



MINISTRY OF FOOD

Hygiene in Catering Establishments

REPORT
OF THE CATERING TRADE
WORKING PARTY

~~LONDON:~~ HIS MAJESTY'S STATIONERY OFFICE
1951

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THE CATERING TRADE WORKING PARTY

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TERMS OF REFERENCE

The Catering Trade Working Party was appointed by the Minister of Food in November, 1948, to make recommendations to the Ministers of Food and Health and the Secretary of State for Scotland as to the precautions considered practicable and desirable with a view to securing the observance of sanitary and cleanly conditions in the catering trade.

PROCEDURE AND APPRECIATIONS

The Working Party first met on 26th November, 1948, and sat on thirty-three occasions. The final meeting was held on 18th October, 1950.

Evidence was taken from catering trade associations, from associations of local authorities and of officers of local authorities, from women's organisations and from individual bacteriologists. The representative nature of the evidence is indicated by Appendix I.

The Working Party had the advantage of the considered views of a committee on detergents which sat under the chairmanship of the Chief Pharmacist of the Ministry of Health.

Groups of members paid visits to catering establishments of different types, to manufacturers of catering equipment and to the Hotel and Catering Exhibition at Olympia.

The Working Party wishes to place on record its appreciation of the courtesy and co-operation of all its witnesses and of the managements and staffs of the catering establishments visited.

The estimated cost of the preparation of this report is £1,566 16s. 3d., of which £129 represents the estimated cost of the printing and publishing of this report.

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Appendix I

SOURCES OF EVIDENCE

Association of Municipal Corporations
Urban District Councils Association
Rural District Councils Association
Metropolitan Boroughs' Standing Joint Committee
Society of Medical Officers of Health
Society of Medical Officers of Health (Scottish Branch)
Sanitary Inspectors Association
Sanitary Inspectors' Association of Scotland

Bacteriologists

Prof. R. Cruickshank, M.D., F.R.C.P., D.P.H. (Wright Fleming Institute of Microbiology)
Dr. G. S. Wilson, M.D., F.R.C.P., D.P.H. (Public Health Laboratory Service)

British Federation of Hotel and Boarding-House Associations
British Hotels and Restaurants Association
Caterers Association (in association with the National Association of Master Bakers, Confectioners and Caterers)
Cooked Meats National Trade Association
Milk Bars Association of Great Britain and Ireland Ltd.
National Caterers Federation
National Consultative Council of the Retail Liquor Trade

Women's Organisations

by arrangement with the Women's Organisations' Committee for Economic Information, through seven representatives nominated by:—

British Federation of Business and Professional Women and National Federation of Business and Professional Women's Clubs
National Council of Women of Great Britain
National Federation of Women's Institutes
Scottish Women's Rural Institutes-
Women's Co-operative Guild
Women's Group on Public Welfare
Women's Voluntary Services.

Appendix II (Part A)

REGISTRATION OF CATERING ESTABLISHMENTS

The case for inspection of premises before registration is accorded

1. The undersigned members of the Catering Trade Working Party consider that registration of eating places is desirable in order to supplement the other relevant powers of the local authority and to strengthen the public health control which is required in the interests both of the trade as well as of the public. For that purpose, the provision for registration is not complete unless it includes a power to refuse registration and a prohibition of starting a new business until registration has been granted. Registration in this form has been increasingly recognised in legislation as desirable and, in particular, the extension of it in section 14 of the Food and Drugs Act, 1938, to various classes of food premises has, so far as we are aware, proved satisfactory in practice.
2. Under that procedure a person proposing to use premises for certain specified purposes may not so use them until they have been registered by the local authority. The grant of registration is contingent on the local authority being satisfied that the premises satisfy the requirements of section 13 of the Food and Drugs Act and are not otherwise unsuitable for the purpose for which it is proposed to use them. If the local authority decides to refuse registration, the applicant is notified of the reasons for this decision and is given an opportunity to appear before the local authority, with any witnesses whom he desires to call, and to show cause why registration should not be withheld; and, if the refusal is maintained, the applicant has the right of appeal to a court of summary jurisdiction and a further right of appeal to a court of quarter sessions.
3. In short, our view is that premises should be inspected to see that they are satisfactory *before* they are brought into use as a catering establishment.
4. We consider that the public ought not to be exposed to the health risks which may be involved in the use of unsuitable premises for new catering establishments. Although the proposed alternative procedure, whereby registration of a new establishment would be granted automatically, would enable the local authority to cancel the registration if the premises fail to satisfy the requirements of section 13 or are otherwise unsuitable, the caterer would be entitled to continue using unsuitable premises while the formalities of cancellation were being gone through, including the exercise of the caterer's rights of appeal. These formalities might occupy several months. Moreover, the registration of premises in which a new business is conducted would be taken to indicate the approval of the local authority, and the public would be fully entitled to ask why a local authority should be allowed to set the seal of official approval on a catering establishment without first taking steps to ascertain that the premises were suitable.
5. Moreover, there is a possibility that courts would be reluctant to uphold the decision of a local authority to cancel a registration in cases where a caterer had installed equipment at considerable expense in premises which were then found to be unsuitable unless the degree of unsuitability were so great as to make any other course impossible.
6. Furthermore, we consider that inspection before registration would act as a protection against unfair competition to that vast majority of caterers who conscientiously make every effort to ensure that their premises are hygienically satisfactory.

7. Finally, we consider that the system of registration for premises in which ice cream and preserved foods are manufactured or sold, a system which has so recently been laid down by Parliament, should be suitable for premises which do not differ in essential hygienic requirements from those in which ice cream and preserved foods are manufactured or sold. We set out in Part C of this appendix the terms of section 14 of the Food and Drugs Act, 1938, which should apply as minimum terms for the registration of premises. We are aware that in Scotland the ice cream manufacturer or dealer has to be registered as well as his premises: whether this refinement should apply to caterers is a matter which, for our part, can be left to the Scottish authorities concerned.

Signed

WILLIAM G. SAVAGE.

P. N. R. BUTCHER.
S. ERICHSEN.
HAROLD HODKINSON.
DENIS NASH.
ANDREW J. SHINNIE.
I. N. SUTHERLAND.

N. R. C. DOCKERAY.
BETTY C. HOBBS.
W. A. LETHEM.
ALLAN W. RITCHIE.
E. L. STURDEE.
ROBERT SUTHERLAND.

Appendix II (Part B)

The case for registration "as of right"

1. While we have accepted with some reluctance that registration should be advocated as part of the administrative machinery to improve hygienic conditions in catering, we are of opinion that the legal form it should take should be as follows.
2. We feel that the industry, quite rightly, would object strongly to any form of registration which could introduce additional penalties to those already imposable and would resist to the utmost a practice which would place in the hands of local authority officials the right to prevent a trader from commencing a catering business merely on assumptions from plans that the premises in question could not be hygienically conducted. The trader also must be safeguarded against the possibility that local interests at parochial level should determine whether he might open a business or not. Nothing must be read into this to cast any reflection on the integrity of local government officials.
3. It has been advanced that it is not in the trader's own interest that he should be able to start up in business before the premises, plant and layout have been examined and advised on by a sanitary inspector. In our view the trade would agree that this is a wise procedure, although we must stress that it is more important that the business should be hygienically conducted and that this is only partially dependent upon the layout of the premises; however, it must remain within a person's right of freedom of action and personal liberty that he should be able or not as he wishes to engage in lawful business.
4. Whilst registration would impose on the caterer an additional burden, if it is indeed a measure which will further the earnest desire of the industry to improve hygiene, then we submit that registration in the form of registration "as of right" gives all that local authority administration can require.

5. By registration "as of right" it is meant that there should be registration upon mere notification by a caterer to a local authority of his intention to operate a catering establishment.
6. Under this procedure, before opening premises for use as a catering establishment the prospective occupier would notify the local authority in writing of his intention and the local authority would automatically register the premises and supply the prospective occupier with a copy of the Standard and Target Codes, after which the occupier may use the premises, subject to current Town and Country Planning requirements.
7. If the local authority or its appropriate committee resolves that in the light of the conditions revealed in a report, premises do not comply with legal requirements they have at present ample powers to proceed by taking the normal legal steps and which in fact is what they will have to do with all the existing catering establishments operating on the appointed day. In our opinion the only extra power which might be required, is *at quarter sessions level only*, the right to withdraw registration.

Signed :

W. H. BENNETT.
HARRY W. CRANE.
JACK HOLLINGSHEAD.
J. R. LOWENTHAL.

A. ERNEST BURDETT.
W. C. CROZIER.
ROY HOOD.
E. VIVIAN ROGERS.

Appendix II (Part C)

Section 14 of the Food and Drugs Act, 1938

14.—(1) Subject to the provisions of this section, and of subsection (6) of the last preceding section, no premises shall be used for—

- (a) the sale, or the manufacture for the purpose of sale, of ice-cream, or the storage of ice-cream intended for sale ; or
- (b) the preparation or manufacture of sausages or potted, pressed, pickled or preserved food intended for sale,

unless they are registered under this section for that purpose by the local authority, and a person who uses any premises in contravention of the provisions of this subsection shall be guilty of an offence.

For the purposes of this subsection, the preparation of meat or fish by any process of cooking shall be deemed to be the preservation thereof.

(2) Subject to the following provisions of this section, the local authority shall, on the application of the occupier of, or of a person proposing to occupy, any premises, register those premises for the purposes of this section.

(3) If it appears to the local authority that any premises for the registration of which application has been made under this section, or which are registered under this section, do not satisfy the requirements of the last preceding section, or are otherwise unsuitable for use for the purpose for which they are proposed to be used or are being used, the authority shall serve on the applicant for registration or, as the case may be, on the occupier for the time being of the premises, a notice stating the place and time, not being less than seven days after the date of the service of the notice, at which they propose to take the matter into consideration and informing him that he

may attend before them, with any witnesses whom he desires to call, at the place and time mentioned to show cause why the authority should not, for reasons specified in the notice, refuse the application or, as the case may be, cancel the registration of the premises.

(4) If a person on whom a notice is served under the last preceding subsection fails to show cause to the satisfaction of the local authority, they may refuse the application or, as the case may be, cancel the registration of the premises, and shall forthwith give notice to him of their decision in the matter, and shall, if so required by him within fourteen days of their decision, give to him within forty-eight hours a statement of the grounds on which it was based.

(5) A person aggrieved by the decision of a local authority under this section to refuse to register any premises, or to cancel the registration of any premises, may appeal to a court of summary jurisdiction.

(6) Upon any change in the occupation of premises registered under this section, the incoming occupier shall, if he intends to use them for the purpose for which they are registered, forthwith give notice of the change to the local authority, who shall thereupon make any necessary alteration in their register.

If a person required to give a notice under this subsection fails to do so, he shall be liable to a fine not exceeding five pounds.

(7) This section shall not apply in relation to premises used primarily as a club, hotel, inn or restaurant, and in relation to premises used as a theatre, cinematograph theatre, music hall or concert hall shall have effect as if in paragraph (a) of subsection (1) the words "the sale, or" and the words "or the storage of ice-cream intended for sale" were omitted.

(8) If at the commencement of this Act local Act provisions with respect to the registration of premises used for any of the purposes mentioned in subsection (1) of this section were in force in a district, this section shall not apply to that district until the Minister, on the application of the local authority, declares it to be in force therein.

(9) Where on an application made by a local authority under the last preceding subsection the Minister declares this section to be in force in the district of the authority, then, upon the declaration taking effect, such of the local Act provisions as may be specified in the declaration shall be repealed or, as the case may be, shall be repealed as respects the district of the authority, but any premises which immediately before the repeal of those provisions were registered thereunder for any purpose mentioned in subsection (1) of this section shall be deemed to have been registered under this section for that purpose.

Appendix III

REPORT OF THE ADVISORY COMMITTEE ON DETERGENTS APPOINTED BY THE CHAIRMAN OF THE CATERING TRADE WORKING PARTY

The Advisory Committee was set up under the Chairmanship of Dr. H. Davis in March, 1949. The list of members is set out in sub-appendix A. It operated as an independent advisory body and not as a sub-committee of the Working Party. It worked in two sections, one consisting of manufacturers' representatives and the other of scientists interested in the use of detergents.

The terms of reference of the Committee were "to advise the Chairman of the Catering Trade Working Party on the use of detergents in the catering industry".

The scientific and technical aspects of the Committee's report are as follows.

A. Properties required of Detergent Preparations

An effective dish-washing compound should:—

- (a) remove, and prevent the redeposition of, food residues and other solids;
- (b) wet glass, china and metal surfaces readily and consequently rinse freely;
- (c) not attack material of cooking utensils nor damage decorated crockery;
- (d) if the water is hard, not cause a precipitate or scum;
- (e) not affect the operative's health nor harm the skin (chiefly applies to hand-washing methods).

Both hand and machine dish-washing methods should produce a satisfactory standard of cleanliness. Utensils which have been submitted to a satisfactory washing process should be visibly free from food soils, greasy films and hard water films which may harbour bacteria and protect them from any subsequent treatment by heat or by a chemical bactericide.

B. Dish-Washing Machines

Both sections of the Committee agree that some dish-washing machines do not make the best use of modern surface-active agents and that the design of some machines has been so simplified as to interfere with the efficiency of the process.

The Committee recommends that machines should be designed to use modern surface-active agents effectively and to be operated efficiently by workers normally engaged in dish-washing.

Members of the Committee explained that the proprietor of a small restaurant could change a bad detergent but could not so easily replace an unsatisfactory dish-washing machine, for which the outlay may have been considerable.

The Committee suggests that the Working Party should hear evidence from the machine manufacturers.

C. Detergent Preparations used in Machine Dish-Washing

For machine dish-washing there are two main types of detergent preparations, consisting of either (i) an alkaline base, with silicates, phosphates and other compounds, or (ii) soap or synthetic detergents, with or without alkalis.

The Committee agrees that some present-day machines must use alkaline preparations, since excessive frothing limits the proportion of synthetic organic detergent which may be employed.

The manufacturers' section discussed the relative merits of the specification of minimum chemical content and of the establishment of an official body to investigate manufacturers' claims. An example of a chemical specification is that of the U.S. Navy Department. Mann has recently proposed the establishment in Britain of a scientific authoritative committee to investigate the properties required of detergents.

Three of the members of the section (Messrs. Cairns, Ross Kane and Resuggan) agreed to examine the practicability of a chemical specification; their recommendations were accepted, in a slightly modified form, by a subsequent meeting of the section. The modified report is reproduced in sub-appendix B.

The manufacturers' section accepts the principle of an official body to investigate manufacturers' claims but wishes to point out the practical difficulties to be encountered. One difficulty may be the evolution of an effective performance test by which the body would assess the preparations submitted. The section considers that the official body should be sponsored by a Government Department.

D. Machine Dish-Washing Procedures

The ideal process may be divided into three parts :—

- (a) a pre-rinse with hot water to remove gross contamination. Excessive concentrations of soiling material reduce the effectiveness of the wash solution and cause waste of detergent.

To prevent the coagulation of protein and the hardening of carbohydrate, the temperature of this pre-rinse should not exceed 140°F., and, to assist removal of fats, should not fall below 120°F. ;

- (b) treatment with hot water containing a suitable concentration of a detergent preparation. The temperature in this stage should not be lower than 130°F.

In order to ensure a minimum concentration of detergent, the concentration should be automatically maintained ;

- (c) an efficient rinse to ensure satisfactory bacteriological standards and quick drying.

In addition to the principles proposed above, the Committee makes the following supplementary observations :—

- (i) after stage (c) of the washing process, wiping with a cloth is undesirable and should not be necessary ; the utensils should be stacked in racks until required for use ;
- (ii) because of the importance of maintaining times and temperatures, the temperature and duration of the washing process should preferably be automatically and not manually controlled.

E. Hand Dish-Washing—necessary precautions

The advantage of machine over hand dish-washing is that at no stage do the washing and rinsing liquids touch the operatives' hands. Consequently, in machine washing higher temperatures may be used and less account need be taken of any irritant properties of the detergent preparations employed.

In designing hand dish-washing methods, two principles should be observed:—

- (a) the temperature of liquids in contact with operatives' hands should not exceed 120°F;
- (b) the detergent preparations used should not affect the health nor harm the skin. Any performance test for hand dish-washing preparations should include a supplementary test for absence of irritant action on the skin.

F. *Detergent Preparations used in Hand Dish-Washing*

These are four main types:—

(a) *Purely alkaline mixtures*

The present considerable use of this type of preparation is likely to be much reduced in the future. The three members of the Committee who prepared a paper on alkaline compounds for machine dish-washing (Messrs. Cairns, Ross Kane and Resuggan) undertook to produce a similar paper (reproduced in sub-appendix C) in respect of hand dish-washing.

(b) *Uncompounded synthetic detergents*

Before suggesting any conditions of use, the Committee feels that some explanation is necessary of the forms in which this class of detergent is sold. Many types of synthetic organic detergents are at present being produced by a small number of manufacturers; explanation of the chemical structure of some of these types is given in sub-appendix D. These primary manufacturers market their products in some cases as dilutions containing 20-40 per cent. of active constituent (i.e., of one of the chemicals listed in sub-appendix D). Because of the rather wide variation of active constituent in the various marketed products, the Committee considers that the strengths of washing solutions should be calculated on the percentage of active constituent and not of the marketed product.

Since these compounds are often most effective at one particular concentration, the Committee carefully considered the strengths it should recommend.

The Committee finally agreed that the washing solution should be of the order of 0.02 to 0.07 per cent. of "true surface-active agent", on the understanding that manufacturers will issue with their products suitable instructions for use. Manufacturers should also provide a method for its determination.

(c) *Compounded synthetic detergent preparations*

These are prepared by a considerably larger number of firms than those manufacturing the primary products.

The Ministry of Food, under the Soap Substitutes (Labelling and Prices) Order, 1943 (S.R. & O. 638 of 1943), and now revoked, licensed "products labelled for sale" and laid down standards for the following types of product:—

- (i) Products claimed to be suitable for general household use, including the washing of woollens and delicate fabrics.

These should contain not less than 7-8 per cent. of concentrated active detergent (the "true surface-active agent" mentioned in sub-paragraph (b)), and not more than 30 per cent. of strong alkali. The pH value of an 0.2 per cent. solution of such products should not exceed 10.2.

- (ii) Products containing not less than 5 per cent. of concentrated active detergent and claimed to be suitable as general household cleansers.

The labels of such products should disclaim use for the washing of fabrics other than linen and cotton goods.

- (iii) Products claimed to be suitable for dish washing and scrubbing only. These are considered, provided the active detergent content is not less than 2·5 per cent.

The Committee found difficulty in phrasing a recommendation for this type of preparation since the addition of a surface-active agent may enhance the irritant effect of the other ingredients.

The Committee therefore confines its recommendations to the following:—

“ If a surface-active agent is added to an alkaline mixture, extra care must be taken to ensure that the hands are not affected.”

- (iv) *Compounded soap powders*

The Ministry of Food, through the Soap (Licensing of Manufacturers and Rationing) Order, 1949 (S.I. 973 of 1949) specified standards for two types of soap powder:—

No. 1 Specification—for powders containing not less than 28 per cent. and not more than 56 per cent. of anhydrous soap ;

No. 2 Specification—for powders containing not less than 6 per cent. and not more than 28 per cent. of anhydrous soap.

The only recommendation the Committee wishes to add to these specifications is that the pH of a washing solution made from a compounded soap powder should not exceed 10·5.

G. *Hand Dish-Washing Procedures*

Since Sir William Savage had informed the Committee that the Working Party considers that single-tank washing methods should not be used, only two-tank or three-tank methods were discussed.

Before applying either method, food residues should be scraped into waste bins and the utensils preferably rinsed in warm water. This procedure should avoid waste of detergent and undue accumulation of soil in the first tank.

Effective treatment by one or other of these two methods necessitates the following:—

(a) *Two-tank method*

- (1) Wash-solution of suitable detergent at temperature of 110°F.-120°F.
- (2) (i) Immersion for fifteen seconds in clean water maintained at a temperature of 170°F., or an equally effective process of sterilisation by heat, or
- (ii) immersion for an adequate period in a solution of an effective concentration of a suitable bactericidal substance, such as a quaternary ammonium compound or a hypochlorite.

(b) *Three-tank method*

- (1) Wash-solution as in stage (1) of two-tank method.
- (2) Warm water rinse, to prevent carry over of washing liquid to final rinsing stage. This second tank may be replaced by a satisfactory rinsing or spraying device.

- (3) (i) Immersion for fifteen seconds in clean water maintained at a temperature of 170°F., or an equally effective process of sterilisation by heat, or
- (ii) immersion for an adequate period in a solution of an effective concentration of a suitable bactericidal substance, such as a quaternary ammonium compound or a hypochlorite.

In recommending a solution of a quaternary ammonium compound as one of the alternatives for the final rinse tank, the Committee recognises that the effective concentration of these compounds varies between the different members of the group and will need to be specified in the instructions issued by the manufacturers.

After removal from the final rinse tank, crockery should be allowed to drain and should not be wiped with a cloth. Where a hot water rinse tank is employed, utensils may be allowed to drain in the same containers in which they were immersed in the tank.

H. Use of Sequestering Agents

In "hard" water, alkalis and some detergents, such as soap, form insoluble calcium and magnesium compounds which usually appear on the surface as scum; synthetic organic detergents are effective and free from scum formation at all reasonable ranges of hardness, pH and salinity.* Although the scum is unsightly if allowed to dry on utensils, a more serious objection is the conclusion of several workers that calcium and magnesium films provide a good environment for the survival and growth of bacteria. Substances which will prevent the precipitation of insoluble compounds, such as those of calcium and magnesium, are known as sequestering agents. The agents most commonly used are inorganic compounds such as the alkali polyphosphates.

Certain organic compounds have been shown to be effective, and differ from the inorganic substances in not acting in stoichiometrical (i.e., chemically equivalent) proportions. Although sequestering agents are normally inorganic, the Committee feels that the use of organic compounds in the catering industry may be expanded.

The Committee recommends that sequestering agents be incorporated in dish-washing preparations the use of which in hard water would otherwise lead to scum formation. When alkali polyphosphates are used, washing solutions should contain not less than the equivalent of 0.015 per cent. of P_2O_5 , as polyphosphate.

I. Washing Facilities in Licensed Premises

The Committee briefly discussed the facilities available for washing glasses in the bars of licensed premises. The conditions prevailing are somewhat different from those in other catering establishments, and the problems are to some extent specific. Practically all cleaning is done at the bar counter, a quick turn round of glasses is frequently necessary and all methods are geared up to the "rush hours" such as the period immediately before closing time. Any system of glass washing must be satisfactory at these times, which are not only the most difficult but are also those at which cleaning needs to be most effective. The cleaning which takes place after closing time is probably generally satisfactory; as the public mostly like glasses to look bright and shining they are usually polished, after cleaning and draining, and put on shelves.

* It is not necessary, of course, to employ sequestering agents with this type of detergent.

A number of glass-washing machines are on the market, but they are not very popular, chiefly because they take up so much space and do not work at sufficient speed.

While the adoption of a two-tank or multi-tank washing and rinsing process may be desirable as a future objective, in a great many licensed houses facilities for this procedure at each bar do not exist at present. In many cases it would not be possible to install such a system without major alterations involving so considerable a building programme that it would not be possible under present conditions. It is most desirable that any recommendations made should be workable.

The Committee learnt that a panel of brewing scientists is very actively engaged at the present time, under the aegis of the Institute of Brewing, in investigating the possibility of the automatic addition of a suitable detergent and bactericide to the sink. As a result of a large number of bacteriological and other tests in laboratories and licensed houses, this body expects to be in a position to make positive recommendations. It is expected that a procedure will be possible which can safely be applied to a single-tank system.

The following are the principal properties required of a detergent and germicidal preparation for use in sinks in bars: it must be—

- non-irritant
- odourless
- tasteless
- rapid and bacteriologically non-selective in action
- without deleterious effect on beer head
- free of haze forming properties in the beer
- non-foaming in the sink
- free of causing lingering bubbles in the glass, suggesting soapiness
- free of causing slipperiness on the surface of the glass
- non-corrosive to pewter, etc.

A suitable detergent having been found, some simple automatic dispensing device is desirable to ensure use at the correct concentration.

After washing, the best practice is to leave the glass to drain, as it should now have a very low bacterial count, but this does not appeal to some members of the public, who consider that a dry, highly polished glass is more attractive.

Where a cloth is used it should be clean and should be retained exclusively for glass polishing. Experiments have shown that impregnation of the cloth with a bactericide does not lead to a lower bacterial count on the glass than that obtained with an unimpregnated cloth provided the latter is clean. This is reasonable if glasses are immersed in a germicidal detergent, because the unimpregnated cloth only becomes dampened with the remains of the detergent from the glass. Nevertheless, impregnation of the cloth may be encouraged as an additional precaution, since there is always a possibility that the cloth may sometimes be used for purposes other than glass drying and polishing.

J. Simple Field Tests

Such tests should be capable of being easily performed by inspectors visiting catering establishments. The following simple tests may be employed:—

- (a) Visible freedom of utensils from soiling matters.
- (b) Freedom from film. The application of finely powdered carbon with a camel hair brush will assist detection of film.

- (c) Temperature of wash and rinse solutions. Inspectors should be provided with a pocket thermometer similar to that described in page 32 of Part III of the U.S. Public Health Bulletin No. 280.
- (d) Inspectors should be provided with clean, stoppered bottles for collecting samples of original wash and rinse solutions for laboratory chemical examination. Where the washing process is shown to be inefficient such examination should reveal whether the solution complies with the simple specifications of this report, as laid down in sub-appendices B and C. We have not made any recommendations for assessing the composition of solutions during use, but the Committee feels that the problem is worthy of consideration.
- (e) Bacteriological examination. The Committee feels that some mention should be made of bacteriological tests, whilst realising that these are outside its terms of reference.

The bacteriological examination of washed utensils may be made by a swabbing or a rinse procedure. For performing the swabbing, inspectors should be provided with sterile cotton swabs contained in 20 ml. of sterile Ringer's solution. Rinse tests of certain types of utensil have certain advantages with regard to reproducibility and simplicity. It may be thought desirable to take samples, for bacteriological examination, of the water in which utensils are rinsed. Bacteriological tests and sampling should only be performed by trained workers.

K. Interpretation by restaurant proprietors of the recommendations of this report

Many of this report's recommendations are unavoidably expressed in technical terms which the Committee appreciates may prove confusing to many proprietors of catering establishments, especially those smaller concerns possessing no laboratory facilities of their own.

The Committee realises that the majority of catering establishments are of this type and therefore urges manufacturers of detergent preparations to issue instructions which the layman will readily understand.

L. Summary

The conclusions of this report may be summarised as follows:—

- (1) A satisfactory washing process should render utensils free from food soils, greasy films and hard-water films.
- (2) Dish-washing machines should be designed to use modern surface-active agents effectively and to be operated efficiently and automatically by ordinary workers.

The Committee suggest that the Working Party should hear evidence from washing machine manufacturers.

- (3) Some present-day machines must use alkaline preparations, since excessive frothing limits the proportion of synthetic organic detergent which may be employed.
- (4) For alkaline machine dish-washing preparations, certain standards of alkalinity, sequestering power and silicate content may be specified.
- (5) The manufacturers' section accepts the principle of the establishment of an official body to investigate claims made for detergent preparations, but wishes to point out the practical difficulties of the proposal. The Section considers such a body should be sponsored by a Government Department.
- (6) The Committee outlines a procedure for machine dish-washing.

- (7) In manual dish-washing, certain precautions are required additional to those necessary in machine procedures.
- (8) The Committee has considered the extent to which standards could be recommended for the following types of hand dish-washing preparations:—
 - (a) Purely alkaline mixtures.
 - (b) Uncompounded synthetic detergents.*
 - (c) Compounded synthetic detergent preparations.†
 - (d) Compounded soap powders.†
- (9) The Committee outlines procedures for two- and three-tank methods of hand dish-washing.
- (10) Sequestering agents should be incorporated in alkaline dish-washing preparations the use of which in hard water would otherwise lead to scum formation.
- (11) The Committee has briefly discussed the facilities available for washing glasses in the bars of licensed premises and the measures necessary for their improvement.
- (12) Simple procedures are described for determining the efficiency of dish-washing processes.
- (13) In referring to the technical nature of its report, the Committee stresses the importance of manufacturers of detergent preparations issuing instructions which the layman will readily understand.

SUB-APPENDIX A

Advisory Committee on Detergents

Chairman : H. Davis, B.Sc., Ph.D., F.R.I.C., Ph.C.
(Chief Pharmacist—Ministry of Health)

Manufacturers' Section :—

E. Barraclough, M.Sc., Ph.D., F.R.I.C.	Monsanto Chemicals, Ltd.
A. C. H. Cairns, B.A., B.Sc., A.R.I.C.	Jos. Crosfield & Sons, Ltd. Industrial Soaps, Ltd.
S. H. Oakeshott, B.A., B.Sc., D.Phil.	I.C.I. Ltd. (Dyestuffs Division).
J. C. L. Resuggan, F.R.I.C.	British Hydrological Corporation.
N. L. Ross Kane, M.A., B.Sc., A.R.I.C.	I.C.I. Ltd. (Alkali Division).
G. S. Shillitoe, B.Sc., A.R.I.C. ...	Irano Products, Ltd.
R. C. Tarring, B.Sc., A.R.C.S. ...	Shell Chemicals, Ltd.

Users' Section :—

H. J. Bunker, M.A.	Food Group, The Society of Chemical Industry.
D. H. F. Clayson, M.Sc., F.R.I.C.	Food Group, The Society of Chemical Industry.
J. G. Davis, D.Sc., Ph.D., F.R.I.C.	Food Group, The Society of Chemical Industry.
Betty C. Hobbs, Ph.D.	Central Public Health Laboratory.
E. Shotton, B.Sc., Ph.C.	School of Pharmacy, University of London.
W. H. Simmons, B.Sc., F.R.I.C.	The Society of Public Analysts.

Secretary : C. L. Sargent, Ph.C. (Ministry of Health).

* In an uncompounded preparation, the detergent is not mixed with other active ingredients.
† In a compounded preparation, the principal component is mixed with ingredients designed to assist its detergent properties.

SUB-APPENDIX B

Standards of Alkaline Detergents for Dish-Washing Machines

Report prepared by Messrs. Cairns, Ross Kane and Resuggan, and accepted, with slight modifications, by Manufacturers' Section.

Unless great care is taken with the formulation of standards for detergents, it is inevitable that development may be restricted and hampered, and it is felt that the most satisfactory method of ensuring suitable detergent standards is for an official body to be set up which will have powers to approve proprietary detergents for dish-washing purposes.

The following standards are suggested for the composition of detergents and are as far as we would be prepared to go at the moment:—

It is recommended that the solution as prepared for machine dish-washing according to the manufacturer's instructions should conform to the following standards:—

1. *Alkalinity*

- (a) The solution should show a pH value of not less than 10.0 and not more than 12.5.*
- (b) When titrated with methyl orange as an indicator the solution should not contain less than the equivalent of 0.10% Na_2O .

2. *Sequestering Power*

When used in hard water the detergent should contain sequestering agents. For example, polyphosphates may be used at a suggested minimum concentration of 0.015% (as P_2O_5) in the solution.

3. *Silicates*

Because of their properties and protective action on metals, the silicates are desirable ingredients; they should, in any case, be present whenever the detergent solution is in contact with certain metals, especially aluminium. If incorporated there should be a minimum concentration of the equivalent of 0.03% SiO_2 in the solution.

Note:—A detergent preparation should not affect the operative's health.

SUB-APPENDIX C

Simple alkaline detergents for hand dish-washing

The solution as prepared for hand dish-washing according to the manufacturer's instructions shall conform to the following standards:—

1. *Alkalinity*

- (a) The solution should show a pH value of not less than 10.0 and not more than 11.5.
- (b) When titrated with methyl orange as an indicator the solution should not contain less than the equivalent of 0.10% Na_2O .

2. *Sequestering Power*

When used in hard water the detergent should contain sequestering agents. For example, polyphosphates may be used at a suggested minimum concentration of 0.015% (as P_2O_5) in the solution.

* Certain types of soiling matter, e.g., pickles or sauces, are liable to cause a rapid fall in pH.

3. *Silicates*

Because of their properties and protective action on metals, the silicates are desirable ingredients; they should, in any case, be present whenever the detergent solution is in contact with certain metals, especially aluminium. If incorporated there should be a minimum concentration of 0.03% SiO_2 in the solution.

Note :—A detergent preparation should not affect the operative's health nor harm the skin. In the absence of medical evidence, the Committee cannot guarantee that the recommended limits of alkalinity will not affect the hands.

SUB-APPENDIX D

Chemical classification of some types of synthetic organic detergents

1. *Polyethylene oxide condensation products*

Essentially condensation products of polyethylene oxide with either fatty alcohols or substituted phenols.

2. *Alkyl sulphates*

(a) *Sulphated fatty alcohols*

Produced by the sulphation of fatty alcohols obtained from sperm oil or from fatty acids or fats by catalytic hydrogenation.

(b) *Sulphated secondary alcohols*

Produced by direct sulphation of olefines, usually obtained from petroleum or shale oil.

3. *Alkyl aryl sulphonates*

Benzene or phenol sulphonates substituted by a long alkyl chain, and produced by the condensation of the aromatic nucleus with a chlorinated paraffin or with a suitable olefine fraction.

4. *Quaternary ammonium compounds* (only certain members of this class may be compounded with alkali).

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into an Inquiry into the Operation
of the Catering Wages Act, 1943*

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