

Food Services, McMurdo Station

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Active Divisions/Departments:

McMurdo Area Directorate

NANA Services LLC

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Purpose

This document establishes standards for successful operation of the McMurdo Station Food Service Program.

Scope/Applicability

This procedure applies to all food service personnel at McMurdo Station.

Terms and Definitions

B DFA

Basic Daily Food Allowance

BFC

Berg Field Center

DA

Dining Attendant

DV

Distinguished Visitor

EOS

End of Season report

FIFO

“F irst In, First Out”—rotating inventory to use oldest items first

Freshies

Fresh fruits, vegetables, and dairy products

LDB

Long Duration Balloon (science event)

Main Kitchen

Kitchen located in Building 155

Milvan

A standardized, modular shipping container such as those used on container ships

MSDS

Material Safety Data Sheets

NANA
North American Native Association

NFI
Necessary Food Item

YTD
Year to Date

Responsibilities

The austral summer Food Services Management team consists of the following people:

- 1 Executive Chef from NANA Services LLC
- 1 Kitchen Supervisor from Raytheon Polar Services
- 4 Sous Chefs/Shift Leaders

The austral winter Food Services Management team consists of the following people:

- 1 Food Service Supervisor from Raytheon Polar Services
- 2 Sous Chefs / Shift Leaders

The Executive Chef is responsible for all matters pertaining to day-to-day operations of the McMurdo Food Service and Dining Facility in addition to projects, budgets, and interdepartmental relations. He/she reports to the Food and Beverage Manager of Station Services (when present at McMurdo Station) or to the resident RPSC Area Manager (when the Food and Beverage Manager is not present).

The Kitchen Supervisor acts on behalf of the Executive Chef when he/she is not present at the dining facility, and works closely with the Sous Chefs on a daily basis to ensure the proper functioning of the food service operation. The primary function of the Kitchen Supervisor is to work closely with the Sous Chefs to ensure high-quality, nutritious food is placed on the serving lines. He/she is also responsible for the preparation, presentation and service of all Distinguished Visitor (DV) functions held for visiting guests.

The Sous Chefs are shift leaders. Each one operates one of the three daily shifts in the main kitchen in a hands-on capacity, and is responsible for the following tasks:

- Allocation of all supplies
- Assuring preparation food and service are executed in a safe manner

- Supervision of Production and Prep Cooks on his/her shift
- Set-up and break-down of serving lines
- Supervision of serving lines during meal hours

Sous Chefs are also the first point of contact in the chain of command for most personnel matters pertaining to the dining facility. Sous Chefs report to the Kitchen Supervisor.

One Sous Chef is responsible for the operation of the LDB project kitchen, which serves a midday meal for approximately 75 people, six days per week.

Discussion

Food Service Menus and Operating Hours

Menus

The McMurdo Food Service department uses a 35-day cycle menu. This guarantees a wider variety of dishes and limits the number of times in each rotation that an item appears on the menu. Due to their popularity, some items will be repeated weekly or biweekly within the cycle; e.g., hamburgers, spaghetti, and Mexican meals.

The proper use of a cycle menu allows the food service management team to accurately order the proper types and amounts of food needed to satisfy the community. Once the cycle menu is instituted and ingredients are delivered, the cooking staff should adhere to the menu as closely as possible. Changes to the menu should be held to an absolute minimum. Deviation from the listed menu may occur under specialized conditions, such as when:

- Fresh produce is available from New Zealand
- Special community events are planned (parties, holidays, etc.)
- Unusual conditions dictate menu alterations (power outage, illness, extreme weather conditions, etc.)
- Shortages of primary ingredients occur in the warehouse inventory
- The Executive Chef deems it necessary and is able to give justification

All menu changes, with the exception of utilizing fresh produce, must be approved by the Executive Chef. If this person is not available, the Kitchen Supervisor may authorize changes.

Note When changes to the established menu do occur, it is very important that these are conveyed to the McMurdo television station so the information scroll can be updated in a timely manner. Failure to follow through on this task generates unnecessary criticism from the community since the television scroll is a prime source of information for many residents.

Operating Hours

The McMurdo food service department is a 24-hr/day, 7-days/week operation throughout the summer season. Due to the constant flux of activities, population, work demands, etc., it is essential to maintain standard meal hours to assure that people will be able to plan their meals at the specified times. Meal hours are designed to coincide as closely as possible to the work schedules of a majority of people at the station, and should be of sufficient duration to allow all personnel to be served. There are four meals served each day during the summer and three meals daily in the winter months. Scheduled meal hours are as follows:

Summer

<u>Meal</u>	<u>Monday through Saturday</u>	<u>Sunday/New Year's Day</u>
Breakfast	5:30 to 7:30 a.m.	5:30 to 7:30 a.m. (Continental)
Brunch	N/A	10:00 a.m. to 1:00 p.m.
Lunch	11:00 a.m. to 1:00 p.m.	N/A
Dinner	5:00 to 7:30 p.m.	5:00 to 7:00 p.m.
Midrats	12:00 to 1:00 a.m.	12:00 to 1:00 a.m.

Winter

<u>Meal</u>	<u>Monday through Saturday</u>	<u>Sunday</u>
Breakfast	6:30 to 7:30 a.m.	6:30 to 8:00 a.m. (Continental)
Brunch	N/A	11:00 a.m. to 1:00 p.m.
Lunch	11:00 a.m. to 1:00 p.m.	N/A
Dinner	5:00 to 7:00 p.m.	5:00 to 7:00 p.m.

Note Thanksgiving and Christmas meal hours vary from those listed above and are covered in the section on Holiday and Special Events Menus.

During the summer season, an “early” meal will be served 30 minutes prior to the regularly scheduled meals times for the kitchen staff on duty and all other personnel who, due to work-related necessities, cannot come to the dining facility during the hours listed above. It is critical to the smooth functioning of the kitchen that attendance at these meals remains minimal; therefore, the Executive Chef must approve the issuance of all early meal passes. Once approved, the pass is valid throughout the entire season, and may be requested for inspection at any early meal. Early meals are NOT served prior to continental breakfast, brunch, Sunday dinner, New Year’s dinner, or midrats; however, meals for the kitchen staff will be made available during those shifts. The service line should be fully supplied with all menu items 10 minutes prior to service of the early meal, with the exception of steamed vegetables, which should be placed on the line no more than 5 minutes before service.

Although the midrats meal does not allow for early service, all personnel working the midrats shift must obtain an early meal pass. This secures that they have priority of service between 12:00 to 12:30 a.m. Any member of the community may attend the midrats meal, but will be asked to wait until all people carrying authorized passes have been served first; general service is guaranteed between 12:30 to 1:00 a.m.

In an attempt to expedite the post-meal clean-up process while providing adequate service to all personnel, the service line on one side is typically closed 30 minutes prior to the official end of the meal service. This early closing is subject to change at the discretion of the Executive Chef or Kitchen Supervisor as situations may arise that necessitate the continued operation of both service lines for the duration of the meal. Early closing of one side does not occur during brunch or holiday meal service.

Holiday Meals and Special Events

Holiday Meals

A large part of our traditional holiday experiences in the U.S. centers around food, which gives the food service department a unique opportunity to provide a sense of “home and family” during the holiday season. Meals served on Thanksgiving and Christmas are more elaborate and abundant than at any other time of the year, requiring careful orchestration and cooperation from all kitchen personnel. Many people from the community, anxious to get into the holiday spirit, will volunteer their time and talents to the efforts of preparing such banquets. Each member of the food service staff is encouraged to contribute his or her

creative skills to the preparation and presentation of the food, decoration of the dining facilities, and promoting holiday spirit.

In general, the meal is served on the first day of the two-day weekend. Brunch is served on both days of a holiday weekend.

Special Events

The most common type of special event that occurs during the summer season is that of entertaining distinguished visitors. These guests may be members of Congress, scientists, NSF employees, media representatives, etc. At some time during their visit, a reception or special meal may be held in their honor. It is the responsibility of the Kitchen Supervisor to meet with event coordinators to gather details of what is expected for each function.

Examples of pertinent information include:

- Date, time and location of event
- Number of people expected, including RPSC and NSF attendees
- Type of reception; e.g., stand-up, sit-down, post-dinner vs. meal, finger foods
- Desired number of items to be served; e.g., 2 hot, 2 cold
- Specific determination of which department(s) provide ancillary items, such as beverages, linen, centerpieces, etc.
- If/how many service staff will be required on-site to assist with event

Once such issues have been determined, the Kitchen Supervisor will plan the menu, coordinate staffing, execute the planned menu (with assistance as needed) and serve the food as directed. With the approval of the Executive Chef, the Kitchen Supervisor may schedule kitchen personnel to support the requirements of each function. If those individuals' normal work schedules do not coincide with the timing of the event, adjustments will be made to the schedule to compensate the employees for the extra hours worked.

Note Protocol for other special events, such as those coordinated with the Recreation department, food requests for parties, etc., can be found in "Supporting External Activities and Remote Sites" below.

Shift Schedules

Throughout the austral summer months, McMurdo Dining Facility is a 24-hr/day operation, which makes it necessary to schedule three 10-hour shifts; obviously, some overlap will occur among shifts. Each person is expected to work 9 hours, with a total break time of 1 hour.

This break may be taken all at once, or in 2 or 3 segments, at the discretion of the shift leader.

From October 1 through February 28/29, the cooks' schedule is as follows:

- Early morning shift: 5:00 a.m. to 3:00 p.m.
- Afternoon/evening shift: 10:00 a.m. to 8:00 p.m.
- Midrats shift (staggered)
 - 8:30 p.m. to 6:30 a.m. (Sous Chef)
 - 9:00 p.m. to 7:00 a.m. (midrats ice runway)
 - 10:00 p.m. to 8:00 a.m. (Production)
 - 10:30 p.m. to 8:30 a.m. (Prep)

Note Some positions (e.g., salad cooks, ice runway cook at lunch) may maximize their productivity potential by having schedules that differ slightly from those listed above. Any alterations are at the discretion of the Executive Chef and the Kitchen Supervisor.

The Dining Attendant's (DA's) schedule during the summer months is as follows:

- Early morning shift: 5:00 a.m. to 3:00 p.m. and 6:00am to 4:00pm
- Afternoon/evening shift 11:00 a.m. to 9:00 p.m.
- Midrats shift 11:00 p.m. to 9:00 a.m.

Throughout the winter months of March 1 through September 30, only two shifts are required in the kitchen. The early morning shift consists of one Sous Chef and one Production Cook who prepare and serve breakfast and lunch. The afternoon/evening shift has one Sous Chef and one Production Cook who are responsible for the dinner meal with the other Production Cook and Prep Cook assisting with both shifts and bakery production. The cooks' schedule is as follows:

- Early morning shift 5:00 a.m. to 3:00 p.m.
- Afternoon/evening shift 10:00 a.m. to 8:00 p.m.

The Service Attendant's schedule for the winter months is:

- Early morning shift 5:30 a.m. to 3:30 p.m.
- Afternoon/evening shift 11:00 a.m. to 9:00 p.m.

The schedules listed above apply only to the normal workweek. The holiday season and other events may require some adjustments of the schedules to accommodate increased or otherwise altered production needs. Every attempt will be made to keep such changes to a minimum.

The Executive Chef and Kitchen Supervisor will typically adjust their work schedules to meet the demands of both the community and kitchen personnel. At least one person from the management team should be available at all times during daytime working hours.

Every food service employee is entitled to one day off each week. In addition, an extra day off will be given for each of the following holidays: Thanksgiving, Christmas, and New Year's (providing the community is receiving a day off for this holiday). The majority of the population in McMurdo will have Sunday as a regular day off, as well as being off as a community on the holidays listed above. It is important to understand that few food service employees will be provided that same opportunity. Instead, days off will likely be scheduled on weekdays, while compensatory holidays will be staggered in such a way as to avoid negatively affecting production.

Support of External Activities & Remote Sites

Although the McMurdo Dining Facility, located in building 155, is the primary food service center available within the scope of operations on Ross Island, there are ancillary sites that require significant culinary support. The dining facility and warehouses become, in essence, a commissary for these other locations. It is the responsibility of the Executive Chef to approve all requests for off-premise food, beverages and equipment, requisition all requested items from the warehouses and still maintain adequate supplies for the daily operation of the dining facility. If requests from external sites cannot be accommodated as determined by the Executive Chef, alternate arrangements will be made to provide the highest quality service possible.

Work Center Requests and Parties

The simplest and most frequent requests are known as work center requests, which is the issuance of hot beverages, condiments, paper cups, etc. to various work centers. These supplies are typically issued in bulk on a weekly, bi-weekly, or as-needed basis. Party requests occur when individuals within the community organize private gatherings and wish to serve food at the event present them. The ability to honor such requests is contingent on the availability of ingredients and the amount of lead-time provided, as well as occasional extraneous factors. Once the Food Services Materials person assembles the work center request or party order, it is the responsibility of the requestor to retrieve all items from the distribution point.

Recreation

The Recreation department relies heavily on the Food Service department to provide satellite-dining opportunities in town. The Burger Bar, open several nights per week, requisitions all supplies from the McMurdo Dining Facility, including bakery items. Occasionally special events will arise, such as the annual chili cook-off, which will require substantial support from the Food Service department. Such events are planned and evaluated for practicality on an individual basis.

BFC

The Berg Field Center (BFC) receives regularly scheduled auxiliary supplies from the McMurdo Dining Facility and warehouses. Each facility's manager, allowing sufficient advance notice, and approved by the Executive Chef, should indicate any additional needs.

Field Camps

Remote work sites outside McMurdo are numerous and vary in population throughout the season(s). The BFC food room coordinator collects the field camp food order & sends them to the Executive Chef for incorporation into the food order. The main kitchen and warehouses provide food for camps larger than nine people. The Food Services Materials person is responsible for collecting the items for the field camp 'partial case' orders.

Ice Runway and Williams Field

The Ice Runway is a 24-hr/day operation that remains functional from approximately the first week in September to the first week in December each year. Williams Field resumes airstrip duties from the first part of December until the close of the summer season in late February, although it begins other operational roles in early to mid-November. These two remote locations require the delivery of hot food daily throughout their respective work seasons. Neither facility contains cooking equipment, requiring all food to be prepared in the McMurdo Dining Facility and transported in thermal containers to each site. The food provided mimics what is served in the McMurdo Dining Facility as closely as possible, allowing for deviation due to holding capabilities, the population's taste preferences and other factors unique to these two locations. Once the food is unloaded from the truck it is placed on heated service lines within each dining area. At the Ice Runway, four meals are provided daily. Breakfast is available from 5:30 a.m. until 7:30 a.m., lunch is from 11:30 a.m. until

1:00 p.m., dinner is served from 5:30 p.m. until 6:30 p.m. and a midrats meal is served from 12:00 until 1:00 a.m. Other provisions are transported to both the Ice Runway and Williams Field so an adequate food supply is available 24 hours/day for employees who are unable to come to the regularly scheduled meals. At various times during the summer season, the population at these facilities may fluctuate significantly; during such periods, it is the responsibility of each work center to inform the McMurdo Executive Chef of the population to be served on a daily basis.

Employee Uniform Policy

All Food Service employees will be issued uniforms to be worn only during scheduled work hours while in McMurdo. The uniforms include non-skid soled kitchen shoes, which are obtained prior to deployment. Each cook receives four pairs of black pants, four white chef's jackets and one baseball-style cap. Dining Attendants receive four pairs of black pants, four blue polo shirts and one baseball-style cap. All uniforms are dispensed at the Clothing Distribution Center in Christchurch, New Zealand, at the same time as the Antarctic Survival (ECW) items. One set of uniforms is to be placed in the hand-carry bag for the flight from Christchurch to McMurdo.

Uniforms are to be maintained in a clean, neat and professional manner. Laundry facilities are provided within each dormitory as a convenience and should be utilized as necessary. Report lost or damaged uniforms to your immediate supervisor as soon as possible.

All uniforms are the property of the National Science Foundation (NSF) and should be returned to the Clothing Distribution Center in Christchurch upon redeployment from McMurdo. Staff members who are missing parts of their uniforms will be billed for the items not recovered. If uniforms simply wear out due to normal usage while in McMurdo, the employee will not be charged.

Industry standard kitchen safety shoes are provided prior to deployment from the employee's hometown via a voucher system. The shoes must have a sturdy sole with good traction on the bottoms and are closed heel and toe.

Employee Hygiene

Food-borne illnesses are a constant threat in any food service operation, but many of the potential hazards may be reduced or eliminated by observance of a few simple personal hygiene practices. It is crucial that each employee take responsibility to adhere to approved

food-handling procedures in an effort to minimize risk and provide a safeguard for the rest of the community.

Each Food Service employee is expected to maintain an exemplary level of personal cleanliness at all times. Sanitation is critical to cooks everywhere, but in Antarctica, where we share our living space, eat the same food and breathe the same air, it becomes even more of an issue. Basic sanitation training, such as that provided during the Serve Safe course by Raytheon Polar Services Corporation upon arrival on site, provides the opportunity to understand how to most effectively implement safe practices. In addition, pertinent safety and sanitation topics are addressed in the weekly safety meeting.

The following criteria must be met when an employee enters the kitchen to begin work:

- Employee is physically clean
- Uniform is clean
- Baseball cap in place (and a hairnet, if necessary)
- Fingernails are scrubbed clean
- Hands are washed according to standard procedures
- Hands are sanitized
- There are no open cuts on hands, arms, face or neck

If the tools are not provided for you to meet the above criteria, inform your shift leader as soon as possible.

There is an approved method to washing one's hands when working in the kitchen: Wet hands and lower arms with warm water, lather liberally with soap and rinse thoroughly. A thorough washing process should take about 20 seconds. Once hands are washed, be sure not to touch the knobs controlling the water flow. Instead, dry hands with a paper towel, then use the towel to shut off the water. If washing hands in the restroom, also use the towel to open the door, being careful not to touch the door handle. Remember that there is as much bacteria on the faucet and doorknobs as there was on your dirty hands. Once hands are washed and dried, rub the sanitizing gel (in a dispenser next to the soap) onto your hands, but do not wipe it off.

Hands are to be washed at the following times:

- At the beginning of a shift
- After taking out the trash
- Any time you return to the kitchen area (from breaks, errands, etc.)
- After smoking a cigarette
- After handling potentially hazardous food (meat, seafood, poultry, dairy, etc.)

- After going to the restroom (wash hands in the restroom AND upon return to the kitchen)
- After coughing, sneezing, blowing your nose or otherwise touching your face
- When going from handling dirty dishes to handling/unloading clean dishes
- Any other time hands are dirty and/or potentially contaminated

Any employee with open cuts, sores, lesions or active rashes should report these to their lead (Sous Chef or Lead DA). Once bandaged appropriately, the employee will be given tasks that are unrelated to direct food preparation responsibilities. At the discretion of the shift leader, the employee may be required to receive clearance from the medical staff before resuming food-handling duties.

Clothing and other personal items belonging to food service employees are not allowed in the food preparation or service areas. In addition, these areas are not to be used to change clothes.

Smoking Policy

The McMurdo Dining Facility is a non-smoking area. Tobacco products in any form are not to be used while in the work areas. There are two designated smoking areas within the immediate area where employees may go to smoke when on an approved break. The first is in the smoking lounge, located in the basement of building 155, and the second is on the loading dock at the back entrance of the kitchen. Cigarette butts are to be disposed of in the butt containers provided at each location.

Employees returning from a smoking break (or any other break) must thoroughly wash hands according to established procedures.

Food Service Personnel Safety

Safety is of utmost importance in the kitchen. Knowledge and awareness are the two most effective keys to avoiding careless mistakes and accidents in any food preparation/service operation. Accidents are often due to carelessness and are usually preventable. There are a few key areas where the majority of mishaps occur and, although these are listed in some detail, one must be aware that this is not a comprehensive list of all potentially hazardous areas. Safe practices start with a safe mindset in all aspects of the job.

Weekly safety meetings address the variety of safety issues in the work place. Daily 'tool box' meetings address pertinent safety issues to the production at hand.

Receiving and Storing Supplies

Every employee should know and practice the following proper lifting procedures: Assess the load. Stand over the container/object to be lifted, with feet about shoulder width apart and firmly planted on a level surface. Bend at the knees to lower your body to the level of the object. Ensuring wrists are in the neutral position, get a firm grip, keeping your back straight. Pull the object close to your body and stand up, using your thigh muscles to stand (continue to keep your back straight). Use a normal stride to walk, keeping the object close to your body so as not to strain your back. Be certain you can see over or around your load until you reach your destination, then gently ease the object to its designated area by reversing the procedure used to pick up the object. If a container is too heavy for you to lift properly by yourself, it is extremely important to seek assistance. An employee should never attempt to lift something that they determine is too heavy. A rolling cart should be used whenever available for transporting heavy items.

When storing items in the dry storage area, use a sturdy, carefully braced ladder for shelves over six feet high. All shelves should be tested to ensure they are strong and in good repair prior to stacking items. The heaviest objects should be stored on the bottom shelves, with progressively lighter items on the upper shelves. No items should be stored on the storeroom floor, as this creates obstacles that may cause people to lose their balance and/or fall. Storage shelves are to be a minimum of 6 inches from the floor to allow cleaning underneath.

All storage areas should have adequate lighting, be well ventilated and clear of obstructions. Empty boxes and containers should be disposed of promptly. Floors of storage areas (dry storage, walk-ins, etc.) should be clean and dry; a regular cleaning schedule should be followed, with additional cleaning as required to maintain pre-determined standards.

Do not store cleaning supplies or chemical contaminants in the same area as food items. There are designated areas for non-food items, and strict adherence to using these locations is mandatory. Chemical storage areas are labeled and the MSDS is available in the main kitchen.

Food Preparation

Cooking successfully for a large population requires mastering a wide variety of skills. At McMurdo the training process should allow each employee to obtain some degree of proficiency on operating every machine in the kitchen, as well as developing satisfactory knife skills. The most common injury in the kitchen results from cuts obtained while using a knife. There are a few simple guidelines that, when followed conscientiously, will prevent many accidents.

Knife Safety

- ALWAYS keep knives sharp. If unsure how to sharpen knives, ask your Sous Chef for a demonstration.
- Use the correct knife for the job.
- Use a knife that fits your hands. Some knives are unwieldy for individuals with small hands. Be sure the knife's size is appropriate for your abilities and comfort level.
- Use a Kevlar glove when cutting meats, melons, blocks of cheese, frozen foods or items that require fine motor skills.
- Store clean and sanitized knives in racks when not in use.
- Always use a cutting board and cut on a flat, steady surface. Never attempt to cut foods while holding them in your hands.
- Never try to catch a falling knife. Simply step back and let it fall to the floor, then wash and sanitize before resuming use.
- Keep knives visible if you lay it on the work surface; be certain a towel, other food items, etc do not conceal it.
- Never place knives in the sink for the Dish Washer to clean. Each cook is responsible for washing, sanitizing and properly storing his/her own knives immediately after use.
- Knives should always be carried by the handle, in front of your body, with the blade pointed down and the blunt edge facing out in the direction you are walking. Do not attempt to carry knives when hands are full, and never carry knives in pockets.
- Never use knives to open cans, bottle tops or shipping boxes.
- Never use knives that have chips or nicks at any place along the blade. If you discover a knife in poor condition, immediately bring it to the attention of your Sous Chef.

- Never horseplay with knives.

Kitchen Equipment Safety

- Each food service employee should receive thorough instructions for proper operation and safety measures on all pieces of equipment prior to use. Proper use is outlined in the Job Specific Safety Training manuals.
- Use kitchen equipment only for the specific job for which it is intended.
- Plan the workload so as not to overload the machine.
- Never walk away from a piece of equipment while it is running.
- Never place sharp blades or small parts from a machine in the sink for the Pot Washer to clean. Each cook is responsible for washing and sanitizing these parts and properly reassembling the machine immediately after use.
- Use safety guards whenever they are available.
- Use Kevlar Gloves when cleaning sharp objects.
- When operating a food grinder, use only a wood, plastic or metallic stomper to feed food into the grinder. Never use forks, knives, spoon handles or any other kitchen utensil.
- When operating a tabletop or floor mixer, keep hands and utensils away from moving parts. Always shut the machine off before attempting to:
 - ◆ Change speeds
 - ◆ Change attachments
 - ◆ Scrape bowl with a spatula
 - ◆ Remove bowl from mixer
- Only qualified personnel should attempt to install or make repairs to kitchen equipment.
- Turn off and unplug equipment when not in use and prior to cleaning.
- Immediately report worn or frayed electrical cords, broken equipment or other operational concerns to the Food Service office so repairs can be requested.

Cooking and Baking

Burns and falls are the next most common types of accidents that occur in the kitchen. Constant vigilance is required to prevent as many of these injuries as possible, as most of what happens in the kitchen requires heat and has the potential to create a mess. A few simple guidelines are necessary to maintain a safe environment in all parts of the kitchen and dining areas.

- Have a thorough working knowledge of all pieces of equipment in the kitchen.
- When cooking food on a stove, turn handles of pots/pans parallel to the front of the range; do not let them protrude into the path of foot traffic.
- Avoid crowding the cooking surface of the range, and be certain no utensils are balanced on the edge of the cooking surface or any pots.
- Use only dry hot pads when handling hot items. If hot pads are unavailable, layer several dry kitchen towels and use them as a hot pad.
- Plan where hot containers of food are to be placed prior to removing them from the oven, griddle, deep fryer, or any other cooking appliance.
- Preferably, use a cart for transporting hot foods. If carrying something hot, announce your path to fellow employees by calling “hot food” (or other appropriate warning) as you walk towards your destination.
- Do not stand directly in front of an oven door when opening it. Open doors slowly, close them firmly and avoid slamming them.
- Steam burns can occur from several pieces of equipment, including the steamer, steam tables on the service lines, steam-jacketed kettles, tilt braising skillets, dishwashing machine, pot/pan sanitizing machine, coffee machines, etc. To prevent steam burns:
 - ◆ Never put your face or arms over the area where steam is visible
 - ◆ When lifting a lid from boiling foods, lift the backside first so the steam is forced away from you.
 - ◆ When lifting lids such as that on the tilt-braising skillet, stand to one side and lift the lid from the side, allowing the steam to rise out of the front of the lid.
 - ◆ Do not close the lids on the steam-jacketed kettles, as too much steam builds for safe use when lid is closed.
 - ◆ Stand back from the dish machine and pots/pans machine when lifting the doors or pulling racks from the machine. If necessary, wear heavy-duty elbow-length latex gloves (dish washing variety) for protection.
 - ◆ When changing pans on the steam table lines, use the clip-on pan lifters and dry hot pads; lift the insert straight up.
- Clean up spilled food and splattered grease (e.g., from the deep fryer) promptly and place yellow “wet floor” signs out when appropriate to prevent slips and falls.
- When rounding a blind corner (i.e., one where someone else cannot see you coming if they are coming around the same corner from the opposite direction), loudly announce “corner” before proceeding to prevent collisions.
- Never horseplay or run in the kitchen or dining room areas.
- Report all accidents, no matter how small they seem, to your immediate supervisor.

Serving Food

Serving food is an extension of cooking and baking, and the same potential hazards for burns, collisions, and falls exist. During service it seems as if the activity often becomes somewhat frantic and unnecessarily hurried. Although it is essential to present the food as quickly as possible, it should also be done efficiently, with safety in mind. Employees and guests may slip and fall when spills are not wiped up, if careless mopping leaves pools of water, when shoes with no traction are worn to work, or a myriad of other preventable situations arise. Some cautions are listed below:

- Never run or hurry unnecessarily while carrying pans of hot food.
- Give proper warning (say “corner,” “hot food,” or “behind you”) when passing behind servers and/or bringing hot food replacements for the service lines.
- Change steam table inserts properly to avoid steam burns. Using a spoon or other short handled lever, lift the inserts at an angle, allowing the steam to escape around the edges.
- Clean up all spills promptly and thoroughly, marking any wet floors with a yellow “wet floor” sign.
- Wear shoes with good traction and proper support.
- The area immediately surrounding the inserts on the steam table service lines are hot enough to cause burns and should be wiped clean with a damp cloth that is folded to provide several layers of insulation from direct heat.
- Any time it is necessary to obtain ice from the ice machine, use only the designated scoop or another unbreakable utensil if a scoop is not available. NEVER use a glass or other breakable vessel to scoop ice. If it chips or breaks, the entire machine must be emptied, cleaned, and refilled prior to its next use.

Clearing Tables and Washing Dishes

Muscle strains (particularly back strains), falls, and cuts are the most common injuries that occur while clearing tables and washing dishes. The following safety precautions will help reduce the risk of injury.

- Be certain trays are not overloaded or improperly stacked/unbalanced.
- Sweep up broken glass and dishes rather than picking pieces up with fingers, regardless of how large the broken pieces are.
- Wash glasses, china, and flatware separately.

- If a glass or dish breaks in a sink filled with water, immediately drain the sink and remove the broken object with a cloth folded to provide several layers of protection in addition to dishwashing gloves. Thoroughly rinse the sink and refill with clean water.
- NEVER put knives or sharp machine parts in a sink filled with water. Sharp kitchen knives and machine parts are to be washed individually by the person who last used them (Cook, Baker, DA, etc.).
- When wiping tables clean, do not stretch to the point of discomfort, trying to reach the opposite side. If necessary, walk around to the other side of the table.
- Keep areas around sinks dry. Wash and dry floor and mats daily, or more often if necessary.
- When carrying stacks of dishes, call “corner” when rounding a blind corner, or “behind you” to announce to another employee that you are approaching where they may not see you.
- Quite often, latex-free vinyl gloves become necessary to do a job safely or comfortably. For example:
 - ◆ If metal is exposed on dish/pot racks it is very hot when pulled from the machine
 - ◆ If an employee is sensitive to the detergents or cleaning agents used in the kitchen, wearing gloves may prevent the development of a rash or rough, dry skin
 - ◆ When unloading plates and other very hot dishes from the dishwashing machine
 - ◆ Any other instance wherein an employee might need gloves to complete a task more effectively

Fire Prevention

Fire hazards are particularly critical due to the remote location of McMurdo and the potentially devastating effects a fire could have on the community at large. The threat of fire can be controlled effectively with an organized fire prevention program, including the following precautions:

- The interior and exterior of all ovens and range hoods should be free of grease build-up.
- Griddle grease traps, cooking surfaces and Gaylord exhaust/hood systems should be cleaned after each use.
- Clean exhaust fans, ducts and filters regularly.
- Only qualified personnel are permitted to work with electrical equipment or wiring.
- Report any electrical abnormality (sparks emitted from an oven, frayed electrical cords, etc.) to the Food Service office immediately so it can be reported and repaired.

- Switch box covers should remain intact and closed.
- Every employee is responsible for knowing the location and proper use of all fire extinguishers in the kitchen and dining areas. Report any fire extinguisher that is expended or inoperable to the Food Service office immediately.

Note It is essential to remember that a fire extinguisher is only a first-line defense; it is not a substitute for calling the Fire Department.

Summary of Safety Measures

(See also procedure EH-MSP-223, *Food Service Safety*, for additional details.)

To reduce the potential for accidents/injuries while maximizing each employee's work efforts, make it a priority to practice the following each day:

1. Keep your mind on your work.
2. Watch where you are walking and be aware of the location of fellow employees.
3. Adhere to proper lifting procedures.
4. Maintain a clean, orderly work area.
5. Report any unsafe conditions or broken equipment.
6. Read and heed all safety signs.
7. Select the right tool for the job.
8. Exercise extreme caution when using mechanical equipment.
9. Keep all safety guards in place and in good condition.
10. Report all injuries and seek medical aid as needed.
11. Avoid, and do not tolerate, horseplay in the kitchen and dining areas.

Cleaning Equipment and Work Spaces

Cleaning Pots, Pans and Cooking and Serving Utensils

Cooks are responsible for transporting their dirty pots and pans, large utensils, bussing tubs, etc. to the pots/pans machine. Any residual food must be scraped from the pan: very small quantities and liquids are to be placed into the garbage disposal, while larger quantities (more than 3 or 4 serving spoons full of food) and any foods containing bones are scraped into a food waste garbage bin. The pan is then power-sprayed and stacked in the size/shape appropriate stack prior to passing it on to the DA's. Utensils are placed in the utensil soak bin. The DA's will wash and rinse the pan before running it through the sanitizing pot machine. After running through its cycle, the pot washing machine is to be unloaded and the items are to be air dried before being put away. All clean items should be allowed to air-dry before returning them to their designated areas.

Throughout the winter months, the same process applies; however, cooks are expected to load and unload the machine, as well as putting away clean items whenever possible.

Cleaning Dishes and Flatware

Soiled dishes returned to the kitchen from the dining rooms are first rinsed with a power sprayer to remove residual food. To prevent buildup of food scraps in the dishwashing machine, it is important to spray both sides of plates and all surfaces of other dishes that may be dirty. It may be necessary to use an abrasive pad to scrub dishes with particularly caked-on food. Cups and glasses are emptied of liquid and placed upside-down in glass/cup racks. Sprayed dishes and full racks of cups and glasses are loaded into the machine in the approved fashion, where they progress through wash, rinse and sanitizing cycles. Once they emerge from the other side of the machine, they are removed by a second person that maintains clean hands to prevent contamination of the clean dishes.

Dirty utensils are placed in a container of warm water to which silverware-soaking detergent has been added. When the container is reasonably full of silverware, they are removed from the detergent, sprayed with a power sprayer to further remove food residue and cycled through the dish machine on a flat rack. After the first time through the machine, silverware is sorted by type and placed, eating end up (except for steak knives, which are placed point down to prevent injury) into round silverware holding containers. They are then cycled through the dish machine a second time. Upon the completion of this process, the silverware

is transferred to empty round silverware containers by tilting the full container directly into the empty container, being careful not to touch the eating end of the silverware. The eating end should now be at the bottom of the container and is ready to place on the service lines for patrons to use.

Equipment

Each piece of equipment must be cleaned after every use. Most machines have removable parts that must be disassembled, washed, rinsed and sanitized in the same manner as other dishes, pots, and pans. For soiled segments that are not removable, or are unable to be cleaned in the usual manner, wipe the surface with a lightly soaped wet towel. Once the area is visibly clean, spray with a food-safe sanitizing spray and wipe dry with a clean dry towel.

Bowl attachments for the Hobart mixers, food processors, etc. should be cleaned as soon as possible after use so food does not dry and harden on the surface. Machines whose parts connect in places that come into contact with food (e.g., slicer, blender, food processor, etc.) must be completely dismantled. The small and sharp pieces are to be washed by the machine's operator, and the remaining pieces are sent through the same procedure as the pots and pans. It is the responsibility of the operator to collect all parts and reassemble the equipment as soon as possible.

Hood fans must be cleaned on a regularly scheduled basis to ensure efficiency. The filters within each hood system must be removed and cleaned as well. Frequency of cleaning is dependent on usage; therefore, filters will require more cleaning during the busier summer season than in the winter.

Work Spaces

Counter tops and cutting boards require careful and constant attention to maintain sanitary conditions. When working with extremely perishable items, such as poultry or meat, it is important to wash and sanitize the cutting board every two hours if preparation times extend past this time limit. Bacteria are transferred from the food product to the cutting board and, if left at room temperature for extended periods of time, can contaminate fresh product. One should never use the same cutting board, storage container, knife, etc. when progressing from raw to cooked products. Counter tops also must be washed frequently and sprayed with food-safe sanitizing agent at the end of each task and at the end of each shift (more often as needed).

All floors in the McMurdo Dining Facility and kitchen areas should be swept and mopped at the conclusion of each shift. Where rubber mats are used (pot washing room and dish washing room), the mats are to be swept at the end of each meal. Once each day the mats are to be taken up from the floor and run through the pots machine or dish machine. The machines will then need to be thoroughly cleaned and sanitized to prepare them for washing dishes again.

Food Service Lines

At the conclusion of each meal, the service lines must be cleaned thoroughly. Each shift is held accountable for the cleanliness of the lines prior to leaving the kitchen. All uneaten food that has been placed in the steam tables for service must be thrown away. Once the food is removed, residual water should be drained from the steam table inserts either by scooping it out or pouring from removable inserts. The steam table must be thoroughly wiped down. The sneeze guard over the line also should be wiped clean, using glass cleaner. The floors behind both service lines should be swept and mopped. Other cleaning duties on the service lines are under the discretion of the Sous Chef and will be assigned as necessary.

Dining Areas

There are some cleaning responsibilities in the dining areas that are crucial to the health and satisfaction of the rest of the community. Although the majority of these duties apply primarily to the DA's, other Food Service personnel may be asked to assist when necessary.

- At the conclusion of each meal, all tables are to be cleared of any remaining debris, condiments should be returned to their designated areas and tables should be wiped clean, using a food-safe sanitizing agent.
- All counters and side tables are to be wiped off, paying particular attention to the area containing the toaster (for crumbs) as well as the table holding ice cream toppings.
- Beverage dispensers must be wiped off thoroughly following each meal. The milk dispenser must also have cereal bowls placed under the spigot to catch milk drippings.
- Garbage must be emptied periodically throughout the meal, as well as at the end of each meal.
- Floors should be swept and mopped at least twice daily, or more often as needed.
- Ice cream/frozen yogurt machines must be drained and thoroughly cleaned twice weekly.

These are a few major areas that immediately catch the attention of the customer; however, there are numerous detailed cleaning concerns that remain the responsibility of the lead DA on each shift to assign.

Proper Food Handling and Cooking at McMurdo

The safe, efficient and proper handling of food begins long before it reaches Antarctica, but the Food Service department assumes responsibility as soon as it arrives on the receiving dock from the warehouse. Food handling procedures practiced in McMurdo are not much different from those in other dining establishments; however, it is necessary to be more diligent due to the constant threat of food-borne illnesses and the disastrous effects they could have on the community. For that reason, specific food handling instructions and cooking guidelines are given below.

General Food Handling

A major portion of foods delivered to the kitchen will be frozen. It is essential to have good communication between the Food Services Materials person and Sous Chefs to maintain a schedule that allows sufficient time for each item to thaw and be ready for cooking at the appropriate meals. Foods that are meant to remain frozen should be placed in the freezer within 30 minutes of delivery. Foods to be thawed should be placed in the refrigerated thaw box according to menu needs. No item should be thawed at room temperature. The Food Services Materials person is responsible for safe and timely thawing practices.

Cooked foods that need to be cooled for storage require special attention. Regardless of the type of food, it should be cooled quickly to 40 degrees prior to placing in the walk-in refrigerator. The greatest concerns are for large pots of thick liquid such as chili or cream soups and deep pans of dense items such as casseroles or mashed potatoes, although any food can be hazardous if left within the dangerous temperature zone of 40 to 140 degrees. Larger pots of food should be placed in an ice bath and stirred constantly (or, at least frequently) to bring the temperature to 40 degrees within 30 minutes. If there is too much product to accomplish this goal, divide it between 2 smaller pots and follow the above procedure. For items in deep hotel pans, the idea is to hasten cooling by maximizing the surface area.

Transfer dense items to 2-inch hotel pans and cool quickly in an ice bath before covering and placing in the walk-in refrigerator. Another reason not to place hot food in the refrigerator is that it raises the walk-in's internal temperature, creating a risk for all other food products stored there.

Re-heating foods requires as much care and attention as cooking them properly the first time. Chilled foods must be heated to a temperature of 165 degrees throughout, within a time span of less than two hours, before they are considered safe to serve. Once they have reached that temperature, they may then be held at or above 140 degrees until the end of service. If there are leftovers after an item has been served a second time, they must be discarded.

Fresh produce and dairy products that arrive at the kitchen from New Zealand are placed directly into a specially designated walk-in. Dairy products are to be rotated according to the FIFO system. Produce must be washed thoroughly prior to processing and/or service.

Guiding Principles for Cooking in McMurdo

- An accurately calibrated thermometer is the most important tool a cook can carry. Refer to procedure OP-MSP-007, Calibration of Food Service Thermometers, for calibration instructions and requirements.
- Many times the quality of the final product is completely temperature dependent.
- The internal temperature of meat, poultry, seafood, etc. should be tested at the thickest portion, penetrating to the center and being careful not to touch bone.
- The temperature of food taken from the oven should be tested in several places. Ovens have hot spots and may bake unevenly.
- Test the temperature of every tray/pan of food taken from the oven. The top and bottom temperatures of the oven can vary significantly.
- Side dishes and non-meat entrees should be heated to an internal temperature of at least 150 degrees.

Cooking Vegetables

Fresh vegetables are available intermittently throughout the summer season. While the cooks in the salad preparation area will use most of these, a portion may be set aside for dishes such as stir-fries, where it makes a noticeable impact on the quality of the final product. It is important to cook fresh vegetables just to the tender-crisp stage, using batch-cooking methods.

Frozen vegetables are often overcooked and mushy because the cook does not realize that their product has been either partially or fully cooked prior to freezing, and needs only to be heated through for service. High quality frozen vegetables should retain their proper texture, flavor and color, and it is the cook's responsibility to ensure that this occurs. Frozen vegetables retain a great deal of water that is released when cooked; it is essential to properly

drain vegetables before serving to prevent them from becoming water-logged while setting on the service lines. At McMurdo, there are three primary methods used for cooking vegetables: steaming, boiling quickly, and stir-frying.

- When steaming, fill a perforated pan half-full with vegetables, place in a non-perforated hotel pan and steam just until heated through.
- Steaming is preferred to boiling, but there will be times when the steamer is unavailable and boiling is necessary. Vegetables should be placed in a perforated deep container and lowered carefully into rapidly boiling water until vegetables are just heated; this may require as little as 45 seconds to as much as 5 minutes, depending on the vegetable. Remove from water and drain thoroughly before putting into serving pans.
- Stir-frying vegetables requires a very small amount of oil as they have an internal composition of 70 to 95% water. The key is to heat the oil until it is hot, but not smoking, before adding the vegetables. Keep stirring throughout the cooking process to avoid uneven cooking.
- When adding a sauce to steamed or boiled vegetables, the sauce often becomes diluted and runny by residual water in the bottom of the serving pan.

Vegetables are to be cooked in batches, as close to serving time as possible. This requires a constant line of communication between the people replenishing the service lines and the cook who is preparing vegetables. When in doubt about whether the vegetable is heated through, the cook should taste the vegetable, using a clean tasting spoon each time. This is especially important when preparing bulky vegetables, such as cauliflower, where the outside may feel hot to the touch, but the inside remains frozen.

Vegetables for Ice Runway or William's Field are prepared on site to ensure the freshest product possible. The steam tables at each facility will maintain the proper temperature throughout the meal's service.

Cooking Meats

Slow roasting is the method that is to be used for cuts ranging from small tenderloins to steamship rounds; only the cooking time will vary. Slow roasting requires proper advance planning, as it will require a greater amount of time to reach the desired results, but the benefits include a moister, more flavorful, tender piece of meat. The yield will also be greater, as lower heat creates less shrinkage. To be specific, the oven's temperature should be set no higher than 275 degrees without the fan, or 225 degrees with the fan running.

The following temperatures are what the thermometer should read when the meat (beef, lamb, and veal) is removed from the oven. Meat should be allowed to set, loosely covered, for 15 minutes before carving. During this time the temperature will rise approximately 10 degrees further and the juices will return to the interior of the meat.

Doneness	Oven Temp. (F)	Internal Color	Internal Temp. (F)
Rare	250 degrees	Reddish-pink	115 to 120 degrees
Medium-rare	250 degrees	Pink	125 to 130 degrees
Medium	250 degrees	Pink/brown	135 to 145 degrees
Well-done	250 degrees	Brown/gray	150 to 160 degrees

Meat should be cooked in batches (progressive cooking) when possible. Once sliced for service, it should be held in a warmer at 140 degrees.

Pork should be handled a bit differently than beef, lamb, or other red meats. To roast it properly the oven temperature should be set at 300 degrees with the fan running, or 350 degrees without the fan. It is necessary to cook pork to an internal temperature of 150 degrees to destroy the parasite that causes trichinosis. Due to the higher internal temperature requirement, it is critical not to overcook pork or it will be dry and tough. Once the meat reaches 150 degrees, remove it immediately from the oven, let stand (as for meat), slice as needed and serve.

Cooking Poultry

The most common types of poultry served in McMurdo include chicken, turkey, duck and Cornish game hens. In general, the same principles of cooking apply to poultry as those given for meat. The oven temperature should be set no higher than 325 degrees, without the fan running, and the final internal temperature of poultry should be 165 degrees. On occasion, chicken will be deep-fried. The same internal temperature applies, regardless of the cooking method. Turkeys, when cooked in the whole state at 325 degrees, require approximately 15 to 20 minutes baking time per pound of turkey. Other poultry varies so widely that no approximate times can be given. When roasting duck, the skin should be pierced in several places around the leg joint, and then the duck should be placed on a rack in the pan to allow the grease to drip down as it roasts.

Cooking Seafood

Seafood has few specific guidelines, as the variety, thickness and cooking methods are incredibly diverse.

The guiding principles for cooking seafood are:

- Cook to an internal temperature of 145 degrees for 15 seconds
- Cook quickly, using high heat, to avoid drying
- Cook in batches, to maintain freshness, proper texture and moistness

Seafood requires careful attention, proper technique and a good deal of practice before most cooks feel comfortable preparing fish in such a way as to achieve an optimal product.

Vegetarian Entrees

Vegetarians account for approximately 15 to 20% of the population at McMurdo at any given time. Many non-vegetarians will frequently opt for the vegetarian entree; therefore, one vegetarian entree will be prepared at each meal. It is not possible to meet the needs of vegans (strict vegetarians who eat no animal products, including eggs and dairy), but all other categories of vegetarians will find sufficient variety to satisfy their nutritional needs.

There is a designated vegetarian cook on the early morning and afternoon/evening shifts during the summer months. It is important that the cooks recognize that, although they are not handling meat products, there is still a danger of food-borne illnesses occurring in vegetarian fare. Ingredients such as tofu, eggs, cheese, etc. are high protein and contain high moisture content, the two criteria for classifying a food as particularly hazardous in the food preparation arena. The same caution must be taken when preparing vegetarian items as when producing meat dishes.

Sauces

Sauces and gravies are integral parts of the menu in McMurdo. Many entrees and side dishes will have a sauce inherent to their preparation (e.g., chicken cacciatore). If one entree contains sauce, it is important to provide an alternate entree without a sauce. If possible, make the sauce(s) for an entree available in a separate spot on the service line so the customer maintains the option of using the sauce.

Ordering, Delivery, Warehousing, and Rotation of Supplies

Most food supplies in McMurdo are purchased in the United States from various vendors who must meet specific criteria for quality and consistency. These items are consolidated in California at Port Hueneme, where they are loaded onto a ship and sent directly to McMurdo

station. This annual delivery arrives early February, near the end of the summer season. During ship off-load, milvans are loaded with supplies and delivered to the appropriate warehouses. Warehouse personnel record the contents of each milvan, re-supply the warehouses, and establish a rotation system to utilize any older products before issuing new items.

Warehouse Organization

Food inventory at McMurdo is stored in one of four locations:

1. Building #164 is a freezer that stores items that must remain frozen at all times to maintain quality.
2. Building #176 is an unheated warehouse that stores dry items with lower water content that will not degrade if subjected to freeze/thaw cycles.
3. Building #120 is a heated warehouse that stores wet and dry items requiring some degree of heat to prevent damage to their contents and containers due to freezing temperatures.
4. Building #155, while not a warehouse, houses the dining facility and maintains one to two weeks of inventory from the three categories listed above; items are stored in walk-in freezers, walk-in and reach-in refrigerators and a dry goods storeroom.

During the austral summer, fresh produce and dairy products are purchased weekly and flown directly from Christchurch, New Zealand, on a space-available basis. They are delivered directly from the airfield to Building #155 and stored in a dedicated walk-in refrigerator.

Order and Delivery

The Executive Chef or Kitchen Supervisor places an order with the warehouse for all items required to complete the menu items for the following week. A lead-time of two days is necessary to process the order and organize delivery in a systematic fashion. Delivery of goods generally requires two days during the summer months, and one day in the winter. During the summer it is the Food Services Materialsperson's responsibility to receive and put all items away in an orderly fashion; in the winter, this responsibility falls to the Food Service Supervisor.

Rotation of Stock

“First In, First Out”, known as FIFO, is the directive that guides all food issuing systems in McMurdo. Older stock is placed in front of new stock so it will be delivered and issued first, both in the warehouses and dining facility. This system ensures minimal waste and maximum quality, particularly where highly perishable products are concerned (e.g., produce). It is the responsibility of each person along the line of ordering, delivery, and issuing to practice FIFO.

References

Hand Washing Policy

Kevlar Glove Policy

Kitchen Equipment Instructions

EH-MSP-223 *Food Service Safety*

OP-MSP-007 *Calibration of Food Service Thermometers*

OP-M-057 *Safety Training Tracking*

OP-M-201 *Uniform & Grooming Standards*

Records

McMurdo Food Service information is reported in the weekly station situation report (SITREP), monthly metrics, and End of Season reports.

Record Identification, Format, & Owner	Active Location Storage, Protection, & Retrieval	Facility Storage, Protection & Retrieval	Retention Time (Active and/or Facilities Storage)	Ultimate Disposition
Temperature Logs (paper checklists) available from the senior on-site Food Services representative	Food Services management office	N/A	Active: two years. Facility Storage: N/A.	Recycle paper

Attachments, Appendices

None.