



"HENRI COANDA"  
AIR FORCE ACADEMY  
ROMANIA



GERMANY



"GENERAL M.R. STEFANIK"  
ARMED FORCES ACADEMY  
SLOVAK REPUBLIC

INTERNATIONAL CONFERENCE of SCIENTIFIC PAPER  
AFASES 2011

Brasov, 26-28 May 2011

## HACCP - NEW TREND OF RISK MANAGEMENT IN AIR FORCE

**Katarína TEPLICKÁ, \* Michal CEHLÁR, \* Stanislav SZABO \*\***

\*Faculty BERG, Technical university of Košice, Slovak Republic

\*\*Faculty of aeronautics, Technical university of Košice, Slovak Republic

**Abstract:** HACCP system can be considered as quality system that is used mainly in grocery industry and during food production. Its importance is constantly increasing and necessity of its implementation results from the law about food and Food code, when main goal is to secure optimal food production and minimizing of health risks. Presented article gives basic view about HACCP system, about way of its implementation in condition of catering establishment, about preparation of necessary documentation and about troubles that are connected with analyzing of various dangers as well as about costs that are necessary for program equipment of the service during establishing of HACCP system.

**Keywords:** hygiene safety, food quality, control points, risk.

### 1. INTRODUCTION

System HACCP is implemented in various airports for example airport **Dalaman in Turkey** owns this system together with system of quality, environment and safety. In the aerservices is this system HACCP necessary.

HACCP (hazard analysis and critical control points) means analysis of dangers and method of critical control points.

**It is system that was developed during sixties in 20th century in USA for National aerial and cosmic agency (NASA) that needed to secure protection of every grocery and nutritional products before mechanical, toxic, chemical and physical contamination.**

HACCP is a tool by which we recognize the risks connected with the production, storage, distribution and the preparation of food, beverages and seasonings and to which we define an inevitable measures to provide their hygienic safety and health harmlessness by usage of control points in which we can use the elements of management.

HACCP system is a more narrowly applied system of securing the quality of products and it is compatible with other systems, as e. g. quality system according to ISO 9001. [2]

The aim of HACCP is exclusively hygienic blamelessness and quality and health harmlessness of foods. Food producing enterprises aim to achieve a certificate for their system of quality and health harmlessness of foods. Food producing enterprises aiming to achieve a certificate for their system of quality according to ISO 9001 or ISO 9002, are bound to work out HACCP system for respective products, processes and phases of production simultaneously observing a certain progression of steps determining decisive points of this system. Introducing of some of the norms of ISO 9000 order need not necessarily mean that the quality system considered and solved with qualification all food security questions.

## 2. BASIC VIEW TO THE SYSTEM HACCP

From the Law about food and its amendments as well as according Food code of Slovakia it results commitment for every producers and persons, that manipulate with grocery or put grocery to the circulation, namely commitment to elaborate and establish to praxis „Proper production practice“ and „System for securing of grocery hygiene control HACCP“ with aim to secure optimalization for grocery, delicacy and drinks production, for satisfying of nutrition need of human organism and for minimalization of health risks. [6] This system is usefull in all services on airport and in on board in airplane. It is world wide standard and it used air company for their services, that they offer in air halls. The main goal of this system is>

- to identify dangerous raw material and grocery from the view of alimental pathogens and toxic elements,
- to find if raw material and grocery are able to support reproduction of microbe,
- to identify possible sources of danger and place of contamination or input to the food chain,
- to state possibility, that microorganism in food will survive or will be reproduced during manipulation with grocery,
- o evaluate relevance and risk of danger as well as health relevance.[1]

HACCP can be used by any organization directly or indirectly involved in the food chain and pharmaceutical industry including:

- Farms, fisheries and dairies;
- Processors of meats, fish and feed;
- Manufacturers of bread and cereals, beverages, canned and frozen food ;
- Food service providers such as restaurants, fast food chains, hospitals and hotels and mobile caterers, catering company;
- Manufacturers of prescription and non-prescription drugs and remedies.

**From the mentioned legislative it results responsibility for every businessman, institution and firm (business aviation) in area of grocery to make every necessary**

measurements, by which he will be secured, that preparation, elaboration, production, packing, stocking, transport, distribution, manipulation and sale of the grocery, delicacy and drinks will be made by hygienic way. New system of production management due to the securing of healthy faultless products have to be elaborated of Food code of Slovakia „Principles of proper production practice“ and legislative of EU about grocery hygiene, that is internationally marked as HACCP. In the business aviation is this support instrument useful for passangers in airplane and very important for food and drinks, that are consumed by board at air plane.

### **System contents following information:**

- organizational scheme, with information about demands and responsibility of workers,
- hygienic regime and sanitary program, service plann with information about grocery flow,
- products and technological process description,
- analysis of possible risks and evaluation of their relevance,
- identification of critical control points,
- establishing of control system for risk handling in individual points,
- stating of corrective measurements and documentation establishing,
- stating of confirmation process and system verification. [1]

## 3. IMPORTANCE OF HACCP

Grocery contamination is very displeasing and it can have also mortal consequences. Contamination outbreak from grocery can damage business due to the loss of client confidence, that can lead to the loss of revenue, lawsuit and unemployment. Moreover legislative of Slovakia demands such system. Technical norm STN EN ISO 22 000 specify demands for management system of grocery safety, that is combination of generally recognized key elements for securing of grocery safety in whole grocery chain till the consumption, as for example: interactive communication, system



"HENRI COANDA"  
AIR FORCE ACADEMY  
ROMANIA



GERMANY



"GENERAL M.R. STEFANIK"  
ARMED FORCES ACADEMY  
SLOVAK REPUBLIC

## INTERNATIONAL CONFERENCE of SCIENTIFIC PAPER AFASES 2011

Brasov, 26-28 May 2011

management, program for support and principles of HACCP.

Grocery safety is connected with risk presence in grocery during consumption. Since in every level of grocery chain the risk for grocery safety can raise, it is necessary to apply sufficient control over it in whole grocery chain. Therefore grocery safety is secured by common afford of every concerned parties, participated in grocery chain. Such organizations of grocery chain are organizations from the point of feed producers and prime producers, through food producers, transport and stock service and subcontractor, till retail trade and catering establishment (including linking with organizations, as for example machines producers, stocking material, cleaning tools, supplementary elements and substances).

### **4. PROCESS DURING HACCP ESTABLISHING**

- 1. step: risk analyse,**
- 2. step: stating of control points CP,**
- 3. step: stating of critical limits,**
- 4. step: stating of effective processes,**
- 5. step:elaboration of corrective measurements,**
- 6. step:stating of confirmation processes,**
- 7. step: evidence, control and regular records actualization.**

HACCP consists from seven basic steps:

1. Risk analysis (to make team HACCP, description of output product, description of production process by the way of diagram, confirming of working place scheme, elaboration of risks list and control measurements). Description of product serves for risk analysis, as well as technological processes scheme and work of the HACCP team. [3]

2. Stating of critical points, in which it is possible to anticipate present risk in grocery, to remove it or to minimize it to the acceptable measure. Decision tree serves for deciding about the point in technological process, that is important from the view of product security and that is common control point.
3. Stating of critical limits in critical points. For every risk controlled in decision control point, that must be maintained with aim to risk anticipating, removing or minimizing to acceptable measure.
4. Stating of effective processes of following in critical control points (here there is stated, who will make it, when, and how often and by what way).
5. Elaboration of corrective measurements (by written way). It is stated corrective measurement for every discrepancy from critical limit with aim to prevent risk rising. At the same time there are stated also every necessary activities, that must responsible worker make and there is stated also the way of documentation for such activities.
6. Stating of confirmation processes, that HACCP system is working (audit, control of critical points, and control of measuring equipments).[5]
7. Elaboration of documents and records, that prove HACCP effectiveness – record about risk analysis, form of the HACCP plan, records from control points monitoring, records about performed corrective measurements, plan for HACCP checking and way of its recording.

HACCP is system that analyses risk and states measurements for its control by this way, that there will be secured safety and grocery health incorruptness. HACCP is orientated more to the prevention than to the

control of final product. HACCP is possible to apply in whole grocery chain from prime production to final consumption and its service can be influenced by scientific risk demonstration to the human health. Safety increasing and grocery health incorruptness and HACCP establishing can be very important convenience of the firms.

HACCP system it demands training of employees in the services, that are using HACCP for example catering service, restaurants, fast foods, air hall, buffets, coffee bars and other services. [5]

### 5. DOCUMENTATION OF HACCP SYSTEM

Direction of European Commission number 93/43/EEC about production hygiene for consumables is expressly stating what elaborated system should obtain. Documentation should obtain following records: [1]

- Service order;
- Determination of production activity and producer tasks;
- Construction of working team HACCP;
- Products description, meat and technological processes description;
- Construction of production process flow diagram;
- Construction of diagram during service;
- Analysis of possible risks danger and evaluation of their relevance;
- Control measurements;
- Stating of critical points ( CP ) ;
- Stating of critical points control (CCP) ;
- Stating of values for critical limits for every CP and CCP;
- Stating of corrective measurements for every CCP;
- Control system for risk handling at individual points;
- Stating of confirmation processes and system verification;
- Training of employees;
- Hygienic regime and sanitary program;
- Disposal solving for catering establishment with establishing of raw material flow and drawing of technological equipment;

- Service and sanitary program;
- Establishment of evidence and documentation .

#### Basic documentation for HACCP

<b>1. Working processes.</b>
<b>2. Technics and technological processes.</b>
<b>3. Production process.</b>
<b>4. Norms for machines and equipments operating and reference to the technological equipment.</b>
<b>5. Hygienic regime.</b>
<b>6. Metrology program.</b>
<b>7. System project for control securing of grocery hygiene.</b>
<b>8. Other commands, directions and prescriptions according grocery producer decision.</b>

#### Contribution of HACCP system for food producers:

- improving of transparency of food production process,
- systematic and regular work performance,
- gradual improvement in accord with clients demands,
- production control in area of prevention, that has influence to the production costs decreasing,
- rationalization of production working processes,
- increasing of food quality,
- increasing of employees work productivity.

#### Conveniences for food consumers:

- increasing of security during food consumption,
- higher protection before health and financial damages,



"HENRI COANDA"  
AIR FORCE ACADEMY  
ROMANIA



GERMANY



"GENERAL M.R. STEFANIK"  
ARMED FORCES ACADEMY  
SLOVAK REPUBLIC

INTERNATIONAL CONFERENCE of SCIENTIFIC PAPER  
AFASES 2011

Brasov, 26-28 May 2011

- higher level of satisfying of the consumers demands,
- lower risk for rising of the danger by contamination, infection etc.

## 6. CONCLUSION

HACCP has been used for testing of final products for confirming of food safety as preventive system of secure grocery production, that had universal application. Whole system had been built by this way, that it excluded or minimized risks to the maximal possible level, since such risks could cause infection, sickness or injuries. Today is HACCP system internationally accepted system and it became international standard and tool for implementation of **System for food safety management according international norm ISO 22000**. HACCP is system, that it will be implemented in area of air force for business air, for airport hall, where are prepared food for passengers, on board in airplane. Its utilization in air force is wide-spectrum. This system is implemented in various airports for example airport **Dalaman in Turkey** owns this system together with system of quality, environment and safety. In the aerservices is this system necessary. The main goal by implementation of this system HACCP is to create team of employees, that they are specific knowledges and skills for food processes. Team HACCP must to cooperate with experts of this system and to prepare records for implementation.

Identification of potentially risks is very difficult process. Training of employess in the air services is important for system functioning. This system HACCP can bring some advtages for air company and their services, because the customers request quality and safety for foods today.

## REFERENCES

1. Kulcsárová, D.: *HACCP*. Diploma work. Faculty BERG Technical university of Košice, 2009.
2. Potkány, M., Hitka, M.: Controlling conception of integrated management with interface on motivation in organization. In *Management in theory and praxis*. Roč.1, č. 3, 2005, s. 42-48, ISSN 1336-7137.
3. Seňová, A., Antošová, M.: Risks valuation as healt hazard and safety of employess as part of life in the firm. In *Mangement in theory and praxis*. Roč. 3, č. 1-2 (2007), s. 30-37. ISSN 1336-7137.
4. Sopóci, M., Nečas, P.: Organizations in permanent changes (or crisis management in education). In *Scientific bulletin of "Henri Coanda" Air Force Academy*. Num.1/2009, p. 104-108. ISSN 2067-0850.
5. Kelemen, M., Nečas, P., Terem, P.: Advanced aerospace management of integrated education and training towards comprehensive security. In *Incas bulletin*. Vol. 2, No. 3 (2010), p. 45-49. ISSN 2066-8201.
6. Socha, L.: *Management system of integreated management*. 1. vyd. Ružomberok : VERBUM, 2010. ISBN 978-80-8084-608-4.