

King Edward's Hospital Fund for London
CATERING ADVISORY SERVICE

An ASSESSMENT
of the
REGETHERMIC MEALS SERVICE SYSTEM
at the
ROYAL LONDON HOMOEOPATHIC HOSPITAL

prepared by

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ADDENDUM

Since this report was produced it is understood that the following amendments have been made:

- 1 Menu Alternative dishes are now being provided Monday to Friday
- 2 Hygiene Control of Infection Officer for the hospital (consultant pathologist) carries out a bacterial check once a month
- 3 Plate Rings Plate rings which fit the plates have now been purchased
- 5 The Hospital decided to increase the establishment and an assistant catering officer has been appointed in addition to the kitchen production manager (paras 13, 35).

CONTENTS

	Paras
FOREWORD	
INTRODUCTION	
The Regethermic System	1
The Installation Cost	2
The Hospital	3
The Study	4- 5
COMPARISON OF SYSTEMS	
Menus	6- 7
Preparation & Cooking	8-15
Meal Distribution	16-19
Meal Service	20-29
Food Costs	30-31
Catering Staff Costs	32-35
Ward Staff Costs	36-37
CONCLUSIONS	38-39
APPENDICES	
Regethermic Ovens	A
Details of Installation Costs	B
Cold Rooms - Ward Refrigerators	C
Menu Bulk Food Service	D
Menu Regethermic	E
Meal Production Routine	F
Schedule of Reheating Instructions	G
Patients Opinions	H
Comparison of kitchen staff hours	I
Comparison of time spent on Food Service	J
Summary of Comments	K

FOREWORD

With the growing acceptance that nurses should be relieved of non-nursing duties an increasing number of central plate and tray services are being considered by Hospital Management Committees. One such service is the Regethermic system, an innovation from France, marketed by Gardner Merchant (Caterers) Ltd.

The King's Fund were asked to promote an experiment with the use of this service at the Royal London Homoeopathic Hospital and report on its effectiveness and compare it with their present system.

Briefly it can be said that there is a saving in nurses time and other ward staff, that man hours in the kitchen are also reduced, that the appearance and palatability of food is improved, and that in a multi-storey building the lift need only be used at convenient times. On the other hand the introduction of a selective menu brings problems, and the risk of bacterial infection is increased. Finally the degree of success, as with other systems, depends ultimately on the level of management and the co-operation of departments.

INTRODUCTION

The Regethermic System

1 The Regethermic system is based on the pre-cooking, plating and rapid chilling of meals up to 48 hours in advance of their being served. The food is cooked, the meals are plated and cooled to under 5°C (38°F) in less than 45 minutes at which temperature they are stored. At a convenient time the plated meals are sent to the wards where they are kept in a refrigerator. When the meals are required they are placed in a Regethermic regeneration or reheating oven (Appendix A) which raises the temperature to 85°C (180°F) within 10 minutes.

The Installation Cost

2 Following a four month trial of a Regethermic Oven in the hospital the Management Committee of the Royal London Homoeopathic Hospital in 1968 approached the King's Fund for a grant towards an experiment designed to provide a food service for all their patients based on the use of the Regethermic system. The total cost of the installation was to be £19200 including kitchen alterations and equipment. Of this total sum up to £6000 could have been required for the upgrading of the kitchen irrespective of the introduction of the Regethermic. So the cost of the Regethermic system might reasonably be regarded as some £13000. Details of the equipment and costs are in Appendices B and C.

The King's Fund made a grant of £8000.

The Hospital

3 The Royal London Homoeopathic Hospital, which dates from 1896, is a five storey building with a central lift connecting the wards directly with the catering department on the fourth floor. It is an acute hospital with 170 surgical, medical and geriatric beds in 10 wards and its catering is controlled and staffed by Gardner Merchant (Caterers) Ltd.

The Study

4 A study was made firstly of the operation of the bulk trolley system both in the kitchen and at ward level prior to the Regethermic system which began operating in all wards in April 1969. Throughout the following 12 months the Catering Advisory Service

made periodical visits to study the new system but a fair assessment could not be made during this period because of staffing problems. Eventually with a new team of management and staff, a well organised production routine was established. The system was again studied during the preparation, cooking, plating, storing, distribution and service of meals. An assessment has been made and the report is presented in the form of a comparison of the Regethermic system with the previous bulk trolley system.

5 In evaluating the effectiveness of the system consideration has been given to the claims of the suppliers of the equipment which may be summarised as follows:

- (a) Less kitchen staff are required than for a conventional system because the kitchen work can proceed steadily throughout the day thus avoiding peak pressures. Weekend and night work can be reduced.
- (b) Ward staff time is saved because the meals are already plated before being sent to the ward.
- (c) The appearance and palatability of food is improved because food can be served immediately after heating rather than being kept hot for long periods.
- (d) The time of meal service may be adjusted within reason by the ward sister if necessary.
- (e) The conveyance of the plated chilled meals to ward units can be undertaken well in advance of the meal service to suit the convenience of the local communications.

COMPARISON OF SYSTEMS

Menus

6 In the Bulk Food Trolleys System a choice of dishes was not shown on the menu (Appendix D). Alternatives to the main ordinary diet such as omelettes or salads were available on request by the ward sisters. There was no advance selection of food. Special and light diets were prepared daily as ordered by each ward. These diets were often used as alternatives to the main ordinary diet, so a choice, of a limited kind, was occasionally available to patients.

7 Under the Regethermic System the same style of menu was used with the alternative of omelettes, salads and eggs always being available. These with special and light diets were ordered daily by the ward sister. A full selective menu was not offered because of the difficulty of estimating the numbers of each dish required since the food is cooked and plated up to 48 hours in advance(see addendum).

Example of the menu is in the appendix E.

Preparation and Cooking

8 Under the old system the preparation and cooking of food was conventional in every way. Fresh and frozen vegetables were used. With the exception of a nucleus of three or four cooks it was difficult to retain or recruit staff in sufficient numbers to provide a good service. There was particular difficulty in recruiting trained cooks. Additionally the kitchen area was too small. The result of these problems was shown in poor culinary standards and the kitchen tended to be untidy rather than dirty. Food was frequently cooked and placed in the heated trolleys up to one hour before the meal was due to be served which had an adverse effect on the nutritional value and acceptability of many dishes.

9 Special diets were prepared individually by a cook employed for this work.

10 Many of the ward staff cleaned the trolley containers. The remainder of them, and all the trolleys, were cleaned in an area of the kitchen where pan washing and vegetable preparation had to be carried on simultaneously, resulting in a good deal of congestion.

11 In the first few weeks of the new Regethermic system the culinary practices were not altered. There was a tendency for the various parts of a meal to be ready in bulk before all food was ready for plating. Through lack of knowledge or understanding, staff kept the food in the kitchen where it cooled very slowly in the ambient temperature of about 68°F to 70°F until plated. Whilst Vitamin C foods are adversely affected nutritionally such foods as stews and cooked meats in certain circumstances could cause food poisoning. All cooked foods should be cooled rapidly after cooking if they are to be stored, i.e. they should be reduced from cooking temperature to below 10°C (50°F) within 30 minutes and below 5°C (38°F) in 45 minutes.

Production was organised as shown in Appendix F.

12 It was found that although there was absence of pressure on the staff the allocation of work in the kitchen caused an uneven work loads on certain days and resulted in some unnecessary overtime being worked. (Adjustments to the staffing arrangements were made as only one cook was needed at 7 am to cook staff breakfasts, the rest of the staff came on duty at 8 am). It was quite obvious a complete reorganisation was needed if the Regethermic system was to have a chance of showing the advantages claimed.

13 A number of weeks were allowed to pass before returning to the hospital to assess the system again. In the meantime the catering officer was changed. Due to there being no assistant available the post of assistant catering officer became kitchen production manager. The man appointed was an experienced and trained chef able to allocate the organise the kitchen work. The quality of the meals then began to improve. Food was cooked, plated and cooled rapidly i.e. within the recommended times. The problems arising from the new techniques (see para 11) were overcome and the meals were satisfactory when sent to the wards. Although some items for the therapeutic diets were specially prepared, where possible chilled food was used for the special diets.

Special techniques for Regethermic

14 There are few foods which cannot be reheated in the Regethermic ovens provided adequate care is taken during the initial preparation and cooking. In the early days of this experiment problems arose with the gravies and sauces of meat stews which, when plated and cooked, separated with fat congealing on the surface. After reheating the

the fat formed a ring around the portion of braised or stewed meat. Careful skimming of these sauces is necessary. The exact amount of roux or thickening agent must be used to ensure the correct consistency when reheated. Any degree of overcooking is highlighted during cooling and reheating when further deterioration of appearance and nutritional content takes place.

15 Because fried foods plated with vegetables do not heat satisfactorily the latter must be covered and heated separately. To retain the characteristics of fried foods these should be heated in an uncovered dish. Although boiled eggs are best cooked at ward level, these together with poached, fried and scrambled eggs can be satisfactorily reheated providing care is taken to ensure that the cooking times are closely controlled. Soups, sauces and some gravies should be freshly prepared and distributed in thermos flasks because extra time and attention is required if they are reheated at ward level (see paras 18, 19).

The times for reheating will be found in Appendix G.

Meal Distribution

16 With the Bulk Food Trolley System breakfast, main dish and porridge, were collected from the main kitchen by the ward maids, heated trolleys being used for some meals, open trays for others. For the midday and evening meals heated food trolleys were always used and were conveyed to the wards by kitchen porters. Occasional delays occurred because of shortage of kitchen staff or because the main central lift which connects the kitchen directly to each ward was being used for other purposes. Although there is a second lift it was rarely used as the food would have to be trolleyed through the middle of one ward to reach the far end of the building and then return the same distance on each floor to reach the ward kitchen.

17 Direct food issues to the wards were also delivered daily separately from the meals. The distribution of meals and food was almost a full time job for two kitchen porters.

18 With the introduction of Regethermic the staff establishment was reduced and man hours were saved through reorganisation of the distribution to the wards. Five deliveries, three for meals, one for direct issues from stores and one for milk, were now reduced to three. During the morning the chilled meals for lunch were conveyed together with

the day's direct issues and soups, sauces and milk puddings prepared that morning and placed into thermos jugs. In the afternoon the chilled supper and breakfast dishes were accompanied by the soups, sauces and milk puddings and breakfast for the following morning. Milk was a separate delivery as previously.

19 Because soups, sauces and milk puddings are freshly prepared, the meals occasionally arrived late. Thus the advantage of the Regethermic system of being able to prepare in advance and deliver at any convenient time was sometimes defeated.

Meal Service

20 Under the Bulk Food Trolley System to serve a main meal on the wards required considerable organisation on the part of the ward sisters, in order to ensure the meal was served quickly. The service was pleasant, portions were adjusted to requirements, second helpings were offered and diets varied when possible by using all available food.

21 The disadvantages of the system, which required the involvement of most of the nursing staff, were shown clearly when the need to give emergency care to a patient interrupted the service of the meal. This resulted in the meal being spoilt by being kept hot for 30 minutes before it was served to the remainder of the patients.

22 On other occasions it was also noticed that ward staff had to go back to the kitchen fairly frequently for extra food because of the difficulty of judging portions under the bulk system. Once during the observation period the service of the meal was delayed for 15 minutes. In many of the wards the soup and sweet courses were frequently put on open trolleys and taken round the wards to be served at the bedside. This method of service was also used at breakfast. Consequently these courses often were only luke warm when presented to the patients.

23 The amount of effort and staff activity required to serve meals with the Regethermic System is considerably less than with a bulk food service. Once the chilled plated meals have been delivered and placed in the ward refrigerator no further attention is required until just before reheating begins when a simple routine is followed.

(a) Switch on Regethermic oven to maximum temperature for 20 minutes to preheat.

- (b) Recheck meals in refrigerator for diets and number of meals required
- (c) Reheat soup or gravy on gas ring if necessary ()
- (d) Check reheat times to be used for the main meals and sweets
- (e) Load oven with main meals, set oven timer and temperature control according to instruction chart
- (f) At the sound of the timer bell switch oven off, serve food immediately

24 The temperature of the food and plates is such, and the speed of service so quick, that the meals can be served from an open trolley without detriment to the food. The first patients served had sometimes to be warned that the plates were extremely hot to touch.

25 The attention of the ward sister and senior nurses was only required to check the meals and their suitability for therapeutic diets or to give special instructions. Once this action had been taken they would give their attention to other work or to a particular patient. The wards are quieter and patients who need assistance with feeding can receive immediate attention as normally one member of the staff could hand round the plated meals. Washing up often began as the courses were cleared because ward domestic staff no longer had to help with the service.

26 Although it was occasionally necessary to send for additional meals or a different meal if patients had been admitted or their condition had changed in the previous 24 hours, these instances were rare compared with the previous bulk trolley system.

27 Whilst this new system if properly operated saves a good deal of man hours and has other advantages, nevertheless it is emphasised that attention must be paid to detail if shortcomings are to be avoided. For example, the appearance of some hot meals left much to be desired due to careless plating, bad handling in the coldroom or vibration in transit. Gravy, sauces and fruit juices often appeared burnt on the edge of plates after the reheating process which was difficult to clean off. The sweets were on occasions in the oven for too long a period due to their having been placed in the oven immediately following the removal of the main course. Similarly breakfasts, which should be reheated for only 8 minutes, were also dry because of being put into the Regethermic oven whilst the first course and tea were served. The timings on the Regethermic chart (Appendix G) placed in each ward was found in practice to be not always appropriate as some foods require a

different timing mainly for breakfasts and suppers. This was because the hospital portions were different from those on which the time chart was based. However the ward staff soon made the necessary adjustment and one ward demonstrated that it is possible to reheat meals containing fried eggs, bacon or boiled ham, which readily dry up if heated too long, satisfactorily. On the other hand with some foods a slight variation in portion size and food combinations which differed from the chart were not found to be significant.

28 One further point of criticism on this particular installation of Regethermic is that the plates are all of the same size, 10 inches. Consequently breakfast meals and sweet courses appeared rather small in the centre of the plates. Smaller plates are available for the system, as are soup bowls, but the cost of these precluded their purchase up to the time of compiling this report. The plate rings specially made for Regethermic plates also were not purchased for the same reason. Those that were used did not stop plates tilting when stacked and during deliveries (see addendum).

29 Despite the difficulties of serving particular dishes, the overall standard of the meals presented to the patients was good and showed a significant improvement over the bulk food trolley service. This view was supported by the patients' opinions (Appendix H). It will be seen that the inability of staff readily to alter portion sizes to suit individuals caused some reaction from patients.

Food Costs

30 'Pay as you Eat' was introduced two months after the full implementation of the Regethermic system. In common with many other hospitals the total number of persons fed decreased considerably and food costs rose. Because these two systems were introduced so near together, it is difficult to make a valid comparison with the previous bulk food system.

31 The need to produce meals before accurate information can reasonably be provided by the wards limits the extent to which close control of total production can be exercised. Nevertheless the reduction in food waste shown in the following table is perhaps an indication that a slight reduction in cost might be achieved due to the control of portion sizes produced by central plating.

	BULK TROLLEY SYSTEM		REGETHERMIC SYSTEM	
	Daily average Resident days	Average waste per person per day	Daily average Resident days	Average waste per person per day
April	243	12.6 ozs	244	11.9 ozs
May	257	12.0 ozs	216	10.4 ozs
June	233	11.9 ozs	199	11.3 ozs

Catering Staff Costs

32 The catering officer and his assistant, at the time of introduction of Regethermic were the employees of Gardner Merchant (Caterers) Ltd. but the kitchen staff were hospital employees. Records of previous years show that the establishment was constantly below maximum and considerable overtime was regularly worked. Under the new system a 5 day week for staff was introduced and its establishment reduced to 9.

33 Following negotiations, in which the Unions represented the ancillary kitchen staff, the latter were transferred to the staff of the contractors. This was arranged to enable acceptable pay levels to be maintained despite the reduction in weekend and shift working. The effect of this arrangement was to reduce the financial savings which would have been achieved, but it was necessary to enable staff to be retained and recruited.

34 A comparison (Appendix I) of the man hours worked in the kitchen with the bulk trolley system and the early stages of the new system shows a reduction in the labour requirement with the same standard of menu as previously, but with the central plating being carried out. The saving shown is still substantial even allowing for the introduction of a refrigerator and microwave oven to provide the service for night staff.

35 After a period of experience with the Regethermic system the following management and staff structure was found to be satisfactory.

	<u>Authorised Establishment</u>						
	Mon	Tues	Wed	Thur	Fri	Sat	Sun
General Manager	1	1	1	1	1	r.d.	r.d.
Kitchen Production Manager	1	1	r.d.	r.d.	1	1	1
Assist. Head Cook	1	1	1	1	1	r.d.	r.d.
4 Cooks	4	3	4	4	3	1	1
1 Diet Cook	1	1	1	1	1	r.d.	r.d.
3 Kitchen Porters	3	3	3	2	2	1	1
Total on duty	11	10	10	9	9	3	3

The services of a Dietitian were available to the hospital in addition to the above staff.

Ward Staff Costs

36 On the wards there was a considerable reduction in the number of ward staff hours needed for the food service but no actual revenue savings were shown to have occurred as the result of this. It is felt that the hours saved go towards providing better patient care and ward management. Detailed recordings of the time spent by ward staff on food service before and after the introduction of Regethermic are shown in Appendix J. The eventual reduction made although less than that found during the first survey can still be considered a substantial saving over the bulk food trolley system. Mainly the saving is due to ward staff not having to collect the breakfast from the kitchen, or wash food containers and the introduction of plated meals. A comparison of the total man hours spent on food service in four wards per week is shown below.

	<u>Nurses</u>	<u>Domestic</u>	<u>Total</u>
Bulk Food Trolley Service	1097	1077	2174
Regethermic 1st survey	446	560	1006
Regethermic 2nd survey	671	837	1508

37 Lack of space prevented the introduction of central washing up which would have further reduced the domestic hours.

CONCLUSIONS

38 The conclusions to be drawn from this study are that in the main the suppliers claims are substantiated although the effectiveness of the system depends on good management and co-operation between departments. However it must also be added that there is a greater risk of bacterial infection and growth because of the prolonged storage period and greater handling than a conventional system. The operation of a selective menu, although possible, could well increase food costs because of having to anticipate requirements of each dish at least 8 hours in advance. Whilst the training of staff at ward level is comparatively simple the training of kitchen staff is more difficult. Many of their old habits have to be changed and a new approach adopted. Central crockery washing normally would be introduced with this system although it was not possible in the Royal London Homoeopathic because of there being no area available. The capital costs of the system are rather higher than other comparable plate service systems even allowing for a possible saving, in some hospitals, where one ~~tower~~ might service more than one ward. Finally it is considered that this system is more suited to a small hospital than to a larger one of 250 beds and upwards.

39 Answers to the suppliers claims are given briefly below:

(a) Less kitchen staff are required than for a conventional system because the kitchen work can proceed steadily throughout the day thus avoiding peak pressures. Weekend and night work can be reduced.

This was shown to be possible but the apparent saving may not be as high as anticipated owing to having to operate a bonus scheme so that staff have an acceptable wage level.

(b) Ward staff time is saved because the meals are already plated before being sent to the ward.

This was shown to be correct.

(c) The appearance and palatability of food is improved because food can be served immediately after heating rather than being kept hot for long periods.

This is true in most cases the exception being some fried foods.

(d) The time of meal service may be adjusted within reason by the ward sister if necessary.

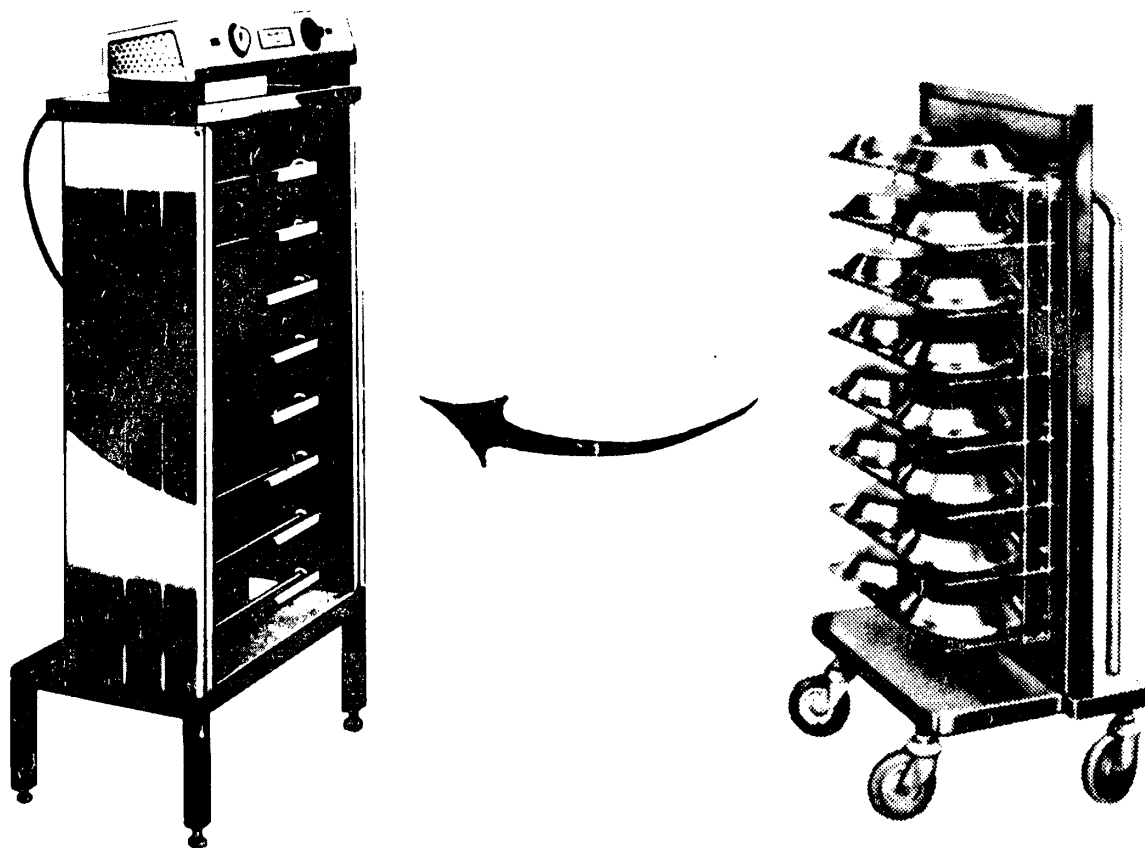
This is true but it should not often be necessary as one person could hand the plates to the patients.

(e) The conveyance of the plated chilled meals to ward units can be undertaken well in advance of the meal service to suit the convenience of local communications.

This is possible but it may be prevented if soups, sauces and gravies are freshly prepared and distributed hot to be served at ward level.

REGETHERMIC OVENS

Regethermic re-generation or re-heating ovens installed in each ward kitchen are of all stainless steel construction and heated by quartz clad electric elements arranged across the oven interior. The oven shelving is fixed to a loading trolley which, when in position, forms the front of the oven closing it completely as would a door (see illustration). The oven shelves are positioned between the electric elements so that any dish of food is heated from the top and the bottom by concentrated even heat. The oven is thermostatically controlled. Food re-heating time is controlled by a timer switch which cuts off the power at the end of any set period. An alarm also rings at the end of the pre-set period to audibly warn an operator that the heating period has been completed.



REGETHERMIC RE-GENERATION OVEN AND LOADING TROLLEY

DETAILS OF INSTALLATION COSTS

	£	£
<u>Regethermic Equipment</u>		
Regethermic Ovens	3636	
Spares for ovens	80	
Regethermic Plates	1170	
Plate Covers	656	
Lifting handles for plates, covers, plate rings etc	525	
Chilled Food Conveyors	1905	
Ward Refrigerators	1705	
Cold Store	1586	
Temperature Gauge Alarms	258	
Conveyor Belt, mobile Bain Maries and Dispensers	1422	
Sundries	<u>46</u>	12989
 <u>Staff Catering Equipment</u>		
Microwave Oven	1075	
Polypropylene Containers	175	
Boiling Pans	<u>277</u>	1527
 <u>Structural Work</u>		
Building	2167	
Electrical	1310	
Fees	436	
Direct Labour	<u>292</u>	<u>4205</u>
		<u>18721</u>

NB Regethermic plates will withstand constant reheating 4°C (37°F) to 97°C (200°F).

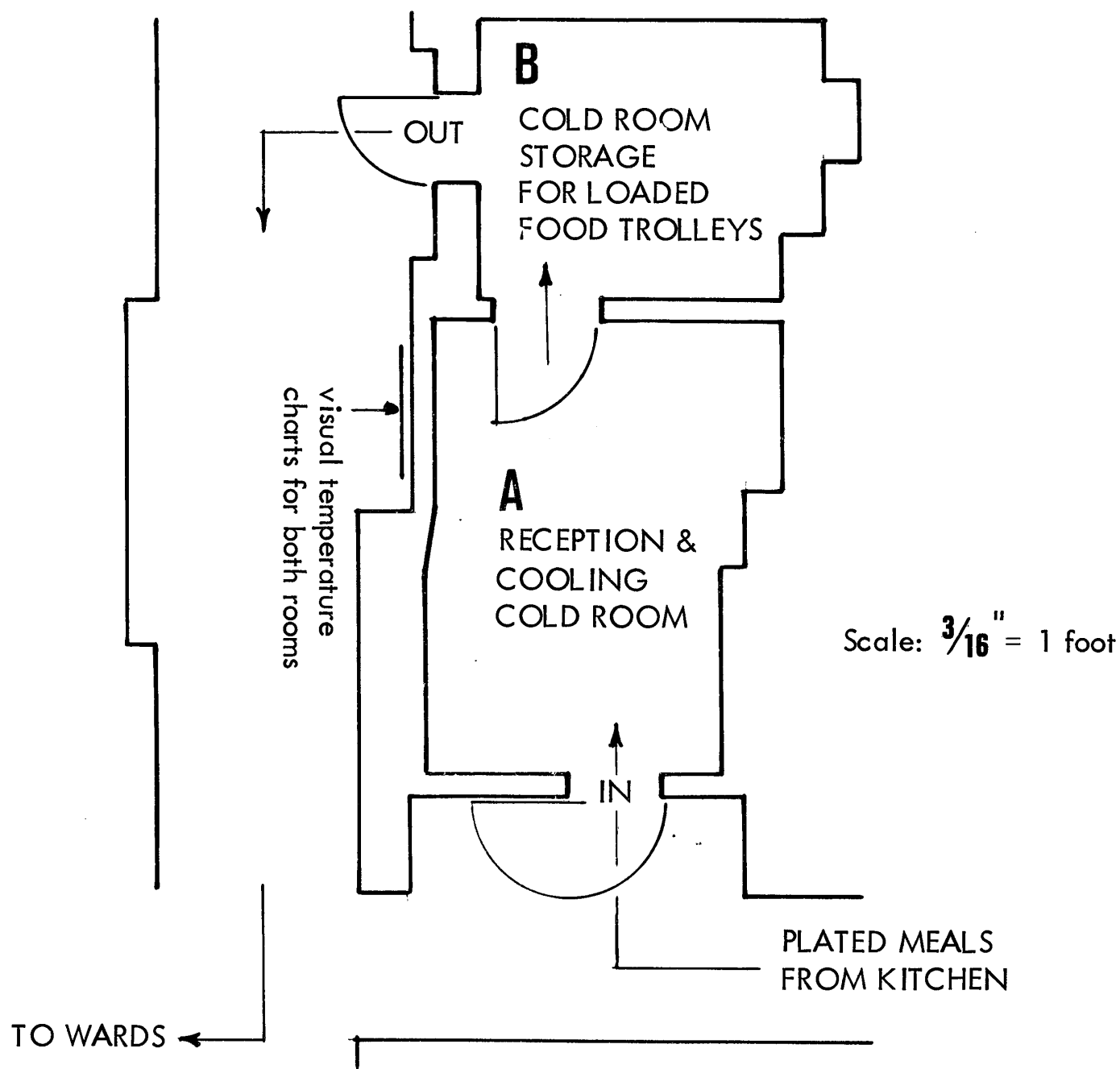
COLD ROOMS

Total capacity is 1650 cu ft. Room A receives the freshly plated meals on trolleys straight from the kitchen for cooling. The meals are placed on meal transport trolleys according to requirements and stored in the second area until the time for delivery. Area B can be entered without opening the first cooling room thus minimising the danger of temperature rises in either cold room.

The refrigerators were designed to maintain a constant temperature of 3°C (38°F). Temperature gauges were fitted to sound alarms should the internal temperature of either cold room rise above 9°C (48°F). The internal temperatures are also recorded on visual chart meters that can be readily seen. These were installed not only for visual checking of temperatures but to indicate any period of time when the chilled food could have been subject to storage temperatures above the minimum for adequate bacteria control.

WARD REFRIGERATORS

Each ward refrigerator is fitted with a 'Rotatherm Visual' temperature gauge and a battery operated alarm and is set to maintain 3°C (38°F) to 9°C (48°F).



MENU BULK FOOD

STAFF & PATIENTS

Menu No 1

SUBJECT TO ALTERATION

BREAKFAST Daily: Cereals & Porridge		LUNCHEON Daily: Soup Daily Staff Alternative: Assorted Salads	SUPPER Daily: Soup
SUNDAY	Boiled Egg	Roast Lamb & Mint Sauce Buttered Cabbage Roast & Parsley Potatoes Plum Pie & Custard	Scotch Egg Salad Potato Salad Peach Jelly & Cream
MONDAY	Bacon & Baked Beans	Steak & Mushroom Pie Sliced Carrots Parsley Potatoes Marmalade Sponge & Custard	Spaghetti Bolognaise Saute Potatoes Jam Tart & Custard
TUESDAY	Grilled Kipper	Braised Liver & Onions Diced Swede Creamed & Boiled Potatoes Ice Cream & Melba Sauce	Bacon & Sausagement Pie Tomatoes French Fried Potatoes Bread & Butter Pudding
WEDNESDAY	Grilled Bacon & Tomatoes	Boiled Ham & Pineapple Spinach Parsley Potatoes Lemon Meringue Pie	Grilled Halibut & Tartare Sauce Green Peas Fried Potatoes Pear Conde
THURSDAY	Bacon & Fried Bread	Fricassee of Veal & Risotto Macedoine of Vegetables Boiled Potatoes Baked Jam Roll & Custard	Chicken vol-au-vent Supreme See Glazed Carrots Creamed Potatoes Chocolate Blanmange & Villa See
FRIDAY	Scrambled Egg on Toast	Fried Fillet of Cod Green Peas French Fried Potatoes Cabinet Pudding	Vienna Steaks & Fried Eggs Cauliflower Saute Potatoes Rhubarb Crumble & Custard
SATURDAY	Chipolatas & Tomatoes	Grilled Lamb Cutlet Buttered Cabbage Parsley Potatoes Butterscotch Tart	Savoury Egg Flan French Beans Creamed Potatoes Ice Cream & Chocolate Sauce

APPENDIX D

MENU REGETHERMIC

STAFF & PATIENTS

Menu No 3

SUBJECT TO ALTERATION

BREAKFAST Daily: Cereals & Porridge		LUNCHEON Daily: Soup Daily Staff Alternative: Assorted Salads	SUPPER Daily: Soup
SUNDAY	Fried Bacon & Egg	Roast, Boned, Stuffed & Rolled Shoulder of Lamb & Mint Sauce Cauliflower Roast and Parsley Potatoes Fruit Pie & Custard	Veal & Ham Pie Salad Potato Salad Jelly & Ice Cream
MONDAY	Bacon & Fried Bread	Steak & Kidney Pie Parsnip Fingers Boiled Potatoes Queen of Puddings	Toad-in-the-Hole Fried Onions Saute Potatoes Fruit Fool & Cream
TUESDAY	Golden Cutlet	Roast Pork & Stuffing Buttered Spinach Roast & Boiled Potatoes Bakewell Tart & Custard	Cottage Pie Macedoine of Vegetables Creamed Potatoes Peach Sponge Flan
WEDNESDAY	Fried Egg & Tomatoes	Braised Chicken & Mushrooms Sliced Green Beans Creamed Potatoes Apple Amber	Fried Fish Fingers French Fried Potatoes Green Peas Chocolate Gateau
THURSDAY	Beef Sausages & Baked Beans	Curried Beef & Rice Glazed Carrots & Swedes Parsley Potatoes Steamed Date Roll	Grilled Lamb Chops Fried Onions Saute Potatoes Plums & Custard
FRIDAY	Scrambled Egg	Fried Fillet of Cod Green Peas French Fried Potatoes Apricot Upside Down Pudding	Chicken & Ham Cutlet Tomatoes Saute Potatoes Raspberry Jelly Whip
SATURDAY	Bacon & Fried Bread	Vienna Steak & Fried Egg Cauliflower & White Sauce Parsley Potatoes Fruit Salad (tinned) & Custard	Grilled Herrings Marrow in Tomato Sauce Creamed Potatoes Mincemeat Tart & Custard

APPENDIX E

MEAL PRODUCTION ROUTINE

The work for each day in the kitchen was planned on the following routine of preparing, cooking, plating and then cooling in cold store.

Daily Work

Monday	Monday supper, Tuesday breakfast, lunch and supper
Tuesday	Wednesday breakfast, lunch and supper, Thursday breakfast
Wednesday	Thursday lunch and supper, Friday breakfast
Thursday	Friday lunch and supper, Saturday breakfast and lunch
Friday	Saturday supper, Sunday breakfast and lunch
Saturday	Monday breakfast and lunch, special diets for Sunday
Sunday	Sunday supper (usually a cold meal, basic food preparation for Monday).

Regethermic Meal Heating System

Schedule of Reheating Instructions

INDEX NO	ITEMS	Reheat with plate cover ON/OFF	Time of heating mins	Oven setting number
<u>LUNCHEON DISHES</u>				
1	Roast Meat	ON	10	1
2	Braised Meat	ON	10	1
3	Steak & Kidney Pie	OFF	10	1
4	Braised Chop	ON	10	1
5	Meat Stew	ON	10	1
6	Vol au Vent	OFF	9	1
7	Braised Liver	ON	10	1
8	Grilled Lamb Cutlet	ON	10	1
9	Lancashire Hot Pot	ON	10	1
10	Steamed Fish	ON	9	1
11	Fried Fish	OFF	9	1
<u>SUPPER DISHES</u>				
15	Cottage Pie	ON	9	1
16	Chicken Fricassee	ON	10	1
17	Poached Egg & Spaghetti	ON	8	1
18	Fried Hamburger & Onions	ON	9	1
19	Fried Egg & Chipped Potatoes	OFF	8	1
20	Fried Liver & Bacon	ON	9	1
21	Poached Egg & Spinach	ON	8	1
22	Cauliflower au Gratin	ON	9	1
23	Spaghetti Bolognaise	ON	9	1
24	Omelettes - various	ON	8	1
25	Grilled Sausages	ON	9	1
<u>BREAKFAST DISHES</u>				
30	Grilled Bacon & Fried Egg	ON	8	1
31	Grilled Bacon & Tomatoes	ON	8	1
32	Grilled Bacon & Beans	ON	9	1
33	Grilled Chipolata Sausages & Baked Beans	ON	9	1
34	Fried Fish Fingers	OFF	8	1
35	Grilled Kipper	ON	9	1
36	Smoked Haddock	ON	9	1
<u>SWEET DISHES</u>				
40	Baked Jam Roll	OFF	9	1
41	Bread & Butter Pudding	ON	10	1
42	Fruit Tarts (various)	OFF	10	1
43	Fruit Pies (various)	OFF	10	1
44	Steamed Sponge Pudding (various)	ON	10	1
45	Milk Puddings (various)	ON	10	1
46	Stewed Fruit	ON	10	1

PATIENTS OPINIONS

Bulk Food Trolley System

As always the opinion of the food varied from ward to ward and between patients on the same ward. Generally the comments were about the food not being hot enough, poor presentation and the monotony of the light and special diets on occasions. There were as many compliments as complaints.

Regethermic System

In obtaining comments and opinions, people's views of the variety of meals and availability of a choice must be set apart to some extent. The general opinion of the food as served was one of appreciation and enthusiasm for the fresh hot appearance of the meals. The fact of the food being always hot reflects efficiency from the patient's point of view. Lack of variety in special diets and the menu generally was also mentioned.

Criticism that portion sizes were frequently too large, and also that potatoes were not wanted on the plate at all came from female patients. Generally they would have preferred to have their potatoes served separately. On the male wards the portions were considered adequate but now and again extra vegetables and potatoes were eaten if they were available from surplus meals.

APPENDIX I

Comparison of kitchen staff hours and Establishment

The weeks shown were selected in consultation with the Treasurer, to ensure a fair comparison with the Regethermic system. In both examples the staff were up to or nearly up to establishment.

Bulk Trolley System

Example A

Authorised Establishment

Catering Officer
Assistant Catering Officer
1 Head Cook
1 Assistant Head Cook
4 Cooks
2 Assistant Cooks
3 Kitchen Porters
1 Kitchen Maid
12 + 2

	<u>Ord. Time</u>	<u>Overtime</u>	<u>Total</u>
July 1966	400	134	534
Sept 1966	434	128	562
July 1967	399½	139	538½
Sept 1967	515	141½	656½
July 1968	432	123	555
Aug 1968	400	142½	542½
Sept 1968	416	145½	561½
Average	428.5	134.7	563.2

Note: These hours include night working

Regethermic System

Example B

Authorised Establishment

Catering Officer
Assistant Catering Officer
1 Head Cook (Production Manager)
1 Assistant Head Cook
5 Cooks
2 Kitchen Porters
9 + 2

	<u>Ord. Time</u>	<u>Overtime</u>	<u>Total</u>
June 1969	334	79½	413½
June 1969	320	83	403
July 1969	333½	81½	415
July 1969	320	95½	415½
July 1969	280	96½	376½
July 1969	264	105	369
Aug 1969	352	80½	432½
Aug 1969	289	79½	368½
Aug 1969	320	77	397
Average	312.5	86.4	398.9

APPENDIX

Comparison of Time spent on Food Service
Examples of time spent daily on 4 different wards

BULK FOOD SERVICE BEFORE REGETHERMIC

		Ward 1 mins	Ward 2 mins	Ward 3 mins	Ward 4 mins
Meal Preparation	Nursing staff	10	32	32	46
	Domestic staff	50	56	62	83
Service	Sister	15	57	66	60
	Nursing staff	138	217	222	102
Clearing	Domestic staff	2	95	70	41
	Nursing staff		26	29	45
Washing Up	Domestic staff	53	35	86	36
	Domestic staff	75	94	95	144
Totals		343 5hrs43	612 10hrs12	662 11hrs12	557 9hrs17
		36 hrs 24 mins			

REGETHERMIC FOOD SERVICE 1st survey

Meal Preparation	Sister	4			
	Nursing staff	16	23	40	19
	Domestic staff	37	41	11	28
Service	Sister	5	5		8
	Nursing staff	68	72	102	50
	Domestic staff	10			2
Clearing	Nursing staff		17	16	
	Domestic staff	28	15	23	41
Washing Up	Nursing staff				1
	Domestic staff	70	84	81	89
Totals		238 3hrs58	257 4hrs17	273 4hrs33	238 3hrs58
		17 hrs 46 mins			

REGETHERMIC FOOD SERVICE 2nd survey

Meal Preparation	Nursing staff	43	28	12	15
	Domestic staff	45	64	59	30
Service	Sister	1	2	5	8
	Nursing staff	104	197	152	53
	Domestic staff		12	6	
Clearing	Nursing staff	36	15		
	Domestic staff	32	11	47	60
Washing Up	Domestic staff	100	130	137	104
Totals		361 6hrs1	459 7hrs39	418 6hrs58	270 4hrs30
		25 hrs 8 mins			

Summary of Time spent on Food Service

BULK TROLLEY						REGETHERMIC									
						1st Survey					2nd Survey				
Ward	1	2	3	4	Av.	1	2	3	4	Av.	1	2	3	4	Av.
Meal Prep.	60	88	94	129	93	57	64	51	47	55	88	92	71	45	74
Service	155	369	358	203	271	83	77	102	60	81	105	211	163	61	135
Clearing	53	61	115	81	78	28	32	39	41	35	68	26	47	60	50
Washing Up	25	94	95	144	102	70	84	81	90	81	100	130	137	104	118
Av. Total Minutes					544					252					377



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SUMMARY OF COMMENTSInstallation Costs

The capital cost of Regethermic is high compared with other system which provide a plated meal service (para 2).

The installation and successful operation of the system requires a degree of management control which may well take a considerable time to establish (para 4).

Menus

The introduction of an effectively controlled selective menu system is difficult because cooking is completed before patients orders can reasonably be collected (para 7).

Preparation & Cooking

If the dangers of bacterial contamination which are inherent in the use of chilled food, are to be avoided it is essential that staff are thoroughly trained in food handling procedures (para 11).

Production schedules need careful planning if the maximum benefit is to be derived from the opportunity this system offers to increase the productivity of the kitchen staff (para 12).

Special Techniques

With skilled efficient management the necessary modified procedures can be introduced and maintained (paras 13, 14, 15).

Meal Distribution

Savings in the cost of distributing food can be achieved by combining meal and other deliveries (para 18).

Because some food is distributed hot, to simplify the reheating procedures, the flexibility of the distribution times is reduced (para 19).

Service

The amount of ward staff involvement in routine food service is considerably reduced (paras 23, 25).

The correct number of complete meals are readily available. (para 26).

Portion sizes were a problem because there was not a comprehensive system which made available to the catering department details of the patients and their individual requirements (para 29).