

# HACCP *For The Food Service Worker*

**H**azard Analysis Critical Control Point (HACCP) is a systematic approach to food production as a means of assuring food safety. This process is currently under consideration by the regulatory agencies of the food industry. To date, the HACCP system is not required for any food industry. However, seafood processors will be the first to undertake HACCP as their inspection system. Soon to follow will be the red meat and poultry processors. The food service industry will also begin to use the HACCP inspection system.

The need for HACCP arose from public concerns about safety of the food supply. After the highly publicized deaths of children in the northwestern United States, the media carried many investigative programs alleging that the food supply was unsafe. In 1994, two children died of foodborne illnesses in Alabama: one from *E. Coli 0157:H7* and the other from a pathogenic *Salmonella* spp.

As food service workers, our goal is to serve safe, acceptable, high-quality food products. Certainly, if the product contains any life-threatening contaminant, such as *E. Coli 0157:H7*, the product will not be of high quality.

## History

HACCP is a concept developed more than 35 years ago by the Pillsbury Company. Pillsbury wanted to insure that the food consumed by the astronauts would not cause illness or injury. Foodborne illness or injury could result in an aborted mission or loss of life. Symptoms such as nausea, vomiting, and diarrhea (which are the common symptoms of foodborne illness) would be difficult to deal with in an enclosed spaceship.

## Defining The Terms

### **H** stands for Hazard:

Know the potential hazards in your food service facility. A hazard is defined as any biological, chemical, or physical property that may cause an unacceptable consumer risk. From the first step of growing the food product to the end step of consumption, many potential hazards exist. During food preparation, for example, opportunities for contamination exist at every step, from receiving, storing, and preparing to holding and serving. Some of the common and serious hazards in a food service industry facility include:

- Improper hand washing.
- Improper food temperatures.
- Improper cleaning and sanitizing.
- Cross contamination.

### **A** stands for Analysis:

Analyze and examine the flow of food through the system. Begin with purchasing and follow the food through the system until its service to the patron in your facility. Only then can each hazard be placed in its proper perspective.

### **C** stands for Critical:

Ask which processes or procedures are critical to serving a safe food product. For example, how critical is the storage of a dry soda cracker in the prevention of foodborne illness? Not critical at all when compared to the storage of raw ground beef. Therefore, the processes which are important for preventing illness to patrons become the critical ones.

### **C** stands for Control:

Determine how to set controls for these critical hazards to prevent illness to patrons. In the case of raw ground beef, many control points must be set from receiving to serving the finished hamburger to the patron.

### **P** stands for Point:

Establish the point at which critical control begins. A CCP is where control is lost and a health risk can occur. The HACCP system can prevent this loss of control and move the food service industry one step closer to being a risk-free industry.

All processes in a food service facility could be classified as either Critical Control Points (CCP) or Control Points (CP).

## HACCP Steps To Food Safety

HACCP is a systematic approach to food safety, consisting of the seven following principles:

- Assess hazards and risks associated with growing, harvesting, processing, manufacturing, distributing, marketing, preparing, and consuming food.
- Determine CCP required to control the identified hazards.
- Establish the critical limits that must be met at each identified CCP.
- Establish procedures to monitor CCP.
- Establish corrective action to be taken when there is a deviation identified by monitoring a CCP.
- Establish effective record-keeping systems that document the HACCP plan.
- Establish procedures for verification that the HACCP system is working correctly.

## Documenting Proper Preparation Of Food

One way to document the proper preparation of food is by establishing and monitoring CCPs. A flow chart is the best way to review the system and establish CP and CCP (Figure 1).

Another way to document the proper preparation of food is with a time and temperature chart. This technique can be employed in the HACCP system by both users and inspectors. A time and temperature chart shows the food product and its journey through the facility until it reaches the consumer. Between 40°F and 140°F is the “danger zone,” the temperature range where microorganisms live and grow. Between 70°F and 120°F is the critical control range of temperatures. No food items should remain at these temperatures for an extended period.

Figure 1. HACCP Flow Chart For Hamburger Patty Preparation.

Step	Problem/Hazard	Solution/Control	CP/CCP
Purchasing	Contaminated food	From a reliable source: USDA inspected	CP
Shipping/Receiving	Bacteria	Store at 0°F or below during transportation. Store upon arrival within 10 minutes.	CP
Storing	Spoilage	Store at 0°F or below. First in, first out.	CP
Thawing	Bacteria; cross contamination; spoilage.	Thaw at 40°F or below. Use within 24 hours.	CP
Cooking	Bacteria survive if temperature too low	Cook to internal temperature of 155°F; measure temp. with a thermometer.	CCP
Hot Holding	Bacteria	Hold at internal temperature of 140°F. Check product every 2 hours.	CCP
Serving	Bacteria	Serve within 2 hours. No personal contact.	CCP
Storing Leftovers	Bacteria spoilage	Rapidly cool leftovers to 45°F in shallow pans. No personal contact. Use within 2 days.	CCP
Serving Leftovers	Bacteria	Reheat quickly to 165°F. Serve within 2 hours. Discard leftover patties.	CCP

Figure 2 is a time and temperature chart for a hamburger patty, which was taken from the freezer and thawed in the refrigerator. The chart begins with the removal of the thawed hamburger from the refrigerator. The hamburger was cooked to an internal temperature of 155°F. It was placed on a steam table (internal product temperature 140°F) for 2 hours. The only time the hamburger was in the danger zone (40°F to 140°F) was during the short cooking process.

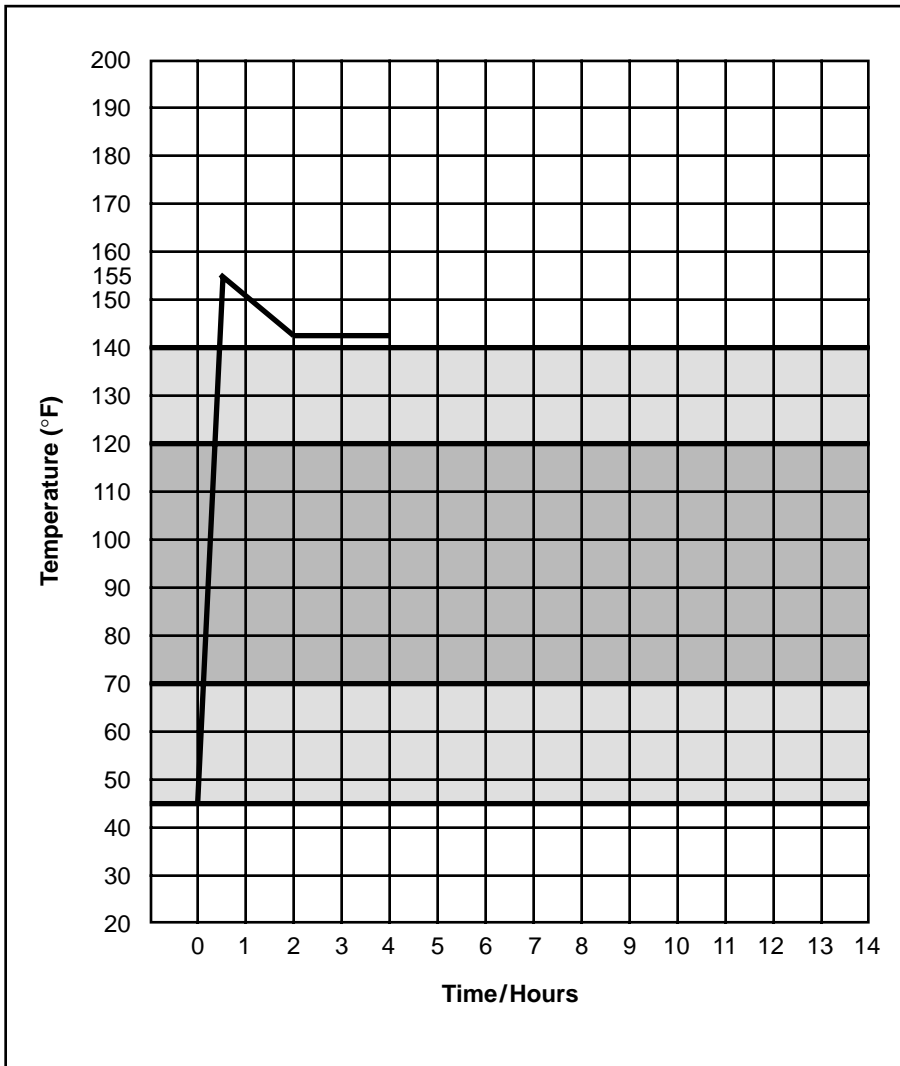
Food service workers can use either of these methods to document

the preparation of food items. They can evaluate each recipe to show the entire process of preparing the food item. Evaluating the recipes can help employees become acutely aware of the problems that may occur during preparation.

## HACCP Inspection Of A Food Service Facility

HACCP can be used in the inspection of a food service facility. The HACCP inspection has been used in New York State since the mid-1980s. Figures 3 and 4 show the forms used

Figure 2. Time And Temperature Plot Of A Hamburger Patty Cooked And Held For 2 Hours.



by the New York State Department of Health. Figure 3 shows both the Time/Temperature Chart and the Product Flow Chart used by the inspector. Inspectors use this form in facility inspections, especially when a food is suspected of temperature problems.

Figure 4 is a two-page form. The inspection starts at the receiving and storing areas and proceeds to the service of a product. Reheating a food product also is monitored. Not every product is inspected by such detailed analysis. However certain foods (shellfish, for example) would always be analyzed for their safety.

HACCP shifts the emphasis of the facility inspection. The traditional inspection system focused on cleanliness of equipment, walls, and floors and on operating temperatures in refrigerators or freezers. The HACCP facility inspection focuses on the processes of preparing and providing safe food. With the traditional inspection system, a food could be placed in the refrigerator and not allowed to cool properly, thus allowing the food to be in the danger zone longer than the recommended time. With the time and temperature charting of a food product, the food's temperature is documented, and the employees can see how quickly a food can reach the danger zone.

## Record Keeping

Keeping accurate records will be a critical part of the HACCP system. Records of time and temperature studies should become second nature to all food service personnel. Other record-keeping forms are available to assist in making HACCP an easy system to use.

## Conclusion

Remember some major points when starting a HACCP system:

- All employees, including management, must be trained to understand the overall working of the program.
- A procedure must be worked out for every process performed. This could be translated to every recipe prepared in the kitchen.
- The end result—a food service providing the safest food possible—takes management, time, and commitment.

Figure 3. HACCP Inspection Form: Time And Temperature Product Flow Chart.

**Hazard Analysis  
Critical Control Point Worksheet**

**NEW YORK STATE DEPARTMENT OF HEALTH**  
Bureau of Community Sanitation and Food Protection

Establishment Name \_\_\_\_\_ Name of Contact Person \_\_\_\_\_ Zip Code \_\_\_\_\_  
 Address \_\_\_\_\_ County \_\_\_\_\_  
 Date: mo. day yr. TIME: Start \_\_\_\_:\_\_\_\_ am/pm End \_\_\_\_:\_\_\_\_ am/pm  
 Product \_\_\_\_\_  
 Ingredients \_\_\_\_\_  
 Sources \_\_\_\_\_

Time	Temp.	Procedure/Observation	Comment/Interpretation

**Time/Temperature (°F) Chart**

**Product Flow Chart**

Name of Inspector \_\_\_\_\_

**INSTRUCTIONS:** Inspector may use this form to collect information for completion of the Hazard Analysis Critical Control Point Monitoring Procedure Report.

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Figure 4. HACCP Inspection Form: Receiving Of Food To Service Of Food.

**Hazard Analysis Critical Control Point  
Monitoring Procedure Report**

NEW YORK STATE DEPARTMENT OF HEALTH  
Bureau of Community Sanitation and Food Protection

HACCP Page 1

COUNTY	DIST.	EST. NO.	MONTH	DAY	YEAR
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THIS FORM CONSISTS OF TWO PAGES AND BOTH MUST BE COMPLETED.

Establishment Name \_\_\_\_\_ Operator's Name \_\_\_\_\_

Address \_\_\_\_\_ County \_\_\_\_\_

(T)(C)(V) \_\_\_\_\_

Food \_\_\_\_\_

PROCESS (STEP) CIRCLE CCPs	CRITERIA FOR CONTROL	MONITORING PROCEDURE OR WHAT TO LOOK FOR	ACTIONS TO TAKE WHEN CRITERIA NOT MET
RECEIVING/ STORING	<input type="checkbox"/> Approved source (inspected) <input type="checkbox"/> Shellfish tag <input type="checkbox"/> Raw/Cooked/Separated in storage <input type="checkbox"/> Refrigerate at less than or equal to 45°F	<input type="checkbox"/> Shellfish tags available <input type="checkbox"/> Shellfish tags complete <input type="checkbox"/> Measure food temperature <input type="checkbox"/> No raw foods stored above cooked or ready to eat foods	<input type="checkbox"/> Discard food <input type="checkbox"/> Return food <input type="checkbox"/> Separate raw and cooked food <input type="checkbox"/> Discard cooked food contaminated by raw food <input type="checkbox"/> Food temperature: More than 45°F more than 2 hours, discard food More than 70°F, discard food
THAWING	<input type="checkbox"/> Under refrigeration <input type="checkbox"/> Under running water less than 70°F <input type="checkbox"/> Microwave <input type="checkbox"/> Less than 3 lbs., cooked frozen <input type="checkbox"/> More than 3 lbs., do not cook until thawed	Observe method Measure food temperature	Food temperature: More than or equal to 70°F, discard More than 45°F more than 2 hours, discard
PROCESSING PRIOR TO COOKING	Food temperature less than or equal to 45°F	Observe quantity of food at room temperature Observe time food held at room temperature	Food temperature: More than 45°F more than 2 hours, discard food More than 70°F, discard food
COOKING	Temperature to kill pathogens Food temperature at thickest part more than or equal to ____°F	Measure food temperature at thickest part	Continue cooking until food temperature at thickest part is more than or equal to ____°F
HOT HOLDING	Food temperature at thickest part more than or equal to ____°F	Measure food temperature at thickest part during hot holding every ____ minutes	Food temperature: 140°F - 120°F: More than or equal to 2 hours, discard; less than 2 hours, reheat to 165°F and hold at 140°F 120°F - 45°F: More than or equal to 2 hours, discard; less than 2 hours, reheat to 165°F and hold at 140°F

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**HACCP Monitoring Procedure Report (Page 2)**

NEW YORK STATE DEPARTMENT OF HEALTH  
Bureau of Community Sanitation and Food Protection

Date \_\_\_\_\_

Establishment Name \_\_\_\_\_

Food \_\_\_\_\_

PROCESS (STEP) CIRCLE CCPs	CRITERIA FOR CONTROL	MONITORING PROCEDURE OR WHAT TO LOOK FOR	ACTIONS TO TAKE WHEN CRITERIA NOT MET
COOLING	Food 120°F to 70°F in 2 hours: 70°F to 45°F in 4 additional hours (check all that apply) <input type="checkbox"/> Product depth less than or equal to 4" <input type="checkbox"/> Ice water bath and stirring <input type="checkbox"/> Solid piece less than or equal to 6 lbs. <input type="checkbox"/> Rapid chill refrigeration <input type="checkbox"/> No covers until cold	Measure temperature during cooling every ____ minutes <input type="checkbox"/> Food depth <input type="checkbox"/> Food load <input type="checkbox"/> Food stirred <input type="checkbox"/> Food size <input type="checkbox"/> Food placed in rapid chill refrigeration unit <input type="checkbox"/> Food uncovered	Food temperature: 120°F - 70°F: more than 2 hours, discard food 70°F - 45°F: more than 4 hours, discard food 45°F or less but cooled too slowly, discard food
PROCESSING SLICING DEBONING MIXING DICING ASSEMBLING SERVING	Prevent contamination by: Ill workers not working Worker hands not touching ready to eat foods Worker hands washed Cold potentially hazardous food at temperature less than or equal to 45°F Hot potentially hazardous food equal to 140°F Equipment and utensils clean and sanitized	Observe: Workers' health Use of gloves, utensils Handwashing technique Wash & sanitize equipment & utensils Use prechilled ingredients for cold foods Minimize quantity of food at room temperature Measure food temperature	If yes to following, discard: Ill worker is working Direct hand contact with ready to eat food observed Cold potentially hazardous food: More than 45°F more than or equal to 2 hours, discard; More than 70°F, discard Hot potentially hazardous food 140°F - 120°F: More than or equal to 2 hours, discard; less than 2 hours, reheat to 165°F and hold at 140°F 120°F - 45°F: More than or equal to 2 hours, discard; less than 2 hours, reheat to 165°F; If yes to following, discard or reheat Raw food contaminated other foods Equipment/utensils are contaminated
REHEATING	Food temperature at thickest part more than or equal to 165°F	Measure food temperature during reheating	Food temperature less than 165°F, continue reheating
HOLDING FOOD, HOT/COLD TRANSPORTING FOOD	Food temperature <input type="checkbox"/> More than or equal to 140°F at thickest part <input type="checkbox"/> Less than or equal to 45°F at thickest part	Measure food temperature during holding every ____ minutes	<input type="checkbox"/> Hot holding potentially hazardous food: 140°F - 120°F: More than or equal to 2 hours, discard; less than 2 hours, reheat to 165°F and hold at 140°F 120°F - 45°F: More than or equal to 2 hours, discard; less than 2 hours, reheat to 165°F and hold at 140°F <input type="checkbox"/> Cold holding potentially hazardous food temperature: 45°F - 70°F: More than or equal to 2 hours, discard; less than 2 hours, serve or refrigerate More than or equal to 70°F, discard

I have read the above food preparation procedures and agree to follow and monitor the critical control points and to take appropriate corrective action when needed. If I want to make any changes, I will notify the Health Department prior to such a change.

Signature of person in charge \_\_\_\_\_

Signature of inspector \_\_\_\_\_

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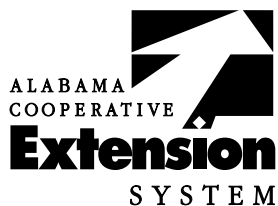
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This publication was prepared by Jean Olds Weese, *Extension Food Scientist*, Assistant Professor; Robin B. Fellers, Assistant Professor; and W. Tim Roberts, *Extension Graduate Assistant*; all in Nutrition and Food Science at Auburn University.

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