

The security management of the catering services in the international NATO's basis operating in the extreme conditions

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Abstract

The present paper research has as the main objectives to define a specific security catering management in the international Nato's basis which operate in the extreme environmental conditions.

We have designed, for the first time in Romania, a complete security management system for the military staff food services (daily ration packs, contractors & supplies, mobile field kitchen, infrastructure for field meals preservation & transport & distribution), in accord with the particular nutrition needs and international standards applied in the Nato's basis and in the Romanians, as well.

Keywords: N Catering, NATO basis, Security management system, Ready meal package

1. Introduction

The North Atlantic Treaty Organisation (NATO) is a defence alliance between 26 countries from North America and Europe under the North Atlantic Treaty signed on 4 April 1949 [1-2]. Romania is a part of the NATO member since May 2004 [3]. The principal tasks for the Nato Member countries are defence planning, legal issues, civil-emergency planning, and security of information, transforming the defence industry into a security and defence industry, and adapting it to the new security environment. He NATO countries have the obligation to implement the proper security management of food service in the NATO basis [4-6]. NATO basis imposed military and humanitarian support infrastructure to maintain an optimal standard of life and motivation for the military staff from the international field of operations.

The catering services providers with license in the Nato basis are developing Specific Field Catering Programme to provide an answer to new requirements for highly mobile and durable equipment [7].

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2. The Security Management of Catering Service in the defence area

The elements of the security management for the food service dedicated to the military staff are the daily ration packs, the contractors & supplies, the mobile field kitchen, the infrastructure for the field meals preservation & transport & distribution.

2.1 Daily ration Pack

Daily food rations are designed as ready meal package in order to cover the nutrition needs of the military staff during 24 hours. The 24-hour ready meal package contains breakfast, lunch and dinner. The auxiliary of serving the followings: a plastic cutlery set, heating up kit, waters purifying tablets and tissues.

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The items inside each ration are packed in a cardboard box, wrapped in a waterproof and resistant plastic film.

This wrapping protects against the contamination from dust, air, and water. The ready meal package can be kept at the room temperature from 18 to 24 months without any alteration in quality.

The essential elements of the strategically correct nutrition of the Nato military staff are the followings:

- 3200 Kcal per person per day.
- Variety of menus (weekly menu rotation).
- Special requirements assured (diets, religions restriction, vegan).
- Food Safety & Security.
- NATO Standards accomplished.
- Long shelf life at room temperature.

Water for drinking and cooking should come only from approved sources. In an emergency situation, water for washing food, heating insulated food containers, and dishwashing can be obtained from unapproved sources if suitable disinfectants are used. Each military staff should select the cleanest water with the least odor, and then treat the water using individual water purification procedures. Such procedures are limited to disinfecting using iodine tablets, chlorine ampoules, boiling.

Canned and dried foods are still used by many countries in their military ration packs. Their shelf life is at least three years. The cans are evaluated for their robustness and subjected to various drop tests to ensure they can resist at the breakage and bursting during hard handling and heavy transportation.

The meals are pre-cooked and vacuum packaged in an aluminium folio. The meal contents are sterilised for providing a long shelf life.

The food autoclave permits to heat 300g of food or water to 80⁰ C from the ambient room temperature in 10-12 minutes, with a holding time of 45 minutes.

The Self-Heating meal system permit to heat over 70⁰ C a 300 g ready cooked meal away from the base in 12 minutes. The flame-less heater, activated with water, is included in the pack to heat the meal casserole with chicken, Lancashire Hot Pot, Sausages and Beans, Chicken Curry, Golden Vegetables, Meatballs with Pasta in Tomato sauce and Vegetable Curry. The dish, cutlery, serviette and condiments are included in the pack.

Each pack meal contains the 300g cooked meal unit in a pouch, a dish, cutlery set, salt & pepper and serviette and a 45ml sachet of water to activate the special heater. The carton is light to carry and easy to store for convenient disposal.

In the extreme situations there is the possibility to provide the complete eating pack without the dish, for the eating directly from the food pouch, with the spoon provided.

The daily menu package includes the followings groups of food & beverage: dry, fresh and frozen.

A. Dry menu items

Desserts & Pastry & Dry confectionery
Musli /Snacks
Powders
Pasta
Soup
Condiments
Stocks
Condiments and dressings
Canned fruits /vegetables
Fishes
Diet and health food

B. Fresh menu items

Pork-Butchery - Salting - Poultry

- Farm products
- Salty cold cuts
- Poultry cold cuts
- Hams
- Pie
- Smoked chicken, prepared and cooked
- Dry smoked raw products
- Dry salty raw products

- Pork pie
- Sausages, cooked sausages

Fresh Creamery

- Milks
- Pasteurised butter
- Sour cream
- Croissants and pastry dough
- Fresh desserts
- Flavoured farmers cheese
- Plain farmers cheese
- Pasteurised fresh milk
- Fresh sterilised homogenized milk
- Margarine
- Eggs
- Drinking yogurt
- Yogurt with fruits
- Pain yogurt

Cheeses

- Goat cheese
- Blue cheese
- Round goat cheese
- Flavoured soft cheese
- Natural soft cheese
- Grated cheese
- Soft pastes with flavoured or washed crust
- Not cooked pastes pressed
- Grated pressed pastes
- Roquefort cheese

Fruits

- Apple sauce and jellies with fresh fruit
- Fresh fruit juice

Vegetables

- 4th range

Breads & Fresh Pastry Making

- Ordinary breads

Poisson

- Smoked prepared fish

Delicatessen

- Pizza
- Cold appetisers

- Vegetables
- Prepared meals
- Fresh sauces

C. Frozen menu items

Ice cream
Pastry / Desserts
Breads
French fries and potatoes
Vegetables
Herbs
Salty Pies
Flaky crusts
Egg products
Fish
Poultry
Meats / Prepared meals

E. Drinks

Spirit - Brandy & Liquor

Cocktail

- Wine based cocktails
- Red cocktails with alcohol
- Red cocktails with wine

Beer & Cider

- Golden beers
- Foreign golden beer
- Dry cider
- Sweet cider
- Cider non-alcoholic
- Flavoured beers

Champagne & Sparkling Wines

- Dry champagne
- Pink champagne
- Sparkling wine

Mineral Water

- Carbonated table water
- Natural table water
- Carbonated thermal water
- Natural thermal water

Lemonade - Fruit Juice & Syrup

- Tonic water
- Carbonated fruit drink
- Fruit drink
- Cola

- 100% fruit juice
- Fruit juice
- Lemonade
- Nectars juice
- Syrups
- Soda with fruit extracts

Table & Country Wines

- Ordinary dry white wines
- Pink wines brand name
- Ordinary pink wine
- Red wine brand name
- Ordinary red wine

Superior & Fine Wines

- White wine A.O.C.
- White wines V.D.Q.S.
- Pink wines A.O.C.
- Red wines A.O.C.

2.2 Field kitchen Equipment

The mobile field kitchen equipment operates under the quality management system assessed to the quality system standard BS EN ISO 9001:2000.

The field kitchen area should be camouflaged to hinder detection by enemy aircraft, ground forces, or infrared sensors.

Passive measures should include dispersion, camouflage, cover and concealment, light and noise discipline survivability moves, covering vehicle tracks into the field kitchen site, and staggering ration distribution to eliminate congestion of the site.

The range of Military and Emergency Mobile Field Kitchens consist of several different types of section containers and shelters proper with the field kitchen function. Most often they include refrigerated containers, washing containers, catering, neutral table & containers and soft shelters. The expandable containers represent the system, which provide a high degree of ability for fixed, heavy installations.

Kitchen equipment consists of standard field kitchen supplemented with additional required equipment.

The major kitchen components include:

- Field kitchen modular.
- Extendible modular kitchen tents.
- Kitchen, company level field feeding.
- The cooks operate burner units.
- Range outfit/oven assembly field gasoline.
- Ice making machine.
- Refrigeration unit.
- Water chiller.
- Sanitation center.

Waste must be removed from the kitchen area at least daily. Dispose of liquid waste in a soakage pit or trench that is equipped with a grease trap that strains out solid matter and grease. Due to environmental concerns, liquid or solid grease may require separate disposal. Bury, burn, or backhaul solid waste.

2.3 Meal Distribution Management

The distribution management includes the secure storage, transport and delivery operations of the ready to eat meals. Each tray pack contains either 9 or 18 portions.

The field refrigerators and freezers are a part of the containerised kitchens, shelters, barracks or tents for the cold storage of the perishables in good. The refrigerators and freezers can be used as transport units when batteries or electrical connections are made available on the transport vehicle.

For storage of perishables, dining facilities are provided frozen food cabinets, reach-in refrigerators, and walk-in refrigerators.

a. Frozen Food Cabinet. Frozen foods should be stored in a frozen food cabinet.

Packages of frozen foods should be grouped according to size and type. The temperature in the frozen cabinet should be kept between 0⁰F and -10⁰F.

b. Reach-in Refrigerator. The perishable items must be arranged so that has a proper air circulation. All items that impart or absorb odors from other items must be stored separately. The temperature in the reach-in refrigerator should be kept between 32⁰F and 40⁰F.

c. *Walk-in Refrigerator.* Is generally used for storing large quantities of fresh fruits and vegetables, eggs, dairy products, and meats.

Damaged items are discarded and the remainder are stacked on the shelves allowing for proper air circulation. The temperature in the walk-in refrigerator should be kept between 32⁰F and 40⁰F.

The special technical requirements for the cold storage equipment are the followings:

i) Protection against climatic stress

- Extreme temperatures, e.g. tropical or arctic regions.
- Temperature shock, e.g. aircraft and other airborne devices
- High humidity, e.g. tropical regions.
- Aggressive atmospheric conditions.
- Sand and wind, e.g. deserts or industrial settings.
- Water damage by rain or transport over water.
- Sun radiation and UV rays.

ii) Protection against electrical stress by direct or random high frequency interference

- Jamming transmissions.
- Switching operations.
- Lightning strikes.
- EMI from nuclear explosions.

iii) Protection against internally produced stress

- Dissipated heat.
- Radio frequency radiation.
- High voltage conduction.

A commercial unit with 100 BTU/hr that fits in a 6" deep 7U (or larger) covers and runs at 110/220 VAC. At the high-level of performance there is the 8500 BTU/hr system that fits in an 8" deep 9U covers and runs on 28 VDC.

Food transport

Transportation in the theater, fuel, water, ice, waste disposal, and residuals handling must be considered in the security management strategy. The conditions will

range from stable to very mobile, high intensity and austere.

Refrigeration system, water and ice may be limited or not available. Foods packed in cans, bottles, airtight foil, or film wraps, as well as food packaged in sealed boxes or multilayered wrappings may be stored outdoors or in partially protected areas. The contamination will be limited to the outer surface.

The decontamination procedure is by removing the outer packaging or washing /scrubbing the container under uncontaminated running water.

Vehicles used to transport subsistence should be clean, free of moisture, and have pallets to keep subsistence packs off the bed of the truck. The front and rear flaps must be lowered and secured during transport. Subsistence vehicles are not to be used to transport garbage or petroleum products while transporting subsistence packs. Mobile & Flexible insulated boxes and containers are common used for the up to 2 days transport of fresh or frozen ready to eat meals from a central production units to local distribution points from the military operation area.

The 3 in 1 and 2 in 1 steel and **aluminium containers and shelters** (60 x 136 mm) and 4" x 6" (102 x 152 mm) exists in the food chain transport in order to preserve the total quality of the fresh meal.

Meals distribution

Portable & robust food and beverage insulated containers are used for a meal distribution in the secure hygienic requirements & Nato standards. The inner stainless steel liner or pans provide a hygienic and efficient system of good distributions and rigorous portioning.

2.4 The catering personnel

Food service personnel require additional time and assistance in preparing ration packs in extreme cold-weather environments.

The food service personnel will come from contractor personnel, local nationals or US

military personnel from other military units, authorized by the Department of the Army.

Two to three waiters could be used, depending on the number of military to be catered.

One waiter could serve the entree, starch foods and vegetables. One waiter could serve the salads, bread and desserts. One waiter serves the beverages and condiments.

During serving, the section cookers monitor the waiters to ensure that the serving procedures and portion sizes are correct. The section cookers must replenish the serving line, open tray packs, monitor serving sizes, and refill beverage dispensers.

Before serving, the section cookers are responsible for briefing the servers on proper serving sizes and portion control.

3. Conclusion

The security management system designed in the present paper research for the first time in Romania, dedicated to the catering service in the Romanian Nato basis, is

elaborated under the ISO9001 standard for quality management, which conforms to insurance company requirements, and the BS7499 standard.

Special military facilities for eating, drinking, shopping and leisure in the particular manner with national/local influence are recommended for the improving of the military staff life quality from international Nato basis and Romanian, as well.

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