W. MIKLIUS and D. B. DeLOACH

Relationship of Air Freight Rates to out-of-state cut flower sales

In-state sales of California cut flowers increased 58.2% from 1950 to 1958, while out-of-state sales—as a percentage of the total flower crop—declined.

With only a limited amount of reliable data, an attempt has been made to analyze the relationship of transportation rates to the decline in out-of-state shipments.

Since 1955, the legal minimum air freight rates for cut flowers have been 16¢ per hundredweight for the first one thousand ton miles and 13¢ in excess thereof on shipments from California to eastern and midwestern markets. Rates into southern states are higher. At present, railway express rates from southern California to Chicago and to New York are higher than air freight rates.

Estimated revenues derived by air carriers from shipments of cut flowers from Los Angeles to major out-of-state markets averaged 17.75¢ per ton mile in 1957 when all-cargo-carriers earned an average of 17.83¢ per ton mile. However, the all-cargo-carrier group accounted for a relatively small portion of total flower shipments.

According to a common rule in rate making, perishable articles move at higher rates than less perishable articles, other things being equal. The high perishability of cut flowers requires special handling, which increases costs in addition to relatively high losses. Although the liability of air carriers is limited, the ratio of losses to total revenue derived from carriage of flowers ranges from 3.31% to 4.91%, compared to about 1% for all other commodities.

Some cut flower shippers object to the alleged priority of mail over other types of commodities, especially during busy mail periods. The Post Office Department does have the power to designate flights on which mail is to be carried, but no priority is given to mail by the Civil Aeronautics Board. Mail is carried on a purely voluntary basis, so any preference given it by airlines management would indicate that rates on flowers are not excessive relative to mail and other freight.

The average cut flower production in southern California—as measured by the sales volume—for the past six years is approximately 10% below the 1950 volume. For the same period, production in the San Francisco Bay area increased 66.5% above the 1950 volume. Factors other than transportation rates may be responsible for the relative decline in importance of out-of-state sales from southern California.

The major—and inelastic—demand for cut flowers is obligation buying for special occasions such as funerals, weddings, births, illnesses and holidays. The demand for flowers for everyday home use—estimated at 2%–4% of the total—depends on low price and minimum service.

Retail florists tend to maintain relatively constant prices, except for holidays when demand is increased and prices rise. Even when wholesale prices are low due to increased supply, prices to customers tend to remain at about the same level.

The inelastic demand for the substantial share of the florists' products and a lack of active price competition makes it easier to add relatively large retail margins. For example, carnations of good quality sold by retail florists in New York on March 28, 1959, for $2.50 per dozen. That price consisted of a $1.00 per dozen wholesale price, plus a $1.50 markup. If the carnations were shipped from Los Angeles, the cost of transportation would have amounted to 19.65¢ per dozen. A reduction in air freight rates of 10% would result in an approximate saving of 2¢ per dozen. Had that reduction been passed on, the wholesale price would decline to 98¢ and price to the consumer to $2.45 per dozen. Such a small reduction in retail price probably would not cause any increase in demand, and there would be no inducement for air carriers to reduce rates.

Lower air freight rates alone would not materially improve the competitive position of southern California cut flower growers and shippers whose out-of-state competition consists of the local growers around large metropolitan market areas, and other producing areas.

The kinds of flowers shipped from southern California to the Chicago and New York markets are grown mainly in glass-houses. Therefore, seasonality is not an especially significant factor.

As far as transportation costs are concerned, local growers are at a definite advantage. Whether total production costs of California growers more than offset the local transportation cost advantage is not known, because cost data are not available for California growers or for growers in other states.

To capture a metropolitan market from nearby growers it would be necessary for California growers to price below direct costs of the local growers. If this were attempted through air freight rate reduction alone, rates most likely would fall below direct costs of the air carriers. Also producing areas in other states are in more advantageous locations. Freight reductions probably would have little effect on the competitive position of California growers because reductions are likely to be general rather than for particular

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W. G. Wilde.................... *Editor*

CHARLES V. MOORE and TRIMBLE R. HEDGES

Irrigation Costs of Pumping in the San Joaquin Valley

The distance a pump must lift underground water to the surface is the most important single factor in the per acre-foot cost of irrigation pumping. Other physical factors in the cost complex—pump and well life, maintenance and repairs, changes in the water table and the total amount of water pumped per year—are influenced by the pump lift.

Practically every grower of irrigated crops in the San Joaquin Valley between the Merced River and the Tehachapi Mountains relies, at least in part, on pumps and underground water supplies. The pumping plants range from those with five horsepower motors, lifting less than 100 gallons of water per minute, to 300 horsepower units discharging in excess of 2,000 gallons per minute. An analysis of a sample of 11,000 pump tests conducted over a five-year period by power companies serving the area showed no constant relationship between total lift and horsepower, horsepower and discharge in gallons per minute, or either lift or horsepower and kilowatt hours per acre-foot.

It was evident from the analysis that geography and ground water conditions, as well as pumping lift, affect remaining well characteristics.

The area of the San Joaquin Valley studied was divided into 16 subareas with boundaries drawn on township lines for convenience but oriented to hydrographic areas.

To prepare estimates of irrigation pumping costs, logbook records from drillers of 800 wells put down within the past five years were tabulated by hydrographic areas. The tabulated material supplied the physical characteristics of

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Investment in Wells and Pumping Plants and Costs of Pumping Water by Hydrographic Area, San Joaquin Valley

Area	Well cost	Est. well life	Pump cost	Est. pump life	Total annual depreciation[1]	Insurance interest and tax	Cost due to lower water table[2]	Repair and maintenance	Service (demand) charge	Total cost except energy	Energy charge	Acre feet pumped[3]	Total cost per acre foot
	$	yrs.	$	yrs.	$	$	$	$	$	$	$		$
A	2,301	20	2,790	20	242.85	204.89	0	55.80	134.60	638.14	439.40	449.7	2.40
B	1,406	20	1,860	20	140.89	138.80	74.40	37.20	74.60	465.89	135.65	218.1	2.76
C	2,600	20	2,598	20	217.55	220.92	103.92	51.96	168.25	762.60	495.50	358.2	3.51
D	7,044	15	2,598	20	583.15	409.78	103.92	51.96	168.25	1,317.06	547.82	361.5	5.16
E	8,122	20	3,545	20	483.38	495.85	0	70.90	201.90	1,252.03	625.02	495.6	3.79
F	2,002	20	2,580	20	197.38	194.74	0	51.60	134.60	578.32	393.48	265.5	3.66
G	2,002	20	2,580	20	197.38	194.74	0	51.60	134.60	578.32	384.66	252.6	3.81
H	2,002	20	2,887	20	212.73	207.78	0	57.74	134.60	612.85	437.38	217.8	4.82
I	1,177	20	2,160	20	146.73	141.82	0	43.20	174.60	506.35	130.25	82.2	7.74
J	2,836	20	2,891	20	246.29	243.40	0	57.82	134.60	682.11	387.51	160.5	6.66
K	12,980	20	4,422	20	721.55	737.58	309.54	132.66	201.90	2,103.23	686.32	213.0	13.10
L	9,766	15	4,769	20	864.22	617.74	333.83	143.07	299.50	2,258.36	962.14	306.0	10.52
M	2,836	20	3,179	20	260.69	255.64	0	95.37	134.60	746.30	377.84	80.4	13.98
N[4]	....	..	....	..	.....	.....	.....	.....	.....	....	.....	...	....
O	15,007	15	16,206	20	1,731.77	1,326.55	1,134.42	486.18	789.00	5,467.92	3,016.78	475.8	17.83
P	14,000	15	17,700	15	2,013.33	1,347.25	1,239.00	531.00	789.00	5,919.58	3,288.32	406.8	22.63

[1] Salvage value of 40% of motor cost was credited to pump unit.
[2] 4% of new pump cost for areas B, C, and D; 7% for areas K, L, O, and P.
[3] Thirty-six acre inches per acre of summer crops. This will understate the amount pumped in areas where winter crops are irrigated and will cause the cost per acre foot to be overstated for these same areas.
[4] Insufficient information.

AIR FREIGHT

Continued

areas and competitive areas can switch more easily to other transportation.

The air freight rates applicable to California cut flowers are intended to correct the directional imbalance of in-and-out movement of easterly and northerly traffic. With the introduction of jet air cargo carriers—around 1962—the imbalance may reappear and directional rates will need readjustment. Lower jet carrier rates might divert freight from other transportation so the new freight capacity could be utilized fully in both directions. In such a case, any future freight reduction is apt to be general rather than based on directional imbalance. California producers might benefit by a straight percentage reduction, but the differentials probably would be too small to influence the competitive position significantly. For example, a 10% reduction on the Los Angeles-New York rate of $19.65 would amount to $1.96, and the Miami-New York rate of $13.80 would be reduced by $1.38.

It is doubtful that the demand for cut flowers or the competitive position of California growers would be improved solely by reduced air freight rates. Factors leading to the present supply-demand situation probably started when the high profits just after World War II attracted new areas into flower production and expanded the production of existing growers. Improved methods—such as low cost cooling-heating systems in greenhouses—increased production, but also reduced the cost and climatic advantages of California growers.

The California cut flower industry must examine packaging and other cost components to discover the most efficient marketing methods, because lower air frieght rates alone will not provide an answer to the competitive problems in out-of-state markets.

W. Miklius is Junior Specialist in Agricultural Economics, University of California, Los Angeles.

D. B. DeLoach is Professor of Agricultural Economics, University of California, Davis.