HACCP
in 3 POINTS
& 7 PRINCIPLES

An Overview for
FOOD SERVICE PLANS

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AN OVERVIEW OF HACCP
The Meaning
The History

3 ESSENTIAL POINTS
Sanitation
Temperature
Standard Operating Procedure

7 PRINCIPLES OF HACCP
Analyze
Identify
Prevent
Monitor
Correct
Document
Verify
OVERVIEW – HACCP

HACCP is a system designed to help an SFA identify and avoid potential hazards by creating and using a Standard Operating Procedure as a guideline to provide safe food services, from the moment the supplies are ordered, to the time they are consumed.
OVERVIEW – DEFINITION

HAZARD
ANALYSIS
CRITICAL
CONTROL
POINT

HACCP
APPLICATION HISTORY

NASA 1962
FDA FOR SEAFOOD
JUICE INDUSTRY
ALL FOODS
USDA 1998

DEFINITION:

OVERVIEW — DEFINITION
HACCP was 1\textsuperscript{st} developed to ensure a safe food supply to NASA astronauts during space travel because it used science-based controls to prevent food borne illness. It is still used by NASA to this day.
OVERVIEW – CHALLENGES

INITIALLY: Length of application and the amount of paperwork was even more than now as the focus was on each item. It has since shifted to the process.

NATIONALLY: A slow implementation of required food workers training in basic food safety principles.

INTERNATIONALLY: Emerging pathogens from abroad complicating regulations. Limited training and trainers of a foreign food industry workforce.

OPERATIONAL: Growing industry reliance on chemicals has increased contamination incidents.

INDUSTRIAL: Multiplicity of corporations worldwide saturate the food industry with inexpensive, unfamiliar products, and the government has inadequate resources to validate the safety of these products.
HACCP, 3 Points

- **SANITATION**
  Clean hands, clean prep areas, clean utensils, clean food

- **TEMPERATURE**
  Cold foods cold, hot foods hot, cook to the right temp. hold at the right temp, document the process

- **STANDARD OPERATING PROCEDURE**
  The FSA’s guidebook, created by the facility for the facility,
HACCP, 7 PRINCIPLES

1. Analyze
2. Identify
3. Limits
4. Monitor
5. Correct
6. Document
7. Verify
7 PRINCIPLES, and the Meaning of Each:

- **Analyze**: biological, physical, chemical influences that could affect your product.
- **Identify**: Critical Control Points in supply flow, purchase methods, and consumption.
- **Prevention**: Critical limits at each CCP must be established to enforce prevention.
- **Monitor**: Establish monitoring procedures for each CCP.
- **Correct**: Establish CCP procedures on how to correct deviations.
- **Document**: Record your success at preventing hazards.
- **Verify**: Establish procedures to verify that corrective procedures are working.

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<th>Who</th>
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<td>Who verified a correction?</td>
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<td>When and Where in the CCP did the correction take place and How was it accomplished?</td>
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<td>Establish verification procedures as part your plan so it becomes a routine Auditing process.</td>
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<td>Establish periodic Feedback to all levels of implementation, ask is the Plan working.</td>
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HOW TO IDENTIFY A CRITICAL CONTROL POINT:

At every step of food preparation ask:

Do preventive measures exist at this step with a hazard:
If yes, then it’s a CPP;
If no, could contamination happen at this step?
If yes, is this potential hazard eliminated at the next food preparation step?
If yes, then it’s not a CCP but possibly a CL.
If no, then it’s a CCP.
1st PRINCIPLE, ANALYZE HAZARDS
HOW TO ANALYZE HAZARDS with HACCP

Conduct a hazard analysis along the Critical Control Points.
As an example exercise, follow these food items from the supplier, to your facility, and to your client, using the HACCP 3 points, 7 principles along the way.
ANALYZE HAZARDS ON CRITICAL CONTROL POINTS:
ASSEMBLY OF FOOD FLOW INFORMATION

PURCHASING AGENT:
How food suppliers are selected. Who monitors product recall notification, response and trace back? Gather information on SOPs.

TRANSPORTATION:
How does food get to warehouse?... To schools?

FIFO:
Food rotation specifications

PEST CONTROLS:
SOPs at warehouse & schools. Who is your pest control operator? Prevention of pests...
IDENTIFY COMMON HAZARDS
BY FOOD FLOW

No Cook:

- Temperature abuse during storage or delivery.
- Cross-contamination
- Miss-handling during assembly.
- Miss-handling during service.
- Improper equipment sanitization.
- Lack of food guards.
- Hazards during transportation, if remote service, and / or Lack of temperature controls at remote site.

Same Day Service:

- Temperature abuse during storage.
- Food handling – improper personal hygiene
- Improper sanitization of equipment.
- Potential cross-contamination.
- Improper cooking temperatures.
- Improper holding temperatures.
- Cross-contamination at service line, and Improper cooking food temperatures.
2. IDENTIFY: FOOD FLOW INFORMATION
2. IDENTIFY: FOOD FLOW INFORMATION

- Identify food flow from suppliers and purchasing methods, to consumption
- Identify team members to write the HACCP plan.
- Identify food preparation methods by processing type
- Identify your consumers
MENU ROTATION CYCLES

CYCLES:
Identify food preparation processes based on weekly, monthly, holidays cycles and recipes.

NO COOK FOOD PREPARATION:
Sandwiches, salads, pre-cooked food items pre-cooked commercially food items

COOK–SERVE PREPARATION:
Pizza, spaghetti, grilled sandwiches, breakfast burritos, sausages, bacon, hamburgers.

ADVANCE FOOD PREPARATION:
12 hours or more prior to service: Beans, Crumbled ground beef, stews.

HOLIDAYS:
Corn beef & cabbage for St. Pat’s Day. Stews, posole, or tamales for fiestas.
Thanksgiving Meal: Turkey rolls

FUNDRAISERS:
Catered specifications.
NO COOK PROCESS

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ADVANCE PREPARATION

- Receiving
- Cold Storage
- Thawing
- Portions
- Cooking
- Cooling
- Same Day
- Cold Hold
- Leftovers
- Service
- Hot hold
- Reheat
- Service
Cleaning suppliers

HACCP Plan?Written SOPs?MSDS?

Cleaning Agents

Chemical test strips needs.
Sanitizers: Chlorine, QA, or iodine.
Concentration requirements.
3. PREVENT HAZARDS:
   By Establishing Critical Limits At Each CCP
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By Establishing Critical Limits At Each CCP

Examples of critical limits:

- Cook raw ground beef to a minimum of 160°F.
- Reheat pre-cooked frozen chicken nuggets to a minimum of 165°F within 45 minutes from placing in oven. Pre-heat oven to 375°F.
- Prepare sanitizing solution for wiping cloth buckets to 100 ppm chlorine.
- Dispensing sanitizing solution at automatic dishwasher should be at 50 ppm, but not to exceed 100 ppm.
Example Of Establishing Critical Limits At Your CCP’s
Along Your Food Flow

Identify all the points along the way where things can go wrong with your food product.
EXAMPLE OF CCP’S ALONG YOUR FOOD FLOW

After you I.D. those points then set Critical Limits (tolerance limits) that your product can stay safe within; Transport times, temperature times, employee tardy or absences,
4. MONITOR: Establish Monitoring Procedures
4. ESTABLISH MONITORING PROCEDURES

- To prevent a hazard from happening, critical limits (CL) are necessary at every CCP.

- Someone has to be responsible for the verification.

- The CL must be documented as to how it was met.

- Deviations are documented as to how they were corrected.

- Food safety standards must be verifiably met and documented.
5. CORRECTIVE ACTION
What The HACCP Team should define:
5. CORRECTIVE ACTION

What The HACCP Team should define:

- Establish a HACCP verification schedule.
- Identify an independent authority knowledgeable in HACCP principles and how HACCP plans work.
- Verification of HACCP monitoring procedures should be reviewed monthly by Managers.
- Review at least monthly, that corrective actions follow established procedures in the HACCP plan when deviations occur.
6. ESTABLISH: Standard Documentation
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- Cafeteria workers should be part of the team to determine what forms to use.
- Monitoring forms should be simple to use.
- Forms should have simple instructions on how to use, by whom and when.
- Forms should also document who monitors that CL was met and how often.
- Space to document corrective action.
- Forms should indicate when to turn in for review.
6. ESTABLISH: Standard Documentation

- Records documenting the SOPs
- Time and temperature monitoring records
- Corrective action records
- Verification or review records
- Calibration records
- Training logs
- Receiving logs
7. VERIFY: Establish Verification Procedures
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- The HACCP Team should assist in defining which activities are necessary to determine if the HACCP Plan is valid.

- Is it working as planned? If not, identify what is not working and why.

- Share findings with the HACCP Team.

- If monitoring, seek feedback from the end user.

- Seek suggestions for improvements.

- Is it lack of understanding or training needs?
Credit to Photographer Carl Warner for “Foodscapes”
Notes & References:
Different Versions of HACCP Principles

Develop, document in writing, and implement SOPs.
2. Identify and document in writing all menu items according to the Process Approach to HACCP.
3. Identify and document control measures and critical limits.
4. Establish monitoring procedures.
5. Establish corrective actions.
7. Review and revise your overall food safety program periodically.

General safety considerations
- Prohibit bare hand contact with ready-to-eat (RTE) foods.
- Store chemicals away from food and food-related supplies.

Personnel
- Require hand washing after restroom use, sneezing, coughing, or after performing any cleaning activity.
- Develop a policy for restricting or excluding ill employees from food production or preparation areas.

Product procurement
- Follow recommendations for selecting vendors such as those found in State distributing agency vendor certification procedures.
- Develop buyer product specifications.

Receiving
- Reject all cans with swollen sides or ends, flawed seals and seams, rust or dents.
- Put perishable foods into the refrigerator or freezer immediately.

Storing
- Store all food and paper supplies 6 to 8 inches off the floor.
- Label all food with name of the school and delivery date.

Transporting
- Preheat transfer carts prior to use.
- Limit transport travel time to a maximum of 2 hours.

Holding
- Keep hot foods hot (above 135 °F) and cold foods cold (below 41 °F).

Preparation
- Do not keep food in the "danger zone" (between 41 °F and 135 °F) for more than 4 hours.
- Handle food with utensils: clean, gloved hands; or clean hands. (Bare hand contact with food during preparation should be limited. Bare hand contact with RTE foods should be prohibited.)

Cleaning/sanitizing
- Use clean water, free of grease and food particles.
- Keep wiping cloths in sanitizing solution while cleaning.

Cooking and documenting temperatures
- Record all temperatures when they are taken.
- Use only a clean and sanitized thermometer when taking internal temperatures of foods.

Cooling
- Cool rapidly by storing food in small batches in individual containers: cover loosely so that heat can escape quickly.
- Keep cold foods cold by pre-chilling ingredients for salads.

Reheating
- Transfer reheated food to hot-holding equipment only when the food reaches the proper temperature.
- Use only cooking ranges, ovens, steamers, and microwave ovens to reheat foods. Use hot-holding equipment only to maintain temperature and not for rapidly heating food.
CCP for 3 Types of Cooking

- **For Process #1 – No Cook:**
  - Cold holding or limiting time in the danger zone to inhibit bacterial growth and toxin production (e.g., limiting time would be holding at room temperature for 4 hours and then discarding).

- **For Process #2 – Same Day Service:**
  - Cooking to destroy bacteria and other pathogens
  - Hot holding or limiting time in the danger zone to prevent the outgrowth of spore-forming bacteria

- **For Process #3 – Complex Food Preparation:**
  - Cooking to destroy bacteria and other pathogens
  - Cooling to prevent the outgrowth of spore-forming bacteria
  - Hot and cold holding or limiting time in the danger zone to inhibit bacterial growth and toxin formation
  - Reheating for hot holding, if applicable
GLOSSARY

All of the definitions in this glossary, except those marked with an asterisk (*), have been taken from the Food and Drug Administration document Managing Food Safety:

APPROVED SOURCE: An acceptable supplier to the regulatory authority based on a determination of conformity with principles, practices, and generally recognized standards that protect public health.

CCP: Critical Control Point.

CONTAMINATION: The unintended presence in food of potentially harmful substances, including micro-organisms, chemicals, and physical objects.

CONTROL MEASURE: Any action or activity that can be used to prevent, eliminate, or reduce an identified hazard. Control measures determined to be essential for food safety are applied at critical control points in the flow of food.

CORRECTIVE ACTION: An activity that is taken by a person whenever a critical limit is not met.

CRITICAL CONTROL POINT (CCP): An operational step in a food preparation process at which control can be applied and is essential to prevent or eliminate a hazard or reduce it to an acceptable level.

CRITICAL LIMIT: One or more prescribed parameters that must be met to ensure that a CCP effectively controls a hazard.

CROSS-CONTAMINATION: The transfer of harmful substances or disease-causing micro-organisms to food by hands, food contact surfaces, sponges, cloth towels and utensils that touch raw food, are not cleaned, and then touch ready-to-eat foods. Cross contamination can also occur when raw food touches or drips onto cooked or ready-to-eat foods.

DANGER ZONE: The temperature range between 5 °C (41 °F) and 57 °C (135 °F) that favors the growth of pathogenic micro-organisms.

EXCLUDE: To prevent a person from working as a food employee or entering a food establishment except for those areas open to the general public.

FOOD: Raw, cooked, or processed edible substance, ice, beverage, chewing gum or ingredient used or intended for use or for sale in whole or in part for human consumption.

FOOD ESTABLISHMENT: An operation at the retail or food service level, i.e., that serves or offers food directly to the consumer and that, in some cases, includes a production, storage, or distributing operation that supplies the direct-to-consumer operation (satellite kitchens).

FOOD PREPARATION PROCESS: A series of operational steps conducted to produce a food ready to be consumed.

FOODBORNE ILLNESS: A sickness resulting from the consumption of foods or beverages contaminated with disease-causing micro-organisms, chemicals, or other harmful substances.

FOODBORNE OUTBREAK: The occurrence of two or more cases of a similar illness resulting from the ingestion of a common food.

HACCP: Hazard Analysis and Critical Control Point.

HACCP PLAN: A written document that is based on the principles of HACCP and describes the procedures to be followed to ensure the control of a specific process or procedure.

HAZARD: A biological, physical, or chemical property that may cause a food to be unsafe for human consumption.

Hazard Analysis and Critical Control Point (HACCP): A prevention-based food safety system that identifies and monitors specific food safety hazards that can adversely affect the safety of food products.

INTERNAL TEMPERATURES: The temperature of the internal portion of a food product.

MEAT: The flesh animals used as food including dressed flesh of cattle, swine, sheep, or goats and other edible animals, except fish, poultry and wild game animals.

MICRO-ORGANISM: A form of life that can be seen only under the microscope: including bacteria, viruses, yeast, and single-celled animals.

MONITORING: The act of observing and making measurements to help determine if critical limits are being met and maintained.

NSLP: National School Lunch Program.

OPERATIONAL STEP: An activity or stage in the flow of food through a food establishment, such as receiving, storage, preparation, cooking, etc.

PATHOGEN: A micro-organism (bacteria, parasites, viruses, or fungi) that causes diseases in humans.

PERSONAL HYGIENE: Individual cleanliness and habits.

POTENTIALLY HAZARDOUS FOOD: A food that is natural or synthetic and that requires temperature control because it is capable of supporting the rapid and progressive growth of infectious or toxigenic micro-organisms.

PROCESS APPROACH: A method of categorizing food operations into one of three categories:

• Process 1: Food preparation with no cook step, wherein ready-to-eat food is received, stored, prepared, held and served.

• Process 2: Food preparation for same day service wherein food is received, stored, prepared, cooked, held and served.

• Process 3: Complex food preparation wherein food is received, stored, prepared, cooked, cooled, reheated, hot held, and served.

PROCEDURE: A written method of controlling a practice in accordance with predetermined specifications to obtain a desired outcome.

REGULATORY AUTHORITY: A Federal, State, local, or tribal enforcement body or authorized representative having jurisdiction over the food establishment.

RESTRICT: To limit the activities of a food employee so that there is no risk of transmitting a disease that is transmissible through food and the food employee does not work with exposed food, clean equipment, utensils, linens, and unwrapped single-service or single-use articles.

RISK: An estimate of the likelihood occurrence of a hazard.

RISK FACTOR: One of the factors identified by the Centers for Disease Control and Prevention (CDC) as contributors to the foodborne outbreaks that have been investigated and confirmed. The factors are unsafe sources, inadequate cooking, improper holding, contaminated equipment, and poor personal hygiene.

SFA: School Food Authority.

SEVERITY: The seriousness of the effect(s) of a hazard.

SOP: Standard Operating Procedure.

STANDARD OPERATING PROCEDURE (SOP): A written method of controlling a practice in accordance with predetermined specifications to obtain a desired outcome.

TEMPERATURE MEASURING DEVICE: A thermometer, thermocouple, or other device for measuring the temperature of food, air, or water.

TEMPERATURE: The measure of how hot or cold some physical system is.

TOXIC: Capable of causing injury or death.

UNSAFE: Not safe for human consumption.