Problems in delivering food to low income urban areas

Contributed by DALE L. ANDERSON

Many urban areas present problems of great magnitude to the distributor of foods. Congested streets, narrow roadways, lack of off street parking hamper efficient handling of loads. The author examines this problem and outlines possible solutions for the consideration of distributors.

People who live in the older, low-income areas of a city often have few choices for shopping. Because of the nature of the neighborhoods, food retailing firms may not build new and modern supermarkets there. Shopping is limited to older supermarkets, small stores, and delicatessens. Large supermarkets require a large number of customers, and it is not practical to locate them where customers lack the means of transportation to travel the necessary distances. Also, those who can afford transportation may drive to the suburban supermarkets to shop, thus removing some of the demand for locating large stores in the area.

The smaller stores may have high costs and high prices for several reasons. In certain fringe areas they may lack enough customers interested in low-cost food to make this a viable market. Shoppers may be divided between the well-to-do who can afford or who may actually demand high quality, high-priced food, and the very poor who cannot afford high-priced food. In such instances, the merchant will naturally favor the better customer in his product offering.

Ethnic and other differences in the goods purchased by the small retailer may also have an effect upon all the costs, including delivery. If these goods have a lower overall volume per item, all their costs will be higher since distribution costs are closely related to volume of movement of an item.

Delivery costs for food into low-income urban areas may be excessive because of narrow streets, lack of parking, inaccessible receiving facilities, small orders, high pilferage rates, poor handling, high damage claims, and severe traffic problems.

Small retail merchants in low-income urban areas may place orders with many wholesalers, thus increasing the delivery cost for each. They also may place frequent small orders because of a lack of storage space, again increasing delivery costs. The kind of wholesalers who will seek this market may be one with high costs and poor delivery equipment. Refrigeration on delivery equipment may be inadequate, and perishable products may deteriorate during delivery. Small retailers may be poor credit risks, and the wholesaler may have to increase his prices to cover credit losses. Merchants of this type may shop for bargains or distress merchandise, thus reducing the quality.

Such products as fruits and vegetables, meats, fish, etc., may not be carried by the smaller grocery wholesalers serving "ghetto" areas and will be distributed by other specialized wholesalers. As a result, the numbers of deliveries per store or the amount of travel for a retailer picking up his own goods may increase. In some cities many of the smaller wholesale merchants are located in old, outdated facilities in parts of the city where traffic and parking conditions are difficult. In these cases delivery costs will be high, and so will the costs for receiving and warehousing the goods.

In delivering to these smaller retailers in the congested urban area, the wholesale delivery driver may encounter many problems. Traffic and congestion in streets and alleys increase travel time substantially and result in frequent traffic accidents. The driver may have to wait for long periods to get to the delivery door of the store, or he may have to carry the items in piece by piece from the streeet. When he has to carry the items in, the merchandise remaining on the truck may be unguarded part of the time, and theft and pilferage can be high. Carrying the products down basement steps or on sidewalk elevators increases the potential for damage to the product and for accidents to the workers. In addition, where receiving areas are badly congested or where delivery requires complicated travel and handling by delivery personnel, the retailer subjects himself to losses through pilferage or through the difficulty of checking receipts.

DALE L. ANDERSON *is Chief of the Transportation Research Branch of the Transportation and Facilities Research Division of the Agricultural Research Service, U.S. Department of Agriculture. Formerly, for 17 years, he was associated with the Wholesaling and Retailing Research Branch of the ARS. He has authored many government bulletins and articles on food distribution and perishable food packaging. He received his B.S. degree in marketing at Oregon State College, his M.S. at Purdue University, and completed course work toward his Ph.D. at American University. He is a member of American Marketing Association, American Agricultural Economics Association, National Council of Physical Distribution Management and National Institute of Packaging, Handling and Logistic Engineers.*

The multitude of vehicles required for these deliveries adds unnecessarily to traffic and congestion in the cities where costs for providing better streets and highways are extremely high. Some communities limit the time of day when deliveries can be made, or limit the size of delivery trucks. These restrictions may cause an increase in costs because of higher overtime or night time driver wage rates. However, these restrictions can lead to reduced delivery costs by causing the elimination of overtime and a reduction in the number of deliveries demanded.[1]

The very procedures that led to low-cost food distribution in suburban areas will work against reduced costs in the ghettos. Large wholesalers and chains have eliminated small stores as customers and have consolidated orders for the remaining larger stores, thus reducing many of the wholesale costs, including delivery. The high cost of delivering small orders was pointed out by the Agricultural Research Service in a recent report.[2] Orders of fewer than five cases delivered 11 to 15 miles cost wholesalers 73 cents a case, which represents over 10 percent of the cost of the goods to the merchant. If the retail or service outlet would buy 25 cases per delivery, the delivery cost per case could be reduced to 12.7 cents. Large-scale, full-line wholesalers, servicing affiliate retail supermarkets could have an equivalent cost of about 7 cents a case.[3] In some instances, a chain store could deliver a fully palletized load and drop the trailer for the store personnel to unload, drop delivery, for close to 1 cent a case,[4] representing about .2 percent of the cost of the goods to the merchant. These differences in delivery cost become even larger when you include order selection and other warehouse costs.

A few large wholesalers have opened "cash and carry" wholesale stores to permit merchants with small volume needs to obtain merchandise at lower costs. However, these retailers must drive their own vehicles, make their own selection, and pay cash. As a result, their customers may not benefit when all the merchant's costs are considered. With such delivery and distribution systems, the additional factor of quality deterioration must be considered.

The institutional or food service industry has similar problems in ghetto areas. Wholesaling is more costly due to the small size order that is the nature of the business, and wholesalers servicing institutional outlets may be the only ones who will serve the small retailers in these areas.

A further factor is the amount of goods handled by route delivery salesmen for such products as milk and bread. Large chains and voluntary and cooperative wholesalers in many instances have taken over the processing and distribution of these goods. The remaining unaffiliated supermarkets are in a position, due to volume, to demand certain services of the wholesale bakery, dairy, etc., delivery men. The smaller stores must carry the remaining costs which, for the wholesaler, may be increasing because of a declining market.

Some food products are distributed to consumers by street peddlers who will have very high costs relative to quantities delivered. In order to operate, such peddlers may handle distress goods which normally carry very high markups.

The net result is that people with low incomes who can least afford high food prices must purchase their food in the highest priced market, and urban delivery problems contribute substantially to these high prices.

Several studies by the U.S. Department of Agriculture, Transportation and Facilities Research Division, have a bearing on this problem. Studies of city wholesale markets have been conducted in over 60 cities and new facilities have been constructed, or are under construction, in over half of them. Costs of food distribution have been materially reduced in cities where new facilities have been completed. A research report on determining costs of delivery of wholesale institutional grocery orders has been published. Other studies have been published on loading, unloading, methods of evaluating delivery operations, and systems of handling groceries from warehouse to retail store. Studies in cooperation with the National Bureau of Standards include methods of rating and testing delivery truck bodies and the effect of door openings on refrigeration in delivery trucks.

While these studies contribute to the solution of certain specific delivery problems, they tend to be used more by the larger, progressive organizations. Solving the delivery problems of the small wholesaler or the receiving problems of the small merchant will take more than research reports. Efforts of the Small Business Administration, OEO, and the various "poverty" action groups to make businessmen out of "ghetto" residents or even to provide employment centers in the "ghettos" will run into these aforementioned problems of urban delivery. The small volume merchant must consider delivery as part of a total system of distributing food. His success as a merchant will depend on the effectiveness of that total distribution system, not just his ability as a merchant. This is the lesson the cooperative and voluntary food wholesale and retail affiliates have learned well in America, and today their combined volume of business far exceeds that of the food chains.

A system especially designed to deliver food at low cost to urban consumers is vitally needed today. However, its development is not just the responsibility of some vague class of "middlemen" but will require the cooperation and involvement of businessmen from several industries and many Federal, State, and local governmental agencies. We must recognize that the private enterprise system and just rewards for the entrepreneur are fundamental to good food distribution operations and employees. However, we also must recognize that an efficient food distribution system is as vital to the citizens as water, electricity, or other needs. We are fast recognizing that a low cost distribution system just doesn't happen, especially in the cities. It must be planned and worked toward cooperatively by the competing firms, as well as the planners and regulators. What are the steps, parts, or responsibilities necessary to achieve such a low cost urban food delivery and distribution system?

(1) *Coordination* of the activities of wholesalers, retail outlets, delivery firms or others involved in handling and distributing food. This may require closer ties between wholesaler and retailer, combined orders, limited number of deliveries, scheduling of deliveries for most desirable times, maximum preparation of the product for retail sale before it reaches the retail store, and it may require development of full line wholesalers who provide a full range of services. Some terminal market areas may be able to provide these services to merchants cooperatively or through a separate service firm having accounting, merchandising, and management capabilities.

(2) *Improved handling and delivery equipment.* Trucks may need to be specially designed for urban delivery, utilizing unitized handling and transporting systems such as pallets, containers, mobile bins or cages, insulated or refrigerated shipping containers, etc. Equipment may have to be different according to the size of the outlets, location of outlets, or order size. Use of helicopters has been suggested but will probably not be practicable except in special situations.

(3) *Improved delivery methods designed to reduce transit and receiving time.* Sales activities or stocking of displays by delivery drivers while their trucks tie up city

streets, alleys or unloading space is expensive for the distributor and a problem to the city. Local regulations may be inadequate to prevent such activities and policing of these regulations difficult. Improved methods of checking receipts at retail to reduce tieup time may include sealed containers or drop deliveries. Scheduling of routes by size and type of store and according to daily traffic patterns may be done by computers. Routes may be selected by size of outlet or type of receiving facilities rather than location.

(4) *Combining deliveries to reduce trips.* Wholesalers may combine their delivery equipment into a cooperative delivery system to eliminate overlapping routes, or specialized trucking firms may take on the function. Improved methods of assembly of orders from several wholesale sources going to a single outlet can be developed in wholesale markets. Each retail outlet might in effect receive its orders into a van or smaller container at a special location in a terminal market and send the sealed shipment to the store in one trip.

(5) *Stores should be designed to accept loads immediately with no tieup time for equipment.* Rapid unloading, arrangements and facilities might be made part of zoning, building permits, or business licensing.

(6) *Lines and items carried should be based on adequate movement to reduce cost for both the retailer and delivering wholesaler.*

(7) *Planning agencies for highways, streets, and other public facilities should recognize the needs of movement of goods.* Separate lanes for delivery vehicles in heavy areas of concentration, and parking places for equipment during delivery should be provided. Special market centers may be required to transfer or assemble goods.

(8) *Persons or agencies involved in setting up urban businesses or training new business operators should recognize the need for efficiency in the distribution system.*

(9) City planners, administrators, and regulators should *understand efficiency of distribution and encourage the development of the most efficient system.* It may be desirable for cities to establish a municipal commission to advise government and industry and to promote advances in distribution methods.

(10) *Consumers need to understand the system, how it works, and whether it works most efficiently for them.* This may require better public relations on the part of the industry.

What type of an urban food distribution system could we expect to develop?

First of all, there should be an efficient market center, a location where incoming shipments of foodstuff can efficiently be received, unloaded and physically sorted. This center would include the various smaller food wholesalers, and would attract warehouses and distribution centers of food manufacturers, certain processors, storage warehouses, brokers, chain store and voluntary and cooperative wholesale distribution centers. In practice, most of the physical shifting and movement of goods would represent less than carload lots since major warehouses will receive and distribute many full car shipments. However, due partly to the increasing variety and number of food items carried and sold, distributors occasionally cannot handle full carloads and considerable breakdown and sorting occurs. This sorting can be done but when distribution warehouses are located in one general area.

Many of the functions previously performed in retail outlets or restaurants need to be centralized, and proper support services need to be provided merchants. Central accounting, advertising and promotion assistance, and many other activities provided by most chain and voluntary wholesalers can be handled by a service bureau for the unaffiliated retail outlets. Many retail outlets may have packaging, pricing, or other advance preparations for sale done centrally, and volume will be the key to efficiency for these activities. Also central processing will eliminate much of the waste accumulated at stores. Market centers also serve as a place to handle distress merchandise. Many small distributors specialize in finding outlets for these goods which cannot withstand the handling in the normal distribution process.

Large chain, voluntary and cooperative warehouses provide their own highly sophisticated delivery system. Smaller wholesalers do not have this advantage and may operate outdated equipment over inefficient routes with small orders. Assuming driver-salesmen can be replaced by better selling methods, a cooperative delivery system or a contract delivery firm could provide considerable efficiency in distribution.

This might consist of a centrally located truck dock where trailers, van containers, or smaller container units are parked and identified by retail outlets. Supervisors would oversee and receive goods moving into this center and check them into the appropriate container. Periodically, sealed containers would be moved to the appropriate stores. Refrigeration would be provided in two or three temperature zones or by smaller insulated containers.

Actual store delivery could consist of dropping a loaded container and returning an empty. In fact, backhaul for these deliveries could be obtained by using the empty containers to haul away trash and garbage. Goods going to very small stores, stores in large buildings, restaurants, and similar outlets, might be handled in small sealed boxes or bins on castors or in pallet boxes which could be unloaded by lift gates and moved into the outlet. Special trucks could handle each size or class of container.

If a system similar to the one just described were adopted for all deliveries in an urban area, costs of delivery would be reduced, fewer trucks would congest the streets, and the quality of delivered goods could better be maintained. Delivery times could also be better adjusted to traffic demands. Even larger chain store food distributors may find some advantage in such a system and chain mini-markets might find it useful.

However, the general conservative nature of small distributors and small retailers probably would require that city administrations "sell" or legislate these improvements.

Some possibility exists that with the increase in food items sold, larger distributors might find a common or public warehouse useful. Separate selection lines for different manufacturers' products could be established to reduce selection travel time and at the same time reduce the quantity of goods of one kind that would be needed in storage in one metropolitan area at one time. Thus, instead of a "safe" reserve stock of brand X cornflakes in every chain or wholesale distribution warehouse in a city, one such stock could supply the entire needs of the city and thus reduce the manufacturer transport costs.

The economics of these various suggestions are not yet known, but with rising costs, increasing varieties of goods, increasing congestion in downtown streets, and the multitude of other problems, it is time to begin to study some of the alternatives to present urban food distribution methods.

SELECTED REFERENCES

[1] **The Effects of Restrictive Municipal Regulations on Motor Carrier Operations and Costs,** Report No. 65-6, May 1966, Project TRANSIM, Department of Engineering, University of California, Los Angeles, prepared for U.S. Department of Commerce.

[2/] **"Determining Costs of Servicing Wholesale Institutional Grocery Orders,"** James J. Karitas, Marketing Research Report No. 752, Agricultural Research Service, U.S. Department of Agriculture.

[3] **Wholesale Food Distributors Annual Financial Comparisons, 1968,** Daniel J. Bartz and Associates, Milwaukee, Wisconsin. Exhibit G-1.24% Delivery Cost X $5.50 a case = 6.8 cents a case.

[4] Based on a truck operating cost quotation of $10.40 for 2.6 mile delivery with a 1,000 case load = 1.04 cents a case.