CHAPTER 3

FOOD SAFETY PRACTICES

INTRODUCTION

0301. Food hygiene includes all practices, precautions and procedures involved in:

a. Protecting food from the risk of biological, chemical or physical contamination.

b. Preventing any organisms multiplying to an extent that would expose consumers to risk or result in premature decomposition of food.

c. Destroying any harmful bacteria in food by thorough cooking or processing.

0302. Benefits from high standards of food hygiene include:

a. Reduced risk of food poisoning, foreign body contamination and spoilage.

b. Compliance with MOD and legal requirements.

c. Economic advantages, including increased shelf life and reduction of waste.

d. Consumer satisfaction and enhanced reputation.

e. Increased morale of personnel.

HAZARD ANALYSIS CRITICAL CONTROL POINT

0303. Article 5 of Regulation (EC) No 852/2004 on the hygiene of foodstuffs refers to *Hazard Analysis* and Critical Control Points (HACCP). HACCP is based on seven principles, detailed at Annex A to this chapter and are summarised below:

a. Identifying any hazards that must be prevented, eliminated or reduced to acceptable levels.

b. Identifying the critical control points at the step or steps at which control is essential to prevent or to reduce it to acceptable levels.

c. Establishing critical limits at critical control points which separate acceptability from unacceptability for the prevention, elimination or reduction of identified hazards.

d. Establishing and implementing effective monitoring procedures at critical points.

e. Establishing corrective actions when monitoring indicates that a critical control point is not under control.

(f) Establishing procedures, which shall be carried out regularly, to verify that the measures outlined in subparagraphs (a) and (e) are working effectively.

(g) Establishing documents and records commensurate with the nature and size of the food business to demonstrate the effective application of the measures outlined in subparagraphs (a) and (f).

0304. In order to meet the requirements of HA across the MOD, a practical guide for the MOD has been produced, based on the principle that there are four main methods of preparing food. The guide, *Hazard Analysis - The Four Line Method*, is at Annex B to this Chapter, which is to be used as a template in all Service establishments. Universally recognised Critical Control Points (CCPs) have been identified; however additional Control Points or Critical Points may be applicable in each case. This will be entirely dependent on the type of catering function and the supporting infrastructure. When preparing individual HA profiles, units are advised to consider the following definitions in order to determine the type of risk that applies at each stage of food preparation:

a. Control point – specific stages in those operations where food hazards i.e. contamination may occur.

b. Critical point – control points which are considered critical points where the hazard must be controlled to ensure that it is eliminated or reduced to a safe level.

c. Critical control point – is a critical point in the process where a specific hazard must be controlled on the basis that no further process will adequately eradicate that hazard.

0305. Written records are also important in establishing a Due Diligence defence under Regulation 11 of the Food Hygiene (England) Regulations 2006 HA includes the principles of:

Critical Points and the Control of those Critical Points. In this document the term Hazard Analysis (HA) will be used, but this is taken to be synonymous with HACCP.

0306. Article 5 of Regulation (EC) No 852/2004 states “Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on HACCP principles”. This Article is designed to make food business operator’s focus on the activities critical to food safety and to find ways of controlling them.

0307. The systematic analysis of each individual food item would result in a heavy burden for most MOD catering operations and would be impractical to implement. An approach, that considers the catering operation step by step, from supply through to consumption, is achievable, effective and forms the basis of food HA in the MOD. The HA approach to ensuring food safety and hygiene is intended to give a clearer focus on the controls that are important to Service caterers to ensure that safe food is provided.

0308. Where catering is provided by contract, the contractor is to use a HACCP system that meets legislative requirements or adopt the Four-Line Method. Specialist advice, through the Chain of Command may be obtained from DFS Team..

SUPPLY OF FOOD AND WATER

0309. The Regulation (EC) No 852/2004 Chap IX states that no raw materials or any other material used in processing products, if they are known to be, or might reasonably be expected to be, so contaminated with parasites, pathogenic micro-organisms, or toxic, decomposed or foreign substances, to such an extent that, even hygienically applying normal sorting and/or preparatory or processing procedures the final product would still be unfit for human consumption.

0310. Delivery Monitoring. Routine checks must be made on deliveries of food for signs of damage, contamination and the presence of pests. The general condition of the food is to be checked, together with more specific checks such as date marks (Best Before and Use By) and temperature. Unfit food or food past its “Use By” date must not be accepted and is to be immediately returned. Temperature monitoring should be conducted at the time of delivery and should form part of the quantity & quality check. For chilled and frozen foods, checks are to be made that the food is delivered at the correct temperature (less than 8^{o}C for chilled and colder than -12^{o}C for frozen). The vehicle temperature printed record, if provided, must now be attached

to the Price Advice Note (PAN)[1] or the temperature recorded on the PAN. The temperature of a random selection of stock items should be recorded directly onto the PAN. For bulk stock "between pack" temperatures are to be taken using a between-pack probe and recorded directly onto the PAN. A note stating "Quality & Date Coding Checked" is to be hand written onto the PAN. A commercially produced ink stamp could also be utilised for this task (example below).

Quality & Date Coding Checked Name: Sig:

0311. Potable Water Supply. It is essential that galleys and kitchens be supplied with potable water for the purposes of food production purposes (including ice and steam) and the washing of food, food storage and preparation surfaces, food equipment and hands. Normally potable water will be supplied direct from a water undertaker but if supplied from private sources, such as local bore holes, this source must comply with current UK water legislation. (Note: that water softeners and water filters installed in catering areas should be maintained in good condition so that they do not contaminate potable water).

FOOD STORAGE

0312. The Regulation (EC) No 852/2004 requires food products and ingredients to be stored in food premises in appropriate conditions, designed and maintained to prevent harmful deterioration and to protect food from contamination.

0313. Dry Provisions Storage. These storerooms are to be kept clean and orderly to minimise the potential hazards from "foreign bodies" and to prevent the harbourage of pests. Where practicable these stores are to be proofed against pest ingress. Part used packs are to be resealed adequately to prevent contamination. High ambient temperatures (above 13^{o}C) and high humidity are to be avoided. Dry goods should be stored on suitable racking raised off the ground.

0314. Chilled Storage (<8^{o}C). Cold rooms and refrigerators are to be kept clean and tidy. It is the responsibility of the Catering Manager to raise the appropriate request if refrigerated space is considered inadequate. Best Practice guidance indicates that the ideal operating temperature of a refrigerator is 5^{o}C or cooler[2].

0315. Frozen Storage (-18 to -21^{o}C). The operating temperature of a freezer is between –18^{o}C to –21^{o}C; this temperature range is to be strictly adhered to. To ensure the maximum operating efficiency of a freezer it is to be regularly defrosted as well as being kept clean and tidy at all times.

0316. Satisfactory storage is essential if a galley/kitchen/mess is to serve clean and safe food. This should include routine turnover of stock and checks of Use By and Best Before Dates (BBD). There are four main groups of foods that require differing storage conditions. The groups are as follows:

a. **Fresh Fruit and Vegetables**. These may be contaminated by soil bacteria and are to be stored away from other foods in a cool area, with adequate ventilation, preferably refrigerated at a temperature appropriate to the product.

[1] Where reference is made to a Priced Advice Note; this also means any other form of Invoice or Delivery Note
[2] Industry Guide to Good Hygiene Practice: Catering Guide

b. **Dry Foods** (including canned foods, cereals and flour). These are to be stored in dry, well-ventilated rooms (ideally at 13^{o}C). Food is to be put on racks, shelves or pallets off the floor.

c. **Frozen Foods.** These are to be stored in a freezer as soon as they are delivered. Frozen foods are to be used within 1 month or in accordance with manufacturer's "best before" dates. 'Kitchen prepared' chilled foods that are subsequently frozen are also to be used within 1 month. For specific cook-chill / cook –freeze operations refer to Annex D of this chapter.

d. **Perishable Foods.** Perishable food temperatures in a refrigerator must not exceed the legal limit of 8^{o}C (see paragraph 0324 for Temperature Control and Monitoring). Such food includes chilled dishes, meat, poultry, eggs, cooked meats and vegetable dishes, prepared salads, soft cheeses, sandwiches, fresh pasta, low acid desserts, smoked or cured meats, fish and dairy produce. Best Practice advice, is that chilled foods are to be used within 48hrs. Food that is spoiled or past its "Use By Date" must be removed from food rooms and appropriate action taken prior to disposal. Broken packaging must be avoided.

0317. **Food Displays/Serveries.** Food displays and serveries should be set at the correct temperature with adequate time allowed for the equipment to achieve target temperatures. It is good practice to have sneeze screens attached to hot and cold food displays to minimise the risk of contamination of food. The handles of utensils should not contact food; this can be achieved by using utensils with longer handles than the service containers.

CROSS CONTAMINATION

0318. Cross contamination is the process whereby pathogenic bacteria present in raw food, such as meat, poultry, and vegetables, come into contact with ready to eat food.
This contamination can be either direct i.e. through contact with surfaces, equipment, splashes, drips, utensils, hands and cloths, or indirect via pests, food handlers, visitors or air supply (flowing from high to low risk areas).

0319. To prevent cross contamination, raw and ready to eat foods are to be kept apart. Good management planning of workflow through the kitchen can assist in this. The flow of waste is also to be considered, along with raw products and prepared food. Additionally, it is to be ensured that:

a. Where possible, there are separate designated preparation areas for raw and cooked foods. If, due to limitation of space, preparation surfaces are used for both high and low risk foods then these activities must be separated by time (ideally low risk foods prepared first). Preparation surfaces must be thoroughly cleaned and disinfected between the two operations.

b. If raw and cooked food is to be stored in the same refrigerator, raw foods are always to be stored (and adequately covered) below cooked or salad foodstuffs.

c. Food handlers always wash their hands between handling raw and cooked foods and change their protective clothing once heavily soiled.

d. Separate colour coded cutting boards (red for raw meat, blue for raw fish, green for fresh fruit, salad and vegetables, white for cooked foods) and colour-coded knives are used (details of NSNs for these items are contained in JSP 308). Always thoroughly wash and disinfect cutting boards and knives in between and after use.

e. Separate machines for raw and cooked food are used, or slicing and mincing machines are thoroughly cleaned and disinfected between raw and cooked food. If separate machines are not available, cooked food must be prepared before raw food.

f. All food is kept in covered, dated and labelled containers during storage and before service.

g. **Storing and Cooking with Eggs.** Some eggs can contain salmonella bacteria inside or on their shells so care must be taken with their use. They are to be stored in a cool dry place or refrigerated, with exterior packaging removed and kept away from other foods. All egg dishes are to be served immediately or cooled quickly and chilled. Commercially pasteurised egg products should be used in preparation of any recipe that is served uncooked or partially cooked. This includes mayonnaise; béarnaise and hollandaise sauces, some salad dressings, ice cream, icings and tiramisu.

h. **Washing of Fruits and Vegetables.** All fruits and vegetables should be washed in potable water before use. It is recommended that when fruits and vegetables are purchased locally overseas, they are to be immersed for 30 minutes in water containing either of the agents listed. The items should then be rinsed to remove taste of disinfecting agent:

(1) Calcium hypochlorite granules – apply manufacturer's instructions.
(2) Milton: apply manufacturer's instructions.
(3) Iodine; when approved for use by medical authority

DEFROSTING FOOD

0320. It is essential that frozen meat and poultry are thoroughly thawed on raised perforated trays or racks, or if unavailable in a designated defrosting area, or ideally in a defrosting cabinet. Frozen vegetables must be cooked directly from frozen.

COOKING

0321. It is essential that food is cooked thoroughly to destroy any bacteria on or within it. Food is to be cooked to a core temperature of 75°C[3] checked with a calibrated digital probe (disinfected with bactericidal wipes). It is important that food such as rolled joints, thick meat probing, and chicken are cooked to 75°C at its thickest part. Thin meat foodstuffs such as bacon cannot be easily probed and will require a visual check to ensure that there are no uncooked areas and that juices run clear.[4] There will be occasions when advance food preparation is required for some "made up" dishes i.e lasagne. Personnel are to ensure that all the temperature criteria for cooking and chilling food is adhered to and recorded on the Advance Food Preparation Record at Appx 2

CHILLING FOOD

0322. When chilling cooked food, it is essential that the food be cooled as quickly as possible passing through the recognised Critical Zone[3], (63°C down to 5°C) within 90 minutes and subsequently stored in a refrigerator at 8°C or less. In terms of Best Practice achieving a core temperature of below 5°C[3] would reduce further the likelihood of pathogenic bacteriological multiplication and therefore should be achieved where possible. (These requirements refer to the temperature of the food, not the air temperature of the equipment). If the target temperatures are not achieved food is to be discarded. The chilling of food to a recognised safe temperature may be achieved using the following methods:

a. Break food down into clean shallow trays and cover.

[3] Industry Guide to Good Hygiene Practice: Catering Guide
[4] Temperatures are indicative of best practice and for some foods only. For example, some cuts of meat may have no significant contamination in the centre, and cooking to temperatures below 75°C (rare) is acceptable provided the meat is adequately sealed and care is taken to avoid cross contamination. The following produce, for example, should not be served rare; pork, poultry, rolled joints, burgers etc.

b. Blast chill to below 'Danger Zone' or cool initially to a low ambient temperature.

c. Store in a refrigerator.

REHEATING FOOD

0323. It is advised that the re-heating of cooked foods is avoided, but if this is not possible it must only be re-heated once and the following steps are to be taken:

a. Ensure that the food reaches a core temperature of 75^{o}C for at least 2 minutes. (In Scotland it is a legal requirement for the centre of the food being re-heated to reach 82^{o}C for at least 2 mins).

b. Use digital probe thermometers to check the temperature at the centre of the food. (Probes are to be disinfected using bactericidal wipes before and after use).

c. The food is to be served and consumed as soon as possible.

d. After re-heating, any leftover cooked food is to be thrown away.

TEMPERATURE CONTROL AND MONITORING

0324. Schedule 4 of The Food Hygiene (England) Regulations 2006 (SI No 14) imposes two holding temperatures of below 8ºC or above 63ºC. The purpose of the regulations is to inhibit or prevent harmful micro-organisms from multiplying by keeping food outside of the recognised best practice ***'danger zone'*** 8°C to 63°C. These Regulations allow limited periods outside temperature control during preparation, display, service, storage or transport, but it is an offence to keep food out of temperature control for so long that it could become unsafe. The requirements do not apply to foods, which by their nature or their packaging (e.g. canned foods) is inherently safe from the growth of such organisms. In such cases the manufacturer's guidelines are to be followed. (Schedule 4 of the aforementioned Regulations will not apply to ships and aircraft. However, the temperature control requirements in Annex II of Regulation (EC) No 852/2004 apply, such as foods not kept at temperatures, which might result in a risk to health).

0325. **Refrigerator and Freezer Temperature Recording.** The operating temperature of all appliances should be monitored and recorded thrice daily using the template at Appendix 4 to Annex B of this Chapter. As a guide, the target operating temperature for a refrigerator is 5^{o}C or cooler[5] and for a freezer are -18° to -21°C
Note: The template at Appendix 1 to Annex B of this chapter is to be utilised as a daily management verification and validation document.

0326. Catering Standing Orders are to specify the corrective action (including Out of Hours/Weekend actions required) to be taken in the event of refrigerators/freezers not achieving recommended operating temperatures or failing completely.

FOOD HOLDING TEMPERATURES (TWO AND FOUR HOUR RULE)

0327. Hot food must be kept at or above 63^{o}C. Once the food falls below 63^{o}C it must either be consumed within 2 hours or disposed of.

0328. Chilled food may be displayed (away from under temperature control) for a maximum period of 4 hours. Only one such period is allowed, no matter how short. If, for example a refrigerated dish has been on display for 1 hour in a non-refrigerated environment, refrigerating it does not mean it can be displayed for a further 3 hours later. Where food is being cooled prior to refrigeration, cooling is to be achieved as quickly as possible as described in paragraph 0322.

[5] Industry Guide to Good Hygiene Practice: Catering Guide

0329. When hot or cold food is displayed outside a temperature-controlled environment, it is to be consumed or discarded within the recommended timescales.

TARGET TEMPERATURES

0330. Food Safety legislation requires that certain temperatures be maintained throughout the food storage period and reached during the production process.

	Cook Temp	Service Temperature (At or above)	Reheat	Reheat Scotland	Chilled Storage	Frozen Storage
Legally Required Temperature	75°C	63°C	75°C for 2 minutes	82°C for 2 minutes	<8°C	<-18C

TEMPERATURE MEASUREMENT AND TEMPERATURE PROBE CALIBRATION

0331. **Measurement**. The MoD approved digital thermometer with attached probe (Hanna Model H1 9241) is to be used for measuring food temperatures, including final cooking temperatures. The probe is to be used as explained at 0321 and disinfected with bactericidal wipes between measurements. In order to meet the requirements of 0310 there are also 'Between Pack Probes' available that are to be used to measure temperatures of frozen and chilled foodstuffs, primarily at the delivery stage. Details of these items can be found in JSP 307 but key items are listed below:

Description	NSN	Remarks
MOD Kit (complete with air & penetration probes)	7320 99 8883759	
Penetration Probe	7320 99 8466252	
Flexible Air Probe	7320 99 8341272	
Thermometer Between Pack Probe	7320 99 4904326	
Bacterial Probe Wipes	7320 99 9363666	6 x 200 pack
Pocket Stick Thermometer	7320 99 7543029	

0332. **Calibration**. A monthly performance check of digital thermometers is to be undertaken using the integral calibration button and an external calibration test cap (see para 0332a. below) recording the readings on the form at Annex C to this chapter (for older thermometers without integral calibration buttons see 0333). In the event that the digital thermometer does not display temperatures within the required tolerances (± 0.4°C) the instrument should be withdrawn from use , replaced and sent away to be recalibrated using single Service procedures. However, if no calibration reading is shown, the test cap may be faulty and a replacement cap should be tried. Such faults should also be reported to the Galley Manager/Unit Caterer/Master Chef. JSP 307 Sch4 provides details of all calibration equipment.

a. **Calibration Test Cap.** Test caps are available to check the instrument's electronics and provide a check. The standard calibration test cap available through the MOD is the +71˚C test cap as detailed at 0333

b. As the Hanna thermometer (Model H1 9241) checks instrument calibration at 0˚C, and there will be checks with the +71˚C test cap, there is no requirement to utilise any other available test caps, such as 0˚C or -17.5˚C. Essentially any inaccuracy at the high end cap calibration will reflect a deviation at the lower.

c. **Alternative Method**. When monthly calibration checks cannot be carried out using the test cap described above, a monthly check of the instrument's performance at hot and cold temperatures is to be undertaken. This is done by first placing the tip of the probe into crushed ice, where the reading should be between -1°C and +1°C within minutes. The

probe should then be placed into steam or boiling water where the reading should be between 99°C and 101°C.

d. **Annual Calibration.**

(1) **ThermoMeter and Probes.** The thermometer handset and associated air or penetration probes are to be calibrated together annually as a system by the manufacturer only when regularly using the alternative method. Single Service procedures will apply for forwarding equipment to the manufacturer and records of the calibration are to be kept.

(2) **Test Caps.** The Hanna test caps do not require to be calibrated as they either function or they do not.

e. **Records.** The results of calibration checks should be recorded on the forms at Annex C Appendix 1 to this chapter.

f. **Additional Calibration.** Should caterers believe that there are exceptional circumstances where additional calibration is required for confidence then additional test caps are available and listed at 0333. However, the caterer's HACCP assessment should reflect the need for this additional equipment and the demand should be discussed with single Service catering policy officers.

0333 **Calibration of Older Thermometer Handsets such as Hanna Model H1 9041.** There are currently some old digital thermometers in service. These do not have the calibration button unlike the new models. If the old model is used within a kitchen then all three test caps, as listed below, are to be used until new thermometers are obtained by units.

Calibration test cap +71˚C, NSN: 7320 99 6663355 (Manufacturer's code: HI-765-71)

Calibration test cap for 0˚C, NSN: 7320 99 2627319 (Manufacturer's code: HI-765-000)

Calibration test cap -17.5˚C, NSN: 7320 99 1705322 (Manufacturer's code: HI-765-17.5)

RECORDS

0334. **Records.** Records are an important aspect of any due diligence defence and are essential in proving that the temperature requirements were being met in the event of any prosecution or food poisoning outbreak. Records (including Calibration records) are to be retained for 12 months. The mandatory records that are to be kept with unit files are listed below:

a. All refrigerator and freezer temperature monitoring documents.

b. Food temperature monitoring records.

c. Calibration records for temperature probes.

PERSONAL HYGIENE

0335. Good personal hygiene is a legislative requirement, for ensuring safe food. Induction training must ensure that new staff are aware of the required standard Food handlers are a potential source of bacterial and physical contamination of food, and so personal hygiene is a key element in ensuring that food is prepared safely. Staff training is to include all the basic elements of personal hygiene (including hand washing training) covered in this section and personnel are to understand the relevance of the precautions.

0336. Regulation (EC) No 852/2004 lays down criteria for the personal hygiene of food handlers and the actions to be taken if a food handler is infected. These regulations require every person working in a food handling area to maintain a high degree of personal cleanliness. The regulations also state that no person, known or suspected to be suffering from, or to be a carrier of, a disease likely to be transmitted through food or while afflicted, for example with skin infections, sores or diarrhoea, is to be permitted to handle food or enter any food area in any capacity if there is there is any likelihood of direct or indirect contamination. Any person so affected and employed in a food business and who is likely to come into contact with food is to report immediately the illness or symptoms and if possible their causes to the person in charge of the galley/kitchen.

0337. **SPECIFIC REQUIREMENTS**

a. **Hand washing**. The hands of food handlers are the principal agents in the transference of bacteria to food. Hand washing facilities (a separate basin that is only to be used for hand washing) in galleys/kitchens and heads/toilets are to include hot and cold running water, soap and a suitable means of drying the hands. Regular checks by senior staff are to be made to ensure these facilities are available and are being used effectively. As a minimum, hand washing, is to take place:

(1) On entering a food room.

(2) Between handling raw and cooked food.

(3) After handling waste food or refuse.

(4) After smoking or eating.

(5) After visiting the WC.

b. **Cuts.** Open cuts harbour bacteria and must be covered with clean blue waterproof dressing to aid detection. Stocks of these are to be available in food preparation areas and readily accessible to food handlers.

c. **Jewellery.** The wearing of wristwatches, ear rings and other exposed body piercing, bracelets and rings (except plain wedding bands), is not acceptable as they harbour bacteria and there is a risk of physical contamination of food.

d. **Smoking**. Smoking is not permitted in food areas, as it transfers bacteria from the mouth to hands. Cigarette ends and ash also pose physical contamination risks.

e. **Protective Clothing and Changing Facilities**. Food handlers, including chefs/cooks, Mess Hands, waiting and bar staff plus storemen must wear suitable clean protective clothing (including appropriate footwear and hats) to prevent contamination of food from normal clothing. Such clothing is to be changed at the end of a shift, or sooner if the situation requires, in order to maintain hygienic standards. It is not to be worn outside food areas and associated premises. If necessary, an outer garment is to be worn over protective clothing whilst away from food production environment. Adequate changing facilities must be provided, with locker space for clean and soiled protective clothing. Changing facilities must be kept clean and tidy at all times.

f. **Visitors.** All visitors to a food preparation area are to be viewed as potential sources of contamination. They must therefore be provided with protective clothing and briefed upon good food hygiene practices before entering the food area. Before entering a food preparation area, visitors must confirm that they are not suffering from diarrhoea and/or vomiting, or heavy cold. Individuals who are suffering should not be allowed to proceed.

g. **Eating/drinking.** Food handlers are not to eat or drink in food rooms. It is acceptable for cooks to taste dishes during preparation in a manner that does not contaminate the food i.e. a clean spoon each time.

h. **Toilet Facilities.** Where possible, toilets for catering personnel are to be separate from those for non-catering personnel and visitors. Toilets are not to be located directly within a food preparation area. There is to be an intervening ventilated space between toilets and food rooms. Food is not to be stored in that space. Toilets must be ventilated such that associated odours are prevented from permeating into food rooms. They must also be kept clean and tidy, in good repair with adequate supplies of toilet paper, hand-washing facilities, soap and hand towels.

i. **Personal Hygiene.** Persons handling open food should not wear nail varnish; should have short nails and have clean hair tied back and, appropriately covered to include facial hair.

0338. **Infected Food Handlers.** See Chapter 4 of JSP 456 Vol 3.

DISPERSED FEEDING

0339. Dispersed feeding is the production and transportation of food for consumption away from an established unit/galley/kitchen or mess for example to personnel on security duties who are unable to be fed in-mess, non-public section functions, such as barbecues or sports meals. This method of feeding is recognised as high risk, because the majority of foods used require controlled temperatures during transportation in order to comply with Food Safety Legislation. Dispersed feeding should only take place when there is no suitable alternative.

0340. **Documentation**. Before food leaves the kitchen, the Shift NCO (or equivalent if DEL or contract catering staff) is to ensure the completion (in duplicate) of FCAT 1013
- Dispersed Feeding Record at Appendix No: 6 – DISPERSED FEEDING RECORD

0341. A copy is to be retained with the food safety records and a copy handed to the person (recipient) taking the food out of the kitchen. The recipient is to be briefed on the following points:

a. **Chilled Products.** Chilled foods are to be consumed within 4 hours of being removed from a temperature controlled environment i.e. refrigerator or chilled servery and when and the product temperature rises above 8^{o}C.

b. **Hot Products.** Hot foods are to be consumed within 2 hours of being placed into a insulated container. Food is to be served at or above 63^{o}C. If a hot container meal arrives at its final destination and the product temperature is below 63^{o}C, it is to be consumed as soon as possible (but always within 2 hours from when the product was placed into the container). This time will have been recorded in column (b) of the FCAT 1013.

c. When temperature monitoring is unavailable at a dispersed feeding location, the food is to be consumed within 2 hrs (hot product) or 4 hours (cold product) of being placed in the insulated container or leaving a refrigerated environment. Once again the time of service is to be recorded in column (b) of FCAT 1013.

TRANSPORT OF FOOD

0342. Movement of temperature-controlled foods may include:

a. The collection of food from suppliers and transportation to the main ration stores and messes.

b. The transportation of prepared food from messes to satellite or dispersed feeding facilities.

0343. Transport can include items such as trolleys, bags, boxes, trays and crates. These articles must be kept clean and maintained in good order. Where transport is also used for materials other than food, it must be thoroughly cleaned between loads to avoid the risk of cross contamination.

0344. Non-catering personnel collecting foodstuffs from the mess are to be briefed on the importance of maintaining the integrity of the food chain, and how this is achieved.

0345. During transport, all food is to be covered and is to be transported in appropriate containers. Where conveyances and/or containers have been used for transporting anything other than foodstuffs or different foodstuffs, there must be effective cleaning and disinfected between loads to avoid the risk of contamination. High-risk food must be kept separate from anything that could cause contamination. When transporting prepared meals, dispatch and receipt temperature checks are to be recorded in accordance with paragraph 0340.

CATERING IN OPERATIONAL ENVIRONMENTS

0346. Certain military catering operations require particular Food Safety care relevant to the environment that they are conducted in. Wherever possible, the MOD and legislative food safety requirements are to be strictly adhered to. Information relating to specific types of catering is listed below:

Operational Catering - HM Ships and Submarines	DCM Vol 1, Chap 8
Instructions for preparing food by Cook-Chill and Cook- Freeze	Annex D
Instructions for Food Safety under Operational Conditions	Annex E

CLEANING

0347. Regulation (EC) No 852/2004 requires adequate facilities to be provided for the cleaning and disinfecting of work utensils and equipment and, their storage. These facilities must be constructed of materials resistant to corrosion, must be easy to clean and have an adequate supply of hot and cold water.

0348. Equipment items that come into contact with high-risk foods will need to be cleaned and disinfected as necessary. Facilities must be provided to clean and disinfect all tools and equipment, crockery, cutlery, glasses and serving dishes. There are to be sufficient cleaning materials and equipment to match the size of the catering facility. Staff involved in cleaning must wear suitable and adequate protective clothing, which must be changed, at the end of each shift.

0349. Colour coded cleaning equipment, e.g. mops must be cleaned, dried and stored in a designated area once finished with. Drying of equipment must not cause recontamination, e.g. from soiled cloths. A full list of NSNs of colour-coded equipment is shown in JSP 308. Equipment must be of durable construction and resistant to corrosion, especially items that will come into contact with powerful cleaning chemicals.

0350. **Sinks.** It is a legal requirement that, where appropriate, adequate provision must be made for any necessary washing of food. Every sink or other facility for the washing of food must have an adequate supply of hot and/or cold potable water as required, and be kept clean. Separate facilities must be provided for hand washing, food preparation and equipment washing if the volume of preparation in the kitchen demands it. In small catering operations, one sink may be used for both equipment and food washing, provided that both activities can be done effectively and without prejudice to food safety, i.e. the sink is to be thoroughly cleaned between each

process. It is good practice to have signs above sinks indicating what they can be used for. Hot water supply is not essential if a sink is to be used exclusively for food preparation.

0351. **Disinfection.** Disinfection is a process that reduces micro- organisms to a level that will not lead to harmful contamination or spoilage of food. Sterilisation is a process that destroys all living organisms. The word 'sterilise' is sometimes used in food hygiene literature and in some official publications where the word 'disinfect' would be correct. Cleaning products are often described as 'detergent/sterilise' when 'detergent/disinfectant' would be a more accurate description. The following definitions clarify the relationship between disinfection and cleaning:

a. A disinfectant is a chemical agent used for disinfection after cleaning.

b. Sanitisation is a term used mainly in the food and catering industry. It is a process of both cleaning and disinfecting utensils and equipment.

c. A sanitiser is a chemical agent used for sanitisation.

d. Sterilisation is a process intended to destroy or remove all living organisms. It is not to be confused with disinfection.

e. **Cleaning, Heat Cleaning Disinfectants.** Disinfection is essential in food hygiene. It is achieved by:

(1) **Cleaning.** This is the most useful and practical method of removing food residues, dirt, grease and other undesirable debris. It can be used alone or in combination with the other two methods. A high proportion of microbial contamination is removed from equipment, food preparation surfaces and hands by thorough cleaning.

(2) **Disinfection by Heat**. This is considered the most reliable of the three methods of disinfection. Immersion in water at 65ºC for 10 minutes, or at higher temperatures for shorter times can be relied upon to destroy most micro-organisms harmful to health, with the exception of bacterial spores. Boiling water is an effective and cheap disinfectant although bacterial spores may survive boiling. The temperature of the washing or rinse cycle in a dishwashing machine can be adjusted to include heat disinfection in the cycle, in accordance with the manufacturer's instruction.

(3) **Chemical Disinfectant.** Some chemical disinfectants are active against a wide range of bacteria; others have a narrow range of antibacterial activity. In all circumstances chemical disinfectants must be used in accordance with the manufacturer's instruction. It is military policy to use general-purpose detergent for general cleaning with surface sanitisers. Chemical disinfectants (stored in a designated cleaning chemical storage area away from the food environment) are only to be used by appropriately trained personnel following a COSHH assessment in accordance with JSP 375 Vol 2, leaflet 5.

CLEANING PROCEDURES

0352. Cleaning of food premises is carried out to remove dirt and grease from all surfaces and equipment that could compromise food safety, as well as food debris. It is imperative that high standards of cleaning are maintained for the following reasons:

a. To comply with the legal requirements of the Regulation (EC) No 852/2004.

b. To reduce the risk of food poisoning by removing food residues, which could contain harmful bacteria.

c. To deny pests harbourage and food.

d. To reduce the risk of foreign objects physically contaminating food.

e. To promote hygiene awareness amongst catering personnel.

f. To provide a pleasant working environment, and at the same time eliminating risks of slips and trips, whilst promoting a favourable image to personnel.

0353. **Cleaning Schedule.** A planned cleaning schedule programme is important in ensuring that high standards of cleanliness in all food areas are achieved and maintained. This can be achieved by adhering to a written cleaning schedule. Food preparation surfaces and equipment must be regularly cleaned whilst in use. This is particularly important where space is limited and the cross contamination risk is increased.

a. Instructions for cleaning specific areas or pieces of equipment are to include the following information relative to the task:

(1) Job description.
(2) Cleaning materials and chemicals to be used (in accordance with manufacturer's instruction).
(3) Safety precautions.
(4) Job method.

b. The cleaning schedule is to state how often a specific area or piece of equipment is to be cleaned and who is responsible for checking that all cleaning tasks have been completed to a satisfactory standard.

c. General information concerning the cleaning of food equipment, surfaces and the material structures, including a list of cleaning equipment and agents used in food rooms/kitchen/galley/mess, are at Annex F to this chapter.

d. Catering managers are to implement a cleaning schedule that relates to all food areas within their department. A schedule detailing the frequency of routine cleaning tasks should be produced for each catering facility. It is to be contained within Catering Standing Orders and communicated to all personnel (e.g. by displaying the schedule on a notice board). A matrix showing the frequency, details of the task, type of cleaning required and a signature block is considered the most useful layout and should be readily available for operatives to follow and sign off. A signature block should also be included for a supervisory check.

0354. **Deep Cleaning.** All galleys/kitchens and associated areas are to be deep cleaned in accordance with single Service instructions. Catering managers are to ensure that deep cleaning contracts are adequate to meet the tasks required. The frequency of cleaning will be dependant upon throughput determined by the risk assessment carried out by the catering manager.

FOOD PREPARATION AREAS

0355. **Surfaces.** Regulation (EC) No 852/2004 require that those surfaces which come into contact with food must be maintained in a sound condition, be easy to clean and, where necessary, disinfected. This requires the use of smooth, washable and non-toxic materials. To comply with this legal requirement, it is important that surfaces that come into contact with high-risk foods must be capable of being disinfected regularly. Examples of such surfaces, assuming that they are properly fixed, applied or installed and maintained, include: stainless steel, ceramics, and food grade plastics. Wooden boards are inappropriate for the preparation of high-risk foods. Food preparation surfaces must either be continuous in their construction or have properly sealed joints.

0356. Design and Layout. The design and layout of food areas are to:

a. Permit adequate cleaning and/or disinfection.

b. Protect against dirt, contact with toxic materials, and formation of condensation and mould.

c. Encourage good food hygiene practices and prevent cross contamination by foodstuffs, equipment, materials, water, air supply or personnel and external sources of contamination such as pests.

d. Where practicable, suitable temperature conditions should be provided for the hygienic preparation of food.

Advice can be sought from DFS Team Equipment and Infrastructure staff.

0357. **Structural Requirements.** In areas where food is prepared, consideration is to be given to floor and wall surfaces, ceilings and overhead fixtures, windows, doors and other openings. There are to be adequate washbasins, sanitary conveniences, ventilation, and drainage. Any maintenance requirements and requests to catering premises are to be recorded in either the Maintenance of Catering Premises – Record of Work Services Template at Annex G to this chapter or the unit works service record. Priority awarded to work service request is entirely dependent on the type of establishment and the impact of the equipment failure. The following priorities are to be applied:

PRIORITY			
EMERGENCY-within a matter of hours	VERY URGENT-same day/ next day (incl. Weekends)	URGENT: <3 WORKING DAYS	NON URGENT
Potable water Supply, Fridges, Freezers, Blast Chillers, Cold Counters, Hot Cupboards, Hot Counters, Temperature Control Equipment, Dishwash Machines, Panwash, Staff WCs and Hygiene Facilities, Work Surfaces, Infestation Prevention, Drainage		Walls, Floors, Ceilings, Storage Rooms, General Kitchen Equipment	Items with no Hygiene Implications

0358. **MOD Standards.** Defence Estates (DE) Design and Maintenance Guide 18 deals with the design of kitchens and serveries for all ranks, and dining rooms for Junior Ranks. Details of dining rooms for Officers and SNCOs are given in JSP 315 Services Accommodation Code, Scales 29 and 34. The guide is also to be read in conjunction with DE Specification 42 on Catering Equipment and JSP 315, Scales 01, 39, 40, 45, 47 and 52. For HM Ships and Submarines, the relevant Naval Engineering Standards (NES) publication provides guidance in the design, layout and equipping of Galleys, Storerooms (refrigerated and dry) and associated areas.[6]

PEST CONTROL

0359. Pests are known to carry a number of pathogenic organisms that can be transmitted to humans through contaminated food. In addition, pests will damage food stocks causing financial loss. It is therefore important that food premises are kept pest free.
The Prevention of Damage by Pests Act 1949 and the Regulation (EC) No 852/2004 impose legal duties on owners and occupiers of buildings to implement adequate procedures to ensure that pests are controlled.

[6] Industry Guide to Good Hygiene Practice: Catering Guide

0360. A wide variety of insect, rodent and bird pests will enter food premises for a number of reasons:

a. **Food.** Even in small quantities, food will enable pests to survive and multiply. Regular and thorough cleaning of spillages is therefore imperative.

b. **Warmth.** Pests of all types are attracted to buildings, which offer even limited warmth away from outdoor conditions. A few degrees increase in temperature will provide conditions in which breeding is enhanced and proliferation encouraged.

c. **Shelter.** Almost every building provides a variety of harbourages for pests. Contrary to common belief, it is the newer buildings with suspended ceilings, panelled walls, service ducts and enclosed electrical trunking, which are more likely to create a problem, than older buildings without such features. Access must be provided to these spaces for the effective control of pests.

0361. Denial of food, warmth or shelter will prevent the survival of pests. This form of control can be termed 'environmental control' and is the first line of defence against possible infestation. Environmental control may be considered as denial of access (proofing), food and harbourage.

0362. **Flying Insect Control.** Emphasis is to be placed on the environmental and physical control detailed previously to reduce the risk of food contamination. Areas around food premises are to be kept clean and tidy to reduce the number of possible breeding sites. External refuse containers are to be clean and in good repair, and have tight fitting lids. If skips are used they are to be completely enclosed. Waste food containers must be washed out before being stored outside. Windows and other openings which provide ventilation are to be fitted with close fitting and cleanable fly screens where required. Doors are to be kept closed or fitted with screens or clear plastic heavy-duty strips. Electronic fly killers, where required, are to be installed but must not be sited above food preparation areas or near natural sources of UV light, e.g. windows. The bulbs within electric fly killers must be changed in accordance with the manufacturer's instructions.

0363. **Recording Sightings.** All personnel employed in a kitchen/galley have a duty to report to Kitchen Managers any evidence of pest infestation. Kitchen Managers are to record such sightings in the Pest Management Register at Annex H to this chapter. The following priorities are to be assigned by the Kitchen Manager when requesting Pest Control Assistance:

PRIORITY: VERY URGENT SAME DAY [incl. Weekends]	URGENT: 3 WORKING DAYS	NON URGENT
Infestation where there is a risk that food may become contaminated.	Infestation in food areas where there is no immediate risk of contamination	Infestation where there are no hygiene implications.

Under operational conditions or on exercise, trained Service personnel carry out pest and vector or vermin control. In peacetime (except in some overseas Commands and HM Naval Bases where MOD Civilian pest control operators are employed) civilian contractors normally carry out pest control. There are two ways in which a pest control contractor may be used:

a. To deal with and eradicate a single infestation.

b. To act as a long-term contractor who will visit the premises regularly and carry out pest control treatments as necessary. This proactive approach is more suitable and is recommended, providing that the pest control service is monitored.

0364. **MOD Pest Control Policy.** JSP 371, Joint Services Pest Control Manual, details the policy and arrangements for pest control in the Armed Forces.

ANIMAL BY-PRODUCTS REGULATIONS - CATERING WASTE

0365. The Animal By-Products Regulations 2005 (Statutory Instrument No. 2005/2347) came into force in England on 28 Sep 2005 underpinning EC legislation[7]. The purpose of the regulations is to safeguard public and human health within the UK/EU and ensures the safe disposal of animal by-products. Parallel legislation exists in Scotland, Wales and Northern Ireland.

0366. The Regulations are principally intended to prevent the transmission of animal diseases. Thus animal by-products have been divided into three categories:

Category 1: This is high-risk material, which includes:

a. Carcasses of animals suspected of having a transmissible spongiform encephalopathy, e.g. BSE

b. Carcasses of zoo and pet animals.

c. Catering waste from international transport[8].

d. Specified risk material (SRM) i.e. offal which carries a risk of BSE infection, including heads, spinal cord and (for cattle) parts of the intestine.

Category 2: This is also high-risk material which includes diseased animals and animals that die on farm but do not contain SRM at the point of disposal. The permitted disposal routes are the same for Category 1.

Category 3: This is ordinary catering waste, low risk material that is not fit for human consumption. After rendering, if appropriate, the treated by-products can be used in feedstuffs and fertiliser.

0367. Category 1c of the regulations requires that any catering waste from a vessel (ships and submarines) or aircraft returning to the UK, even if the vessel may have only called in at a third country port or airfield and not necessarily have taken on supplies, must ensure that *catering waste*[9] is completely destroyed and disposed of by Licensed hazardous waste disposal contractors or Local Authority.

UNIT RESPONSIBILITY FOR DISPOSAL

0368. In compliance with the Hygiene of Foodstuffs - Regulation (EC) No 852/2004, catering waste and dry refuse must be managed internally within all catering facilities. The following “best practices” are to be employed in unit catering facilities. Where a unit kitchen has a macerators plumbed into the waste water system some of the listed recommendations become null and void.

a. Catering waste and dry refuse must not be allowed to accumulate in food rooms, except in so far as it is unavoidable for the proper functioning of the catering department.

b. Systems of work are to be in place to ensure that refuse containers in food rooms are not over filled and are emptied regularly.

[7] Regulation (EC) No 1774/2002 1 May 2003
[8] This does not apply to RN or RFA vessels that have operated only in waters or ports of the EU and those of Norway and the Channel Islands. In these circumstances food waste returned to the UK can be treated as domestic waste.
[9] Defined as “all waste food including used cooking oils, raw meat and raw fish originating in catering facilities and kitchens”

c. Catering waste must be double bagged and placed in an appropriate refuse container. Any refuse containers used for storage of waste awaiting collection and removal are to have a lid, be pest proof, and to be constructed of durable material, which makes them easy to clean and disinfect.

b. All catering waste and dry refuse is to be removed from the kitchen/galleys at the end of the working day. Bins or sack holders used in areas preparing high-risk foods must be disinfected more frequently.

e. All refuse containers used within kitchen/galleys are to be included in the cleaning schedule.

STORAGE AND REMOVAL OF CATERING WASTE AND REFUSE.

0369. Regulation (EC) No 852/2004 states that adequate provision must be made for the removal and storage of catering waste and other refuse items. To achieve this, the following guidelines are recommended:

a. Refuse stores must be designed and managed in such a way as to enable them to be kept clean, prevent access by pests, and protect against contamination of food, drinking water, equipment or premises.

b. Areas for indoor storage of refuse must be remote from food rooms and not sited near the main delivery entrance[10].

c. In establishments it is good practice to have a separate area designated for the storage of outdoor waste with well-lit hard standing. A hose is to be provided for cleaning purposes.

d. The originator of the catering waste has a 'duty of care' to ensure waste is disposed of legally. This statutory responsibility remains with the originator despite the use of disposal contractors.

e. Food packaging disposal: Care should be taken to fully empty packaging before it is sent to landfill. Poorly emptied packaging that still contains animal by-products will not be permitted onto a landfill site[11].

0370. **Environmental Protection (EP) and Marine Pollution Regulations (MARPOL).** Disposal of general waste must meet the requirements of EP (JSP 418), DEFRA instructions and MARPOL legislation. Items of general waste that should be addressed under this paragraph include the recycling of refrigerators and recycling of cooking oil (JSP 418 Vol 2 Leaflet 18 Annex C refers)

[10] There will be exceptional circumstances where this is not possible. The key point is that cross contamination from food waste must be prevented so any chosen alternative controls must be at least as effective.
[11] In the MOD, this is only the case for International Waste returned from exercises or operations.

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ANNEX A-THE SEVEN PRINCIPLES OF HAZARD ANALYSIS

1. Identifying any hazards that must be prevented, eliminated or reduced to acceptable levels.

Food Hazard involves:

- Identifying the hazards that may affect the process.
- Identifying the steps at which hazards are likely to occur.
- Deciding which hazards are significant i.e. their elimination or reduction to acceptable levels is essential to the production of safe food.
- Determine the measures necessary to control the hazards.

Examples of hazards are:

- Bacteria or other micro-organisms that cause food poisoning.
- Chemicals, for example by cleaning materials or pest baits.
- Foreign materials such as glass, metal, plastic and so on.

Of these, the most important hazard is likely to be harmful bacteria or other germs that may contaminate and multiply in food.

2. Identifying the critical control points (CCPs) at the step or steps at which control is essential to prevent or to reduce it to acceptable levels

Critical control points in the process are those steps where control measures must be used to prevent, eliminate or reduce a hazard to an acceptable level.

3. Establishing critical limits at CCPs which separate acceptability from unacceptability for the prevention, elimination or reduction of identified hazards.

CRITICAL POINTS are steps at which the hazards must be controlled to ensure that a hazard is eliminated or reduced to a safe level.

- Any step where food may become CONTAMINATED is to be controlled. Controls include clean and disinfected equipment, the personal hygiene of staff, and separation of raw and cooked food. All food is to be protected from contamination by foreign bodies, pests or chemicals.
- Steps where bacteria may be able to MULTIPLY in food must be controlled. The time and temperature at which food is held, stored or displayed are likely to be critical.
- Any cooking or reheating step is to be able to KILL harmful micro-organisms. It will be critical that heating is thorough. Cooking is normally the most important control step in most food preparation. Chemical disinfection of equipment is another control point designed to KILL micro-organisms.

4. Establishing and implementation effective monitoring procedures at critical points

Controls must be set for the critical points, then checks introduced.

CONTROLS will either reduce the hazard to an acceptable level or get rid of it completely.

The controls are to be precise as possible. For example, it is better to state that certain products will be stored under refrigeration at a set temperature, rather than to simply say that it must be kept in the chiller. A control target is to be set for every critical control point that has been identified.

When controls have been set, it is then possible to MONITOR the critical points whenever that preparation step is used. The targets can be checked. The frequency of checks is to be set for each control. Checking temperatures does not always involve probing food with a thermometer. Delivery vans or storage chillers may be fitted with temperature monitors and these can be checked.

Other critical controls are more difficult to measure, e.g. cleaning & disinfection of equipment or the personal hygiene of staff. They will be often vital to the safety of food, and there are to be regular checks that standards are kept up.

5. Establishing corrective actions when monitoring indicates that a CCP is not under control.

Corrective action is the action to be taken when a critical limit is breached. Corrective action usually involves two distinct actions:

- Dealing with an effected product.

• Bringing the CCP and process back under control. Procedures for corrective action should specify the action to be taken, the person responsible for taking the action and who should be notified.
6. Establishing procedures, which shall be carried out regularly, to verify that the measures employed at Principle 1 and 5 are working effectively.
Verification involves the use of methods, procedures and tests, in addition to those used in monitoring, to determine compliance with the HACCP plan. Part of the verification is validation i.e. obtaining evidence that elements of the HACCP plan are effective, especially the CCP and critical limits.
7. Establishing documents and record-keeping.
Documentation is useful to demonstrate that food safety is being managed and, provided records are completed accurately at the appropriate time, they will be used to support a due diligence defence.

ANNEX B-HAZARD ANALYSIS

THE FOUR-LINE METHOD

1. This annex contains:

   a. Flow Diagram - An Overview of the Four-Lines.

   b. Flow Diagram – LINE A – Food/dishes served cold.

   c. Flow Diagram – LINE B – Food/dishes served hot.

   d. Flow Diagram – LINE C – Food/dishes cooked, chilled and served cold.

   e. Flow Diagram – LINE D – Food/dishes cooked, chilled, reheated and In-Flight Catering.

   f. Hazard Analysis Flow Chart – LINE A.

   g. Hazard Analysis Flow Chart – LINE B.

   h. Hazard Analysis Flow Chart – LINE C.

   i. Hazard Analysis Flow Chart – LINE D.

   j. Hazard Analysis Flow Chart – In Flight Catering Food Services

   k. Galley/Kitchen/Mess Management Records:

      1 Daily Food Safety Management Record (Template and Example) – Appendix 1 and 1E (For use by managers for validation/verification).
      2 Advance Food Preparation Record (Template and Example) – Appendix 2 and 2E.
      3 Food Time/Temperature Record (Template and Example) – Appendix 3 and 3E.
      4 Galley/Kitchen/Mess Fridge/Freezer/Blast Chiller Daily Monitoring Record (Template and Example) – Appendix 4 and 4E.
      5 Galley/Kitchen/Mess Fridge/Freezer/Blast Chiller Monitoring Record (Template) – Appendix 5 and 5E
      6. FCAT 1013 template. – Appendix 6

USE OF THE FOUR-LINE METHOD

2. This guide is to be used by all caterers when analysing the hazards within their establishments/Units. Each kitchen/galley is unique in its design and layout and hence the hazards present will not always fall into the strict guidance given in this Annex.

3. The following points are to be used when implementing the Four-Line Method:

   a. Using the seven principles detailed in Annex A caterers are to assess the hazards that are present in their particular kitchen/galley. The guidance in this Annex is to be used as a template to aid the identification of generic hazards and controls.

   b. When specific hazards are identified that are not present in this guidance they are to be annotated onto the templates as a Control Point, a Critical Point or a Critical Control Point.

c. The ‘Other Points For Consideration’ boxes refer to other practices and procedures that will already be in place in the kitchen/galley, which contribute to the overall hazard analysis system. The ‘SOs Section insert’ is to be removed and replaced with the appropriate reference for the procedure that is referred to. Microsoft Word based forms can be obtained from HQ catering and EH staff to assist with the process.

d. Once the hazards have been assessed the daily menu is to be recorded on single Service record forms. From the menu high risk items are to be identified and, by referring to the Four-Line method guidance, the relevant Hazard Analysis Line annotated onto the record next to the individual food dish. This will then act as a guide to personnel preparing the dishes as to the controls that need to be in place.

e. Whilst the Four-Line method concentrates on food safety within a kitchen/galley and provision areas, other factors and risks will need to be considered in ancillary areas such as delivery bays and pot/crock wash.

REVIEW

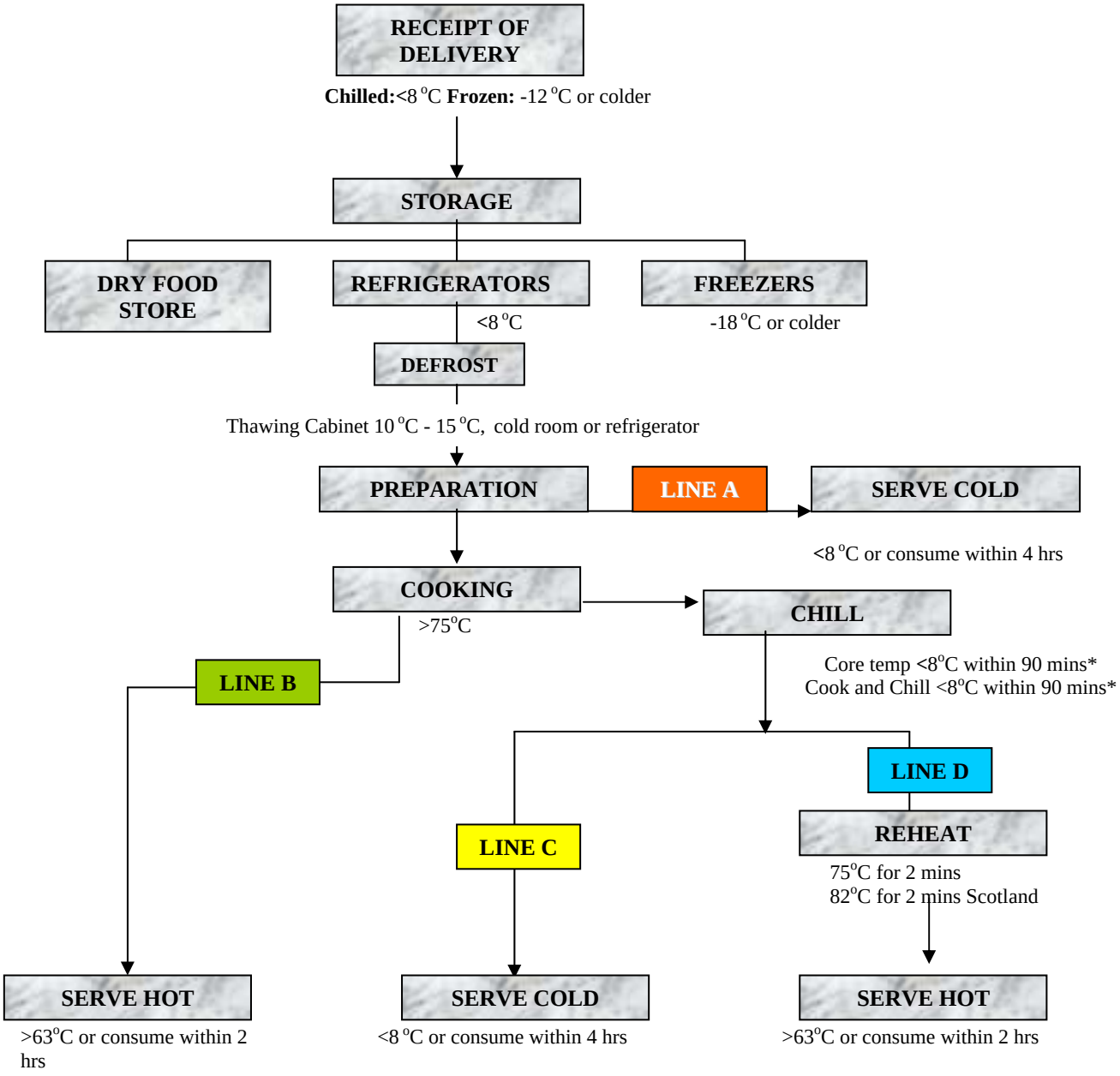
4. Once the above action has been taken, it is important to ensure that the process is reviewed regularly and particularly when:

a. Methods of control or checking are found to be ineffective or impractical.
b. The menu changes.
c. Methods of preparation changes.
d. New equipment is used.
e. The layout or design of the kitchen/galley is changed.
f. The Kitchen/Galley Manager changes.

TRAINING

5. Personnel will require training on the Four-Line method in order to understand the rationale, application and implementation of the procedures. The Defence Food Services School will conduct initial training for Service personnel.

OVERVIEW OF THE FOUR LINES



OTHER POINTS FOR CONSIDERATION

PERSONNEL HYGIENE AND TRAINING
Standing Orders Section insert

POT WASH
SOs Section insert

CROCKWASH
SOs Section insert

STRUCTURE AND EQUIPMENT
SOs Section insert

FOOD FROM NON MOD SUPPLY
SOs Section insert

CLEANING
SOs Section insert

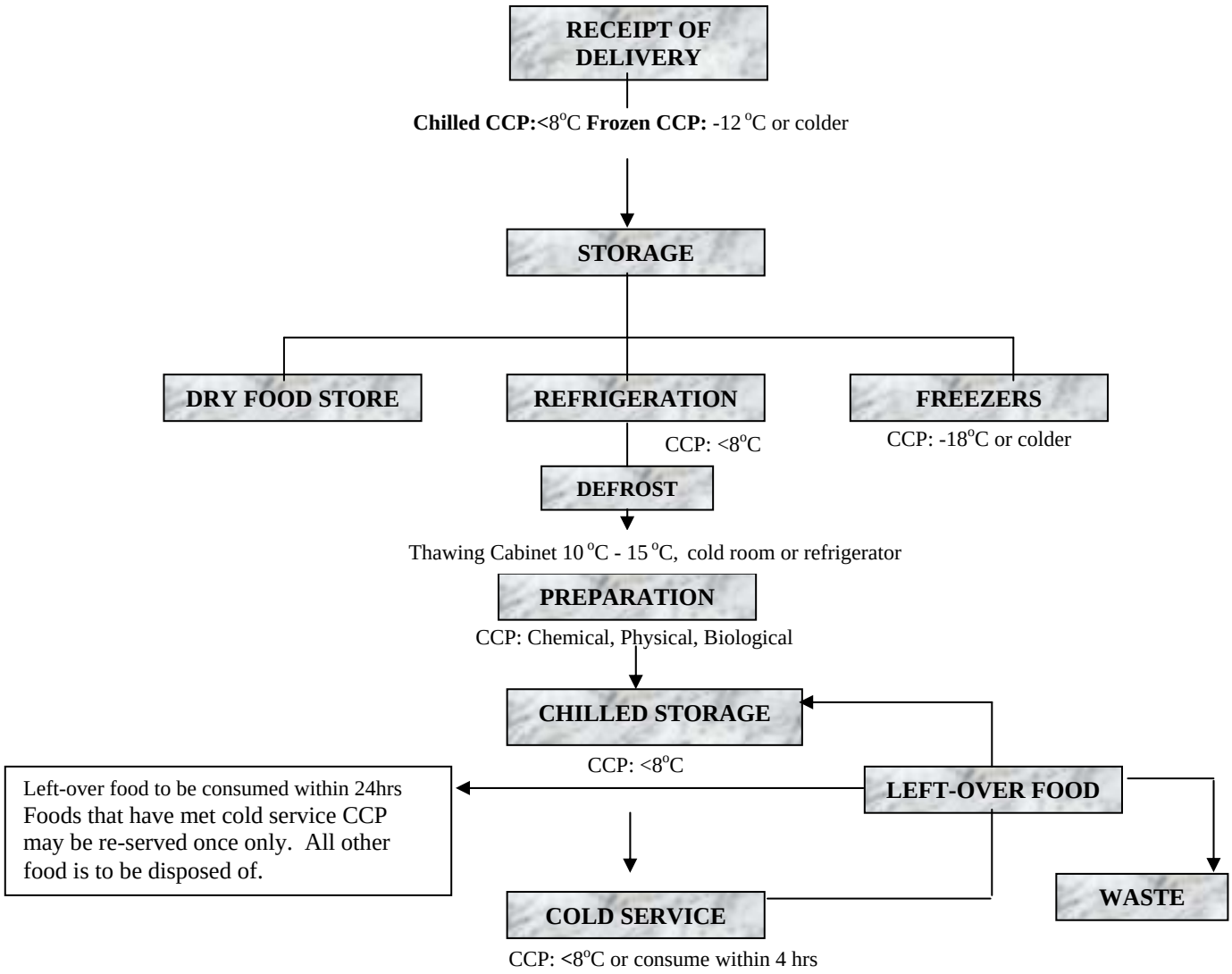
PEST CONTROL
SOs Section insert

WASTE MARPOL & EP
SOs Section insert

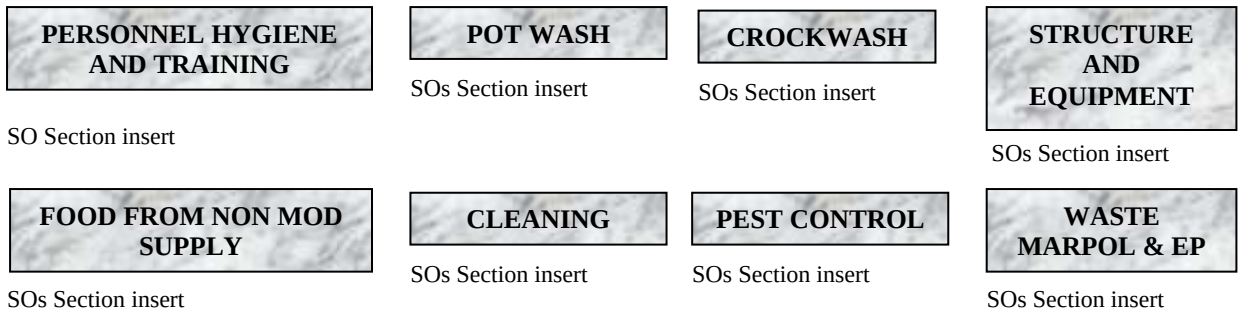
(* Best practice <5°C)

LINE A

FLOW DIAGRAM - HAZARD ANALYSIS
FOOD DISHES THAT ARE SERVED COLD

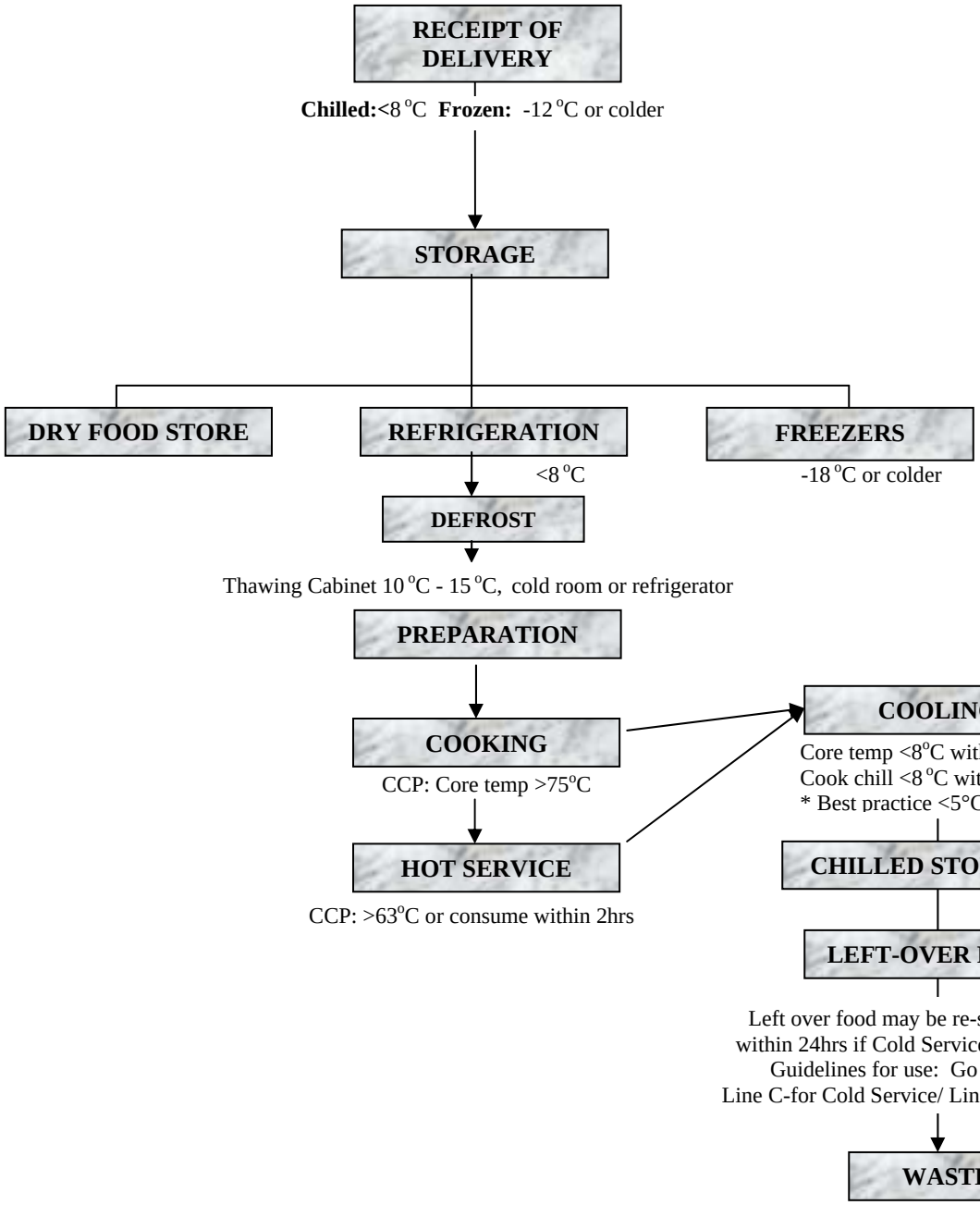


OTHER POINTS FOR CONSIDERATION



LINE B

FLOW DIAGRAM HAZARD ANALYSIS
FOOD DISHES THAT ARE SERVED HOT



OTHER POINTS FOR CONSIDERATION

PERSONNEL HYGIENE AND TRAINING
SOs Section insert

POT WASH
SOs Section insert

CROCKWASH
SOs Section insert

STRUCTURE AND EQUIPMENT
SOs Section insert

FOOD FROM NON MOD SUPPLY
SOs Section insert

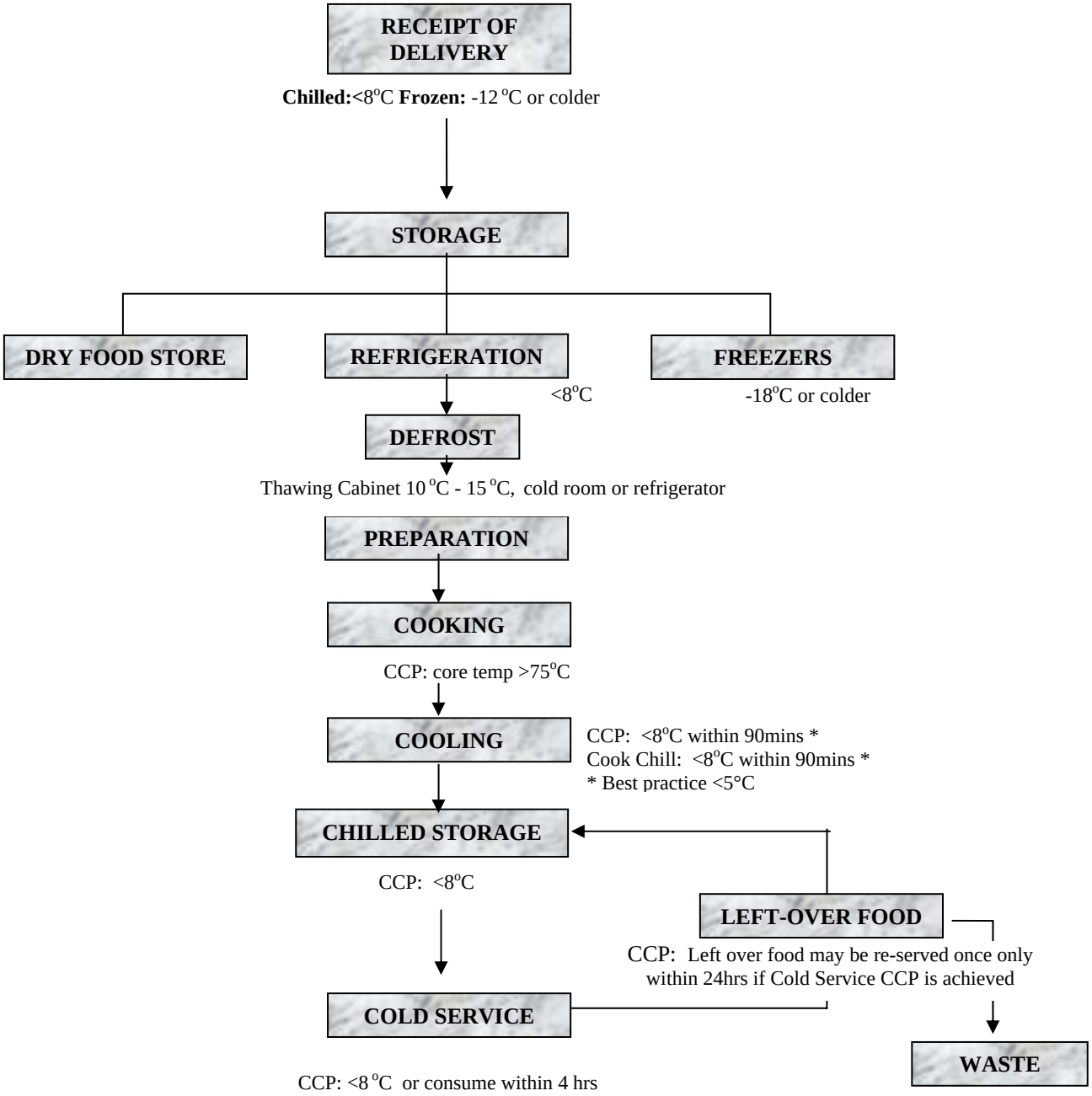
CLEANING
SOs Section insert

PEST CONTROL
SOs Section insert

WASTE MARPOL & EP
SOs Section insert

LINE C

FLOW DIAGRAM HAZARD ANALYSIS
FOOD DISHES THAT ARE COOKED, CHILLED AND SERVED COLD

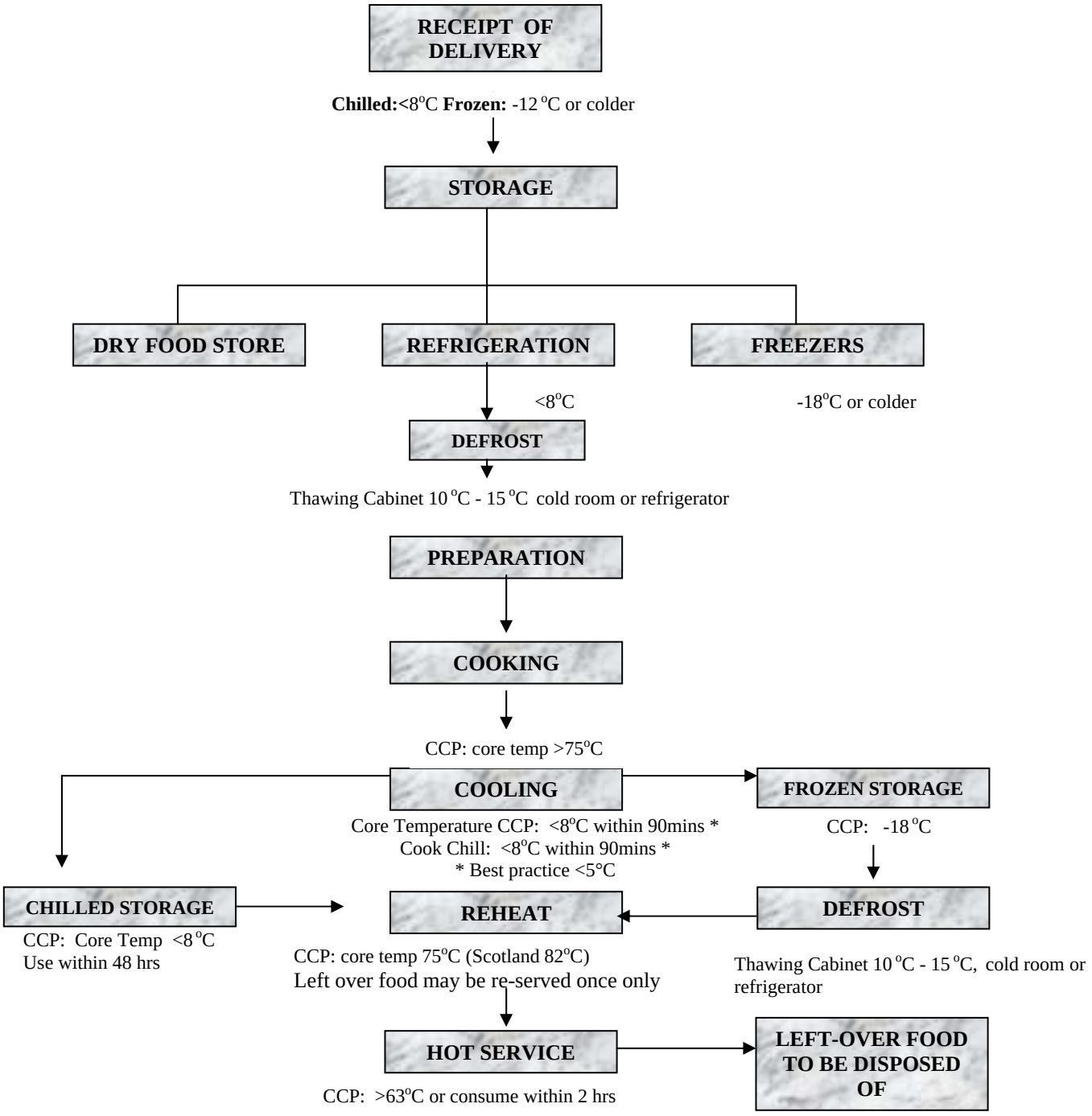


OTHER POINTS FOR CONSIDERATION

PERSONNEL HYGIENE AND TRAINING	**POT WASH**	**CROCKWASH**	**STRUCTURE AND EQUIPMENT**
SOs Section insert	SOs Section insert	SOs Section insert	SOs Section insert
FOOD FROM NON MOD SUPPLY	**CLEANING**	**PEST CONTROL**	**WASTE MARPOL & EP**
SOs Section insert	SOs Section insert	SOs Section insert	SOs Section insert

LINE D

FLOW DIAGRAM HAZARD ANALYSIS
FOOD DISHES THAT ARE COOKED, CHILLED AND REHEATED
PLUS IN FLIGHT CATERING



OTHER POINTS FOR CONSIDERATION

PERSONNEL TRAINING AND HYGIENE
SOs Section insert

POT WASH
SOs Section insert

CROCKWASH
SOs Section insert

STRUCTURE
SOs Section insert

FOOD FROM NON MOD SUPPLY
SOs Section insert

CLEANING
SOs Section insert

PEST CONTROL
SOs Section insert

WASTE MARPOL & EP
SOs Section insert

FLOW CHART **LINE A**

HAZARD ANALYSIS
FOOD/DISHES THAT ARE SERVED COLD

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES (CONTROL) What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
1. Receipt of Delivery	**Physical** Packaging, pests, foreign objects.	Ensure no foreign material present in deliveries.	Visual/sensory checks by staff receiving goods.	Do not accept from supplier or Inform I/C Galley/Kitchen and initiate disposal action.
	Chemical Cleaning agents	Adhere to cleaning schedule and follow manufacturer's instructions.	Check cleanliness of delivery trolleys.	Do not accept from supplier or Inform supervisor and return to catering store staff.
	Biological Contamination from food poisoning bacteria or toxins.	**Critical Control Point** Check delivery temperature: **Chilled**: <8°C **Frozen** –12°C or colder. Ensure food within "Use By/ Best Before" dates.	Check food temperatures using a calibrated temperature probe. Record temperature in Temperature Log. Check "Use By/ Best Before" dates.	**Chilled:** >8°C or **Frozen:** less than –12 °C. Return to catering store and inform I/C Galley/Kitchen. Do not accept from supplier or Return to catering store if outside "Use By" or "Best Before" dates.
2. Storage	**Physical** Packaging, pests, foreign objects.	Routine pest control surveys by (Insert details of MOD or civilian pest control service). Keep food covered. Cleaning schedule.	Monitor efficacy of pest control contract/operations. Visual/sensory checks. Supervision.	Pest control treatment by (*(Insert details of Pest Control Service)*). Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform I/C Galley/Kitchen.
	Chemical Cleaning agents.	Keep refrigerators and storage areas hygienically clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Supervision.	Dispose of contaminated food. Inform supervisor. Clean immediately and review cleaning schedules.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES (CONTROL) What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
	Biological Contamination and growth of food poisoning bacteria or toxins.	**Chilled:** CCP<8°C **Frozen:** CCP -18°C or colder Ensure food within "Best Before/Use By" dates. Separate raw/cooked foods discard if contamination suspected.	Check temperatures (thrice daily) using a calibrated temperature probe. Record in Temperature Log. Check "Use By/ Best Before" dates. Visual/sensory checks.	Use food immediately or discard if temperatures are higher than: **Chilled:** 8°C **Frozen:** -18 °C). Adjust or repair chiller or freezer unit. Discard food if past "Best Before/Use By" dates.
3. Defrost In accordance with 0320.	**Physical** Packaging, pests, foreign objects.	Routine pest control survey by *(Insert details of Pest Control Service)* Keep covered when not in use. Cleaning schedule.	Monitor efficacy of pest control contract/operations.Supervision. Visual/sensory checks.	Pest control treatment by *(Insert details of Pest Control Service).* Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor. Staff training.
	Chemical Cleaning agents.	Equipment must be clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Daily checks on cleaning techniques – check recorded.	Liaise with cleaning supervisor. Dispose of contaminated food.
	Biological Cross contamination and growth of food poisoning bacteria or toxins.	Wash hands before handling food. Surfaces and equipment to be sanitised prior to defrosting. Keep raw food separate. Defrost Temp: <8°C Keep covered <8°C until required for use. Ensure food within "Use By/ Best Before" dates.	Visual/sensory checks. Supervision. Regularly check "Use By/ Best Before" dates.	Discard contaminated food, and separate raw and cooked foods to remove risk of cross contamination. Discard food if past "Best Before/Use By" dates. Supervision/staff training.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES (CONTROL) What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
4. Chilled Storage	**Physical** Packaging, pests, foreign objects.	Routine pest control survey by *(Insert details of Pest Control Service)* Keep covered when not in use. Cleaning schedule.	Monitor efficacy of pest control contract/operations. Supervision. Visual/sensory checks.	Pest control treatment by *(Insert details of Pest Control Service)*. Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor. Staff training.
	Chemical Cleaning agents.	Equipment must be clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Daily checks on cleaning techniques – check recorded.	Liaise with cleaning supervisor. Dispose of contaminated food.
	Biological Cross contamination and growth of food poisoning bacteria or toxins.	**<u>Critical Control Point</u>** Wash hands before handling food. Surfaces and equipment to be sanitised prior to defrosting. Keep raw food separate. Keep covered, <8 ^{o}C until required for use. Ensure food within "Use By/ Best Before" dates.	Visual/sensory checks. Supervision. Regularly check "Use By/ Best Before" dates. Record temperature in Temperature Log.	Discard contaminated food, and separate raw and cooked foods to remove risk of cross contamination. Discard food if past "Best Before/Use By" dates. Supervision/staff training.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
5. Preparation	**Physical** Packaging, pests, foreign objects.	**Critical Control Point** Routine pest control survey by *(Insert details of Pest Control Service)* Keep covered when not in use. Cleaning schedule. Planned preventative maintenance iaw local arrangements.	Monitor efficacy of pest control contract/operations. Supervision. Visual/sensory checks.	Pest control treatment by (*Insert details of Pest Control Service).* Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor. Staff training.
	Chemical Cleaning agents.	**Critical Control Point** Equipment must be clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Daily checks on cleaning techniques - check recorded.	Liaise with cleaning supervisor. Dispose of contaminated food.
	Biological Cross contamination and growth of food poisoning bacteria or toxins.	**Critical Control Point** Wash hands before handling food. Preparation surfaces and equipment to be sanitised prior to food prep. Keep raw food separate. Keep covered once prepared and under temperature control until required for use. Ensure food within "Use By/ Best Before" dates.	Visual/sensory checks. Supervision. Regularly check "Use By/ Best Before" dates. Record temperature in Temperature Log.	Discard contaminated food. Discard food if past "Best Before/Use By" dates. Separate raw and cooked foods to remove risk of cross contamination. Supervision/staff training.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
6. Cold Service	**Physical** Packaging, pests, foreign objects.	**<u>Critical Control Point</u>** Routine pest control survey by *(Insert details of Pest Control Service)* Keep food covered when not in use. Cleaning schedule. Planned preventative maintenance iaw local arrangements.	Monitor efficacy of pest control contract/operations. Visual/sensory checks. Supervision. .	Pest control treatment by *(Insert details of Pest Control Service)* Dispose of contaminated food. Clean immediately and review cleaning schedule. Report to supervisor. Staff training.
	Chemical Cleaning agents.	**<u>Critical Control Point</u>** Equipment must be clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Daily check on cleaning techniques record checks.	Clean immediately and review cleaning schedule. Dispose of contaminated food. Inform supervisor.
	Biological Cross contamination and growth of food poisoning bacteria or toxins.	**<u>Critical Control Point</u>** Equipment must be clean. Cold service: $<8^{o}C$	Use calibrated food probe. Record temperature in *Temperature Log*.	Discard food if >8°C or consume within 4 hrs.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
7. Left Over Food	**Physical** **Chemical** **Biological** Contamination from food poisoning bacteria or toxins.	**<u>Critical Control Point</u>** Food held at the Service Point at <8°C may be retained for 1x further service period (providing the next service is within 24 hrs).	Visual/sensory checks. Supervision. Determine whether foods have been kept <8 °C using temperature monitor and record	Discard any food >8°C.
8. Waste	**Physical** Packaging, pests, foreign objects.	Food waste to be removed from food rooms at end of each meal. **All external waste containers must be covered to prevent pest ingress**.	Supervision and staff training.	Staff retraining. Remove damaged bins.
	Chemical Cleaning agents.	Use cleaning chemical iaw manufacturers instrs. Include on cleaning schedule.	Supervision and staff training. Ensure all cleaning chemical residue is removed	Re-clean, Remove damaged bins. Staff training.
	Biological Contamination from food poisoning bacteria or toxins.	Waste area must be clean. Removal of food waste to be undertaken so as to prevent the risk of cross contamination.	Supervision and staff training.	Separate. Retrain staff. Liaise with contractor and arrange for more frequent removal.

FLOW CHART **LINE B**

HAZARD ANALYSIS
-FOOD/DISHES THAT ARE SERVED HOT

STEP	HAZARDS What can go wrong here?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
1. Receipt of Delivery	**Physical** Packaging, pests, foreign objects.	Ensure no foreign material present in deliveries.	Visual/sensory checks by staff receiving goods.	Do not accept from supplier or Inform I/C Galley/Kitchen and initiate disposal action.
	Chemical Cleaning agents.	Adhere to cleaning schedule and follow manufacturer's instructions.	Check cleanliness of delivery trolleys.	Do not accept from supplier or Inform supervisor and return to catering store staff.
	Biological Contamination from food poisoning bacteria or toxins.	Check delivery temperature: **Chilled:** <8 ^{o}C **Frozen:** -12^{o}C or colder Ensure food within "Use By/ Best Before" dates.	Check food temperatures using a calibrated temperature probe. Record temperature in Temperature Log. Check "Use By/ Best Before" dates.	**Chilled:** >8°C or **Frozen:** less than -12 ^{o}C return to catering store and inform I/C Galley/ Kitchen. Do not accept from supplier or Return to catering store if outside "Use By/ Best Before" dates.
2. Storage	**Physical** Packaging, pests, foreign objects.	Routine pest control surveys by *(Insert details of Pest Control Service).* Keep food covered. Cleaning schedule.	Monitor efficacy of pest control contract/operations Visual/sensory checks. Supervision.	Pest control treatment by *(Insert details of Pest Control Service).* Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform I/C Galley/Kitchen.
	Chemical Cleaning agents.	Keep refrigerators and storage areas hygienically clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Supervision.	Dispose of contaminated food. Inform supervisor. Clean immediately and review cleaning schedules.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
	Biological Contamination and growth of food poisoning bacteria or toxins.	Refrigerators to operate: <8 ^{o}C Freezers to operate: -18 ^{o}C or colder Separate raw and cooked foods. Rotate stock – observe "Best Before/Use By" dates.	Check temperatures thrice daily using a calibrated temperature probe. Record in Temperature Log. Check "Use By/ Best Before" dates. Visual/sensory checks. Bulk storage refer to single service requirements.	Use food immediately or discard if high temperatures: Refrigerator**:** >8°C or Freezer**:** less than -18 ^{o}C. Adjust or repair faulty refrigerator/ freezer unit. Separate raw and cooked foods discard if contamination suspected. Discard food if past "Best Before/Use By" dates.
3. Defrost In accordance with 0320.	**Physical** Packaging, pests, foreign objects.	Routine pest control by *(Insert details of Pest Control Service)* Keep covered when not in use. Cleaning schedule.	Monitor efficacy of pest control contract/operations Supervision. Visual/sensory checks.	Pest control treatment by *(Insert details of Pest Control Service)*. Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor. Staff training.
	Chemical Cleaning agents.	Equipment must be clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Daily checks on cleaning techniques – check recorded.	Liaise with cleaning supervisor. Dispose of contaminated food.
	Biological Cross contamination and growth of food poisoning bacteria or toxins.	Wash hands before handling food. Surfaces and equipment to be sanitised prior to defrosting. Keep raw food separate. Defrost Temp:<8^{o}C . Keep covered <8°C until required for use. Check "Use By/ Best Before" dates.	Visual/sensory checks. Supervision. Regularly check "Use By/ Best Before" dates.	Discard contaminated food, and separate raw and cooked foods to remove risk of cross contamination. Discard food if past "Best Before/Use By" dates. Supervision/staff training.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
4. Preparation	**Physical** Packaging, pests, foreign objects.	Routine pest control by *(Insert details of Pest Control Service)* Keep covered when not in use. Cleaning schedule.	Monitor efficacy of pest control contract/operations Supervision. Visual/sensory checks.	Pest control treatment by *(Insert details of Pest Control Service)*. Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor. Staff training.
	Chemical Cleaning agents.	Equipment must be clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Daily checks on cleaning techniques - check recorded.	Liaise with cleaning supervisor. Dispose of contaminated food.
5. Cooking	**Physical** Packaging, pests, foreign objects.	Routine pest control by *(Insert details of Pest Control Service)* Cleaning schedule. Equipment maintenance. Planned preventative maintenance iaw local arrangements.	Monitor efficacy of pest control contract/operations Supervision. Visual/sensory checks.	Pest control treatment by *(Insert details of Pest Control Service)*. Dispose of contaminated food. Report to I/C Galley/Kitchen. Report defect to PROPMAN/galley manager – submit defect report form. Recall suspect food.
	Chemical Cleaning agents.	Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Supervision.	Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
	Biological Survival of food poisoning bacteria or toxins.	**Critical Control Point** Core temperature of food >75°C.	Use calibrated temperature probe for every batch. Record temperatures in Temperature Log.	Continue cooking at least until temperature is reached. Inform I/C Galley/Kitchen. Revise cooking routines.
6. Hot Service	**Physical** Packaging, pests, foreign objects.	Routine pest control by *(Insert details of Pest Control Service)* Keep food covered when not in use. Cleaning schedule.	Monitor efficacy of pest control contract/operations Supervision. Visual/sensory checks.	Pest control treatment by *(Insert details of Pest Control Service)*. Dispose of contaminated food. Clean immediately and review cleaning schedules.
	Chemical Cleaning agents	Equipment must be clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Weekly check on cleaning techniques - record check.	Dispose of contaminated food.
	Biological Contamination and growth of food poisoning bacteria or toxins.	**Critical Control Point** Equipment must be clean. Hot service CCP: temperature >63°C. If <63°C consume within 2 hrs of service.	Use calibrated food probe in accordance with Kitchen Standing Orders Record temperature in Temperature Control Log.	If food <63°C use within 2 hrs from end of the cooking cycle. Inform I/C Galley/Kitchen. Staff retraining. Check equipment for defects.
7. Left Over Food	**Physical** Pests, foreign objects.	**Critical Control Point** Food <63^{o}C: to be disposed of. Food >63^{o}C that is intended for further use must be cooled to a CCP of <8^{o}C within 90 mins & stored at <8^{o}C. Food item to be used <24hrs.	Visual/sensory checks. Supervision. Determine whether foods have been kept >63^{o}C.	Discard any high risk foods <63°C or any food that has not been kept under adequate temperature control.
	Chemical Cleaning agents.			
	Biological Contamination from food poisoning bacteria or toxins.			

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
8. Reheating	**Physical** Packaging, pests, foreign objects.	Routine pest control by *(Insert details of Pest Control Service)* Cleaning schedule. Equipment maintenance. Planned preventative maintenance iaw local arrangements.	Monitor efficacy of pest control contract/operations Visual/sensory checks. Supervision.	Pest control treatment by *(Insert details of Pest Control Service)* Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor. Report defect to PROPMAN/ Galley Manager.
	Chemical Cleaning agents.	Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Supervision.	Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform Supvr.
	Biological Survival of food poisoning bacteria or toxins.	**Critical Control Point** Core temperature of food to reach 75°C for at least 2 mins 82°C in Scotland for at least 2 mins	Use calibrated temperature probe for every batch. Record temperature in Temperature Control Log.	Continue reheating until temperature is reached. Inform I/C Galley/Kitchen. Revise reheating routines.
9. Waste	**Physical** Packaging, pests, foreign objects.	Food waste to be removed from food rooms at end of each meal. All external waste containers must be covered to prevent pest ingress.	Supervision and staff training.	Staff retraining. Remove damaged bins.
	Chemical Cleaning agents.	Use cleaning chemical iaw manufacturers instrs. Include on cleaning schedule.	Supervision and staff training. Ensure all cleaning chemical residue is removed	Re-clean, Remove damaged bins. Staff training.
	Biological Contamination from food poisoning bacteria or toxins.	Removal of food waste to be undertaken so as to prevent the risk of cross contamination. Waste area must be clean.	Supervision and staff training.	Separate. Retrain staff. Liaise with contractor and arrange for more frequent removal.

FLOW CHART **LINE C**

HAZARD ANALYSIS
-FOOD/ DISHES THAT ARE COOKED, CHILLED AND SERVED COLD

STEP	HAZARDS What can go wrong here?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
1. Receipt of Delivery	**Physical** Packaging, pests, foreign objects.	Ensure no foreign material present in deliveries.	Visual/sensory checks by staff receiving goods.	Do not accept from supplier or Inform I/C Galley/Kitchen and initiate disposal action.
	Chemical Cleaning agents.	Adhere to cleaning schedule and follow manufacturer's instructions.	Check cleanliness of delivery trolleys.	Do not accept from supplier or Inform supervisor and return to catering store staff.
	Biological Contamination from food poisoning bacteria or toxins.	Check delivery temperature: **Chilled:** <8°C **Frozen:** -12 °C or colder Ensure food within "Use By/ Best Before" dates.	Check food temperatures using a calibrated temperature probe. Record temperature in Temperature Log. Check "Use By/ Best Before" dates.	**Chilled:** >8°C or **Frozen:** less than-12 °C return to catering store and inform I/C Galley/Kitchen. Do not accept from supplier or Return to catering store if outside "Use By/ Best Before" dates.
2. Storage	**Physical** Packaging, pests, foreign objects.	Routine pest control survey by *(Insert details of Pest Control Service)*. Keep food covered. Cleaning schedule.	Monitor efficacy of pest control contract/operations Visual/sensory checks. Supervision.	Pest control treatment by *(Insert details of Pest Control Service)*. Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform I/C Galley/Kitchen.
	Chemical Cleaning agents.	Keep refrigerators and storage areas hygienically clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Supervision.	Dispose of contaminated food. Inform supervisor. Clean immediately and review cleaning schedules.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
	Biological Contamination and growth of food poisoning bacteria or toxins.	Refrigerators to operate at or below <8 ^{o}C Freezer to operate -18 ^{o}C or colder. Separate raw and cooked foods. Rotate stock – observe "Use By/ Best Before" dates. Bulk Storage; refer to Single Service Requirements.	Check temperatures thrice daily using a calibrated temperature probe. Record in Temperature Log. Check "Use By/ Best Before" dates. Visual/sensory checks.	Use food immediately or discard. **Refrigerator:** >8°C or **Freezer:** less than -18 ^{o}C inform I/C. Adjust or repair refrigerator or freezer unit. Separate raw and cooked foods discard if contamination suspected. Discard food if past "Use By/ Best Before" dates.
3. Defrost In accordance with 0320.	**Physical** Packaging, pests, foreign objects.	Routine pest control survey by *(Insert details of Pest Control Service)*. Keep covered when not in use. Cleaning schedule.	Monitor efficacy of pest control contract/operations Supervision. Visual/sensory checks.	Pest control treatment by *(Insert details of Pest Control Service)*. Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor. Staff training.
	Chemical Cleaning agents.	Equipment must be clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Daily checks on cleaning techniques – check recorded.	Liaise with cleaning supervisor. Dispose of contaminated food.
	Biological Cross contamination and growth of food poisoning bacteria or toxins.	Wash hands before handling food. Surfaces and equipment to be sanitised prior to defrosting. Keep raw food separate. Defrost Temp:<8^{o}C . Keep covered <8°C until required for use. Ensure food "Use By/ Best Before" dates .	Visual/sensory checks. Supervision. Regularly check "Use By/ Best Before" dates.	Discard contaminated food, and separate raw and cooked foods to remove risk of cross contamination. Discard food if past "Use By/ Best Before" dates. Supervision/staff training.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
4. Preparation	**Physical** Packaging, pests, foreign objects.	.Routine pest control survey by *(Insert details of Pest Control Service)*. Keep covered when not in use. Cleaning schedule. Planned preventative maintenance iaw local arrangements.	Monitor efficacy of pest control contract/operations Supervision. Visual/sensory checks.	Pest control treatment by *(Insert details of Pest Control Service)*. Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor. Staff training.
	Chemical Cleaning agents.	Equipment must be clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Daily checks on cleaning techniques - check recorded.	Liaise with cleaning supervisor. Dispose of contaminated food.
	Biological Cross contamination and growth of food poisoning bacteria or toxins.	Wash hands before handling food. Preparation surfaces and equipment to be sanitised prior to and after raw food prep. Keep raw food separate from cooked. Wash hands after handling raw food. Keep covered once prepared. Ensure food within "Use By/ Best Before" dates.	Visual/sensory checks. Supervision. Regularly check "Use By/ Best Before" dates.	Discard food if past "Use By/ Best Before" dates. Separate raw and cooked foods to remove risk of cross contamination. Supervision/staff training.
5. Cooking	**Physical** Packaging, pests, foreign objects.	Routine pest control survey by *(Insert details of Pest Control Service)*. Cleaning schedule. Equipment Maintenance. Planned preventative maintenance iaw local arrangements.	Monitor efficacy of pest control contract/operations Supervision. Visual/sensory checks.	Pest control treatment by *(Insert details of Pest Control Service)*. Dispose of contaminated food. Report to I/C Galley /Kitchen. Report defect to PROPMAN Galley Manager –submit defect report form. Recall suspect food.
	Chemical Cleaning agents.	Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Supervision.	Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor.

	Biological Survival of food poisoning bacteria or toxins.	**<u>Critical Control Point</u>** Core temperature of food > 75°C.	Use calibrated temperature probe for every batch. Record temperatures in *Temperature Log*.	Continue cooking until temperature is reached. Inform I/C GalleyKitchen. Revise cooking routines .
6. Cooling	**Physical** Packaging, pests, foreign objects.	. Routine pest control survey by *(Insert details of Pest Control Service)*. Keep food covered. Cleaning schedule.	Monitor efficacy of pest control contract/operations Supervision. Visual/sensory checks.	Pest control treatment by *Insert details of pest control service*. Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor.
	Chemical Cleaning agents.	Ensure chilling area hygienically clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Daily check on cleaning techniques - record check.	Dispose of contaminated food.
	Biological Cross contamination and growth of food poisoning bacteria or toxins; growth of surviving spores or pathogens.	**<u>Critical Control Point</u>** Cool food as quickly as possible through the critical zone from >63°C to <8°C in 90 mins*; Cook and chill <8^{o}C within 90mins* .(* best practice <5°C). Use clean, shallow trays to aid cooling. Keep raw food separate	Record chilling time and temperature in Temperature Log.	If longer than 90 mins hrs discard food. Inform supervisor. Investigate possible process failure. Staff training.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
7. Chilled Storage	**Physical** Packaging, pests, foreign objects.	.Routine pest control survey by *(Insert details of Pest Control Service)*. Keep food covered. Cleaning schedule.	Monitor efficacy of pest control contract/operations Visual/sensory checks. Supervision.	Pest control treatment by (*Insert details pest control service).* Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform I/C Galley/Kitchen.
	Chemical Cleaning agents.	Keep storage mediums hygienically clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Supervision.	Dispose of contaminated food. Inform supervisor. Clean immediately and review cleaning schedules.
	Biological Contamination and growth of food poisoning bacteria or toxins.	**<u>Critical Control Point</u>** Separate raw and cooked food. Store <8 ^{o}C. Rotate stock. Observe "Use By/ Best Before" dates.	Check temperatures thrice daily using a calibrated temperature probe. Record on *Temperature Log*. Check "Use By/ Best Before" dates. Visual/sensory checks.	**Chilled:** Discard if >8°C or consume within 4hrs. **Frozen:** Use immediately if Less than -12°C Keep raw/cooked foods separate. Discard food if past "Use By/ Best Before" dates.
8. Cold Service	**Physical** Packaging, pests, foreign objects.	Routine pest control survey by *(Insert details of Pest Control Service)*. Keep food covered when not in use. Cleaning schedule. Planned preventative maintenance iaw local arrangements.	Monitor efficacy of pest control contract/operations Visual/sensory checks. Supervision.	Pest control treatment by *(Insert details of Pest Control Service)* Dispose of contaminated food. Clean immediately and review cleaning schedule. Report to supervisor. Staff training.
	Biological Cross contamination and growth of food poisoning bacteria or toxins.	**<u>Critical Control Point</u>** Equipment must be clean. Cold service: CCP <8 ^{o}C .	Use calibrated food probe. Record temperature in *Temperature Log*.	Discard food if >8°C or consume within 4hrs

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
9. Left Over Food	**Physical** **Chemical** **Biological** Contamination from food poisoning bacteria or toxins.	**<u>Critical Control Point</u>** Food held at the Service Point at <8°C may retained for 1x further service period providing the next service is within 24 hrs.	Visual/sensory checks. Supervision. Determine whether foods have been stored <8°C using temperature monitor.	Discard any food > 8°C.
10. Waste	**Physical** Packaging, pests, foreign objects.	Food waste to be removed from food rooms at end of each meal. **All external waste containers must be covered to prevent pest ingress**.	Supervision and staff training.	Staff retraining. Remove damaged bins.
	Chemical Cleaning agents.	Use cleaning chemical iaw manufacturers instrs. Include on cleaning schedule.	Supervision and staff training. Ensure all cleaning chemical residue is removed	Re-clean, Remove damaged bins. Staff training.
	Biological Contamination from food poisoning bacteria or toxins.	Waste area must be clean. Removal of food waste to be undertaken so as to prevent the risk of cross contamination.	Supervision and staff training.	Separate. Retrain staff. Liaise with contractor and arrange for more frequent removal.

FLOW CHART **LINE D**

HAZARD ANALYSIS
-FOOD/ DISHES THAT ARE COOKED, CHILLED/FREEZE AND REHEATED

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
1. Receipt of Delivery	**Physical** Packaging, pests, foreign objects.	Ensure no foreign material present in deliveries.	Visual/sensory checks by staff receiving goods.	Do not accept from supplier or Inform I/C Galley/Kitchen and initiate disposal action.
	Chemical Cleaning agents.	Adhere to cleaning schedule and follow manufacturer's instructions.	Check cleanliness of delivery trolleys.	Do not accept from supplier or Inform supervisor and return to catering store staff.
	Biological Contamination from food poisoning bacteria or toxins.	Check delivery temperature: **Chilled:** <8 ^{o}C **Frozen:** -12^{o}C or colder Ensure food within "Use By/ Best Before" dates.	Check food temperatures using a calibrated temperature probe. Record temperature in T*emperature Log*. Check "Use By/ Best Before" dates.	**Chilled:** >8°C or **Frozen:** less than -12 ^{o}C return to catering store and inform I/C. Galley/Kitchen. Do not accept from supplier Return to catering store if outside "Use By/ Best Before" dates.
2. Storage	**Physical** Packaging, pests, foreign objects.	Routine pest control surveys by *(Insert details of Pest Control Service).* Keep food covered. Cleaning schedule.	Monitor efficacy of pest control contract/operations Visual/sensory checks. Supervision.	Pest control treatment by *(Insert details of Pest Control Service).* Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform I/C Galley/Kitchen.
	Chemical Cleaning agents.	Keep refrigerators and storage areas hygienically clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Supervision.	Dispose of contaminated food. Inform supervisor. Clean immediately and review cleaning schedules.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
	Biological Contamination and growth of food poisoning bacteria or toxins.	**Refrigerator:** <8°C **Frozen:** -18ºC or colder. Separate raw and cooked foods. Rotate stock – observe "Use By/ Best Before" dates.	Check temperatures thrice daily using a calibrated temperature probe. Record in *Temperature Log*. Check "Use By/ Best Before" dates. Visual/sensory checks.	Use food immediately or discard if high temperatures **Refrigerator:** >8°C or **Freezer:** less than -18°C Adjust or repair chiller or freezer unit. Separate raw and cooked foods discard if contamination suspected. Discard food if past "Use By" dates.
3. Defrost In accordance with 0320.	**Physical** Packaging, pests, foreign objects.	Routine pest control surveys by *(Insert details of Pest Control Service).* Keep covered when not in use. Cleaning schedule.	Monitor efficacy of pest control contract/operations Supervision. Visual/sensory checks.	Pest control treatment by *(Insert details of Pest Control Service).* Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor. Staff training.
	Chemical Cleaning agents.	Equipment must be clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Daily checks on cleaning techniques – check recorded.	Liaise with cleaning supervisor. Dispose of contaminated food.
	Biological Cross contamination and growth of food poisoning bacteria or toxins.	Wash hands before handling food. Surfaces and equipment to be sanitised prior to defrosting. Keep raw food separate. Defrost Temp:<8 °C . Keep covered <8 °C until required for use. Ensure food within "Use By/ Best Before" dates.	Visual/sensory checks. Supervision. Regularly check "Use By/ Best Before" dates.	Discard contaminated food, and separate raw and cooked foods to remove risk of cross contamination. Discard food if past "Use By/ Best Before" dates. Supervision/staff training.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
4. Preparation	**Physical** Packaging, pests, foreign objects.	**Critical Control Point** Routine pest control surveys by *(Insert details of Pest Control Service)*. Keep covered when not in use. Cleaning schedule. Planned preventative maintenance iaw local arrangements.	Monitor efficacy of pest control contract/operations Supervision. Visual/sensory checks.	Pest control treatment by *(Insert details of Pest Control Service)*. Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor. Staff training.
	Chemical Cleaning agents	**Critical Control Point** Equipment must be clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Daily checks on cleaning techniques - check recorded.	Liaise with cleaning supervisor. Dispose of contaminated food.
	Biological Cross contamination and growth of food poisoning bacteria or toxins.	Wash hands before handling food. Preparation surfaces and equipment to be sanitised prior to and after raw food prep. Keep raw food separate from cooked. Wash hands after handling raw food. Keep covered once prepared. Ensure food within "Use By/ Best Before" dates.	Visual/sensory checks. Supervision. Regularly check "Use By/ Best Before" dates.	Discard food if past "Use By/ Best Before" dates. Separate raw and cooked food remove risk of cross contamination. Supervision/staff training.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
5. Cooking	**Physical** Packaging, pests, foreign objects.	Routine pest control surveys by *(Insert details of Pest Control Service).* Cleaning schedule. Equipment maintenance. Planned preventative maintenance iaw local arrangements.	Monitor efficacy of pest control contract/operations Supervision. Visual/sensory checks.	Pest control treatment by *(Insert details of Pest Control Service).* Dispose of contaminated food. Report to I/C Galley/Kitchen. Report defects to PROPMAN/ galley manager - submit *defect report form.* Recall suspect food.
	Chemical Cleaning agents.	Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Supervision.	Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor.
	Biological Survival of food poisoning bacteria or toxins.	**<u>Critical Control Point</u>** Core temperature of food >75°C.	Use calibrated temperature probe for every batch. Record temperatures in *Temperature Log*.	Continue cooking until temperature is reached. Inform I/C Galley/Kitchen. Revise cooking routines.
6. Cooling	**Physical** Packaging, pests, foreign objects.	Routine pest control surveys by *(Insert details of Pest Control Service).* Keep food covered. Cleaning schedule.	Monitor efficacy of pest control contract/operations Visual/sensory checks. Supervision.	Pest control treatment by (*Insert details pest control service).* Dispose of contaminated food. Inform supervisor.
	Chemical Cleaning agents.	Ensure chilling area hygienically clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Supervision.	Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
	Biological Cross contamination and growth of food poisoning bacteria or toxins.	**<u>Critical Control Point</u>** Cool food as quickly as possible to CCP <8ºC, within 90 mins. (Cook and Chill <8°C within 90mins). Store at <8 °C Use clean, shallow trays to aid cooling. Keep raw food separate	Record chilling time and temperature In *Temperature Log*.	If food cannot be chilled within 90 mins then discard. Inform supervisor. Investigate possible equipment failure. Staff training.
7. Chilled & Frozen Storage	**Physical** Packaging, pests, foreign objects.	Routine pest control surveys by *(Insert details of Pest Control Service).* Keep food covered. Cleaning schedule.	Monitor efficacy of pest control contract/operations Visual/sensory checks. Supervision.	Pest control treatment by (*Insert details pest control service).* Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform I/C Galley/Kitchen.
	Chemical Cleaning agents.	Keep storage mediums hygienically clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Supervision.	Dispose of contaminated food. Inform supervisor. Clean immediately and review cleaning schedules.
	Biological Contamination and growth of food poisoning bacteria or toxins.	**<u>Critical Control Point</u>** Separate raw and cooked food **Chilled CCP:** <8 °C **Frozen CCP:** -18 °C or colder Rotate stock Observe "Use By/ Best Before" dates. Frozen Rechauffe dishes: stored covered & labelled- use within 30 days.	Check temperatures thrice daily using a calibrated temperature probe. Record on *Temperature Log*. Check "Use By/ Best Before" dates. Visual/sensory checks.	**Chilled:** Discard if >8°C or consume within 4hrs. **Frozen:** Use immediately if less than -18 °C Adjust or repair chiller or freezer unit. Keep raw/cooked foods separate. Discard food if past "Use By/ Best Before" dates.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
8. Defrost In accordance with 0320.	**Physical** Packaging, pests, foreign objects.	Routine pest control surveys by *(Insert details of Pest Control Service).* Keep covered when not in use. Cleaning schedule.	Monitor efficacy of pest control contract/operations Supervision. Visual/sensory checks.	Pest control treatment by *(Insert details of Pest Control Service).* Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor. Staff training.
	Chemical Cleaning agents.	Equipment must be clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Daily checks on cleaning techniques - check recorded.	Liaise with cleaning supervisor. Dispose of contaminated food.
	Biological Cross contamination and growth of food poisoning bacteria or toxins.	Wash hands before handling food. Surfaces and equipment to be sanitised prior to defrosting. Keep raw food separate. Keep covered <8 ^{o}C until required for use. Ensure food within "Use By/ Best Before" dates.	Visual/sensory checks. Supervision. Regularly check "Use By/ Best Before" dates.	Discard contaminated food, and separate raw and cooked foods to remove risk of cross contamination. Discard food if past "Use By/ Best Before" dates. Supervision/staff training.
9. Reheating	**Physical** Packaging, pests, foreign objects.	Routine pest control surveys by *(Insert details of Pest Control Service).* Cleaning schedule. Equipment maintenance. Planned preventative maintenance iaw local arrangements.	Monitor efficacy of pest control contract/operations Visual/sensory checks. Supervision.	Pest control treatment by *(Insert details of Pest Control Service)* Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor. Report defect to PROPMAN/ galley manager.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
	Chemical Cleaning agents.	**Critical Control Point** Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Supervision.	Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor.
	Biological Survival of food poisoning bacteria or toxins.	**Critical Control Point** Core temperature of food >75°C (82°C in Scotland) for a minimum of 2 mins.	Use calibrated temperature probe for every batch. Record temperature in *Temperature Control Log*.	Continue reheating until temperature is reached. Inform I/C Galley/Kitchen. Revise reheating routines.
10. Hot Service	**Physical** Packaging, pests, foreign objects.	Routine pest control surveys by *(Insert details of Pest Control Service).* Keep food covered when not in use. Cleaning schedule.	Monitor efficacy of pest control contract/operations Supervision. Visual/sensory checks.	Pest control treatment by *(Insert details of Pest Control Service).* Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform supervisor. Staff training.
	Chemical Cleaning agents.	Equipment must be clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Weekly check on cleaning techniques - record check.	Dispose of contaminated food.
	Biological Contamination and growth of food poisoning bacteria or toxins.	**Critical Control Point** Equipment must be clean. Hot service: temperature >63°C.	Use calibrated food probe in accordance with *SOs*. Record temperature in *Log*.	If food <63°C use within 2 hrs from the end of the cooking cycle. Inform I/C Galley. Staff retraining / Check equipment for defects.

STEP	HAZARDS What can go wrong here ?	PREVENTIVE MEASURES CONTROL What can I do about it ?	MONITORING How can I check ?	CORRECTIVE ACTION What if it's not right ?
11. Waste	**Physical** Packaging, pests, foreign objects.	Remove waste from food rooms at end of each meal. **All external waste containers must be covered to prevent pest ingress**.	Supervision and staff training.	Staff retraining. Remove damaged bins.
	Chemical Cleaning agents.	Use cleaning chemical iaw manufacturers instrs. Include on cleaning schedule.	Supervision and staff training. Ensure all cleaning chemical residue is removed	Re-clean, Remove damaged bins. Staff training.
	Biological Contamination from food poisoning bacteria or toxins.	Waste area must be clean. Removal of food waste to be undertaken so as to prevent the risk of cross contamination.	Supervision and staff training.	Separate. Retrain staff. Liaise with contractor and arrange for more frequent removal.

HAZARD ANALYSIS IN-FLIGHT CATERING FOOD SERVICE

STEP	HAZARDS What can go wrong here?	PREVENTIVE MEASURES CONTROL What can I do about it?	MONITORING How can I check?	CORRECTIVE ACTION What if it's not right?
1. Receipt of Delivery	**Physical** Packaging, pests, foreign objects, broken security seals on trolleys (iaw NASP).	Ensure no foreign material present in deliveries.	Visual/sensory checks by staff receiving goods. Cross check security tag numbers on trolleys against in-flt cat paperwork accompanying delivery.	Refuse delivery. Request fresh rations.
	Chemical Cleaning agents.	Ensure no cleaning agents are evident on trolleys.	Visual assessment of cleanliness of delivery trolleys and delivery vehicle.	Do not accept rations. Inform Snr Cabin Crew Supervisor and submit report to in-flt catering manager.
	Biological Contamination from food poisoning bacteria or toxins.	**Critical Control Point** Check delivery temperature: Chilled: <8 ^{o}C Freshly Prepared Hot: >63˚ C Frozen**:** > -18^{o}C. Ensure food within "Use By/ Best Before" dates.	Check food temperatures using a calibrated temperature probe. Record temperature in Temp Log. Check "Use By/ Best Before" dates. **NB. A 2˚C temp tolerance exists.**	Chilled: <8°C Freshly Prepared Hot: > 63˚C Frozen: >-18 ^{o}C (Acceptable tolerance down to -12˚C for delivery) If food temp is recorded outside limits by more than 2˚C, ask to see In-Flt Cat temp documentation accompanying rations. Cross check temps on paperwork and time taken. Use common sense to determine appropriate action. If food temps just outside limits upon delivery, but were within limits upon departure from In-Flt facility, consider accepting rations and annotating on paperwork actions taken and reasoning behind decision. Alternatively, do not accept from supplier and request fresh rations.

STEP	HAZARDS What can go wrong here?	PREVENTIVE MEASURES CONTROL What can I do about it?	MONITORING How can I check?	CORRECTIVE ACTION What if it's not right?
2. Storage	**Physical** Packaging, pests, foreign objects.	Keep food covered. Cleaning schedule. Ensure 'One Shots' insecticide on board aircraft.	Visual/sensory checks. Supervision by Snr Cabin Crew. Confirm 'One Shots' insecticide has been dispensed.	Dispose of contaminated food & inform Snr Cabin Crew. Clean immediately and review cleaning schedules. Request appropriate stocks of 'One Shots' insecticide for aircraft.
	Chemical Cleaning agents.	Keep refrigerators and storage areas hygienically clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Supervision.	Dispose of contaminated food. Inform Snr Cabin Crew Supervisor. Clean immediately and review cleaning schedules.
	Biological Contamination and growth of food poisoning bacteria or toxins.	**Critical Control Point** Check temp of food in storage at regular intervals. Record temps in Temp Log. Visual/Sensory Checks.	Check temp at regular intervals using a calibrated temperature probe. Record in Temp Log. Check "Use By/ Best Before" dates. Visual/sensory checks.	Consume immediately or discard if chilled food has been outside temp limits for more than 4 hrs. Defrosting frozen food is to be treated as chilled. Submit request to repair chiller or freezer unit. Discard food if past "Use By/ Best Before" dates.

STEP	HAZARDS What can go wrong here?	PREVENTIVE MEASURES CONTROL What can I do about it?	MONITORING How can I check?	CORRECTIVE ACTION What if it's not right?
3. Cold Service	**Physical** Packaging, pests, foreign objects.	**Critical Control Point** Keep food covered when not in use. Cleaning schedule. Pest Control.	Visual/sensory checks. Supervision by Snr Cabin Crew. Delivery of 'One Shots' insecticide.	Dispose of contaminated food. Clean immediately and review cleaning schedules. Inform Snr Cabin Crew Supervisor. Deliver 'One Shots' insecticide prior to food service. Staff training.
	Chemical Cleaning agents.	Equipment must be clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Supervisory Snr Cabin Crew checks on cleaning techniques – check recorded on Temp Log.	Clean immediately and review cleaning schedules. Dispose of contaminated food. Inform Snr Cabin Crew.
	Biological Cross contamination and growth of food poisoning bacteria or toxins.	**Critical Control Point** Ensure temp of food within set limits. Wash hands before handling food. Surfaces and equipment to be sanitised prior to service. Ensure food within "Use By/ Best Before" dates.	Discard chilled food if temp higher than 2˚C tolerance. Consume within 4 hrs of leaving temp controlled environment. Check "Use By/ Best Before" dates.	Discard contaminated food, and separate raw and cooked foods to remove risk of cross contamination. Discard food if past "Use By/ Best Before" dates. Supervision/staff training.

STEP	HAZARDS What can go wrong here?	PREVENTIVE MEASURES CONTROL What can I do about it?	MONITORING How can I check?	CORRECTIVE ACTION What if it's not right?
4. Hot Service.	**Physical** Packaging, pests, foreign objects.	**Critical Control Point** Pest Control. Keep covered when not in use. Cleaning schedule.	'One Shots' insecticide delivered. Snr Cabin Crew Supervision. Visual/sensory checks.	Report to Snr Cabin Crew Supervisor and request 'One Shots' dispensed prior to food service. Dispose of contaminated food. Clean immediately and review cleaning schedules. Staff training.
	Chemical Cleaning agents	**Critical Control Point** Equipment must be clean. Adhere to cleaning schedule and follow manufacturer's instructions.	Visual/sensory checks. Snr Cabin Crew Supervisory checks on cleaning techniques - check recorded on Temp Log.	Dispose of contaminated food.
	Biological Cross contamination and growth of food poisoning bacteria or toxins.	**Critical Control Point** Wash hands before handling food. Equipment and galley preparation area must be clean. Surfaces and equipment to be sanitised prior to and following food service. Probe a selection of meals taken from different parts of the oven s and serve food immediately upon reaching required core temp of > 75˚C. Ensure food within "Use By/ Best Before" dates.	Use calibrated thermometer food probe to check temp of food. Visual/sensory checks. Record temp in Temp Log.	Food to be served immediately to pax upon reaching core temp of >75˚C. If not served immediately, food is to be destroyed. Check oven equipment for defects and report if necessary. Discard food if past "Use By/ Best Before" dates. Supervision/staff training.

STEP	HAZARDS What can go wrong here?	PREVENTIVE MEASURES CONTROL What can I do about it?	MONITORING How can I check?	CORRECTIVE ACTION What if it's not right?
5. Left Over Food	**Physical** Packaging, pests, foreign objects. **Chemical** Cleaning agents. **Biological** Contamination and growth of food poisoning bacteria or toxins.	**Critical Control Point** Food < 63˚C to be disposed of. No Reheat.	Snr Cabin Crew Supervision. Visual/sensory checks. Probe food.	Discard all leftover food.
6. Waste	**Physical** Packaging, pests, foreign objects. **Biological** Contamination from food poisoning bacteria or toxins.	Food waste to be removed from aircraft galley at end of each meal service. Full rubbish bags to be tied/sealed securely and stored in specially designated area for removal upon landing. All galley waste to be double bagged and kept near exits (but not to be placed outside aircraft – to prevent pest infestation). **All international waste to be double bagged and sealed securely for onward disposal iaw DEFRA regulations.** Removal of food waste to be undertaken so as to prevent the risk of cross contamination.	Supervisor to check correct waste procedures.	Staff training. Correct disposal of waste.

(INTENTIONALLY BLANK)

Appendix1 - DAILY FOOD SAFETY MANAGEMENT RECORD (TEMPLATE)

Unit/Galley/Mess/Kitchen:______________________ Date:___________________________ IC Shift:___________________________

TIME	FREEZER No 1	FREEZER No 2	FRIDGE No 1	FRIDGE No 2	NAME	SIGNATURE	REMARKS

	HAL	BATCH COOK		BATCH COOK		BATCH COOK		END OF SERVICE (Only for items to be cooled and re-used)		NAME & SIGNATURE
		TIME	TEMP	TIME	TEMP	TIME	TEMP	TIME	TEMP	
Meal:	HAL	TIME	TEMP	TIME	TEMP	TIME	TEMP	TIME	TEMP	
Meal:	HAL	TIME	TEMP	TIME	TEMP	TIME	TEMP	TIME	TEMP	
Meal:	HAL	TIME	TEMP	TIME	TEMP	TIME	TEMP	TIME	TEMP	

This form is designed for a manager to verify and validate records taken by their catering personnel, which is normally a 10% spot check of the procedures carried out in their respective establishments.
*** Note**: Food listed in the **END OF SERVICE** section is to be transferred to the **Advanced Food Preparation Record** to maintain the food safety audit trail. All food items that are to be cooled and re-used must be recorded in this section, having being maintained during service at above 63°C.

Appendix1 - DAILY FOOD SAFETY MANAGEMENT RECORD (EXAMPLE)

Unit/Galley/Mess/Kitchen:_____ **Date:**_____ **IC Shift:**_____

TIME	FREEZER No 1	FREEZER No 2	FRIDGE No 1	FRIDGE No 2	NAME	SIGNATURE	REMARKS
0800	- 21ºC	- 19.3ºC	3.2ºC	4.1ºC	**BLOGGS**	D Bloggs	

	HAL	BATCH COOK		BATCH COOK		BATCH COOK		END OF SERVICE* (Only for items to be cooled and re-used)		NAME & SIGNATURE
		TIME	TEMP	TIME	TEMP	TIME	TEMP	TIME	TEMP	
Scrambled Egg	B	0830	70°C							**Bloggs *Bloggs***
Meal: Lunch	**HAL**	**TIME**	**TEMP**	**TIME**	**TEMP**	**TIME**	**TEMP**	**TIME**	**TEMP**	
Cornish Pasties	D	1215	75°C	1245	75°C					**Bloggs *Bloggs***
Salad/Sandwich Bar Meats Beef	A	1220	4°C							**Bloggs *Bloggs***
Mayonnaise	A	1220	5°C							**Bloggs *Bloggs***
Meal: Dinner	**HAL**	**TIME**	**TEMP**	**TIME**	**TEMP**	**TIME**	**TEMP**	**TIME**	**TEMP**	
Roast Turkey	B	1630	82°C					1730	68°C	**Bloggs *Bloggs***
Beef Stew	B	1630	89°C	1700	82°C					**Bloggs *Bloggs***
Lasagne	D	1630	78°C							**Bloggs *Bloggs***
Coleslaw	**A**	**1700**	**4°C**							**Bloggs *Bloggs***
Meal: Supper	**HAL**	**TIME**	**TEMP**	**TIME**	**TEMP**	**TIME**	**TEMP**	**TIME**	**TEMP**	
Braised Turkey	D	2100	78°C							**Bloggs *Bloggs***
Beef Stew	D	2100	76°C							**Bloggs *Bloggs***
Chicken Pie	D	2100	78°C							**Bloggs *Bloggs***

*** Note**: Food listed in the **END OF SERVICE** section is to be transferred to the **Advanced Food Preparation Record** to maintain the food safety audit trail. All food items that are to be cooled and re-used must be recorded in this section, having being maintained during service at above 63°C.

APPENDIX 2 - ADVANCE FOOD PREPARATION RECORD (TEMPLATE)

GALLEY/KITCHEN/MESS:_____ **IC** **DATE:**_____

SHIFT:_____

		End Cook		Blast/Chill		Into Fridge/Freezer		Labelled[1]	
Dish Name	**HAL**	**Time**	**Temp**	**Time**	**Temp**	**Time**	**Temp**	**(tick)**	**Name & Signature**

[1] To contain product name, preparation date and In House consumption date.

Appendix 2 -ADVANCE FOOD PREPARATION RECORD (EXAMPLE)

GALLEY/KITCHEN/MESS: _____ **IC SHIFT:**_____ **DATE:** _____

		End Cook		Blast/Chill		Into Fridge/Freezer		Labelled[1]	
Dish Name	**HAL**	**Time**	**Temp**	**Time**	**Temp**	**Time**	**Temp**	**(tick)**	**Name & Signature**
Lasagne	D	1500	80ºC	1505	3ºC	1620	4C	✓	Bloggs *Bloggs*
Mince for cottage pie	D	1000	90ºC	1005	4ºC	1125	4ºC	✓	Bloggs *Bloggs*
Roast Beef for salads	A	1200	77ºC	1310	4ºC	1311	5ºC	✓	Bloggs *Bloggs*
Eggs for sandwiches	A	0900	98ºC	0915	3ºC	0930	4ºC	✓	Bloggs *Bloggs*

Food to be chilled <8ºC* within 90minutes
(* <5ºC Best Practice)

[1] To contain product name, preparation date and In House consumption date.

APPENDIX 3 - FOOD TIME/TEMPERATURE RECORD (TEMPLATE)

GALLEY/KITCHEN/MESS:_____ **IC SHIFT:**_____ **DATE:**_____

MEAL:_____

		Batch Cook No:		**Batch Cook No:**		**Batch Cook No:**		**End of Service** (Only for items to be cooled and re-used)		
Dish Name	**HAL**	**Time**	**Temp**	**Time**	**Temp**	**Time**	**Temp**	**Time**	**Temp**	**Name & Signature**

Blast chill to a temperature <5ºC within 90mins

Appendix 3- FOOD TIME/TEMPERATURE RECORD (EXAMPLE)

GALLEY/KITCHEN/MESS:_____ **IC SHIFT:**_____ **DATE:**_____

MEAL:_____

		Batch Cook No:		**Batch Cook No:**		**Batch Cook No:**		**End of Service** (Only for items to be cooled and re-used)		
Dish Name	**HAL**	**Time**	**Temp**	**Time**	**Temp**	**Time**	**Temp**	**Time**	**Temp**	**Name & Signature**
Beef Curry	B	1145	92ºC	1215	90ºC	1230	87ºC	1245	72ºC	D Bloggs
Chicken Portions	A	1145	3ºC	1200	4ºC			1245	5ºC	D Bloggs

REHEATING FOOD 0323. It is advised that the re-heating cooked food is avoided, but if this is not possible it must only be re-heated once and the following steps are to be taken:

a. Ensure that the food reaches a core temperature of 75^{o}C for at least 2 minutes. (In Scotland it is a legal requirement for the centre of the food being re-heated to reach 82^{o}C for at least 2 minutes).

b. Use digital probe thermometers to check the temperature at the centre of the food. (Probes are to be disinfected using bactericidal wipes between each use).

c. The food is to be served and eaten as soon as possible.

d. After re-heating, any leftover cooked food is to be thrown away

APPENDIX 4 – FRIDGE/FREEZER TEMPERATURE RECORD (TEMPLATE)

For (week beginning) _____

Fridge/Freezer																					
Day	**Mon**			**Tue**			**Wed**			**Thu**			**Fri**			**Sat**			**Sun**		
Date																					
Time																					
Initials																					
Fridge 1																					
Fridge 2																					
Fridge 3																					
Fridge 4																					
Fridge 5																					
Freezer 1																					
Freezer 2																					
Freezer 3																					
Freezer 4																					
Supervisor Check																					

Comment:

JSP 456 Vol 3 0325 Fridges and Freezers must be checked thrice a day using a calibrated air/probe thermometer, not just reading from the dial on the equipment. Best practice recommends that the fridge should operate at a temperatures < 5ºC and freezers at - 18ºC to -21ºC

Initials of individual checking equipment

Appendix 4 – FRIDGE/FREEZER TEMPERATURE RECORD (EXAMPLE)

For (week beginning) _____

Example times of monitoring

Fridge/Freezer																					
Day	**Mon**			**Tue**			**Wed**			**Thu**			**Fri**			**Sat**			**Sun**		
Date																					
Time	0700	1330	1830	0730	1314	1845	0711	1342	1845	0715	1400	1745	0700	1345	1800	0700	1415	1843	0730	1415	1900
Initials	DGC	DGC	DGC	DGC	DGC	KI	KI	DS	DGC	DS	KI	DS	KI	DGC	DS	DGC	DS	KI	DGC	DS	DS
Fridge 1	8ºC	5.2ºC	3ºC	6ºC	2ºC	5ºC	10ºC(1)	3ºC	4ºC	5ºC	9ºC(2)	3ºC	1ºC	4ºC	3ºC	4ºC	5ºC	3ºC	9ºC(3)	2ºC	4ºC
Fridge 2																					
Fridge 3																					
Fridge 4																					
Fridge 5																					
Freezer 1	-22ºC	-16ºC(4)																			
Freezer 2	U/S	U/S	U/S																		
Freezer 3																					
Freezer 4																					
Supervisor Check	Bloggs	Smyth																			

Temperature out of control state why, give a reference number and comment in comments box at bottom of form

Comment: 1 Fridge recently opened for delivery of rations. 2 Fridge Cleaning. 3. On defrost Cycle. 4. Delivery of frozen foods
Freezer 2 U/S awaiting new door seals

JSP 456 Vol 3 0325 Fridges and Freezers must be checked thrice a day using a calibrated air/probe thermometer, not just reading from the dial on the equipment. Best practice recommends that the fridge should operate at a temperatures < 5ºC and freezers at - 18ºC to -21ºC

APPENDIX 5- GALLEY/ KITCHEN/ MESS BLAST CHILLER MONITORING RECORD (TEMPLATE)

GALLEY/KITCHEN/MESS:______________________

DATE & BATCH NO:_____________________________

Time In:		**Temp:**		**Remarks (relating to intended use or quantity)**
Time Out:		**Temp:**		

DATE & BATCH NO:_________

Time In:		**Temp:**		**Remarks (relating to intended use or quantity)**
Time Out:		**Temp:**		

DATE & BATCH NO:_________

Time In:		**Temp:**		**Remarks (relating to intended use or quantity)**
Time Out:		**Temp:**		

DATE & BATCH NO:_________

Time In:		**Temp:**		**Remarks (relating to intended use or quantity)**
Time Out:		**Temp:**		

DATE & BATCH NO:_________

Time In:		**Temp:**		**Remarks (relating to intended use or quantity)**
Time Out:		**Temp:**		

DATE & BATCH NO:_________

Time In:		**Temp:**		**Remarks (relating to intended use or quantity)**
Time Out:		**Temp:**		

APPENDIX 6 - DISPERSED FEEDING RECORD

DISPERSED FEEDING RECORD FCAT 1013

Unit/Galley/Mess/Kitchen:_____ Date:_____

Dish	Temp/Time	Temp/Time At Feeding Location	Remarks

Shift NCO Signature:_____ Recipient signature[1]:_____
Name:_____ Name:_____

To be produced in duplicate: 1 x copy retained with Food Safety Records and 1 x copy to accompany recipient of food.

Completion notes for column:
(a) Enter dish e.g. stew or packed meal.
(b) Enter time and temperature when either hot food is placed into insulated container or cold food leaves a refrigerated environment.
(c) If products are not temperature probed at the feeding location, consumption is to be within 4 hrs (cold food) or 2 hrs (hot food) of the time in column (b). Cold food is to be consumed within 4 hrs of temperature rising above 8°C. Hot food is to be consumed within 2 hrs of the temperature dropping below 63°C

[1.] Recipient signs to confirm receipt of products and requirements for consumption in accordance with completion notes for columns (b) and (c).

DISPERSED FEEDING RECORD FCAT 1013

Unit/Galley/Mess/Kitchen:_____ Date:_____

Dish	Temp/Time	Temp/Time At Feeding Location	Remarks

Shift NCO Signature:_____ Recipient signature[1]:_____
Name:_____ Name:_____

To be produced in duplicate: 1 x copy retained with Food Safety Records and 1 x copy to accompany recipient of food.

Completion notes for column:
(b) Enter dish e.g. stew or packed meal.
(b) Enter time and temperature when either hot food is placed into insulated container or cold food leaves a refrigerated environment.
(c) If products are not temperature probed at the feeding location, consumption is to be within 4 hrs (cold food) or 2 hrs (hot food) of the time in column (b). Cold food is to be consumed within 4 hrs of temperature rising above 8°C. Hot food is to be consumed within 2 hrs of the temperature dropping below 63°C

[1.] Recipient signs to confirm receipt of products and requirements for consumption in accordance with completion notes for columns (b) and (c).

ANNEX C - TEMPERATURE PROBE CALIBRATION RECORD (TEMPLATE)

Probe No:……..(Serial Number)

MONTH	-17.5C	0°C	+71°C	NAME & SIGNATURE
Jan				
Feb				
Mar				
Apr				
May				
Jun				
Jul				
Aug				
Sep				
Oct				
Nov				
Dec				
Comment				

Calibration: A monthly calibration check of each thermometer is to be made at each of the holding temperatures using each of the three test caps. If this cannot be achieved then the procedures at para 0332b and 0332c should be adopted.

ANNEX C
APPENDIX 1 – ALTERNATIVE METHOD
TEMPERATURE PROBE CALIBRATION RECORD (TEMPLATE)

Probe No: ……. (Serial Number)

MONTH	TESTED HOT	TESTED COLD	NAME & SIGNATURE
Jan			
Feb			
Mar			
Apr			
May			
Jun			
Jul			
Aug			
Sep			
Oct			
Nov			
Dec			

ANNEX D- COOK-CHILL AND COOK-FREEZE

INTRODUCTION

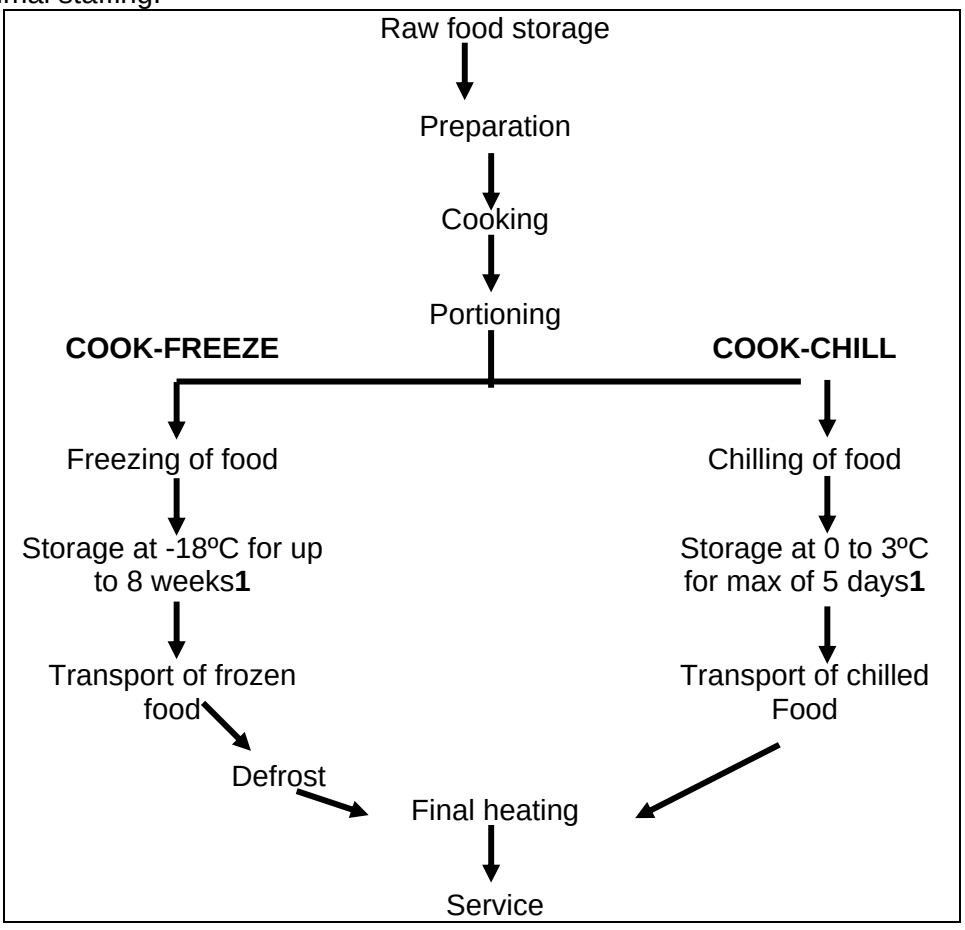
1. A number of Service establishments, specifically in-flight catering production units utilise a dedicated cook-chill or cook-freeze procedure. Cook-chill and cook-freeze systems are methods of preparing food in advance of need, thus allowing the separation of food preparation and service, and the rationalisation of the catering process.

OVERVIEW

2. The two methods of producing in-flight meals by a cook-chill/cook-freeze system are summarised below and illustrated in the diagram:

a. **Cook-chill.** Cook-chill is a system where food is prepared and cooked in economic quantities, retained in a state of `suspended freshness' by rapid chilling and storage at less than 3^{o}C, and served within 5 days from finishing galleys/kitchens with minimal staffing. Kitchens supporting the provision of satellite feeding (ships in refit) may also utilise such a system.

b. **Cook-freeze.** This is a system where high quality food is prepared and cooked in economic quantities, retained in a state of `suspended freshness' by rapid chilling, freezing and storage, and served up to 8 weeks later from finishing galleys/kitchens with minimal staffing.



1. Department of Health in 1989: Chilled and Frozen: Guidelines on Cook-Chill and Cook-Freeze Catering Systems (ISBN 0 11 321161 9)

HAZARD ANALYSIS

3. The principles of hazard analysis described in para 0303 should be applied to cook-chill and cook-freeze. Potential hazards that are to be considered include:

a. Mistakes in the batch preparation of food could lead to a far greater outbreak of food poisoning than smaller scale cooking based on normal meal times.

b. Difficulties in ensuring adequate heat penetration and rapid cooling after cooking.

COOK-CHILL/COOK- FREEZE CONTROL MEASURES

4. Where hazards are identified, control measures must be introduced through catering standing orders. The main emphasis must be placed on the correct storage between cooking and service to prevent the multiplication of organisms which may have survived the heat process, or which have reached the food after cooking.

UNDERLYING PRINCIPLES OF COOK-CHILL

5. The development of effective refrigeration equipment, particularly blast chillers, allowed the introduction of a safe system, which depends upon a number of characteristics of bacteria to prevent food poisoning. The method of food preservation in many cook-chill foods is low temperature. Pathogenic bacteria will not increase at temperatures below 3°C and the activity of many spoilage organisms is also severely curtailed at this temperature. The growth of all bacteria has a lag phase, a period when no increase occurs when in a new environment, as would occur following cross-contamination. This period normally lasts for several hours. Cook-chill therefore depends upon cooking foods to at least pasteurisation temperature to ensure that most pathogens are killed, and then rapidly reducing the temperature of the food to 3°C or below within the lag phase period. This is followed by strict temperature control during the storage period to maintain the safety and integrity of the product.

THE PRINCIPLES OF CHILLING

6. Chilling, as used in cook-chill catering, is not to be confused with refrigerated storage as practised by most caterers. Cook-chill relies on specifically dedicated equipment capable of removing heat from food in a rapid and controlled way. The rate of chilling relies upon a number of independent and dependent factors as listed below:

a. The nature of the chilling medium (air, nitrogen, carbon dioxide, water).

b. The temperature of the chilling medium.

c. The circulation of the chilling medium.

d. The shape of the food container.

e. The depth of food in the container.

f. The head-space in the container.

g. Whether or not the container is correctly covered.

7. Factors dependent on the food being chilled include the following.

a. Food heat conductivity and heat capacity.

b. Food density.

c. Initial temperature.

d. Food bulk and volume.

e. Food moisture content.

8. The factors listed have significant effects upon chilling rates. For example, containers without covers chill about 15% more quickly than correctly covered ones, although gas chilled systems such as air and nitrogen do tend to dry out uncovered foods. Similarly, a head-space reduction from 20mm to 10mm will also give a 15% saving in chilling time, but remember to cut down the head-space by using a shallower container rather than by increasing the depth of the food.

THE COOK-CHILL METHOD

9. The basis for cook-chill catering systems is laid down in guidelines issued by the Department of Health in 1989: Chilled and Frozen: Guidelines on Cook-Chill and Cook-Freeze Catering Systems (ISBN 0 11 321161 9). Any caterers using cook-chill as the basis of their system are to ensure that the system complies fully with this guidance, particularly if operating in the healthcare sector where compliance is viewed as being mandatory. Strict personal and equipment hygiene must be maintained; ideally separate equipment and staff will be used in the pre and post-cooking areas, especially in large-scale operations.

10. Cook-chill systems can be broken down into the following stages:

a. Cook the food to ensure pasteurisation. This means ensuring that the food reaches a core temperature of 75^{o}C for 2 mins.

b. Portion or tray the food into containers for chilling within 30 minutes of the end of cooking. The depth of food in trays is not to exceed 50mm and joints of meat are not to exceed 2.5kgs in weight.

c. Place the food into a blast chiller and chill to 3°C or below within 90 minutes. Meat and poultry joints are to reach 3°C within 150 minutes. Meat products are not to exceed 2.5kgs in weight, and large poultry carcasses are to be broken down into sections prior to chilling.

d. Place in refrigerated storage between 0 and 3°C.

e. Transport/distribute at between 0 and 3°C.

f. Reheat to a core temperature of 75°C (82^{o}C in Scotland) for 2 mins and commence serving within 15 minutes of the end of the reheating process.

11. The recommended maximum life for cook-chill catering foods is five days, including the days of production and consumption. If, during storage, the temperature of the food rises to above 5°C, but below 10°C, the food must be consumed within 12 hours. If the temperature of the food rises above 10°C, it is to be discarded. If any food is not consumed after reheating, it must be discarded. Due to the strict temperature requirements on food storage, refrigeration used must be specifically for cook-chill food storage with an operating range between 0 and 2°C, and preferably fitted with automatic temperature monitoring, recording and an alarm.

COOK-FREEZE METHOD

12. Once the core temperature (upon initial cooking) reaches 75^{o}C, products being prepared and stored using cook-freeze must be frozen to –5^{o}C within 90 minutes. Products are then to be stored and distributed (for up to 8 weeks) at –18^{o}C or below until reheated. Prior to re-heating, products must be correctly thawed. This must be monitored to ensure that the product temperature does not rise excessively or above 3^{o}C. Consumption must then be within 24 hours.

MONITORING THE SYSTEM

13. Any food production operation should have been subject to a food safety assessment based on HACCP principles and, although not a strict legal requirement, such systems must be documented when it covers such a high-risk operation. The following monitoring and recording is to be completed, whether a full-scale production system is being operated or a caterer is using cook-chill/ freeze as a supplement to a conventional system:

a. The name of the food and the production date.

b. The time at the end of the cooking process and the core temperature of the food.

c. The time the food entered the chiller/ freezer.

d. The time the food left the chiller and the core temperature of the food.

e. The temperature of the storage refrigerator/ freezer.

f. The core temperature of the food at the end of reheating.

g. Effective monitoring by supervisors must be provided to monitor the temperature control points. All temperature recording devices, refrigerators, chillers, freezers, automatic cooking equipment, are to be checked, calibrated and maintained regularly.

14. During storage, the container is to be labelled with the name of the food and either the production or Use-By date to ensure correct stock rotation. The records above will establish that the food was pasteurised (b), was portioned within 30 minutes (c–b), was chilled within 90 minutes (d–c), was chilled to the correct temperature (d), was stored at the correct temperature (e) and was re-pasteurised on reheating (f). The same records are to be kept when operating a cook-freeze system.

SUMMARY

15. The following checklist is to be referred to if cook-chill or freeze food production process is used:

a. Cook-chill methodology:

(1) Cook to ensure pasteurisation.

(2) Portion food for chilling within 30 minutes of the end of cooking.

(3) Place in refrigerated storage between 0 and 3°C.

(4) Transport / distribute at between 0 and 3°C.

(5) Reheat to a core temperature of 75°C (82^{o}C in Scotland) for 2 mins.

(6) Commence serving within 15 minutes of the end of the reheating process.

b. Follow the Department of Health's guidelines on cook-chill and cook-freeze catering systems.

c. It is imperative that personnel conducting the regeneration of food must be trained and recognised food handlers. They must be given adequate induction training and a documented record of their training and responsibilities is to be maintained.

(INTENTIONALLY BLANK)

ANNEX E-FOOD SAFETY UNDER OPERATIONAL CONDITIONS

1. The aim of Annex E is to assist kitchen managers to assess food safety problems that could be faced when establishing a catering facility under operational conditions. As such, it can be used by junior Food Service/Catering personnel who may only have a limited knowledge of HACCP-based systems. It is, however, envisaged that more senior Food Service/Catering personnel will be available to advise on detail, as appropriate.

2. This system takes the form of a series of 'yes/no' flow charts to aid decision-making under such conditions. These are designed to be complementary to the policy and advice given at Chapter 3 to this JSP.

3. Kitchen managers are to work through the flow charts, identifying potential food safety hazards. Where these are identified, options are given for their removal/reduction or alternative actions are suggested.

4. *If it is considered that an unacceptable risk still remains, that particular procedure is not be carried out. This may ultimately mean reverting to the use of Operational Ration Packs (ORP) and informing the chain of command that the risks are too high.*

5. If further advice is required, it is to be sought from catering or Service Environmental Health Team (EHT).

OVERVIEW- CHARTS 1-12

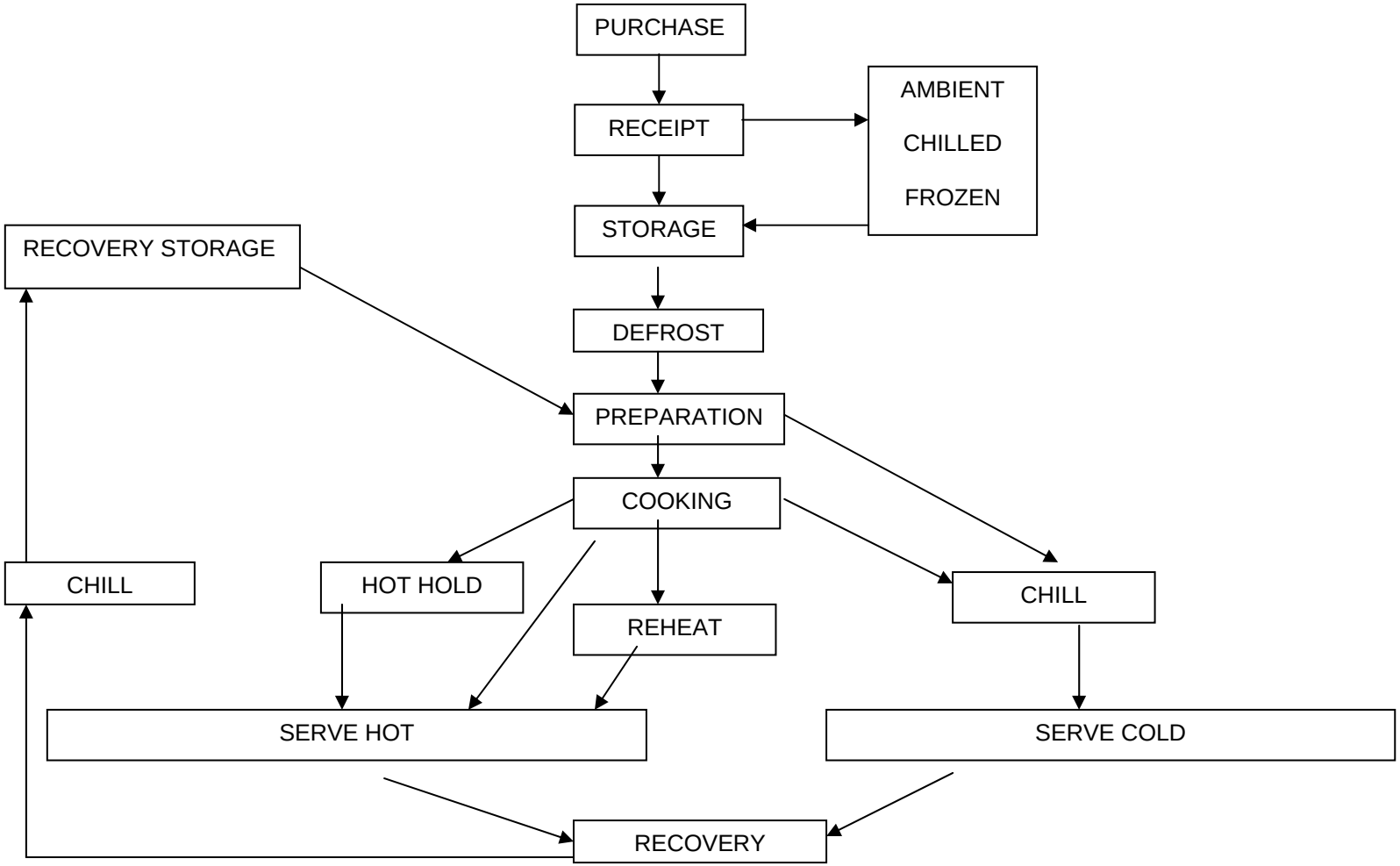
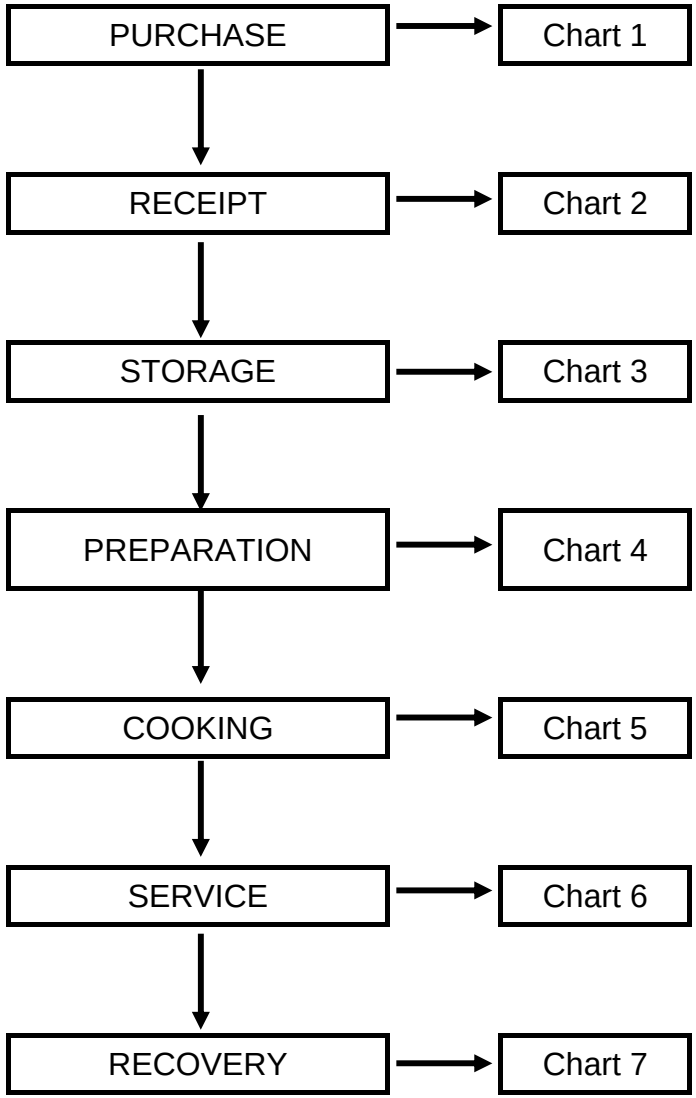


CHART INDEX


PURCHASE
Chart 1
RECEIPT
Chart 2
STORAGE
Chart 3
PREPARATION
Chart 4
COOKING
Chart 5
SERVICE
Chart 6
RECOVERY
Chart 7

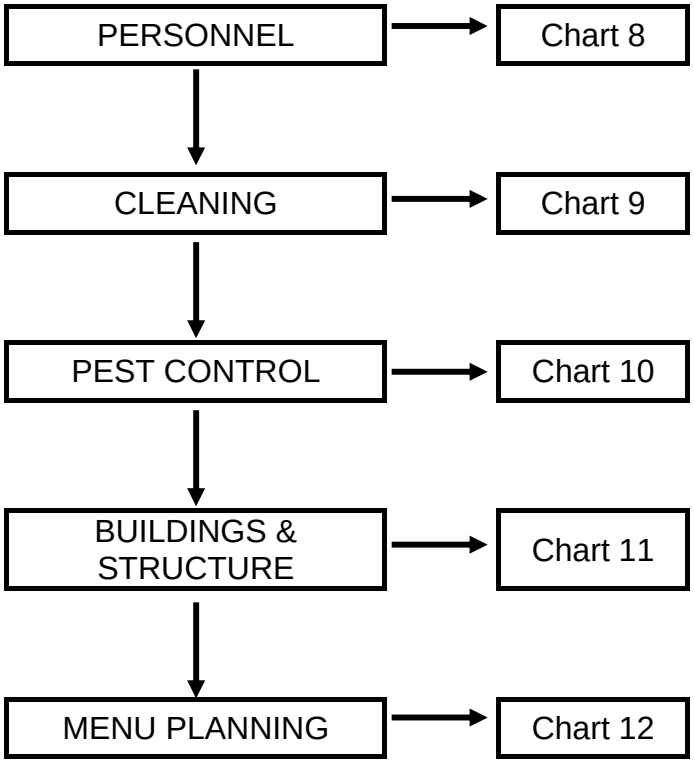

PERSONNEL
Chart 8
CLEANING
Chart 9
PEST CONTROL
Chart 10
BUILDINGS & STRUCTURE
Chart 11
MENU PLANNING
Chart 12

CHART 1 – PURCHASE

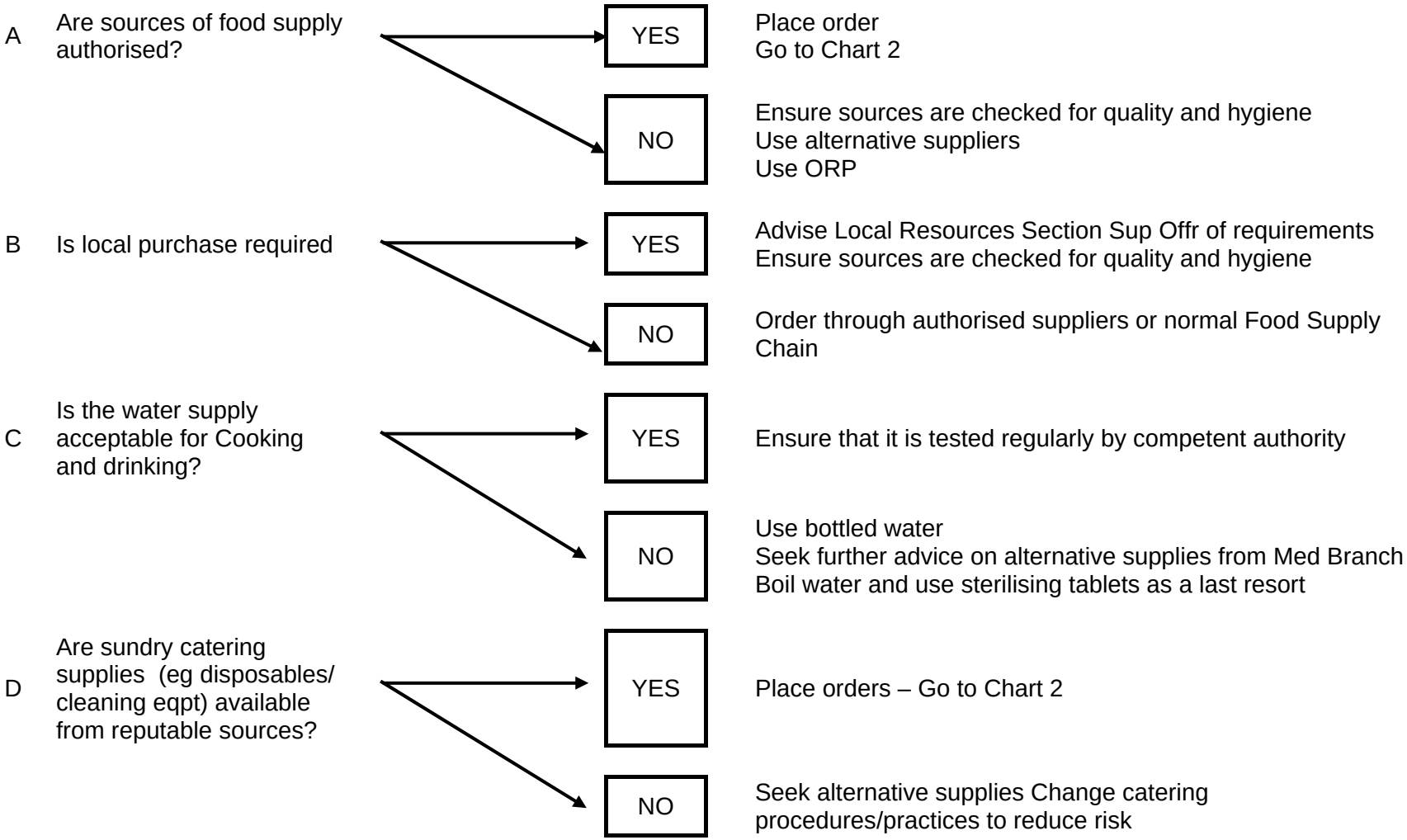


CHART 2 – RECEIPT

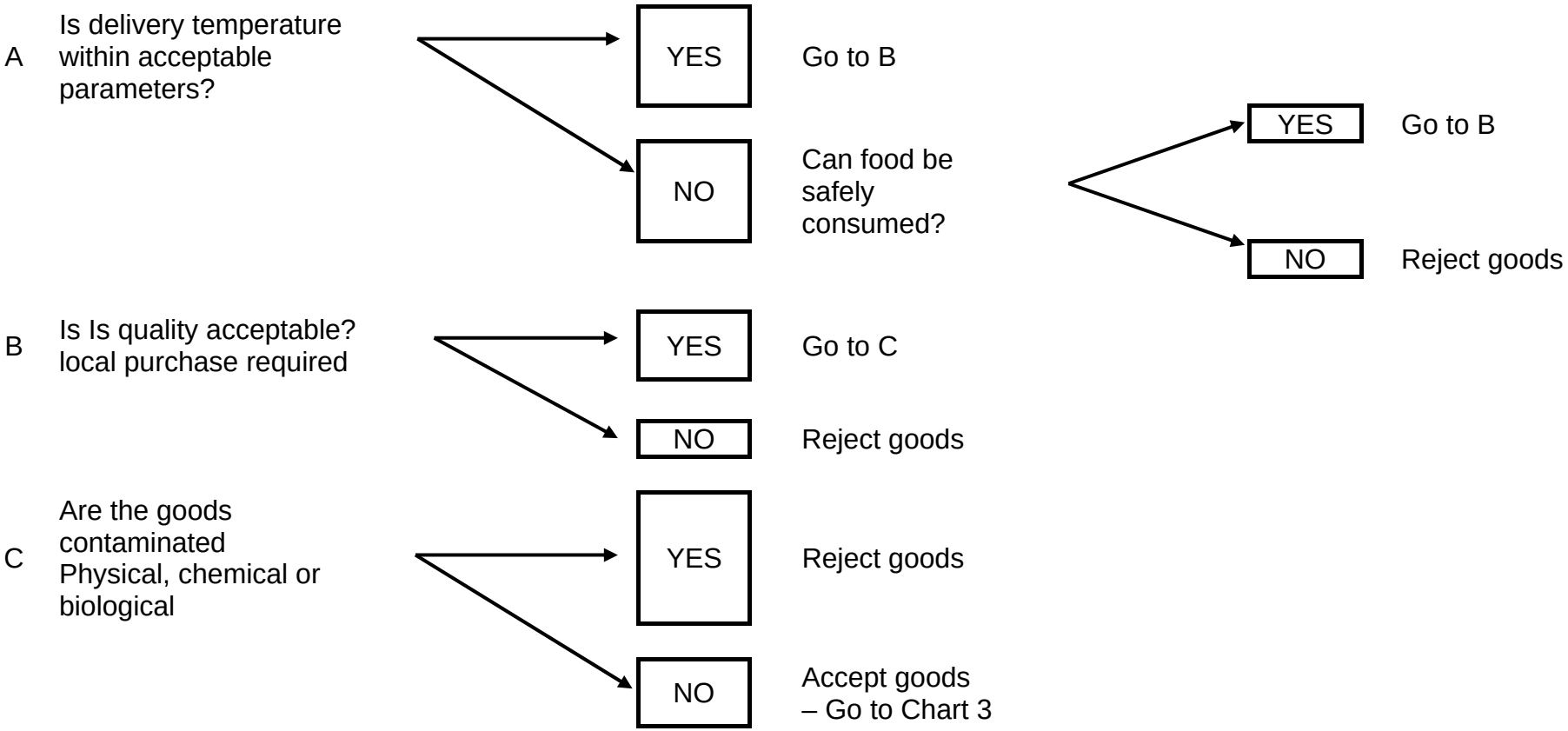
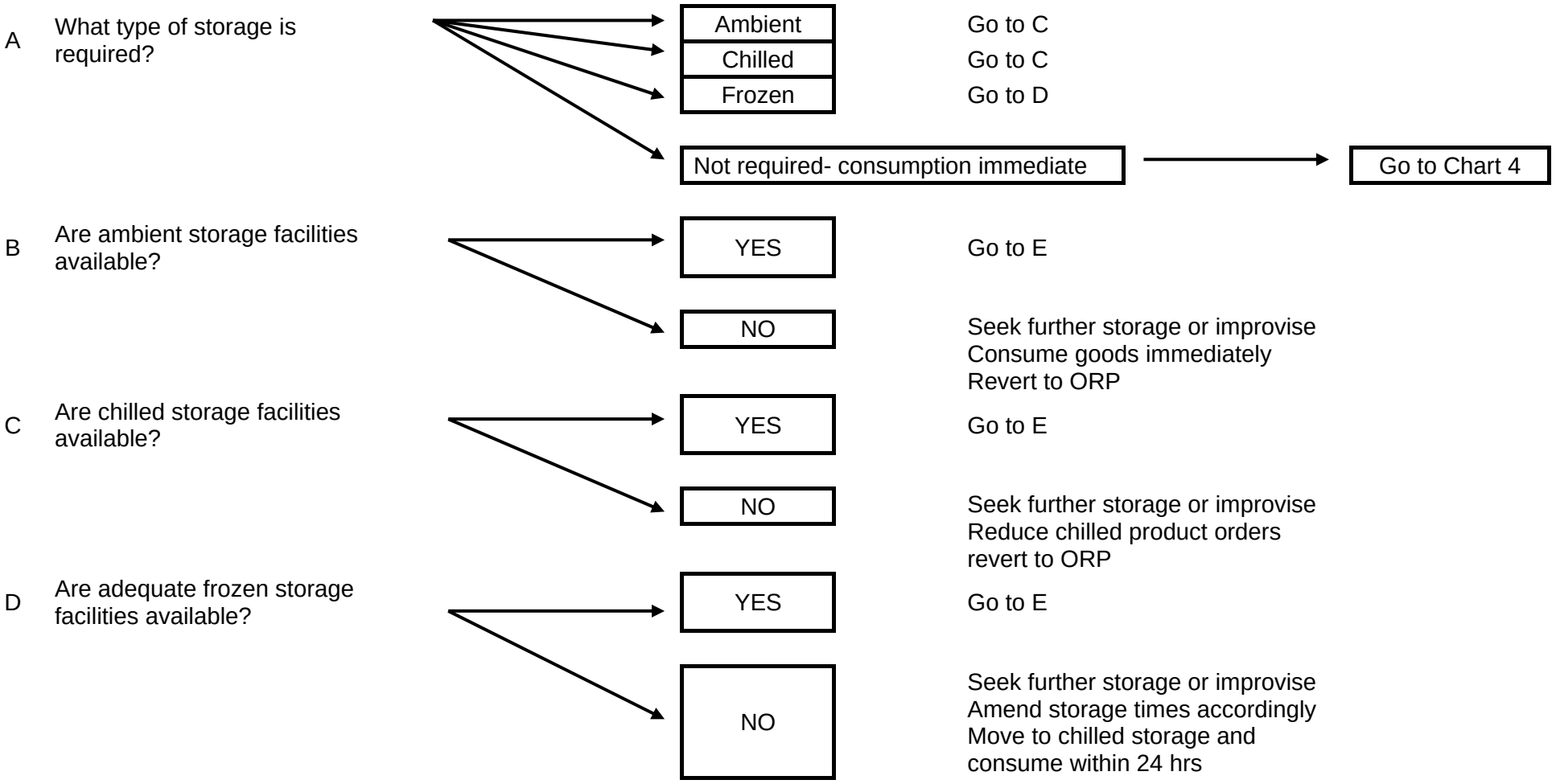


CHART 3 – STORAGE



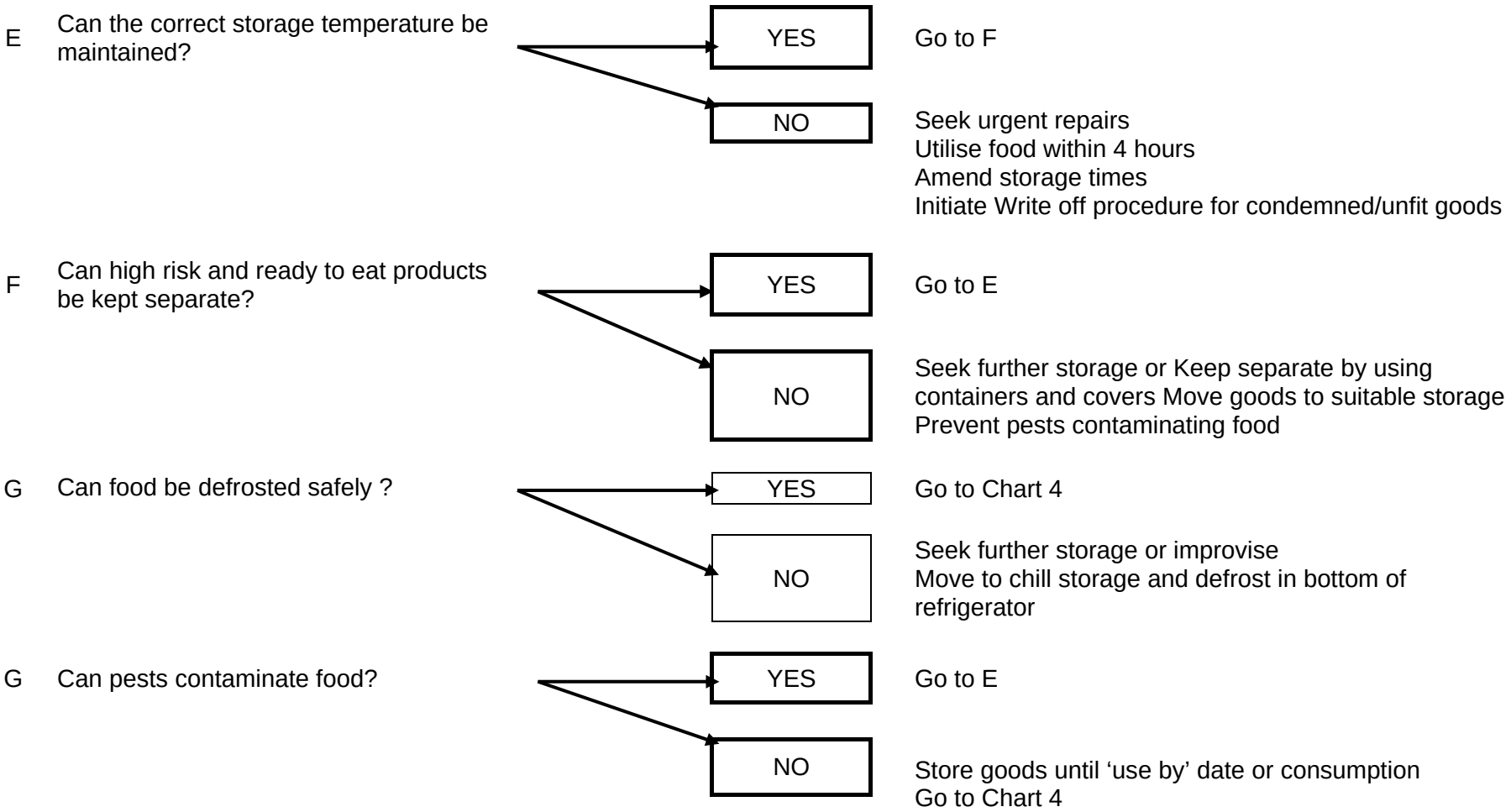
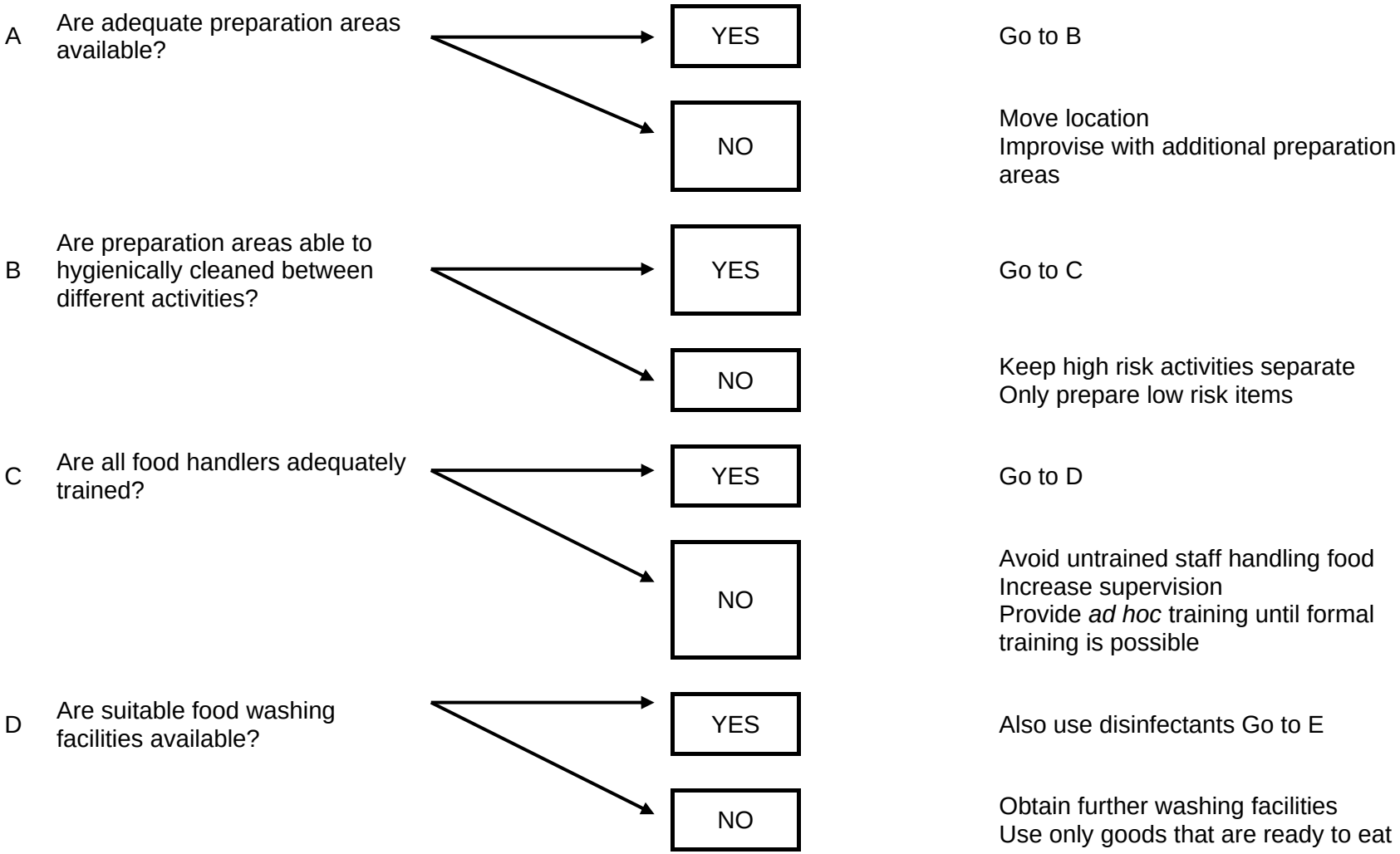

E
Can the correct storage temperature be maintained?
YES
Go to F
NO
Seek urgent repairs
Utilise food within 4 hours
Amend storage times
Initiate Write off procedure for condemned/unfit goods
F
Can high risk and ready to eat products be kept separate?
YES
Go to E
NO
Seek further storage or Keep separate by using containers and covers Move goods to suitable storage
Prevent pests contaminating food
G
Can food be defrosted safely ?
YES
Go to Chart 4
NO
Seek further storage or improvise
Move to chill storage and defrost in bottom of refrigerator
G
Can pests contaminate food?
YES
Go to E
NO
Store goods until ‘use by’ date or consumption
Go to Chart 4

CHART 4 – PREPARATION



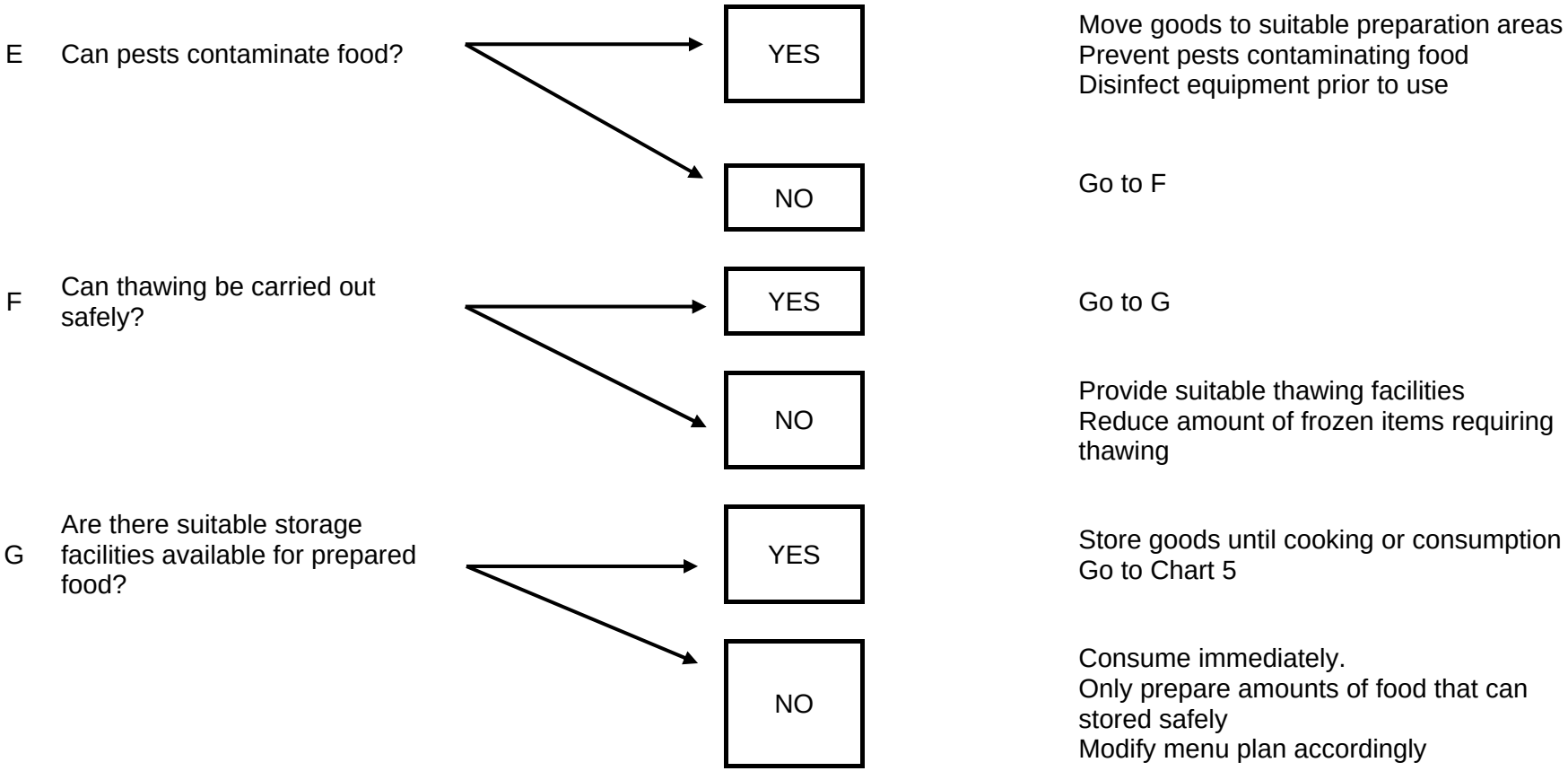
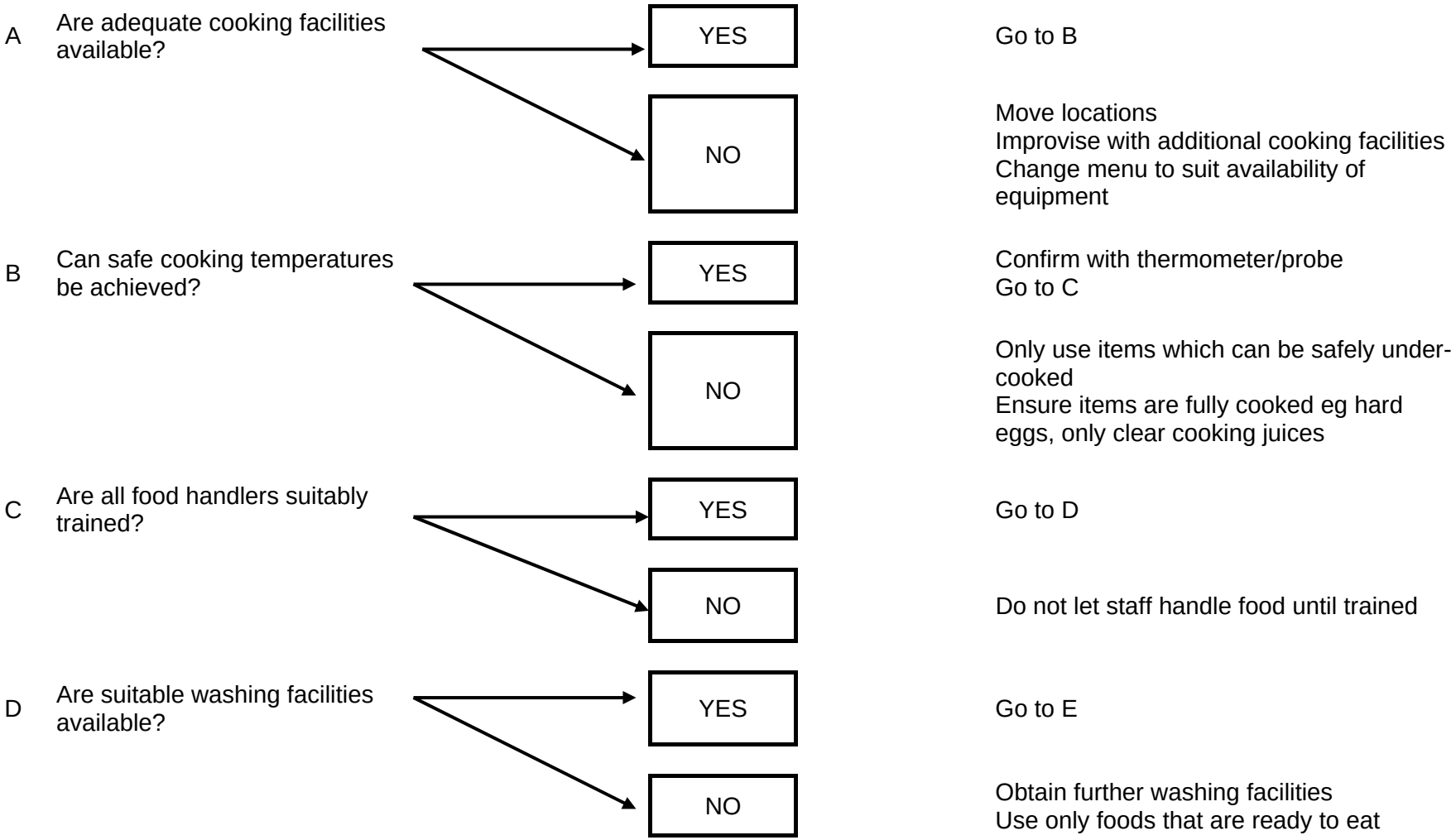
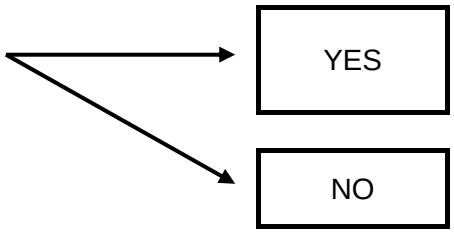

E
Can pests contaminate food?
YES
NO
Move goods to suitable preparation areas
Prevent pests contaminating food
Disinfect equipment prior to use
Go to F
F
Can thawing be carried out safely?
YES
NO
Go to G
Provide suitable thawing facilities
Reduce amount of frozen items requiring thawing
G
Are there suitable storage facilities available for prepared food?
YES
NO
Store goods until cooking or consumption
Go to Chart 5
Consume immediately.
Only prepare amounts of food that can stored safely
Modify menu plan accordingly

CHART 5 – COOKING



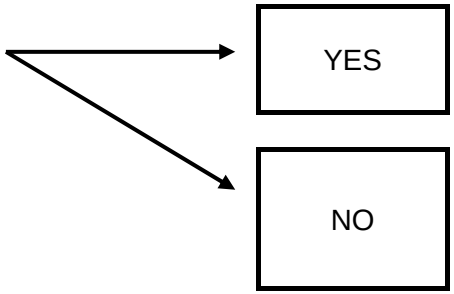
E Are items being cooked early?



Ensure safe hot holding facilities are available
Alter menu to suit equipment availability

Go to F

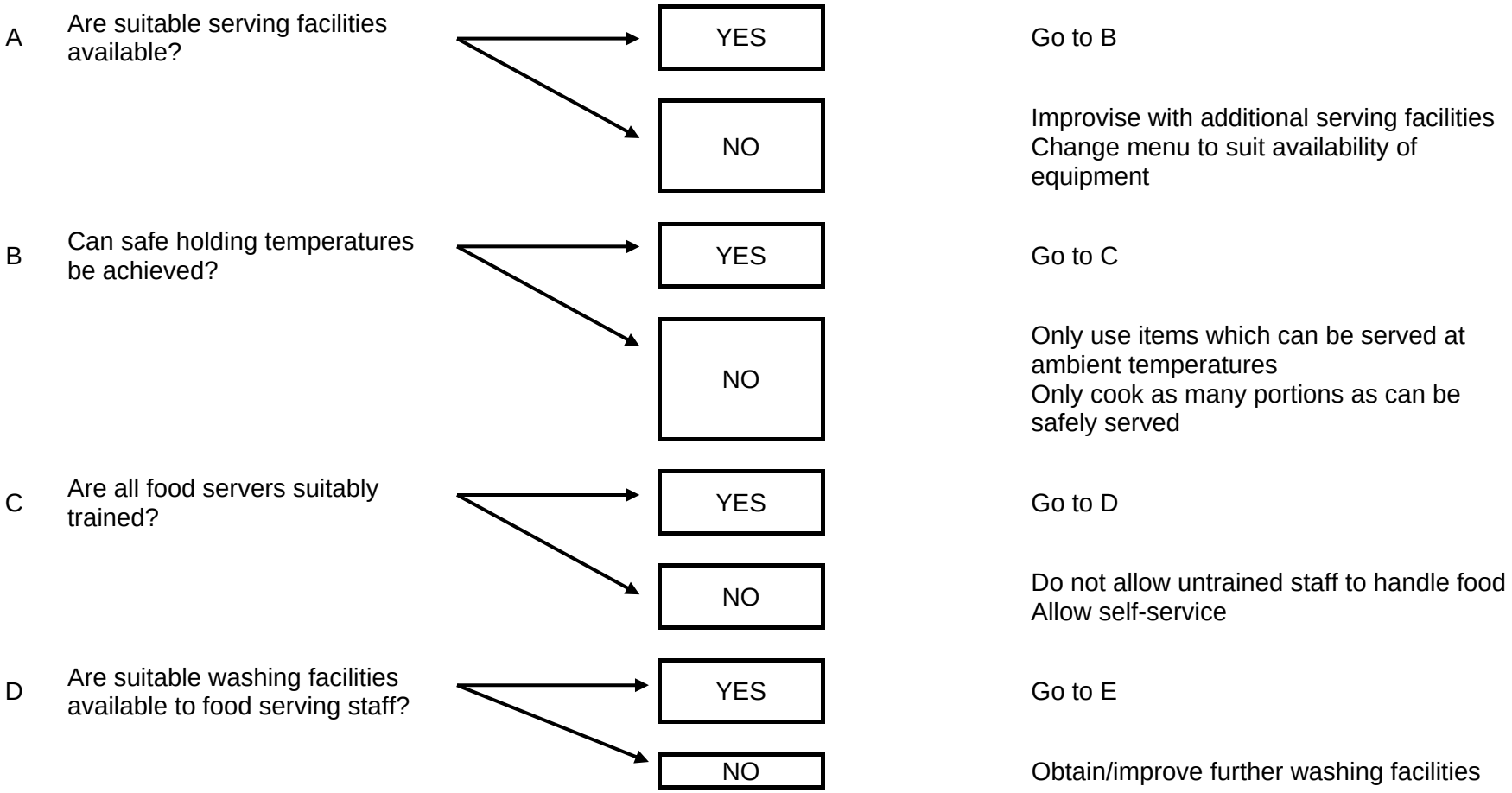
F Are there suitable storage facilities for cooked foods?



Store goods until consumption
Go to Chart 5

Provide suitable storage facilities
Consume immediately
Only prepare amounts of food that can be stored safely

CHART 6 – SERVICE



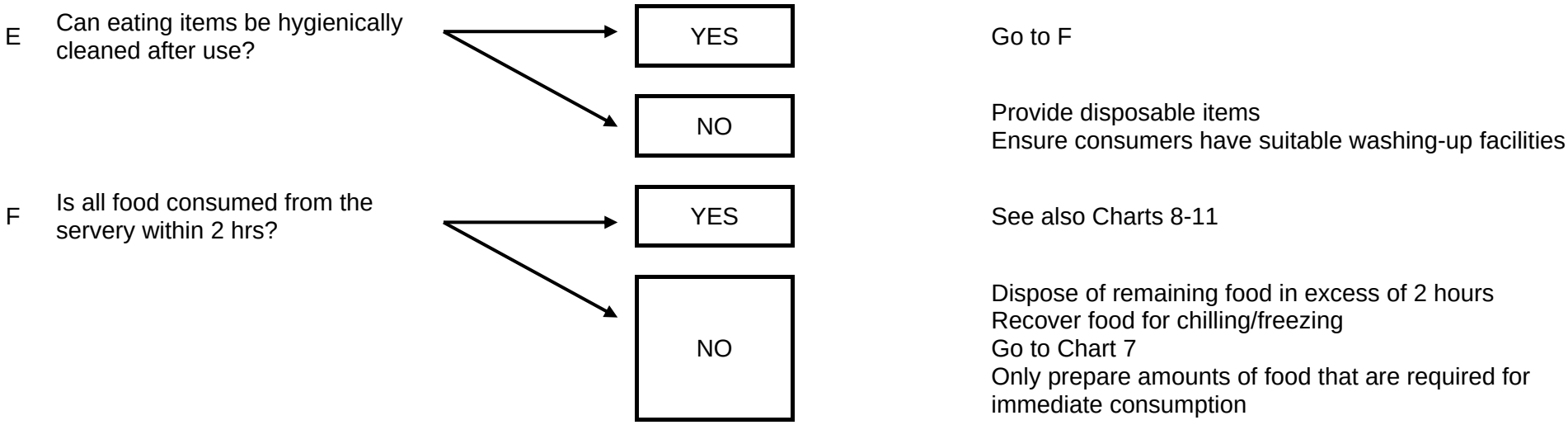

E
Can eating items be hygienically cleaned after use?
YES
Go to F
NO
Provide disposable items
Ensure consumers have suitable washing-up facilities
F
Is all food consumed from the servery within 2 hrs?
YES
See also Charts 8-11
NO
Dispose of remaining food in excess of 2 hours
Recover food for chilling/freezing
Go to Chart 7
Only prepare amounts of food that are required for immediate consumption

CHART 7 – RECOVERY

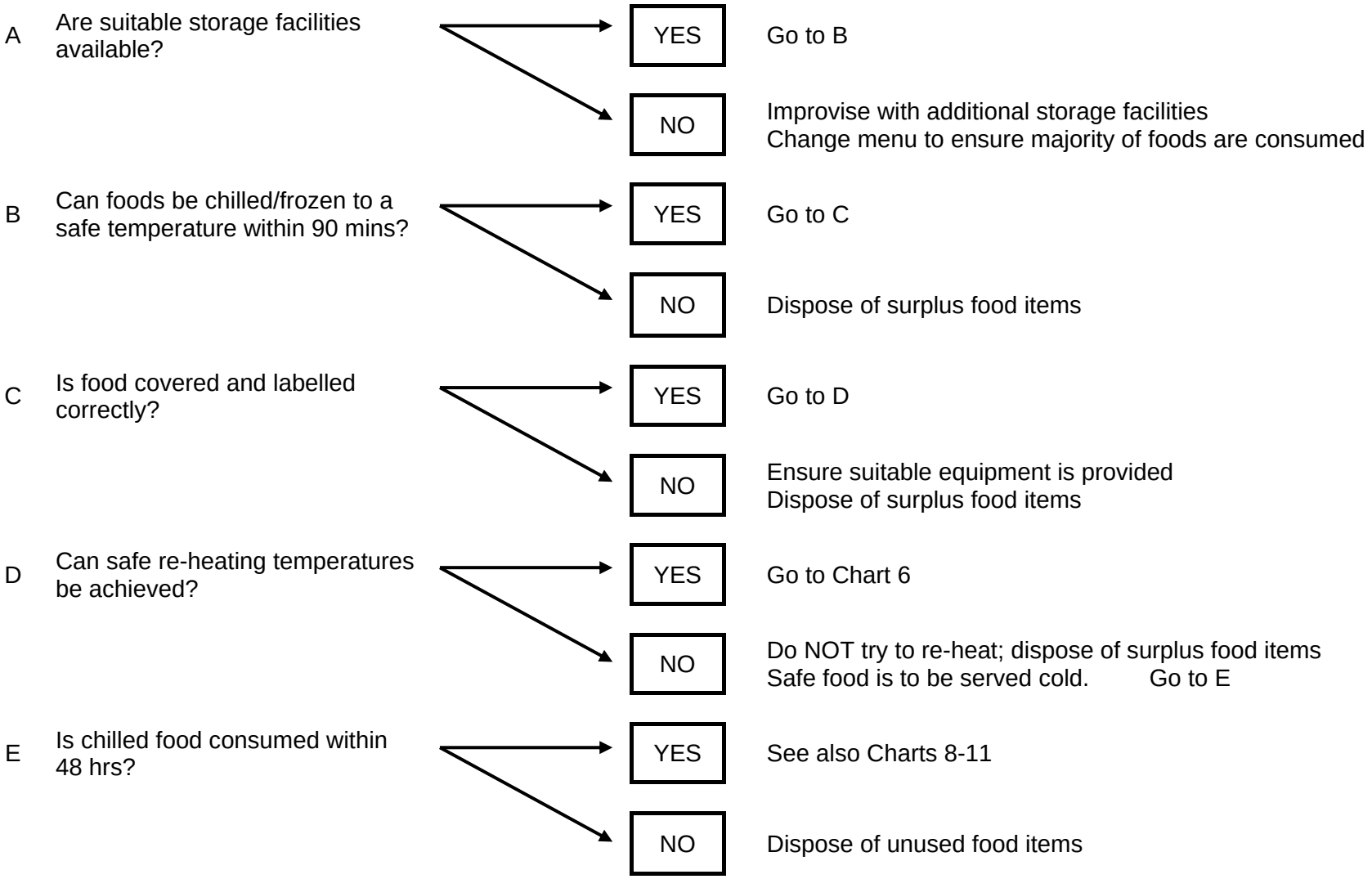
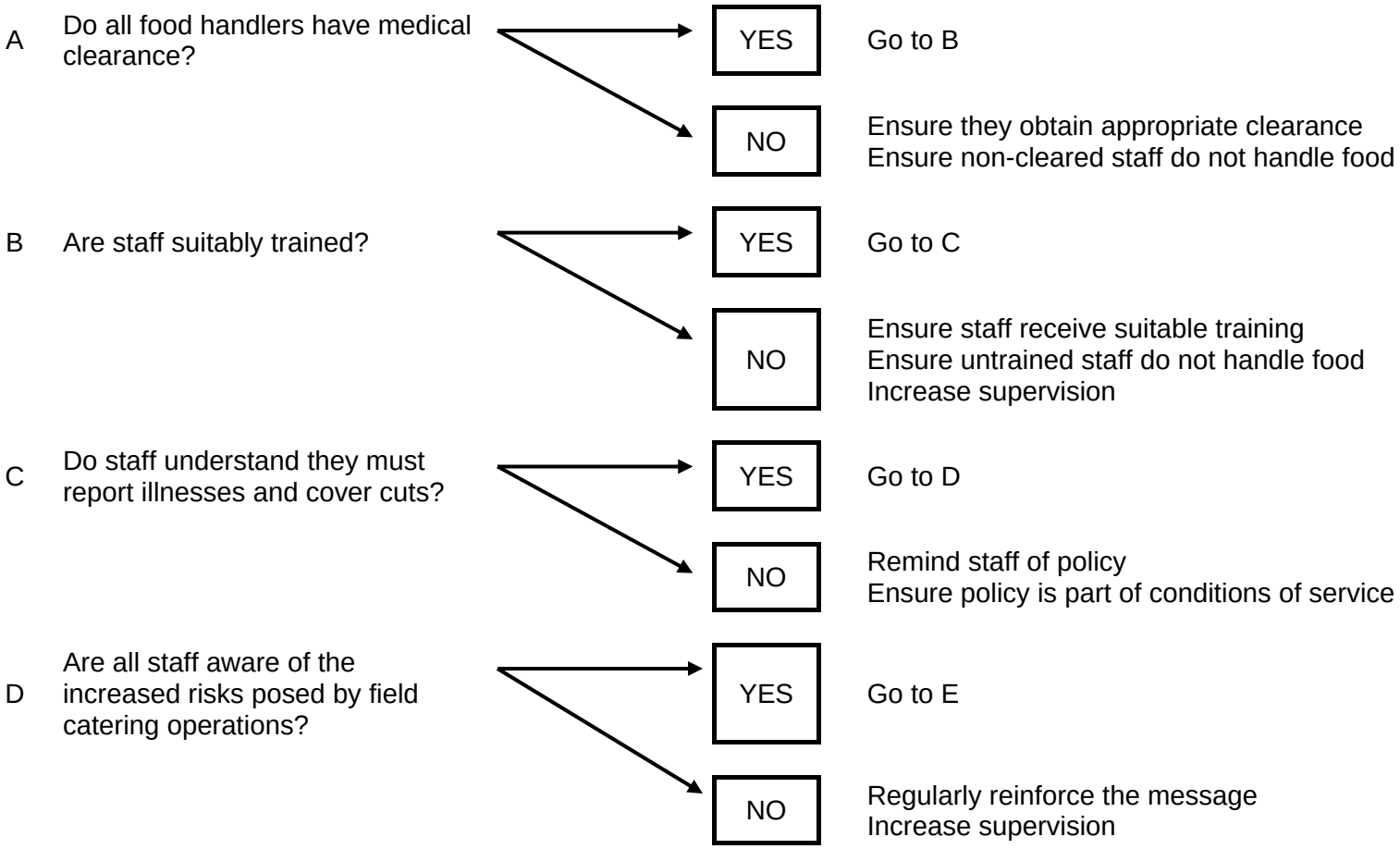


CHART 8 – PERSONNEL



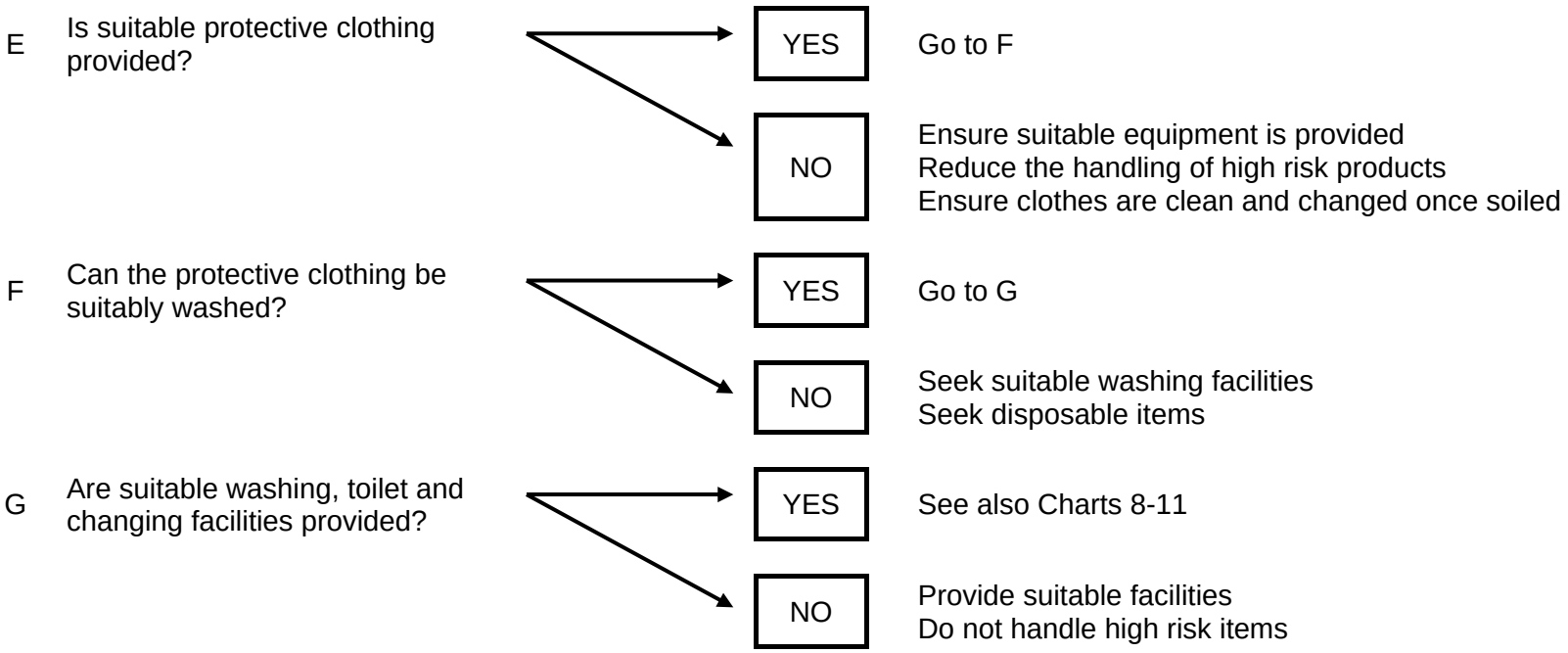
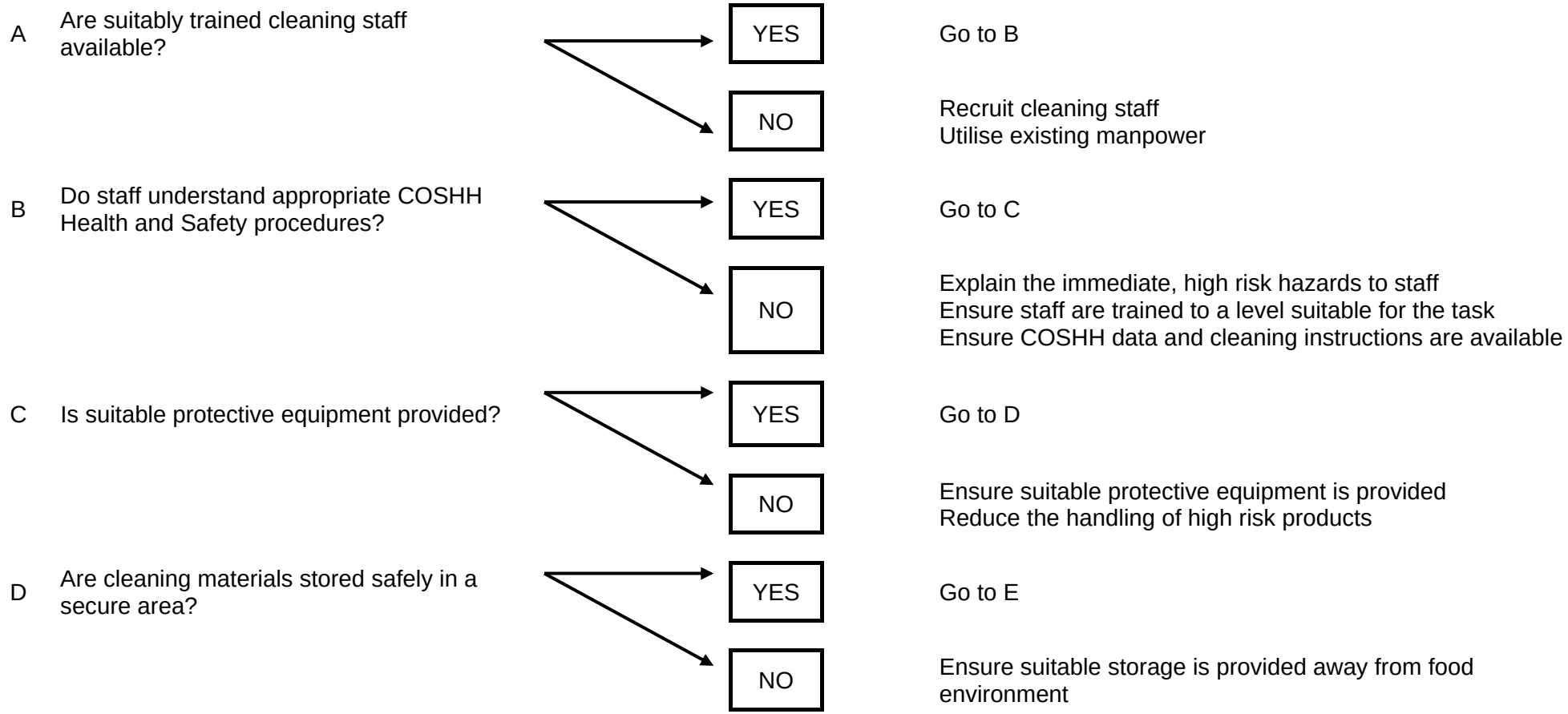

E
Is suitable protective clothing provided?
YES
Go to F
NO
Ensure suitable equipment is provided
Reduce the handling of high risk products
Ensure clothes are clean and changed once soiled
F
Can the protective clothing be suitably washed?
YES
Go to G
NO
Seek suitable washing facilities
Seek disposable items
G
Are suitable washing, toilet and changing facilities provided?
YES
See also Charts 8-11
NO
Provide suitable facilities
Do not handle high risk items

CHART 9 – CLEANING



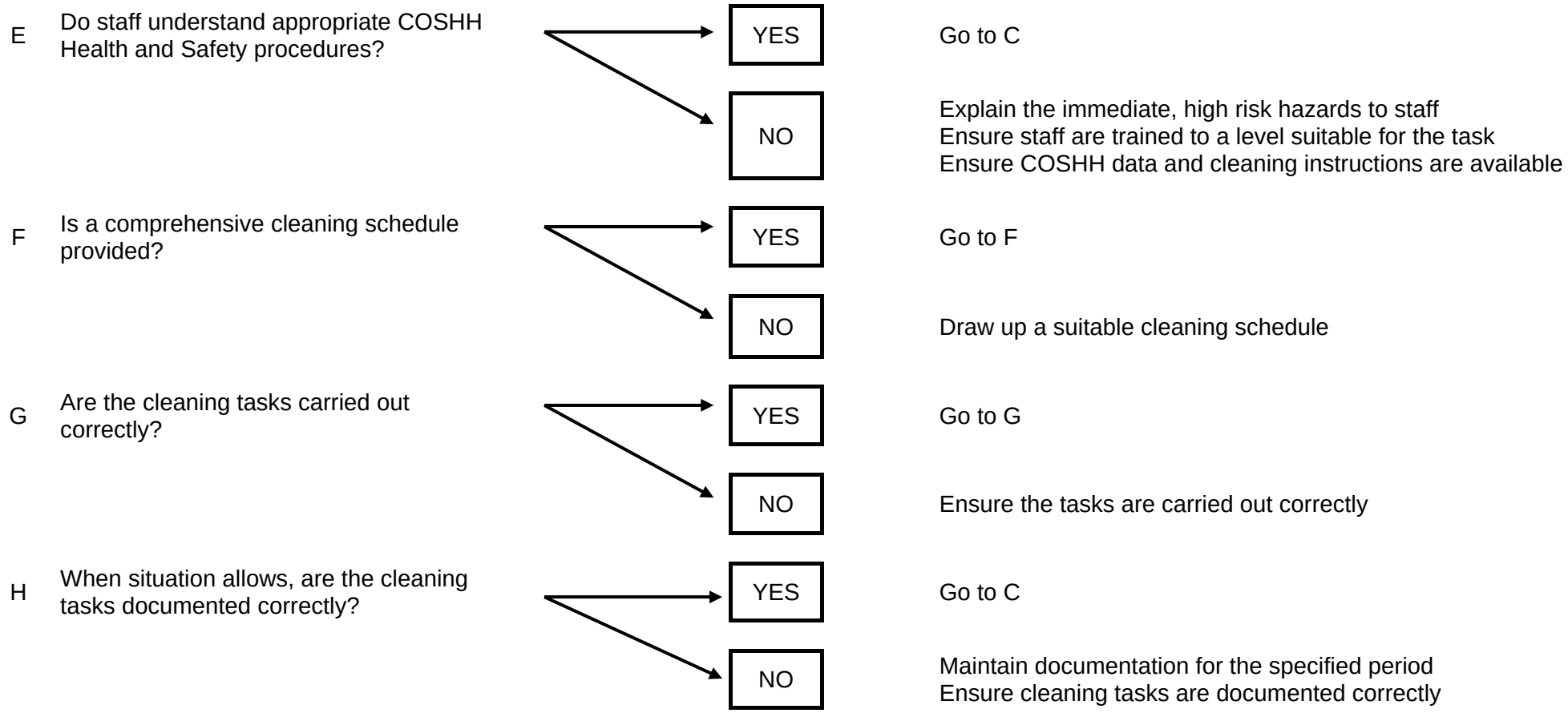
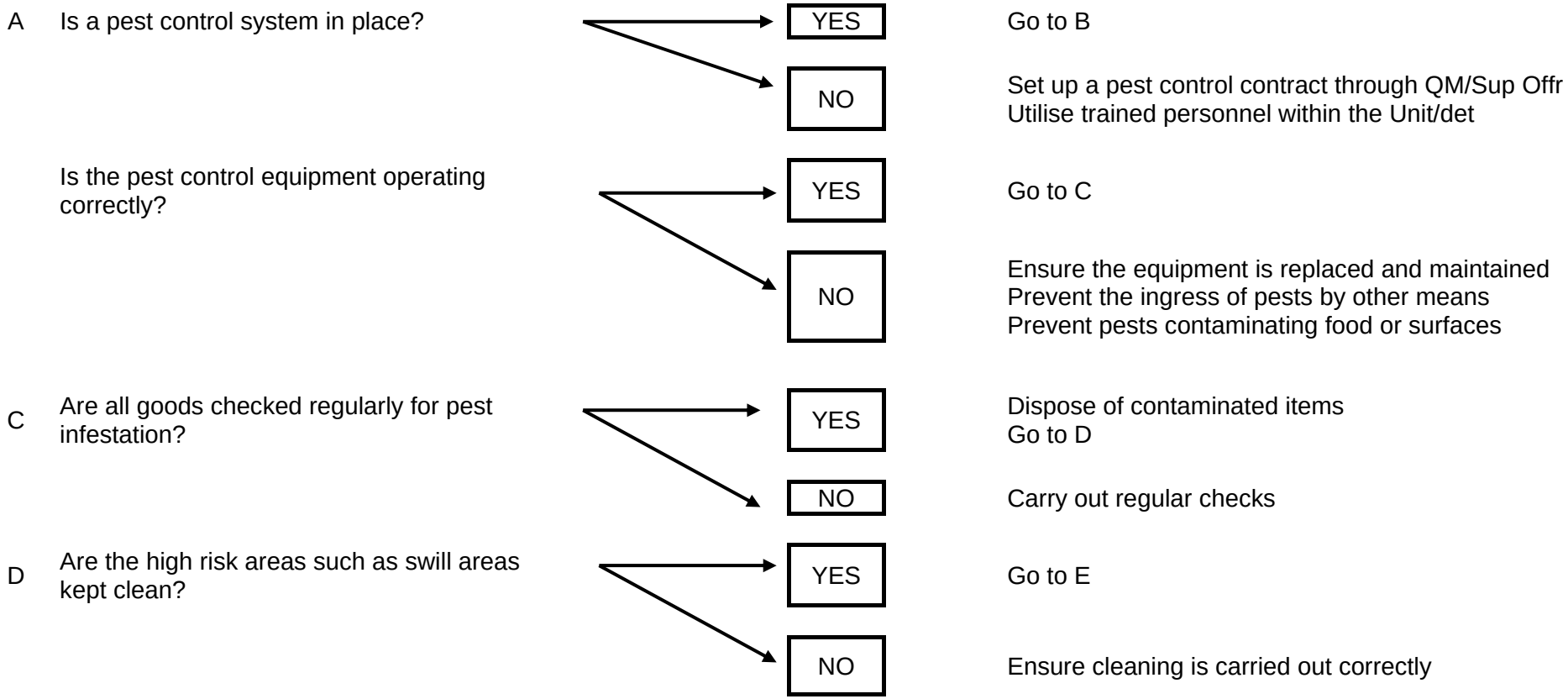

E
Do staff understand appropriate COSHH Health and Safety procedures?
YES
Go to C
NO
Explain the immediate, high risk hazards to staff
Ensure staff are trained to a level suitable for the task
Ensure COSHH data and cleaning instructions are available
F
Is a comprehensive cleaning schedule provided?
YES
Go to F
NO
Draw up a suitable cleaning schedule
G
Are the cleaning tasks carried out correctly?
YES
Go to G
NO
Ensure the tasks are carried out correctly
H
When situation allows, are the cleaning tasks documented correctly?
YES
Go to C
NO
Maintain documentation for the specified period
Ensure cleaning tasks are documented correctly

CHART 10 – PEST CONTROL



E	Are there seasonal problems that can be pre-empted?	YES	Ensure control systems are established early Alter catering systems to suit seasonal changes Go to F
		NO	Go to F
F	Are the pest control procedures documented?	YES	Maintain documentation for the specified period
		NO	Ensure the appropriate documentation is kept

CHART 11 – BUILDINGS AND STRUCTURE

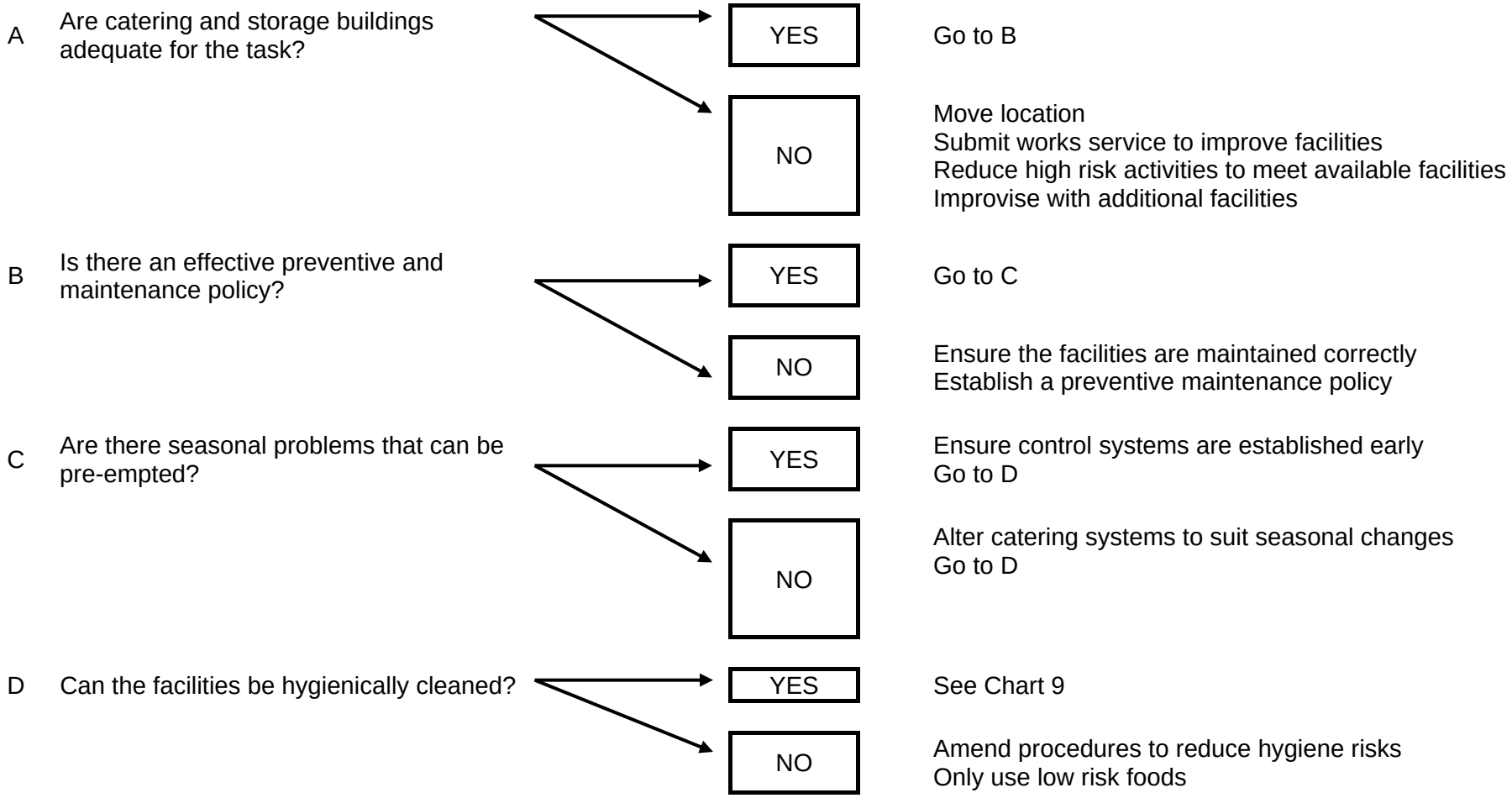
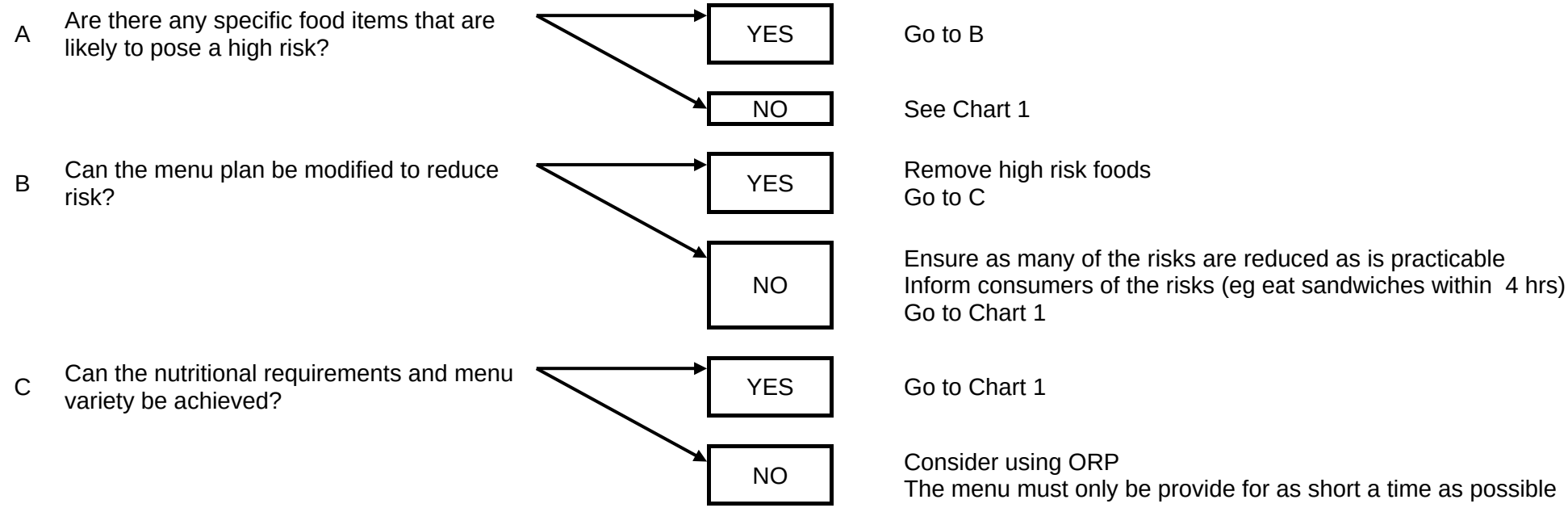


CHART 12 – MENU PLANNING



ANNEX F-CLEANING GUIDE

EQUIPMENT/ AREA	CLEANING AGENT	CLEANING ROUTINE	FREQUENCY	PRECAUTIONS
Ceiling/Overheads	Detergent	Wash with hot water and detergent.	Periodically*	
Cooking Range	Detergent Proprietary Cleaner	Clean as you go during the day. At the end of each day, wash surfaces with hot water and detergent. Use proprietary cleaner if necessary.	Daily	
Deep Fat Fryer	nil	Clean as you go. Remove old oil when necessary and give thorough clean before refilling (To remain empty overnight)	Daily	Ensure oil has cooled before changing
Doors	Detergent	Wash with hot water and detergent	Periodically*	
Crockery/Utensils	Detergent	Clean in dishwasher or sink using hot water and detergent.	After each meal	
Floor/Deck	Detergent	All spillages are to be dealt with immediately. At the end of each day sweep and wash with hot water and detergent.	After each meal	
Food Mixer	Detergent	Clean with hot water and detergent.	After use	Ensure safe system of work
Gravity Feed Slicer	Sanitiser	Clean with hot water and detergent.	After use	Ensure safe system of work
Kitchen/Galley Utensils	Detergent	Clean in dishwasher or sink using hot water and detergent.	After use	
Microwave Oven	Detergent	All spillages are to be dealt with immediately. At the end of each day, wash with hot water and detergent.	Daily	
Oven	Oven cleaner	Clean all internal surfaces with proprietary cleaner.	Weekly	Ensure safe system of work
Pots and Pans	Detergent	Clean in dishwasher or sink using hot water and detergent.	After use	
Vegetable Preparation Machine	Detergent	Clean with hot water and detergent.	After use	

EQUIPMENT/ AREA	CLEANING AGENT	CLEANING ROUTINE	FREQUENCY	PRECAUTIONS
Refrigerator/Freezer	Detergent Sanitiser	Spillages are to be dealt with immediately. Scrub the shelves and wash the food compartments with hot water and detergent, rinse with clean hot water and apply sanitiser. Defrost according to manufacturers instructions.	Weekly	When sanitisers are used ensure that the necessary contact period is achieved.
Servery	Detergent Sanitiser	Clean as you go during the day. Before preparing ready to eat food and at the end of each day, wash all surfaces with hot water and detergent, rinse with clean hot water and apply sanitiser.	Daily	When sanitisers are used ensure that the necessary contact period is achieved.
Sinks	Detergent Sanitiser	Clean as you go during the day. At the end of each day scour, wash with hot water and detergent and rinse. Where sinks are used for food, equipment and hand washing, they must be cleaned and disinfected between uses.	Daily	When sanitisers are used ensure that the necessary contact period is achieved.
Storage/Display Units	Detergent Sanitiser	Spillages are to be dealt with immediately. Wash with hot water and detergent. If used for both cooked and uncooked food, wash with hot water and detergent, rinse and apply sanitiser.	Weekly (wrapped, tinned bottled goods). Daily (unwrapped food, wrapped high risk food).	When sanitisers are used ensure that the necessary contact period is achieved.
Walls/Bulkhead - behind work surfaces	Detergent Sanitiser	Clean as you go during the day. Before preparing ready to eat food and at the end of each day, wash all surfaces with hot water and detergent, rinse with clean hot water and apply sanitiser.	Daily	When sanitisers are used ensure that the necessary contact period is achieved.
Walls/Bulkhead - high and low level	Detergent	Wash with hot water and detergent.	Weekly	
Waste Compactor	Detergent	Clean with hot water and detergent.	Weekly	
Waste Containers	Detergent	Clean with hot water and detergent.	Daily	
Waste Disposal Unit	Detergent	Clean with hot water and detergent.	Weekly	Ensure safe system of work

EQUIPMENT/ AREA	CLEANING AGENT	CLEANING ROUTINE	FREQUENCY	PRECAUTIONS
Windows	Detergent	Clean with hot water and detergent.	Periodically*	
Wiping Cloths	Sterilising solution	Preferably use disposable cloths. If not, change cloths frequently. Boil or soak in sterilising solution at the end of each day.	Daily	
Work Surfaces	Detergent Sanitiser	Clean as you go during the day. Before preparing ready to eat food and at the end of each day, wash all surfaces with hot water and detergent, rinse with clean hot water and apply sanitiser.	Daily	When sanitisers are used ensure that the necessary contact period is achieved.

*Periodically means `as necessary' and relates to the build up of dirt., COSHH Risk Assessments must be conducted prior to use of substances that are classified as toxic, harmful, corrosive, irritant or very toxic. Staff must be trained prior to use, in the safe use of cleaning chemicals and effective cleaning procedures.

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ANNEX G - MAINTENANCE OF CATERING PREMISES - RECORD OF WORKS SERVICES (TEMPLATE)

Galley/Kitchen/Mess:_____

SER NO	WORK REQUIRED	WORKS SERVICE REFERENCE NO	DATE REPORTED	PRIORITY	HASTENING ACTION			CHECK OF WORK COMPLETED/ REMARKS
					DATE & INITIAL	DATE & INITIAL	DATE & INITIAL	

ANNEX H-PEST MANAGEMENT REGISTER (TEMPLATE)

UNIT:_____ **GALLEY/KITCHEN/MESS:**_____

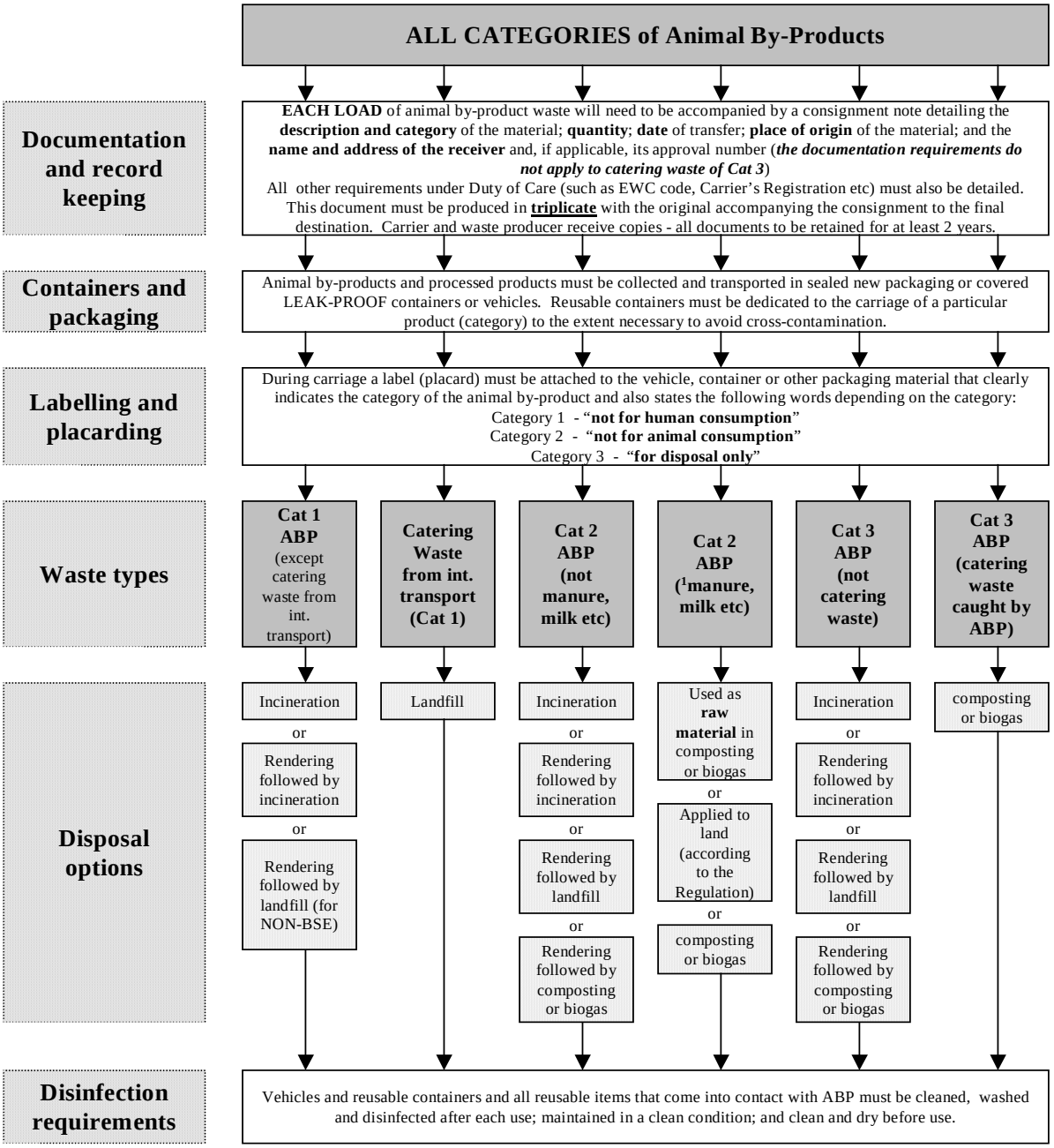
SER NO	LOCATION & TYPE OF INFESTATION	TIME & DATE REPORTED	SIGNATURE OF REPORTING SUPERVISOR	ACTION TAKEN PESTICIDE/ INSECTICIDE USED	DATE OF PEST CONTROL	SIGNATURE OF CONTRACTOR [1] OR EHT PERSONNEL	REMARKS/WORK REQUIRED TO FABRIC TO ASSIST CONTROL	DATE OF NEXT EXTERNAL CHECK

[1] Contractor's Logs should be attached to this record.

Annex I

Animal By-Products Guidance
Process flow for the handling and disposal requirements of Animal By-Products

These disposal routes are those allowed for each category of Animal By-Products. However, the regulation is complex and does allow some other disposal routes for very limited types of Category 2 and Category 3 ABP



[1] If the competent authority does not consider the manure, digestive tract content or milk to present a risk of spreading any serious transmissible disease.

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