

DISPOSABLE REFUSE CONTAINERS¹

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The use of a heavy duty, weather resistant, disposable paper bag for storage and collection of refuse was first introduced commercially in the Scandinavian countries with the initial introduction in Sweden some ten years ago. We, in America, consider refuse to be waste, something to be dumped or burned promptly, and at least cost. Throughout Europe, refuse is considered a conglomerate material from which several valuable components can be extracted. Because of this basic difference, European research work is more extensive and their conservation concepts and operating practices are in many respects, further advanced and superior to ours.

After the initial introduction in Sweden, the use of paper garbage bags became extensive in Western Europe. Today, besides Sweden, they are used in Belgium, Finland, Denmark, Western Germany, France, Great Britain, Ireland, Scotland. Just recently, in Sydney, Australia — a city of 2,000,000 persons, an extensive trial test involving some 2000 residential homes was initiated. The popularity of the paper bags has spread to include some parts of South Africa, where they are used on a limited basis.

While all initial tests were focused primarily on residential use, much work has been done in the adaptation of these bags to institutions, hospitals, restaurants, factories and public service utilities.

Perhaps the greatest user of paper garbage bags is England. Latest information indicates that 87 communities have adopted this system on a limited scale and 154 trials are now in progress.

For the past 3½ years, we in America have been exploring the application of the paper bag for refuse collection. One major manufacturer has been most active, and to date has converted one eastern city to the use of paper bags by means of an enforced ordinance, and there are several other areas under extended test at this time.

In an attempt to evaluate the paper bag application, major paper manufacturers consolidated their efforts, through the Kraft Paper Association, to pioneer this development. Believing this new idea would be an appealing improvement in refuse collection, we solicited the guidance and cooperation of the American Public Works Association, and through joint efforts, 4 test cities were selected. In each city, a

60-day actual test of the paper bags was made. These cities were chosen in various areas of the country for reasons of climate differences, method of collection and disposal, size of city and means of financing the refuse collection operation. The new system was evaluated as a direct replacement for the conventional refuse can under existing collection practices. Of the 1281 families who participated in these tests, over 70% were noticeably in favor of the paper bag system being adopted in their city.

In substance the findings in all four cities were:

1. In each city a substantial majority of the residents who participated voluntarily in the program reported improvement in household storage in terms of sanitation, convenience, and appearance as well as reduction of both noise and spillage during collection.
2. In each city local public works officials (or supervisory personnel) noted an improvement in sanitation and in materials handling during collection and disposal and in some cases collection crews were enthusiastic in their endorsement of it.
3. Under all extremes of weather, from torrential sub-tropical spring rainfall to sub-zero cold and deep winter snow, the kraft bags performed their function well. It was evident that such few malfunctions as did occur could have been prevented by changes in refuse storage and collection practices, protection from marauding animals or modification of the holder mechanism from which the sack was suspended.

In developing the test program, comparison of the use of disposable bags with conventional metal cans was based on several criteria: sanitation, noise, esthetics, climatic factors, and convenience to both users and collectors. Cost investigations were also attempted but it was found that it was not possible to draw reliable conclusions in this series of tests. Cost factors and collection practices vary widely from community to community. Time, motion and tonnage studies made under these conditions were of limited value. Furthermore, cost of hardware and bags, now produced only in pilot quantities, would not necessarily reflect costs were production and competition at full scale. Public acceptance was another significant factor covered in the study.

As stated in the original proposal form, the aim of the program was to evaluate possible contributions of the disposable bag system in terms of, ". . . better sanitation, public convenience and economy. . ." In viewing the program in operation in the four

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cities the steering committee noted the following with regard to the original criteria.

1. Overall, the disposable paper bag system appears to be more sanitary. Spillage is virtually eliminated. Even where open trucks are used, there is practically no wind-blown debris. At land-fill sites, the unsanitary (and unsightly) effect of wind is likewise largely eliminated. Although only limited tests were made on combustion characteristics, no adverse effect on incinerator operation was noticed, and it would appear that the use of paper bags would not be detrimental.

2. Bags appear to have an advantage in cleanliness. Unlike cans, after collection there is a new clean container on-site. How much cleaner cannot be determined since there is no way of measuring how regularly or how well the average householder cleans the metal refuse container.

3. During the tests, some reluctance was noted on the part of householders to use a second bag when needed, and excess refuse was placed in miscellaneous containers, some satisfactory and some not. If a bag system were adopted, some means for overcoming this practice would have to be found.

4. Experience during the test with insect and fly control was not entirely satisfactory. This was largely attributable to inadequacy of hardware design. Lids, which should fit tightly over the holder, were occasionally bent so they did not entirely close, or were left open altogether. Design of the cover should be sturdier so that it would resist distortion should hinges become stiff because of corrosion or freezing. In this regard, it should be noted that the tops and lids of metal cans are also frequently damaged in handling and under average conditions provide an inadequate seal against flies and insects.

5. Exposed bags are more vulnerable to animal attack and vandalism than metal cans, particularly where grease penetration occurs. Introduction of a grease resistant compound to the bag and animal guards seemed to partially resolve the problem however. (The problem was significant only where garbage was unwrapped.) In the overall tests, animal and rodent attack was a minor problem.

6. The strength of the bags used in the tests was adequate and little spillage was encountered because of bags tearing, even during wet periods. In the first test which involved unwrapped garbage, bags not treated with grease resistant compounds and a collection process which involved dragging bags for some distance, there was a slightly higher incidence of spillage due to tearing. Also an early model holder had prongs which induced tearing. This condition was improved in the last three tests.

If public acceptance is directly proportional to public convenience, the four-to-one approval indi-

cated in post-test surveys, indicate the system to be more convenient. Some positive factors noted are:

1. In curb-service systems, a bag is easier for the householder to handle than a can and does not have to be returned to its place after collection. (It is likewise easier for the collector to handle in all systems.)

2. There is less noise involved in the collection of bags.

3. There was some indication that users felt odor was reduced.

4. There was strong agreement that appearance was improved.

Through the basis of the test conducted, conclusions as to the economy of the disposable bag system as compared to the conventional system were not found feasible. Too many variables make any generalization invalid. What may be a cost advantage in one community may be the reverse in another.

The general conclusion within our industry is that the use of bags will save 20-40% of the collection time required under conventional methods. This will however vary from city to city, dependent upon the system of collection used.

The nature of this vital activity in our cities is such that it involves a great many factors which vary widely from place to place. Such variables are prevailing weather, point of storage, point of collection, class of living units, requirements for preparation, method and frequency of collection and others.

No solution for the problem of refuse disposal is likely ever to be devised which will be completely satisfactory from the viewpoints of all involved — the user, the collector, the disposer, the municipality. However, the system under consideration here is certainly a contribution to the art, a step in the right direction and worthy of serious consideration.

The benefits derived from using paper bags can be listed as follows:

1. A more attractive, cleaner city.

2. Less spillage at point of collection: refuse completely contained in bag.

3. No unsightly garbage cans at the curb, when curb-side collection is used.

4. Less rats, flies or other disease-carrying insects or rodents.

5. Improved sanitation—A new clean bag is used after each collection.

6. Faster collection—No time lost in emptying cans and replacing.

7. Reduction in noise level . . . No clanging cans.

8. Possible use of open bodied trucks instead of the noisier compactor type.

In order to realize the above benefits, we believe that many practices which are common today will need to be modified or changed. We certainly do not believe that simply to substitute a metal frame holder and bag for the present garbage can, utilizing

the same collection equipment and procedures, one could expect to attain maximum benefits.

It is entirely possible that complete systems especially engineered to the use of paper bags, will be required to realize all of these benefits. It is cer-

tain that an educational program will be required to acquaint the users with the different handling techniques required by the paper bag, when changing from the metal garbage can. Preparation and handling of the refuse will also be an important factor.

NEWS AND EVENTS

National Restaurant Association Presents An Educational Bulletin On Foodborne Illnesses To Membership

Recognizing the importance of a better understanding of foodborne illnesses on the part of restaurant operators, the National Restaurant Association has taken an important step toward educating their membership in prevention of these illnesses.

The first step to accomplish their objective was in the form of a letter to all association members pointing out that many people, particularly employees in the Food Service Industry, are not familiar with the "why" and "how" of food contamination. Many operators become too complacent with this important management responsibility, because the food poisoning cases they read about in the newspapers always seem to occur elsewhere. The more food service personnel understand about the problem, the better prepared they are to control it.

Along with the letter a technical bulletin entitled, "Foodborne Illnesses" was enclosed. This bulletin, contained a chart which lists foodborne illnesses known to occur in food service establishments, their causes, the foods involved, how contamination is introduced into the foods, and the preventative or corrective procedures. The chart is designed so that it can be posted, or otherwise used as instructional material for employees. Such material helps employees to become aware of their responsibilities in food protection during preparation and service.

The second step towards safer food service was in the form of a letter to all Directors of Public Health in which the Board of Directors of the National Restaurant Association put themselves on record as strongly urging food service operators to work cooperatively with their local health officials in planning and accomplishing effective food protection programs. Representatives of the National Restaurant Association served on the Industry Advisory

Committee to the U. S. Public Health Service during the revision of the Food Service Sanitation Manual and its ordinance and code. As a result of their service on this committee the Association has recommended the adoption of the ordinance and code by states and municipalities in the interest of improved restaurant sanitation and more uniform country-wide application of food service sanitation regulations and inspection systems. The letter points out, also, that while most of the members recognize the importance of employee hygiene and food service sanitation, many do not realize that the food protection program is a management problem affecting public confidence in their establishments and, therefore; directly related to their business success.

The National Restaurant Association, working to bring about a better realization of the problems involved, is also interested in keeping the public informed of the joint planning and cooperative efforts of the Health Officer-Food Service Operator Team to assure the public of clean, wholesome places to eat. Further, it believes that the public should be kept informed of advances in refrigeration, restaurant equipment, food processing and preservation and in food preparation and serving techniques which insure better food protection.

The "Foodborne Illness" chart is streamlined and does not include many of the illnesses contained in other publications but this is done purposefully in order to make it more useful to a food service operator. The chart will be revised as new data indicates a need for such revision.

Further information may be obtained from Vernon E. Cordell, Director, Public Health and Safety, National Restaurant Association, 1530 North Lake Shore Drive, Chicago, Illinois 60610.