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POOL DELIVERY SYSTEMS FOR WHOLESALE FLORISTS IN URBAN AREAS

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PREFACE

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POOL DELIVERY SYSTEMS FOR WHOLESALE
FLORISTS IN URBAN AREAS

By Robert F. Guilfoy, Jr., research engineer, Transportation and Packaging
Research Laboratory, Northeastern Region, Agricultural Research
Service, Beltsville, Md.

SUMMARY

This research indicates that some wholesale florists located in urban
areas could save as much as 50 percent in delivery costs through conversion
from a nonpool (conventional) delivery system to a pool delivery system in
conjunction with establishment of a separate delivery charge to retailers.

In a nonpool delivery system each wholesaler makes his own deliveries
independent of other wholesalers. In a pool delivery system, one trucking
service delivers orders for two or more wholesalers to retailers within a
designated urban area. In many instances, wholesalers who participate in
pool delivery retain some vehicles of their own to make deliveries outside the
area served by the pool.

Average size of order from the retailer was found to have a significant
inverse relationship to delivery cost for both nonpool and pool delivery.
Indications are that establishment of a separate delivery charge to the
retailer, while not increasing delivery cost to the retailer, may encourage the
retailer to order in larger quantities per order.

Four delivery pools were studied. One of these was a nonprofit service
cooperatively owned by the wholesalers, while the others were commercial
trucking services.

In one pool, orders were picked up from the wholesalers and brought to
a central sorting point where they were reloaded into trucks according to
delivery routes. In the other pools, each truck picked up orders at each
wholesaler for a particular delivery route and, after the last pickup,
proceeded on the delivery route.

A total of 31 wholesalers in Cleveland, Ohio, Detroit, Mich.,
Baltimore, Md., Pittsburgh, Pa., and Washington, D.C., participated in the
study. Of these wholesalers, 17 operated a conventional delivery, while 14
participated in pool delivery.

The pools in Cleveland and Detroit, which consisted of five wholesalers each, had significantly lower delivery costs than the pools in Pittsburgh and Baltimore, which consisted of two wholesalers each.

INTRODUCTION

A major concern of wholesale florists located in urban areas is the cost of delivering their products to retail florists. Cost increases, particularly for fuel, have caused wholesalers to seek more efficient methods of delivery. This study evaluates the pool delivery systems and the nonpool (conventional) delivery systems.

As used in this report, terms are defined as follows:

Nonpool (conventional) delivery system.--A system in which each wholesale florist operates his own vehicles to deliver all of his own orders independent of other wholesalers.

Pool delivery system.--A system in which a single trucking operation is used to deliver orders for two or more wholesale florists to retail florists within designated boundaries in an urban area. Deliveries to retailers outside that area are made by individual wholesalers using their own trucks.

Nonpool wholesaler.--One who operates a conventional delivery system.

Pool wholesaler.-- One who participates in pool delivery.

Delivered order.--One which is made up at the wholesalers' facility and then transported to the retail florist.

Peddle sale.--An order which is made up by the driver-salesman at each delivery stop from a stock of merchandise carried in the wholesalers' truck.

Retailer pickup.--An order which is picked up by the retailer at the wholesalers' facility.

Grower delivery.--A delivery made direct from the grower (wholesalers' supplier) to the retail florist.

As far as could be ascertained at the time this study was conducted, only the cities of Cleveland, Detroit, Baltimore, and Pittsburgh had pool delivery systems for wholesale florists. In Cleveland and Detroit the pools consisted of five wholesalers each, while in Baltimore and Pittsburgh the pools consisted of two wholesalers each.

Data were obtained from 17 nonpool wholesalers and 14 pool wholesalers for a total of 31 (table 1). Most of the wholesalers handled florist supplies in addition to floral products. One of the nonpool wholesalers and one of the pool wholesalers handled florist supplies exclusively.

TABLE 1.--Number of nonpool and pool wholesalers in 5 different areas included in the study

Area	Nonpool wholesalers	Pool wholesalers	Total wholesalers
	Number	Number	Number
Cleveland, Ohio	1	5	6
Detroit, Mich.	0	5	5
Baltimore, Md.	4	2	6
Pittsburgh, Pa.	4	2	6
Washington, D.C.	8	0	8
Total	17	14	31

Figure 1 illustrates schematically the areas covered by pool trucks and wholesaler trucks. The inclusive boundaries for pool delivery are determined by mutual agreement between the pool wholesalers.
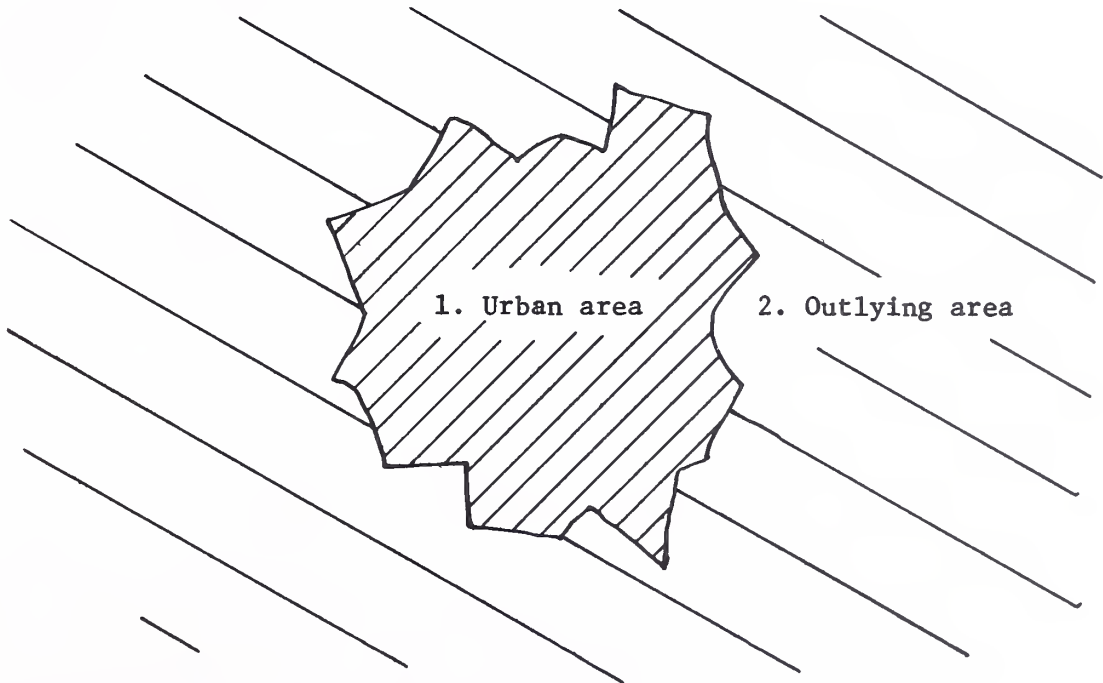

Figure 1.--Areas served by pool trucks and wholesaler trucks. Nonpool whole-salers--wholesaler trucks deliver to areas 1 and 2. Pool wholesalers--pool trucks deliver to area 1, wholesaler trucks to area 2.

When determining delivery costs for a pool wholesaler, his payments to the pool and the cost of operating his own trucks were aggregated. This was done because, when comparing costs of conventional and pool delivery, it is necessary to use total costs. It would be unrealistic to compare delivery costs for urban areas only, while disregarding costs of delivery to outlying areas.

In developing cost data, the contractor relied basically upon wholesalers' records. Where records were incomplete, the contractor had to develop estimated values based upon a combination of (1) estimates and judgments of responsible personnel in the wholesale florist company and (2) the contractors' judgment based upon his experience from other transportation cost studies. All data presented in this report are for calendar year 1973.

DELIVERED ORDERS

Table 2 shows gross sales for the 31 wholesalers, allocated according to method of sale. This study deals only with delivered orders, which accounted for 94 percent of sales of nonpool wholesalers and 59 percent of sales of pool wholesalers.

TABLE 2.--Gross sales of 31 wholesalers according to method of sale for calendar year, 1973

Method of sale	Gross Sales			
	Nonpool wholesaler 1/		Pool wholesaler 2/	
	Amount	Percent of total	Amount	Percent of total
	Dollars	Percent	Dollars	Percent
Delivered orders:				
By pool trucks...	---	---	713,861	51
By wholesaler trucks.	956,641	94	119,035	8
Subtotal......	956,641	94	832,896	59
Peddle sales	0	0	101,393	7
Retailer pickup....	51,394	5	408,639	29
Grower delivery....	8,347	1	73,214	5
Total........	1,016,382	100	1,416,142	100

1/ Weighted average for 17 companies.
2/ Weighted average for 14 companies.

The delivery costs for peddle sales were excluded from this study, because the wholesaler trucks involved are operated by driver-salesmen who receive higher salaries than the truck drivers for a typical wholesale florist. Also, the time at each stop is considerably more for the peddle truck, because in addition to delivery, selling and order makeup are involved. Retailer pickup and grower delivery involve no pool trucks or wholesaler trucks.

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NONPOOL (CONVENTIONAL) DELIVERY SYSTEM

Operation

A nonpool wholesaler who operates a nonpool (conventional) delivery system may either own or lease his vehicles. In addition to using his trucks for delivery of orders, the wholesaler may also use some of these vehicles part time to pick up incoming merchandise at the airport. However, airport pickup accounts for a relatively small part of vehicle usage. Even so, the cost of vehicle operation for airport pickup was excluded when calculating delivery costs.

The nonpool wholesalers operated anywhere from 3 to 13 trucks each, averaging a little over 5 per wholesaler. Vehicles were either of one-half or three-quarter ton rating with the larger rating predominant. Frequency of delivery to retail florists varied from as little as once per week to some retailers to as much as three times per day to others.

For the 17 nonpool wholesalers combined, about 53 percent of delivered orders went to retailers located in urban areas while the other 47 percent went to outlying areas. Deliveries to retail florists in outlying areas ranged from one-way distances of a few miles to as much as 200 miles.

Charges to Retailers

When considering delivery charges to retailers, it should be noted that the retailer pays for delivery whether the delivery charge is included in the wholesaler's price for merchandise delivered, or whether the delivery charge is made separately. ~The wholesaler must recover delivery cost just the same as any other cost.

Only 4 of 17, or about 25 percent, of the nonpool wholesalers made a separate delivery charge to retailers located in the urban area. Two of those wholesalers charged $2 per order only if the order was under $25. The third wholesaler charged $1 and the fourth $1.50 per order.

POOL DELIVERY SYSTEMS

Operation

The pool in Cleveland was an incorporated nonprofit operation wholly owned by the participating wholesalers. The other three pools (Detroit, Baltimore, and Pittsburgh) were independent companies that contracted with the wholesalers to provide a delivery service. Area covered by each of the four pool services varied, but averaged about 540 square miles.

The Detroit pool used what might be termed a "central sort" operation. In this operation trucks picked up orders from the five wholesalers and brought the orders to a central sorting point (the truck garage). Here the orders were sorted and reloaded into trucks according to delivery routes.

Cleveland, Baltimore, and Pittsburgh used what might be termed a "direct delivery" operation. In that operation, a given truck goes from one wholesaler to another picking up orders for a particular delivery run or section of the city. After picking up at the last wholesaler, the driver proceeds on his delivery run.

Frequency of delivery by the four pool systems varied from as much as three-per-day to as little as every-other-day. Two of the pools provided an airport pickup service for wholesalers for which a charge was made separate from delivery charges.

The four pool operations had a total of 23 trucks for urban area deliveries, while the wholesalers operated a total of 10 trucks of their own for deliveries to outlying areas. Thus a total of 33 trucks served the 14 wholesalers, which amounted to an average of 2.4 trucks per wholesaler.

In addition to the 33 trucks, some wholesalers used salesmen's cars and peddle trucks to occasionally make special deliveries. Such occasional use of these vehicles was taken into account when calculating delivery costs.

Charges to Wholesalers and Retailers

Table 3 shows the separate delivery charges and the basis for those charges made to wholesalers and retailers in the four pool systems. The basis for charge varied among the pools.

Three out of four of the pools, including both of the five-company pools, made a separate delivery charge to retailers. Thus, charges to retailers were more prevalent among the pool wholesalers than among the nonpool wholesalers. As indicated previously only 25 percent of the nonpool wholesalers made charges.

Retailer pickup amounted to 5 and 29 percent for nonpool and pool wholesalers, (table 2) respectively. The fact that a separate delivery charge to retailers was more prevalent among the pool wholesalers may have caused more of their retailers to pick up orders, probably to avoid paying a delivery charge. In this study no attempt was made to determine the cost to the retailer for picking up his orders at the wholesale facility.

Opinions of Wholesalers

Each of the 14 pool wholesalers was asked if he had any opinion regarding advantages or disadvantages of pool delivery in comparison with nonpool (conventional) delivery. Following is a list of those opinions that were voiced by two or more wholesalers, with the number of wholesalers voicing each opinion indicated in parentheses:

Advantages --
   • Savings in delivery cost (14)
   • Eliminates responsibility for management of the delivery operation (6)
 .. • Less pressure from retailers for special deliveries or preference in regular deliveries (2)

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• Retailers like pool delivery since they receive orders from all wholesalers in one delivery (2)

    Disadvantages --
    • Lack of control over drivers (5)
    • Lose some control in handling of merchandise (2)

TABLE 3.--Basis of charges to wholesalers and retailers for deliveries made by the four pool systems

Pool	Basis of charges to --	
	Wholesalers	Retailers
A- Cleveland (5 wholesalers)	Each wholesaler pays $2 per order delivered. Every 6 months, profit or loss sustained by the pool is shared on a pro-rata basis by the five wholesalers (nonprofit operation).	Retailer pays a per-stop charge of $1.50 to $3 to the pool according to zone of delivery. Payment is same regardless of number of orders delivered.
B- Detroit (5 wholesalers)	Each wholesaler pays a zone charge ranging from $2 to $5.50, plus $1 for the second package in a zone and $.75 for each additional package. Each wholesaler guarantees a certain minimum weekly payment.	Retailer makes payment to the wholesaler (not direct to pool). Payments vary from $1.50 to $1.75 per order for four wholesalers; The fifth wholesaler uses a zone charge which varies from $1.25 to $2.50 per order.
C- Baltimore (2 wholesalers)	Each wholesaler pays $1.20 for every $25 worth of merchandise delivered. Minimum order is $25.	No payment for regular delivery.
D- Pittsburgh (2 wholesalers)	Each wholesaler pays a fixed amount over a 1-year period. The fixed amount for each wholesaler is determined on a pro-rata basis.	Retailer pays from $2.50 to $5 per order to the pool, depending upon zone in which he is located.

DELIVERY COSTS

    Table 4 summarizes the costs found for the two types of delivery systems. Referring to column 4, the cost for conventional delivery was 6.3 percent of delivered order sales, compared with 3.0 percent of delivered order sales for the five-company pool. Thus, the cost of delivery in the five-company pool was only 48 percent, or about one-half, of that for conventional delivery.

In terms of dollars, the difference in delivery cost between the two systems was $3,300 ($6,300-$3,000) per $100,000 in delivered order sales.

TABLE 4.--Comparison of delivery costs and related factors for conventional and pool delivery systems

Type of delivery system	Average value per order	Percentage of wholesalers who charge retailers for delivery	Average delivery cost		
			Per order	As percent of sales	Compared with conventional delivery [1]
	(1)	(2)	(3)	(4)	(5)
	Dollars	Percent	Dollars	Percent	Percent
Conventional [2] ..	56	25	3.54	6.3	---
Pool:					
Two-company [3].	62	50	3.55	5.7	92
Five-company [4]	142	100	4.16	3.0	48
Average [5].	96	86	3.81	4.0	64
F test [6]	14.61**			4.18*	12.19**

1/ On the basis of 100 percent for conventional delivery =
column (4) x 100.
          6.3

2/ Figures on this line in columns 1, 3, and 4 are taken from the appendix table 5, last line, columns 4,5, and 6, respectively.

3/ Figures on this line in columns 1,3, and 4 are taken from the appendix table 6, last line, columns 4,5, and 6, respectively.

4/ Figures on this line in columns 1,3, and 4 are taken from the appendix table 7 last line, columns 4,5, and 6, respectively.

5/ Weighted average for 2-company and 5-company pools.

6/ F values are from a least squares analysis of variance comparing conventional with pool (average) delivery systems.

** Indicates a highly significant difference ($p < 0.01$)

* Indicates a significant difference ($p < 0.05$)

A perusal of columns 1 and 4 in table 4 indicated that value (size) per order might also have an influence on delivery cost. Because of the apparent relationship between type of delivery system, size of order, and delivery cost, it was decided to make statistical analyses of the data concerned.

Statistical Analyses

Least squares analyses of variance were used in making a comparison of delivery costs between the types of delivery systems.

Conventional delivery versus pool delivery.--Average value (size) per order for pool delivery ($96) was found to be significantly higher ($p < 0.01$) than for conventional delivery ($56). Average delivery cost per order for pool delivery ($3.81) was significantly higher ($p < 0.05$) than for conventional delivery ($3.54). When average delivery cost is expressed as percent of sales, the pool system (4.0 percent) was significantly lower ($p < 0.01$) than for the

conventional system (6.3 percent).

Five-company pool versus two-company pool delivery.--Regarding value (size) per order, there was a significant difference ($p < 0.05$) between five-company pool ($142) and two-company pool ($62) delivery. Cost of delivery per order did not differ significantly between the five-company pool ($4.16) and the two-company pool ($3.55). A significant difference ($p < 0.01$) was found in delivery cost as percent of sales between five-company (3.0 percent) and two-company pools (5.7 percent).

Value (size) per order versus delivery cost.-- Correlation of value of order with delivery cost as percent of sales was calculated from the data on the 17 nonpool wholesalers in appendix table 5 and also for the data on the 10 pool wholesalers in appendix table 7. In both instances, the result was a correlation of -0.70, which points out a significant negative relationship in which delivery costs decrease as size of orders increase.

DISCUSSION

Not all wholesalers were so located that they could participate in pool delivery with other wholesalers.

In this research, 3 of the 17 nonpool wholesalers were located well outside the urban area and probably were too distant from other wholesalers to join in pool delivery. Stated the other way, 14 of the 17 nonpool wholesalers were located within the urban area and probably could participate in a pool delivery.

This research indicates that some wholesalers could reduce delivery costs by taking the following steps:

1. Make a separate delivery charge to retailers. A separate delivery charge will not increase delivery cost to the retailer. However, it will bring to the retailer's attention the fact that a cost is involved in delivery. In turn, the retailer will probably tend to increase his average size of order, while decreasing the number of deliveries needed. This study pointed out a significant decrease in delivery cost with increase in the average size of order.

2. Use pool delivery. Wholesalers participating in pool delivery had significantly lower delivery costs than wholesalers operating a nonpool (conventional) delivery system. Further, there was indication that the greater the number of wholesalers participating in a pool system the lower might be the delivery costs. That observation is based on the finding that wholesalers in the five-company pools had significantly lower delivery costs than wholesalers in the two-company pools.

APPENDIX

TABLE 5.--Delivery costs for the 17 nonpool wholesalers for calendar year 1973

Wholesaler (No.)	Orders delivered (1)	Delivered order sales (2)	Total delivery cost 1/ (3)	Value per order 2/ (4)	Delivery cost Per order 3/ (5)	As percent of sales 4/ (6)
	Number	Thousand dollars	Dollars	Dollars	Dollars	Percent
1	7,500	1,181	37,461	158	4.99	3.2
2	14,950	1,386	53,176	93	3.56	3.8
3	10,452	1,105	47,033	106	4.50	4.3
4	21,214	1,638	78,155	77	3.68	4.8
5	12,220	647	32,896	53	2.69	5.1
6	16,028	1,188	64,289	74	4.01	5.4
7	15,924	708	44,420	44	2.79	6.3
8	21,736	1,215	78,746	56	3.62	6.5
9	13,000	612	40,496	47	3.12	6.6
10	16,172	711	51,413	44	3.18	7.2
11	59,800	2,341	175,406	39	2.93	7.5
12	13,026	588	44,320	45	3.40	7.5
13	12,324	752	59,368	61	4.82	7.9
14	11,128	730	58,910	66	5.29	8.1
15	8,320	469	39,286	56	4.72	8.4
16	15,080	552	46,771	37	3.10	8.5
17	19,240	443	66,822	23	3.47	15.1
Average 5/	16,950	957	59,939	56	3.54	6.3

1/ Includes: Truck depreciation, rental, insurance, maintenance, repair, fuel, oil, lubricants, tires, license fees, washing, parking, tolls; drivers' wages and benefits decreased on a pro-rata basis for any time drivers may spend in work in store; use of salesmen's cars and peddle trucks for occasional delivery; and supervision and administration
2/ Column 2 divided by column 1.
3/ Column 3 divided by column 1.
4/ Column 3 divided by column 2, times 100.
5/ Simple average for columns 1, 2, and 3; weighted average for columns 4, 5, and 6.

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TABLE 6.--Delivery costs for the total of four wholesalers in the 2-company pool in Baltimore and the 2-company pool in Pittsburgh for calendar year 1973

Wholesaler (No.)	Orders delivered 1/	Delivered order sales 1/	Total delivery cost 2/	Value per order 3/	Delivery cost	
					Per order 4/	As percent of sales 5/
	(1)	(2)	(3)	(4)	(5)	(6)
	Number	Thousand dollars	Dollars	Dollars	Dollars	Percent
1	10,025	497	21,508	50	2.15	4.3
2	13,860	1,800	84,970	130	6.13	4.7
3	40,000	1,500	98,813	37	2.47	6.6
4	6,028	523	42,770	87	7.10	8.2
Average 6/	17,478	1,080	62,015	62	3.55	5.7

1/ Total delivered by pool and wholesaler vehicles.
2/ Sum of three elements: (1) Payments of wholesaler to the pool; (2) payments of retailers to the pool (pool D, table 3, only); and (3) cost of operation of wholesaler vehicles (includes cost items listed in table 5, footnote 1).
3/ Column 2 divided by column 1.
4/ Column 3 divided by column 1.
5/ Column 3 divided by column 2, times 100.
6/ Simple average for columns 1, 2, and 3; weighted average for columns 4, 5, and 6.

TABLE 7.--Delivery cost for the total of 10 wholesalers in the 5-company pool in Cleveland and the 5-company pool in Detroit for calendar year 1973

Wholesaler (No.)	Orders delivered 1/	Delivered order sales 1/	Total delivery cost 2/	Value per order 3/	Delivery cost	
					Per order 4/	As percent of sales 5/
	(1)	(2)	(3)	(4)	(5)	(6)
	Number	Thousand dollars	Dollars	Dollars	Dollars	Percent
1	1,791	550	10,425	307	5.82	1.9
2	1,055	300	6,140	284	5.82	2.0
3	2,338	645	13,609	276	5.82	2.1
4	2,314	630	13,468	272	5.82	2.1
5	9,528	1,570	32,394	165	3.40	2.1
6	4,628	720	20,098	154	4.29	2.8
7	5,720	598	18,076	105	3.16	3.0
8	12,311	1,050	34,942	85	2.84	3.3
9	4,650	750	37,258	161	8.01	5.0
10	7,155	528	28,188	74	3.94	5.3
Average 6/	5,154	734	21,460	142	4.16	3.0

1/ Total delivered by pool and wholesaler vehicles.
2/ Sum of 3 elements: (1) Payments of wholesaler to the pool; (2) payments of retailers to the pool (pool A, table 3, only), and (3) cost of operation of wholesaler vehicles (includes cost items listed in table 5, (fnt. 1).
3/ Column 2 divided by column 1.
4/ Column 3 divided by column 1.
5/ Column 3 divided by column 2, times 100.
6/ Simple average for columns 1, 2, and 3; weighted average for columns 4, 5, and 6.

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