information on injuries at work."

## **CONCLUSION**

The program «Analysis\_of\_accidents 1.0» gives an opportunity to: keep records of accidents in the food industry; create a data bank of information acts H-1 for analysis purposes and circumstances of occupational accidents in the food industry; prepare and publish acts on form N-1 and in a timely manner to email for social insurance against industrial accidents and occupational diseases. If it's necessary, you can expand email addresses; to generate annual reports on Form № 7 TNV, given the information acts H-1.

Therefore, the 1st stage of performing the function "Planning and funding for health and safety" of the system of food safety management companies is to analyze traumatic situations.

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