

10-1958

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Recommended Citation

William H. Dodge and Richard R. Carll, The Influence of Proprietary Trucking upon Minimum Rate Policy in California, 11 *Vanderbilt Law Review* 1109 (1958)

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THE INFLUENCE OF PROPRIETARY TRUCKING UPON MINIMUM RATE POLICY IN CALIFORNIA

WILLIAM H. DODGE* and RICHARD R. CARLL**

The rapid growth of proprietary trucking in recent years poses a difficult problem for motor carrier regulation: what to do about a type of competition which erodes the traffic of motor carriers holding themselves out for general hire to the public, and yet lies almost completely outside the scope of public control. By proprietary (or private) carriage is meant the transport of a shipper's freight in a vehicle which he owns, leases, or rents. The freight handled in propriety vehicles has reached large proportions, amounting in 1955 to almost one-half of all inter-city ton-miles of motor freight. The for-hire carriers have taken some steps towards revising their rate structures to prevent the diversion of traffic to private trucking; they have also strenuously complained that the practices of renting or leasing vehicles to permit private carriage in many instances represent an unauthorized and illegal form of uncontrolled for-hire transportation.

In California the State Public Utilities Commission is attempting to "stabilize" the freight rates of for-hire carriers by comprehensive minimum rate regulation, but from the outset the policy has had to meet complications raised by proprietary trucking. The intent of minimum rate regulation is to avoid destructive competition among carriers. The method is to enforce a minimum rate level high enough to cover the costs of reasonably efficient common carrier service. If successful, this policy may effectively control the rates of for-hire carriers who specialize in moving the profitable low-cost traffic, but no public legislation can deprive shippers of the privilege of employing their own transport—as long as it is genuinely private—if they choose to use it to save money. The shipper who is seeking to reduce his transportation bill to the minimum can scarcely neglect the proprietary alternative in California, where a far-sighted highway construction program has allowed full advantage to be taken of the convenience and flexibility of motor trucking.

Private trucking deprives common carriers of revenue traffic and may lead to destructive competitive practices with all the forcefulness of competition within the transport industries. The competition to common motor carriers in California is a blunt obstacle to the effort at minimum rate control; yet, the trend in this state, which now relies upon motor transport to an unusual extent, foreshadows events likely

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to occur before long in other populous regions of the United States. Nationally and locally, public policy has given increasing attention to the protection of strong common carrier systems, but the regulatory authorities can expect to encounter growing problems from competition to the carriers which they are powerless to control directly by regulation.

A recent application by the California carriers for an increase in minimum rates for general freight traffic brought participation by shippers which the Public Utilities Commission said was "one of the greatest in the history of minimum rate proceedings before the Commission."¹ The threat to divert to proprietary transport was frequently mentioned by shippers opposing rate increases. We have obtained cost and traffic data which were used by the shippers, carriers, and the Commission in this case and have analyzed it to determine under what traffic conditions proprietary transport is a suitable alternative to common carrier service.

The proposition we shall seek to develop in this article is that the nature of the service and legal obligations of carriers who hold themselves out for hire to the general public requires that their costs be calculated for *average* traffic conditions, whereas the cost of proprietary trucking may be adjusted to the *special* traffic conditions of the single shipper who operates the private vehicle. If the freight of the individual shipper can be moved in a private vehicle at a lower cost than the average for common carriers, the carriers are deprived of this low-cost traffic, and their loss simply raises the average cost level to the remaining shippers using for-hire transportation.

This idea is developed in the sections to follow with the aid of the information gained from California's experience with minimum rate regulation. The first section describes proprietary trucking and the type of traffic it is used to carry, in comparison with other areas of motor transport. The second traces the development of California minimum rate policy and the impact it has felt from "specialized" trucking. The third section deals with the method by which average cost levels, used as a floor to minimum rates, are calculated for motor carriers in California. The fourth shows special traffic conditions of shippers that deviate from the average traffic movements for which the carrier costs are calculated, and the way that these differences permit economies from the use of private vehicles. Finally, we shall discuss the obvious questions in public policy raised by the growth of proprietary competition.

1. PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA, IN THE MATTER OF THE INVESTIGATIONS INTO THE RATES, RULES, REGULATIONS, CHARGES, ALLOWANCES, AND PRACTICES OF ALL COMMON CARRIERS, HIGHWAY CARRIERS, AND CITY CARRIERS RELATING TO THE TRANSPORTATION OF GENERAL COMMODITIES, case No. 5432, decision No. 55249 (July 1957). See also the supplemental decision No. 55704 (Oct. 1957).

I

The term "common calling" implies a holding out to serve all comers. Early development of this principle referred to immobile facilities such as inns, grain elevators, wharfs, who were required to serve all who transported themselves or their property to these enterprises, requested service and paid a price. The common calling principle carried over to transportation agencies, characterized by their ability to move a part of their facilities to immobile customers and fulfill their transportation needs. To the operations of these enterprises, notably the railroads, the common law attached an obligation to serve all members of the public for which there were available tie-ins with transport facilities. Thus, railroads became common carriers, obligated to serve all along their tracks. The common carrier obligation was translated into statutory law in the United States by the Act to Regulate Commerce of 1887.²

Primed by modern highway development and the flexibility of the motor vehicle, vast numbers of trucks were introduced to the transportation scene relatively soon after the birth of the combustion engine. There evolved fleets of trucks operated by firms engaged in the business of transporting property for compensation as well as by firms using trucks for transporting their own products. Those firms operating on a for-hire basis were brought under the economic regulation of the Interstate Commerce Commission in 1935, but statutory provisions distinguished between those holding their services out to the public upon request for service (common carriers) and those contracting their services out to individuals (contract carriers). Unlike the blanket coverage of railroad common carrier obligations, the common carrier obligation of motor carriers is limited by restrictions upon operating authority imposed by the Commission, such as restrictions upon the commodities carried, highway routes traveled, points served, etc. In addition, certain motor carriers have been able to specialize their operations by requesting restrictions in their permission to operate as common carriers, as, for instance, the automobile, lumber and petroleum truckers.

The specialized nature of motor truck operations has carried through to the second phase of for-hire transportation—contract carriage. Faced with the fact that many for-hire truckers were not offering their services to all who requested, but, at their own initiative, were seeking out individual clients for whom they would perform transport

2. Section 1 (4) of the Interstate Commerce Act states that "It shall be the duty of every common carrier subject to this chapter . . . to provide and furnish transportation upon reasonable request therefor, and to establish . . . through routes and to make reasonable rules and regulations with respect to the operation of through routes and providing for reasonable compensation to those entitled thereto . . ."

service under an individual, long-term contract, Congress also brought these for-hire carriers under economic regulation. Because the scope of public control does not require that the contract carriers hold themselves out for general hire, their operations are basically specialized transportation, similar to the services of specialized common carriers.

Unlike the railroad industry, motor carriage has developed a significant class of operations which is not for-hire transportation service. Trucks are operated by enterprises engaged in commercial activity other than transportation of property for compensation, and are aided primarily by the public provision of right-of-way and the relatively low investment requirements for individual operating equipment. These firms, because of service or cost advantages, have decided to fulfill their own traffic needs, operating motor equipment in conjunction with other phases of their business.³ The organization pattern of proprietary truck operations varies widely but can be summarized as follows: (a) outright ownership of motor equipment by a non-carrier firm and exclusive use of the equipment by that firm; (b) leasing of equipment by a non-carrier firm and exclusive use of such equipment by that firm for a specified period of time; (c) outright ownership of vehicle by a non-carrier firm and joint use of equipment in conjunction with other firms, usually by a lease arrangement; (d) joint leasing of equipment over a period of time by several non-carrier firms.

Contract and proprietary carriage are preferred by a large part of the shipping public to the services of common carriers because certain traffic movements can be carried at less expense to the shipper if transportation is specialized. Popular discussion has labeled this freight "cream" traffic. The term refers to that traffic whose actual costs are somewhat less than the average costs of the class of traffic with which it is combined for cost-finding and rate-making purposes. A primary factor in establishing conditions leading to "cream" traffic is the obligation of motor common carriers to serve the public upon request. Differences in the cost of moving apparently similar shipments result from time and directional unbalances in traffic, and the carrier who must serve all comers at any time and place cannot avoid

3. Cushman cites three motivating forces furnishing the original impetus to recent expansion of private motor carriage: (1) Three per cent federal excise tax levied on for-hire transportation, to be paid by the user; (2) "totally irresistible upward movement of for-hire carrier rates and charges"; (3) the acceptance of the "primary business" test for determining the validity of private operations, which, along with delivered pricing practices, may yield the private transport operator an additional profit, if costs of performing service are less than the transportation charges included in the delivery price. See CUSHMAN, *TRANSPORTATION FOR MANAGEMENT* 62-65 (1953). This study emphasizes the second point mentioned by Cushman—increasing for-hire carrier rates and charges.

charging some shippers more than cost and others less than cost—unless rates are adjusted to account for cost differences.⁴ But if contract or proprietary truckers, not required to serve all comers, can balance their operations, they may be able to carry such “cream” traffic at lower costs. It follows, then, that the successful invasion of common carrier “cream” traffic leads to a condition in which the remaining common carrier users have lost the revenue support of the low-cost traffic.

While the existence of low-cost traffic may be the principal, but not the only reason for the use of private vehicles, it has not been true that all operations conducted under the “proprietary” label are genuinely private. A non-transport firm which has exclusive ownership and use of vehicles would without question be engaged in private operations in the statutory sense.⁵ Also, genuine private transportation results when use of leased vehicles is for a non-transport firm’s own traffic over extended periods of time. But the use of proprietary trucking operations has been extended to an area where now there is considerable debate as to whether trucking service operated under the guise of proprietary transport is, in effect, pseudo proprietary transportation. In these cases, the leasing arrangement has been used to combine the traffic operations of several shippers so that the group’s traffic is balanced and lower costs are achieved.

Common and contract motor carrier operations come under regulatory scrutiny, while proprietary operations are exempt from all economic regulation. Charged with the responsibility of regulating for-hire carriage in the public interest, the ICC, early in motor carrier regulation, stated:⁶

4. Section 216(d) of the Interstate Commerce Act states: “It shall be unlawful for any common carrier by motor vehicle engaged in interstate or foreign commerce to make, give, or cause any *undue* or *unreasonable* preference or advantage to any particular person, port, gateway, locality, region, district, territory, or description of traffic, in any respect whatsoever, or to subject any particular person, port, gateway, locality, region, district territory, or description of traffic to any *unjust* discrimination or any *undue* or *unreasonable* prejudice or disadvantage in any respect whatsoever.” (Emphasis supplied.) Rate uniformity for traffic with different costs and rate variations for traffic of equal costs are both forms of differential pricing which may produce some high cost traffic which is subsidized by revenues of cream traffic. The use of the modifying terms “undue,” “unjust” and “unreasonable” in the statute has helped to create such pricing situations by requiring rate uniformity when costs are different and rate differences when costs are uniform.

5. Section 203 (17) of the Interstate Commerce Act defines private carriage as follows: “The term ‘private carrier of property by motor vehicle’ means any person not included in the terms ‘common carrier by motor vehicle’ or ‘contract carrier by motor vehicle,’ who or which transports in interstate or foreign commerce by motor vehicle property of which such person is the owner, lessee, or bailee, when such transportation is for the purpose of sale, lease, rent, or bailment, or in furtherance of any commercial enterprise.”

6. Contracts of Contract Carriers, 1 M.C.C. 628, 629 (1937). This case is cited in most of the recent cases dealing with contract carrier applications.

The underlying purpose is plainly to promote and protect adequate and efficient common-carrier service by motor vehicle in the public interest, and the regulation of contract carriers is designed and confined with that end in view.

and:⁷

There is force in this protestant's view that common carriers, since they undertake to service the general public, should be protected against contract carriers who take the cream of the traffic and thus make it difficult for the common carriers to continue their broader operations.

Two recent enactments dealing with the relationship of common and contract motor carriage reveal Congress's recognition of this goal—requirement of contract carriers to file actual rates and conversion of some contract carriers to common carriers. Since ICC policy is to promote and preserve common carrier systems, it can regulate to a considerable extent, with the aid of congressional enactments, common carrier-contract carrier relationships.

The reason why the contract carriers are thus brought under regulatory control would appear to apply with equal force to proprietary trucking, for it centers, as does contract carriage, upon specialized "low-cost" traffic movements. However, statutory tools are lacking for effective regulation of the competitive relationships of for-hire carriers and proprietary carriers. Genuine use of private vehicles is completely outside the scope of regulatory control. Only when operations by non-carrier firms take on the form of for-hire transportation can the regulatory authorities enter the picture. If the ICC finds that certain proprietary operations are in fact for-hire operations it may then conduct a hearing on the merits of issuing operating authority, either a certificate for common carriage or a permit for contract carriage. Such cases are based upon the public interest requirements of original common or contract carrier applications.

II

The analysis of this study stresses the competitive structure of California's intrastate trucking. In order to understand the regulatory problems involved, we must first note the differences in the scope of federal and of California regulatory authority and then review California's regulatory policy. Both the ICC and the California Public Utilities Commission exercise regulatory authority over all for-hire motor carriers of property. The former is, of course, limited to interstate trucking and the latter to intrastate operations. Both require certificates of public convenience and necessity for some carriers and permits for others. Certificate proceedings for regular common carrier service require a hearing before the commissions and applicants

7. Gollock Application for Extension of Operations, 1 M.C.C. 161, 165 (1936).

must furnish proof not only of their fitness, willingness and ability to provide service but must also prove public necessity for the services sought. Unlike federal policy, however, California regulation requires only a permit for "irregular" motor carrier operations. Under California law these are called radial carriers. With one exception, all other California for-hire carriers—contract carriers, household goods carriers, city carriers—require only permits to operate.⁸ The exception is irregular petroleum common carriers who must obtain certificates of convenience and necessity before operating. In permit proceedings for radial common, contract, household goods and city carriers no hearings are required and only financial responsibility must be proven by the applicant.

Certificated carriers must file actual rate tariffs with the Commission and all increases in rates must be approved by the Commission. In contrast, permitted carriers are not required to file actual rates, and consequently, changes in rates can be made for any situation without Commission review. The Commission has summarized the competitive framework of the for-hire motor carriers in California as follows:⁹

Moreover, the so-called radial carrier is at liberty to determine and change the territorial scope of his operations from time to time, increase or reduce his rates at will, subject only to the observance of those established by the Commission as minima. The regular route common carrier is bound by the terms of its certificate and the exact rates set forth in its published tariffs. Under present laws no clear authority is given to the Commission to control the entrance of radial common carriers into the field or to circumscribe the type or extent of the service performed, in order to prevent an oversupply of transportation, with a consequent burden upon the public in the form of higher transportation charges than otherwise would be necessary.

8. Historical development of California's regulation of motor carriers starts with a state constitutional provision which allows for legislative control of common carriers by railroad, canal and "other transportation companies." In 1916, the California Supreme Court ruled that "transportation companies" included certain common carrier truck and stage operations, and in 1917 legislative action was taken to bring motor carriers under regulatory control. In the mid-1920's, however, decisions by the U.S. and California Supreme Courts and the California Railroad Commission reduced California regulatory authority to those common motor carriers operating over regular routes or between fixed termini. The gap in regulatory scope was rectified in 1935 (the year the ICC obtained regulatory authority over interstate motor carriers) when the legislature brought radial common carriers and contract, household goods and city carriers under the authority of the California Railroad Commission (later the California Public Utilities Commission).

9. Decision No. 41470, Case No. 4823, 48 Cal. P.U.C. 65 (1948). An indication of the competition among for-hire motor carriers is brought out by the following statistics for the year 1957:

	Certificated carriers		Permitted carriers	
	Amount	%	Amount	%
Number of carriers	645	4.6	13,407	95.4
Vehicles operated	36,979	34.7	69,335	65.3
Gross operating revenue (millions) ..	\$247.7	45.4	\$297.1	54.6

These differences in regulatory control and the extent of competition among certificated and permitted carriers has not lessened the importance of the common carrier concept in the Public Utilities Commission's scheme of regulation:¹⁰

The rate structure which the commission controls should not, at the expense of the public, impede the advent of new ideas and procedures in transportation. Conversely, the Commission must make sure that a new idea or procedure offering an immediate benefit to the public would not in the long run burden commerce by threatening the financial stability and operating efficiency of established carriers upon which the public depends for the bulk of its transportation requirements.

Regulatory approval of cross subsidization within the rate structure, which we have observed to be contained in the common carrier obligation, is evident in California policy and is sanctioned by the courts:¹¹

Theoretically, at least, the state of California is a "one and inseparable" entity; and if an integral portion thereof shall suffer a given loss which may be fully compensated by gain of identical character in another like portion of the state, it is not conceivable that, as a whole, the "public interest" will have sustained any detriment.

California minimum rate regulation was initiated in 1935, the year when its scope of regulation was enlarged.¹² In that authority are contained three main provisions:

1. Minimum rates applicable to railroads, certificated and permitted motor carriers shall be established at the lowest of the lawful rates determined for any one type or class of carrier. (Section 726 of Public Utilities Code.)
2. Minimum rates for permitted carriers shall not exceed the "current rates" of certificated carriers. (Section 3663.)
3. Upon application to the Commission and a finding of reasonableness, permitted carriers may establish rates at less than the minimum rate level prescribed by the Commission. (Section 3666.)

10. Decision No. 47716, 52 Cal. P.U.C. 44 (1952). By definition, radial common carriers come under the common carrier concept, but in actual practice, the bulk of the radial carriers are characterized as specialized or "pick and choose" carriers, i.e., specialized to the extent that the public they serve is severely restricted and their operations bear little relationship to a general holding out to all corners.

11. *Southern Pac. R.R. v. Railroad Commission of California* 13 Cal.2d 89, 87 P.2d 1055 at 1060 (1939).

12. The development of rates prior to 1935 is described by the Commission as follows:

It was pointed out [in the examiner's report] that during the period in which rail and vessel carriers handled virtually all of the intercommunity transportation business within this state this Commission was chiefly concerned with seeing that common carrier rates were definite, known and open for public inspection, that the exaction by common carriers of exorbitant charges was prevented and that discriminations were prevented or removed. It was pointed out, further, that the subsequent advent of unregulated motor trucks into the for-hire transportation field brought about a period of destructive rate cutting which caused the rate structures of common carriers to become disrupted and distorted and impaired the ability of all the transportation agencies to afford adequate service. Decision 31606, Case No. 4246, 41 C.R.C. 675 (1938).

Currently, all for-hire motor carriers are governed by regulatory-established minimum rates. In addition, the Commission established minimum rates for railroad less-carload traffic and the rails voluntarily adjusted their carload rates to the same level as truckload minimum rates.¹³

Recognizing the statutory provisions which in effect require one minimum rate level applicable to all for-hire carriers in the state, the Commission established its minimum rate level on the "low-cost" side by basing minimum rates upon costs found for "operations of carriers performing service in a reasonably efficient manner under present service demands and economic conditions." The Commission has placed considerable reliance upon the cost studies of its engineering staff in its minimum rate cases. The cost data are obtained, not from averaging the operating results of all carriers reporting to the Commission, but by weighting the performance and costs of a limited number of carriers for which data are available and which are considered "reasonably efficient operators." Where necessary, unit performance and unit cost data developed from time and motion studies, observations of operations by cost analysts, records of specific performance and costs (i.e., labor contracts, equipment purchase price) are used to derive the various cost components. When unit costs for specific operations are determined in this manner, the costs of all those operations necessary to provide various types of traffic are aggregated.¹⁴

The Commission's rate policy is governed by its objectives of sustaining a strong common carrier system while accounting for certain

13. The Commission began its minimum rate program in 1935 by setting minimum rates for specific cases—by commodity classes and territories within the state. By 1937, a general level of minimum rates for all traffic in the state was established. Since that time there have been several adjustments in the general minimum rate levels as well as for special circumstances. The general procedure in establishing minimum rates is for the Commission to establish mileage scales for class-rated traffic to which the current classifications of the carriers are to apply. To account for differences in costs resulting from adverse operating conditions in different areas of the state, constructive mileages are determined by which an additional number of miles are added to the actual road miles of routes with adverse operating conditions. In some cases, minimum rates are established on a point-to-point basis, especially for the more densely-traveled routes. Also included in the minimum rate orders are applicable minimum rates for accessorial services, special conditions such as split pickup and delivery, minimum charges on small shipments, etc.

14. "Emphasis should be made, therefore, that cost development set forth herein reflects use factor, load factor and performance data for the transportation of property by carriers having generally the more favorable operating conditions." 1 TRANSPORTATION DIVISION, PUBLIC UTILITIES COMMISSION, REPORT OF STUDY DEALING WITH THE COST OF TRANSPORTING GENERAL FREIGHT BY MOTOR VEHICLE EQUIPMENT IN THE STATE OF CALIFORNIA. Introduction (January 31, 1957). The court has justified the selection of cost data by the Commission by stating: "In rate making it is settled that the commission need not accept cost figures that are unjustifiably high because of inefficient methods of operation." *California Mfrs. Ass'n v. Public Utilities Commission*, 42 Cal.2d 530, 268 P.2d 1 (1954).

areas where specialized carriage can operate more economically. The Commission has expounded the objectives of a differential pricing scheme for common carriers from its early minimum rate cases. Summarily, it advocates charging minimum rates only where competitive prices are required in order to attract and hold traffic. Since the Commission's minimum rates are governed by the operation of "reasonably efficient" carriers and tend to be based on "low-cost" operations, the Commission has encouraged carriers who find such rates less than full cost to charge relatively higher rates on non-competitive traffic in order to attain profitable operations. The Commission implies that this practice is necessary for carriers striving to fulfill common carrier obligations. Supplementing its rate policy is the Commission's regulation of entry into the for-hire field. The Commission has followed a liberal certification policy on the grounds that as long as carriers can operate as permitted carriers anyway, more effective rate and operating controls could be administered under a certificate for common carriage.

In practice, the Commission's policy has not been completely successful. The intense state of competition in trucking operations has resulted in minimum rates becoming the going rates for the for-hire carriers, an indication that there are few areas of noncompetitive traffic. And even then, there have been numerous applications by permitted carriers for rates at less than prescribed minimums, suggesting continued emphasis on specialized operations. It has been difficult for the Commission to refuse these pressures. In many of its minimum rate cases, the Commission expresses increasing awareness of the fact that the shipper, if denied lower rates, has the proprietary trucking alternative—an area which lies completely outside regulatory control and which could upset the objectives of motor carrier regulation.

III

Before we continue further with the discussion of proprietary carriage, it is necessary to give some detailed consideration to the costs of motor trucking. In this section we shall analyze the method by which the average costs of motor carrier services are developed for regulatory purposes by the California Public Utilities Commission.¹⁵ The argument has been made that carriers must charge less than the minimum rates based upon these average costs if they are to retain the profitable traffic upon which "unregulated" trucking concentrates. If the carriers, this theory continues, do not adjust rates to special

15. CALIFORNIA PUBLIC UTILITIES COMMISSION, TRANSPORTATION DIVISION, TRUCK TRANSPORT ENGINEERING SECTION, REPORT OF STUDY DEALING WITH THE COST OF TRANSPORTING GENERAL FREIGHT BY MOTOR VEHICLE EQUIPMENT IN THE STATE OF CALIFORNIA, case No. 5432, vols. 1 and 2 (January 31, 1957).

traffic conditions, the attempt to enforce minimum rate regulation is made futile because, among other possibilities, shippers may change to private vehicles.¹⁶ Our purpose in this and the following section is to enlarge upon this idea by explaining why certain traffic conditions permit specialized trucking to operate at lower cost than the general carrier average and thus favor the use of proprietary transport.

Classes of Motor Trucking Costs

Motor trucking requires expenditures for vehicles and labor. The labor costs include man-hours needed for the loading and unloading of freight and the operation of motor vehicles. Vehicle expenses are usually classified as "fixed" and "running." The fixed expenses are those which must be met if a vehicle is owned, regardless of how much it is used. Running expenses are paid in proportion to use. Most vehicle expenses fall easily into one category or the other. Registration and weight taxes and vehicle insurance are classed as fixed expenses in the California studies; fuel, tires, and maintenance are running costs. Depreciation is considered a fixed annual cost until the annual miles a vehicle travels reaches 85,000, after which it changes in proportion to vehicle mileage. Other expenses are the depreciation and maintenance of capital facilities such as terminal buildings and power devices for loading and unloading, administrative and clerical help, and taxes.

These items are classified according to the function for which they are incurred, as follows:

1. Pickup-and-delivery costs. These expenses consist of the manpower and labor required to bring a vehicle to the shipper's freight, to carry a shipment to the consignee, and to return the vehicle to active service. They also include any manpower and equipment used in loading and unloading vehicles, other than the driver.
2. Line-haul costs. These expenses include vehicle operating and driver costs for moving freight between freight terminals or between the door of the shipper and the door of the consignee. The cost of returning the vehicle may also be added if no other freight is carried on the return haul. For large trucks and combination-type vehicles, the driver and the vehicle operating expenses are each about equal in size.
3. Terminal costs. These include the labor cost of handling freight at terminals and the capital and maintenance expenses of terminal buildings and equipment.

16. Nicholson, *Motor Carrier Costs and Minimum Rate Regulation*, 72 Q. J. ECON. 139 (1958).

4. Billing and collecting costs. A certain amount of driver and clerical time must be used to collect freight charges from shippers. The notable aspect of these expenses is that they are almost identical for any size of shipment and therefore decrease in importance as the weight of shipments increases.
5. Indirect costs. A truck line must allocate a certain amount of administrative overhead, taxes, and profit among all of the shipments it handles. In the California studies these costs are usually assigned as a percentage of total direct expenses which have been allocated to each weight and distance class of shipment.

Behavior of costs with weight and distance

These expenses are assigned to weight and distance classes of shipments, and in this procedure the costs which change with both weight and distance are separated from the costs which are influenced only by the quantity and the weight of shipments. Line-haul costs are added as distance increases, although not in exact proportion to mileage.¹⁷ The other direct expenses are presumed to be unaffected by the length of haul. The way in which total direct cost is derived for shipments of varying size and distance is shown in Table 1. No indirect costs are included in these figures. To account for them, direct costs would have to be expanded by about 20 per cent.

Table 1—Direct Cost Per 100 Pounds of Moving General
Freight by Motor Carrier in California, 1957*
(Costs in cents per 100 pounds)

Shipment Weight Groups	Pickup and Delivery	Terminal and Billing	Line-Haul				Total Direct Cost			
			30 mi.	75 mi.	150 mi.	350 mi.	30 mi.	75 mi.	150 mi.	350 mi.
<i>Less-Than Truckload Freight</i>										
Under 100 lbs.	144.4	132.5	6.9	13.6	20.7	37.3	283.8	290.5	297.6	314.2
100-500 lbs.	62.6	46.0	6.9	13.6	20.7	37.3	115.5	122.2	129.3	145.0
500-1,000 lbs.	40.2	26.6	6.9	13.6	20.7	37.3	73.7	80.4	87.5	104.1
1,000-2,000 lbs.	34.8	21.1	6.9	13.6	20.7	37.3	62.8	69.5	76.6	93.2
2,000-4,000 lbs.	30.2	14.4	6.9	13.6	20.7	37.3	51.5	58.2	65.3	81.9
4,000-10,000 lbs.	27.0	9.2	6.9	13.6	20.7	37.3	43.1	49.8	56.9	73.5
<i>Truckload Freight</i>										
10,000-20,000 lbs.	14.8	0.2	6.4	9.7	14.6	30.9	21.4	24.7	29.6	45.0
20,000-30,000 lbs.	10.8	0.1	6.4	9.7	14.6	30.9	17.3	20.6	25.5	41.8
30,000-40,000 lbs.	9.2	0.1	6.4	9.7	14.6	30.9	15.7	19.0	23.9	40.2

*These costs are "statewide," not for any particular territory in California. They assume two terminal handlings for every less-than-truckload shipment, and loading and unloading by hand.

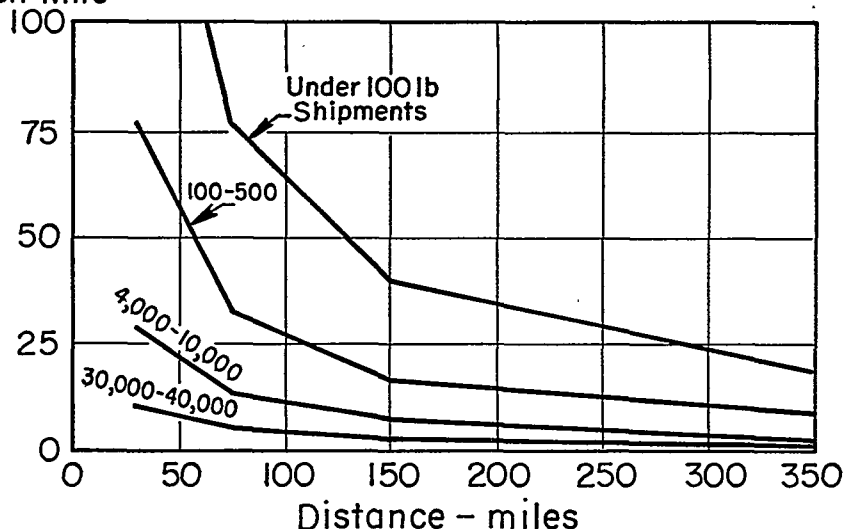
17. The costing technique assumes that line-haul expenses for shipments of greater length are lower per 100 pounds because the vehicles traveling longer distances in line-haul service carry higher loads per mile on the average.

Two important points about the change in unit costs with weight and distance may be taken from the data in Table 1. First, the proportion of total cost which is line-haul expense, and variable with distance, increases with *both* weight and distance. This trend is revealed by a few percentages based upon the cost data:

Shipment Weight	Per Cent Line-Haul Cost		
	30 mi.	150 mi.	350 mi.
Under 100 lbs.	2.4%	7.0%	11.9%
100-500 lbs.	6.0	16.0	25.6
4,000-10,000 lbs.	16.0	36.4	50.7
30,000-40,000 lbs.	40.8	61.1	76.9

The high cost of pickup-and-delivery and terminal services assigned to lightweight shipments, it will be noted, make line-haul expense relatively unimportant, even for long distances. On truckload freight, however, line-haul cost is the main expense item. Second, the level of total direct cost per ton-mile of freight falls with increasing distance as the non-mileage expenses are spread over a larger number of ton-miles. But the fall is much more rapid for lightweight shipments because of the low proportion of line-haul costs, as these total cost curves indicate:

Cents, Per
Ton-Mile



Cost of Different Trucking Operations

The cost studies do not associate the expense categories with every shipment in exactly the same way. The proportion of each type of cost depends not only upon the weight and the distance of a shipment

but also upon how the load is moved. For instance, a shipment may be carried directly from the shipper to the consignee, it may be moved through one or two terminals en route, it may be picked up collectively with several other shipments which all have the same destination, it may or may not be unloaded from a pickup truck and reloaded on a separate line-haul vehicle during its movement. The number of alternative methods of moving freight by motor vehicle is seemingly so endless that it might appear next to impossible to arrive at representative average cost figures. But most trucking operations would fit into the following broad classes:

1. Transportation of truckload freight. Except for short hauls, line-haul expenses are the principal expense item. The pickup and delivery costs include bringing a vehicle to the shipper's door, loading and unloading, and returning the vehicle to other uses. No allowance for terminal handling is necessary.
2. Transportation of less-than-truckload freight. In this category both pickups and deliveries are considered to be made by local service vehicles having several stops during any single trip. Shipments picked up and delivered in this way are usually moved through terminals so that the loads may be classified for transportation in line-haul vehicles. The expense of multiple pickups and deliveries and terminal handling reduces line-haul expense to minor importance. In some operations it is possible to use only one terminal and to that extent reduce the terminal handling bill.
3. Transportation of split pickup and delivery or peddle trip freight. This class is in an intermediate position between the other two as regards cost: it combines features of both truckload and less-than-truckload service. In the typical operation a truck makes a single pickup at shipper's dock or at a terminal and delivers the load to a multiple number of destinations—or the reverse. There is a saving by this method on non-mileage costs, but it is partly absorbed by higher line-haul expense per 100 pounds which results from operating vehicles which are less fully loaded than the average.

Except for the heaviest truckloads, practically all varieties of shipments might be moved by any one of these three methods. For any shipment, however, the preferred type of operation would be the one which was least expensive.

Factors Determining Average Cost

The foregoing method of cost assignment indicates that the total cost of transporting any given shipment by motor truck is made up of a variety of expenses. The expenses are assigned in different proportions, depending upon the weight and distance of the shipment and

the type of trucking operation by which it is moved. However, the cost studies do not merely tell what combination of cost factors is required for any given shipment; they also assume that this combination on the average represents the *minimum* cost—for the common carriers, at least. We must now consider the reasoning upon which this assumption rests.

Efficiency Standards. The process by which cost factors are organized in an "optimum" combination that achieves the lowest cost of production has been discussed at some length in the writings of economic theory,¹⁸ and the principles which have been developed may be usefully applied to this analysis. A given sum of money is regarded as being most efficiently employed when its expenditure produces maximum output, or a given output is most efficiently produced when no other combination of cost factors could produce it at less expense. If the prices of the cost factors are taken as given quantities (like 30¢ per gallon of gasoline), the level of cost will depend upon the physical output which is produced by each factor. The greater the output from each factor, the less will be the cost per unit of output. Unit costs are minimized, and efficiency is maximized, when the combination of factors purchased with a given sum of money produces the greatest output. No money can be saved by substituting one factor for another.

Now for motor transportation the efficiency objectives refer to securing the maximum freight movement from the expenditure of each cost dollar, or to moving a given number and weight of shipments at minimum expense. The cost factors in trucking, as we have observed, are divided between those which are related to distance and those which are not. The achievement of minimum cost, therefore, could be stated as maximizing the ton-miles of freight per dollar spent on line-haul cost factors and maximizing the tonnage handled per dollar of pickup-and-delivery, terminal, and billing expense. In theory, this objective is reached through an optimum combination of vehicles, labor, and capital facilities.

It follows from this concept of productive efficiency that the key variables affecting the level of unit costs are the average pounds of freight moved *per mile* in line-haul service and the pounds of freight handled *per hour* of pickup-and-delivery and terminal time. The larger the values given these "performance" measures, the smaller will be the cost of transporting a given volume of freight.¹⁹ The

18. A simple treatment of this concept is found in DUE, *INTERMEDIATE ECONOMIC ANALYSIS*, ch. 7 (3d ed. 1956).

19. Actually, the distinction between mileage cost factors and hourly cost factors is not entirely sharp. Drivers, for example, are paid by the hour, and relating driver cost in line-haul service to distance requires that an average speed in miles per hour be assumed. As the speed is increased,

engineering staff of the Commission has conducted extensive field investigations of the performance factors, the size of which depends basically upon how well motor vehicle facilities and labor can be adjusted to traffic movements. Because of the direct bearing they have upon the assignment of costs to weight and distance classes of shipments, each measure will be considered in brief.

Pounds per mile. The maximum load that may be carried in a line-haul vehicle is, of course, limited by the vehicle's capacity, but the use made of the capacity, the "load factor," depends upon how much traffic is available. In the California cost studies, shipments moving longer distances are assumed to be carried in vehicles having higher load factors, on the average. For shorter distances the average load per mile is less. This relationship, similar to one used in the Interstate Commerce Commission's costing technique, lowers line-haul unit costs for shipments in the longer distance classes. It reflects the fact that for longer hauls, when line-haul expense is a greater proportion of total cost, it is more important for vehicles to be fully loaded. Trucks can travel for short distances without any payload, or only partly filled, without significantly changing total unit costs. But if a vehicle must return to its terminal from the place of delivery without carrying any load, the empty movement cuts the load factor for the total trip in half, thus doubling line-haul costs per cwt. over one-way unit costs. Very little long-distance travel by for-hire carriers is wholly empty,²⁰ but the more frequent occurrence of lightly-loaded return movements on shorter hauls tends to lower the average load per mile.

Pounds per hour. The following factors determine the freight which can be handled for each dollar of pickup-and-delivery expense:

1. The physical performance, in pounds per man-hour, of labor in loading and unloading. This measure may be increased by the use of mechanical power devices, pallets, etc.
2. The load handled at each stop of the pickup-and-delivery vehicle.

A certain minimum expenditure is necessary to bring a vehicle

efficiency in the use of driver time would also be increased. The same might be said for "fixed" vehicle expense, if greater speeds allowed a higher annual rate of vehicle utilization, although higher speeds also tend to increase "running" expenses per mile. Much vehicle and driver time on short-distance shipments must arbitrarily be allocated between line-haul and pickup-and-delivery service.

20. It has been found that wholly empty mileage traveled by ICC regulated carriers, whose average hauls are somewhat longer than interstate carriers, accounts for not more than about 5% of total miles. This small percentage allows the assignment of the cost of empty movement as an overhead expense to all loaded trips without a significant distortion of costs. The partly-loaded trips in the ICC studies are accounted for in the relationship between average load and distance. U.S. INTERSTATE COMMERCE COMMISSION, EXPLANATION OF THE DEVELOPMENT OF MOTOR CARRIER COSTS WITH STATEMENT AS TO THEIR MEANING AND SIGNIFICANCE, statement No. 1-54, p. 107 (1954).

and driver to the origin or destination of a shipment, and the larger the load at each place, the less is the cost per cwt.

3. The number of stops per hour made by a pickup-and-delivery vehicle. The more pickups or deliveries which can be made in an hour's time, the more is the freight that can be handled per vehicle-hour and man-hour. The number of stops per hour depends upon the distance between stops, the vehicle speeds, and the delay time at the door of the shipper or consignee. For truckload freight, where there is only one stop to make, the minimum time required for that stop is the most efficient.

The last two of these factors may offset each other. That is, the same weight in an hour might be handled by 6 stops at 500 lbs. per stop or 3 stops at 1000 lbs. per stop. In other words, more frequent service might be provided at the sacrifice of some weight carried at each stop if the stops are closely spaced.

The pounds-per-hour measure is further reduced by the time involved in terminal handling, billing and collecting. Larger loads require fewer man-hours per cwt. for these functions than smaller loads, and of course, truckload shipments avoid terminal costs completely.

Substitution of factors. The maximum cost efficiency is not realized by getting the most freight moved from each cost factor taken separately, but rather from an "optimum" combination of factors which maximizes the collective output. To some degree, a lower performance measure may be acceptable from one cost factor in order to secure greater productivity from another; in other words, the factors are substitutes over a limited range. The trucker must decide the proper proportion of his cost dollar to spend on each factor.

Especially, the mileage and time cost factors may be substituted for each other. The significance of this opportunity for the level of motor trucking cost by common carrier can be conveniently illustrated by example. Let us imagine that the alternatives that a carrier must decide between are (1) to move a shipment through a terminal and secure the economies of higher average load per mile which come from assembling several shipments together for line-haul movement and (2) to avoid terminal expense and have the diseconomy of a low line-haul load factor. We may specify some costs, using drastic simplifications:

1. Pickup-and-delivery expense: \$8.00 per shipment. (We assume that no costs are a function of the weight of the shipment.)
2. Terminal handling expense: \$8.00 per shipment. (Again, cost is independent of weight.)
3. Line-haul expense: \$.30 per vehicle mile.

A final assumption is that a shipment moved through terminals is transported in a line-haul vehicle carrying an average load of 20,000 lbs. per mile. If it is not moved through terminals, the only load in line-haul service is the weight of the shipment. The return haul is neglected.

The problem is whether or not terminal handling is economical. The solution depends upon the size of the shipment and the distance it moves. Let these variables be:

d=distance in miles.

w=weight in pounds.

The total cost of moving a shipment by each method is:

With terminal handling: $\$16.00 + \frac{\$.30}{20,000}dw$

Without terminal handling: $\$8.00 + \$.30 d$

The total cost of moving 8,000 lbs. for 100 mi. with terminal handling would be \$28.00; without terminal handling it would be higher: \$38.00. The diseconomies of low load factor on the line-haul are larger than the saving of the expense of bringing several loads together at a terminal for transport in one vehicle. But the situation is reversed with a shorter distance and a larger load. The total cost of a 16,000-lb. shipment moving 50 miles is \$28.00 with terminal handling and \$23.00 without it.

For every weight of shipment up to 20,000 lbs. there is a distance at which the total cost by either method is exactly the same, expressed in this formula:

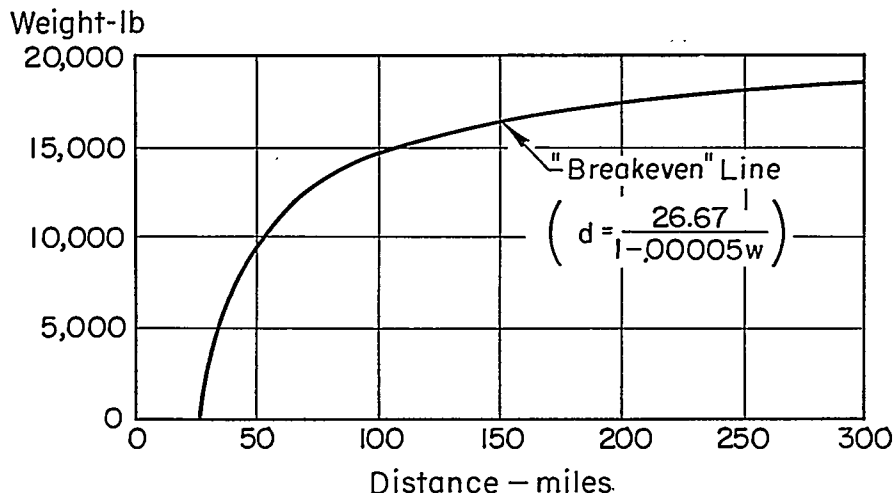
$$d = \frac{26.67}{1-.00005w}$$

For each given weight, a distance longer than this quantity would indicate that terminal handling would pay; for shorter distances it could be avoided.

The "breakeven" points of cost equality are graphically shown in the chart below. Places lower than the "breakeven" line represent less cost through terminal handling; points above the line indicate a higher cost.

The California Commission's studies are applied to the making of minimum rate scales by relating "average costs to the average class of traffic in each weight group."²¹ The costs are supposed to be based upon the average traffic conditions of reasonably efficient carriers; hence, they should represent nearly maximum efficiency for the traffic conditions under which the carriers operate. But for specialized traffic

21. PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA, TRANSPORTATION DIVISION, RATE SECTION, MINIMUM RATE TARIFF No. 2, SUGGESTED REVISIONS IN MINIMUM RATES, RULES AND REGULATIONS, case No. 5432 p. 6 (Feb. 25, 1957).



conditions there is no reason why the "performance" factors, upon which the level of cost depends, should be the same as the carrier average. Costs will be lower if, by specializing, a carrier can transport more pounds per mile of line-haul distance or handle more pounds per hour of the non-mileage cost factors. The common carrier cannot move freight at the same cost even if it operates with maximum efficiency, as long as the performance measures from which the costs are calculated reflect average traffic movements.

IV

The shipper who is presented with a for-hire carrier freight rate equal to average carrier cost may well consider the alternative of specialized trucking for his own traffic movements. Our intent in this section is to show how proprietary trucking has been employed by shippers who can move their own freight at a lower cost than the general carrier average, and to explain the traffic conditions which make this saving possible.

First of all, an important distinction must be made: it is between the trucking cost of common carriers which combine the traffic of a number of shippers and the cost of using a private truck for the freight of a single shipper. Usually, the for-hire carrier can move freight more efficiently than each shipper could by using his own private vehicles. The carriers are able to realize higher loads per vehicle mile, more pounds per hour in pickup-and-delivery operations, and often a higher quality of service because they mingle the separate loads of numerous shippers. In addition, they are specialists in the business of transportation. The freight for which private vehicles may be used economically is clearly the "cream" to the carriers: it

helps to hold down the average cost level for all traffic. In order to retain it, the carriers have provided commodity rates, high volume minimums, or special contracts which intercept the possibility that the shipper will use his own vehicle.

Under what traffic conditions, then, would proprietary trucking have a cost advantage over for-hire carriers which are subject to minimum rate regulation?

Areas of Proprietary Trucking

In California minimum rate regulation the area in which proprietary trucking has become a strong competitive factor is the transport of small shipments for short distances.²² Proprietary trucking has been encouraged by the high cost of pickup-and-delivery service by the common carriers on this traffic. It is not, however, merely the high level of average cost which has created the occasion for proprietary competition but the substantial differences in the cost of serving different shippers. Some of the low-cost shippers have elected to use private vehicles rather than pay freight rates based upon the average cost of all traffic; the effect of this practice has been to raise the average cost level for the remaining traffic. Besides proprietary transport, this situation has favored a general disorganization of freight rates on small shipments and charges of discrimination among shippers—conditions which California is attempting to combat with minimum rate controls. The problems of small shipments are nationally recognized: the Interstate Commerce Commission reports that they "have become among the most troublesome and difficult of those with which the transport agencies and the Commission have to deal."²³

Mention must be made of the other important instance of proprietary competition—on the return movement of vehicles from the principal direction of traffic flow. This situation has received little attention in the California proceedings, but it is worthwhile to compare it briefly with the small shipments problem. Unless the shipper owning his vehicle has a balanced traffic flow in both directions, he must operate without a load on his return movement. The cost of empty movement grows in importance as length of haul increases. It also is linked directly to the cost of carrying the outgoing shipment: the back haul costs increase in exact proportion to the number of vehicle movements away from the point of origin. The economic term for the relationship is the "directional jointness" of expenses. Because of the empty return a private vehicle cannot usually be used eco-

22. "Testimony of record, principally that introduced by shippers or their representatives, indicates that the area in which proprietary transportation is most feasible is for distances up to about 100 miles, and that if the class rates, particularly for small shipments, are substantially increased in this area, proprietary operations will become more general." *Id.* at 7.

23. 66 ICC ANN. REP. 59 (1952).

nominically for long-haul traffic unless it is shared between two or more shippers through a leasing or rental arrangement and operated with a load both ways. The shippers share jointly the expense of the same trucking operation, and because each shipper must surrender control of the vehicle during part of the operation, it has been charged that under law the arrangement is a for-hire service carried on without public authorization. The case is especially strong if a third party owns and leases the vehicles and drivers to the shippers. The use of a private vehicle for short distance shipments avoids these complications because the renter or lessor retains full control over the vehicle for his entire operation, in the course of which the vehicle is returned to its origin.

One reason why the return haul has been of less concern to California minimum rate policy is that intrastate distances are shorter. Another is that the Commission in its cost studies has allowed for a considerable amount of return haul loading in specifying average loads per mile.²⁴ But along the Pacific Coast leasing for the return haul has had a "phenomenal growth," as a carrier statement has alleged, by means of "avoiding all the burdens of regulation and by furnishing all the services of a for-hire transportation system which Congress has decreed shall be regulated."²⁵

Nevertheless, the exact economic difference between return-haul leasing and leasing for local-service operations is more apparent than real. If the "directional-jointness" of cost explains the motive for return-haul leasing, then the "time-jointness" of costs may be an equally acceptable reason for short-term leasing. Various operating costs are joint with respect to time because the necessity of providing a vehicle and driver to a shipper for one month out of the year

24. For example, the study of the cost of transporting lumber reported that the major haulers serving the Eureka Area at the northern end of California "have a back haul for practically every southbound load of lumber. The carriers have negotiated and secured regular return loads from the merchants and larger users of truckload supplies for delivery as far north as Crescent City. . . . In addition to these loads the carriers will also subhaul for the two large common carriers of freight in Eureka when no other back haul is available.

"Thus it has been determined that the costs developed herein should reflect the performance and the efficient operations of these carriers as the basis for consideration in a cost that has been developed for a minimum rate proceeding. There are many more carriers hauling lumber from this area who return empty, and their costs would be greater, but such operations were not given consideration in this report." CALIFORNIA PUBLIC UTILITIES COMMISSION, TRANSPORTATION DIVISION, ENGINEERING SECTION, REPORT ON THE COST OF TRANSPORTING LUMBER BY MOTOR VEHICLE EQUIPMENT FROM POINTS IN HUMBOLDT, LAKE, MENDOCINO, AND SONOMA COUNTIES, Case No. 5432 (1955).

25. From a brief submitted by the American Trucking Associations in the following case: Louis W. Soukup, Docket No. MC-C 2102, p. 31 (1957). In this case the carriers argue that the renting or leasing of a vehicle and driver either direction on the route between Portland, Oregon, and points in California is a practice which is "equal to that of for-hire transportation and at less cost. . . ."

usually requires that the same vehicle and driver be held out for lease or rental during the remaining eleven months. The shipper who leases a truck for a seasonal surge of traffic, or an unexpected customer demand, shares the vehicle with other shippers in much the same manner as on a return-haul movement. In either instance the common purpose of the leasing technique is the fuller use of labor and equipment, by maximizing the load per vehicle mile or the freight handled per hour. These objectives can be attained by assigning a vehicle and driver among different shippers whose particular traffic movements permit a high rate of utilization. It is an arrangement which benefits the shipper, profits the vehicle owner, and threatens the business of common carriers which are unable to adjust readily to specialized traffic conditions.

Shipper Evidence and Arguments

The response of the California shippers to the carriers' application for increased minimum rates in 1955 was practically unanimous in one respect: the proposed rates, it was claimed, would exceed the value of the service. As reasons why the value of the service would not bear the increases, some mention was made of restricting marketing territories, changing distribution methods, or otherwise altering sales policy. But the most frequently stated limit upon the value of common carrier service was the threat to use proprietary transport.

In order to describe the reasons why a shipper's freight bill might be reduced through the use of private vehicles, we shall draw upon the evidence submitted by three shippers—a hardware jobber, a paint manufacturer, and a drugstore company. Their traffic is typical of the freight movements of many other shippers who provided less detailed exhibits in the minimum rate proceedings. It consists mainly of outbound shipments of finished products moving from a centrally-located warehouse or factory to retail outlets. The products are "high-valued" items in freight classification.²⁶ The average weight of shipment transported by for-hire carrier is low: according to samples of the traffic it was 228 lbs. for the hardware shipments, 454 lbs. for the drugstore items, and 1178 lbs. for the paint traffic.²⁷ The freight rates

26. The hardware traffic was calculated to be at 78% of first class.

27. Nearly all of the shipments weighed less than 1000 lbs., but the greater weight of the few larger shipments pulled the averages up. The distribution of number of shipments and weight is:

Weight Class	Number of Shipments			Weight of Shipments		
	Hardware	Drug	Paint	Hardware	Drug	Paint
Under 100 lbs.	42.7	30.7	8.5	9.8	4.1	0.5
1-300 lbs.	36.7	38.8	36.8	26.9	15.2	5.3
3-1000 lbs.	17.3	20.5	34.3	37.7	24.1	15.8
1-2000 lbs.	2.7	5.7	10.0	17.1	18.2	11.7
Over 2000 lbs.	0.6	4.3	10.4	8.5	38.4	66.7
	100.0	100.0	100.0	100.0	100.0	100.0

upon the shipments weighing between 100 and 2000 lbs. ranged from 125¢ to 150¢ per cwt. Higher rates are charged for the "minimum charge" shipments under 100 lbs., and lower rates apply to the shipments over 2000 lbs.

The shippers' docks for this traffic are in the heart of the large California metropolitan areas: the hardware and drugstore freight originates in Los Angeles and the paint shipments in San Francisco. The destinations in each instance are rather densely clustered for the short distances around the central point of origin and then become more geographically dispersed as distance increases. This traffic pattern lends itself to the type of trucking operation in which a single pickup of a multiple lot of shipments is made which are delivered to consignees in a number of different places. The shippers use their own vehicles (owned, rented, or leased) in this manner for the short-distance deliveries within a highly concentrated land area; for-hire carriers handle the longer movements. In the rate proceedings the shipper threat was to broaden the range of the proprietary operation.

In the traffic of small shipments, the freight most desired by the carriers is that which consolidates many shipments into a single multiple lot for either pickup or delivery. On this traffic the costs of pickup-and-delivery which are independent of the amount of weight handled at any single stop, such as the expense of bringing a vehicle to the door of a shipper, are spread out over a large quantity of freight. The high-cost shipments are those of light weight which must be handled singly at any stop.²⁸ They are assigned the full amount of the minimum trucking expense required for making a stop at a shipper's door—unless, of course, the rate structure is so organized that the low-cost traffic contributes to the expense of moving the high-cost traffic by "cross-subsidization."

But the multiple-lot loading of small shipments is also the basis for the economy in the use of proprietary transport by shippers having this traffic. The source of the saving can be determined by comparing for-hire carrier and private vehicle cost items for the same traffic. This is done in the following paragraphs, using as cost data the cost of operating private vehicles given by the shippers and the carrier costs calculated by the engineering staff of the California Public Utilities Commission.

28. A simple example will explain this point. Assume that one-half of the pickup and delivery expense for all traffic is calculated to be independent of the weight handled, and this amount to \$2.00 per stop. Let the remaining cost be equal to \$.25 per cwt. The cost of picking up a 200 lb. shipment is \$2.50 or \$1.25 per cwt. The cost of picking up ten 200 lb. shipments is \$7.00 or \$.35 per cwt.

Private Vehicle Cost. The cost of proprietary transport to the shipper is the sum of labor and vehicle operating expenses:

1. The driver expense at \$3.00 per hour amounts to \$27.00 for a nine-hour day and \$30.00 for a 10-hour day.
2. A truck usually is rented at a flat weekly charge plus a rate per mile. In 1956 a 14,000 lb. single unit truck could be had for about \$35.00 a week, or \$7.00 a day for a five-day week, plus 6¢ per mile.²⁹
3. Fuel costs and other expenses which change with distance come to about 6¢ per mile.

A representative cost figure would thus be about \$35.00 per day plus 12¢ per mile. If the vehicle travels 100 miles per day, the total cost would be \$47.00; for 150 miles it would be \$53.00. The average daily cost submitted by the hardware and paint shippers was just under \$50.00. This expense is converted to a cost per hundredweight of freight by dividing it by the average daily load carried in private vehicles over a period of time.

The paint and hardware shippers supplied a measure of the average daily load as a part of their testimony. The figures presented here are taken from a one-month sample of shipments which at that time were carried by for-hire truckers but were either being diverted to private vehicles or under consideration for transport by that method. These shipments were loaded at the shipper's door and delivered to a number of destinations within a short (less than 75-mile) distance. The proprietary cost thus obtained is:

	<i>Private Vehicle Cost Per Day</i>	<i>Ave. Weight Per Day</i>	<i>Cost Per cwt.</i>
Paint Traffic	\$49.00	7560 lbs.	64.8¢
Hardware Traffic	\$48.12	5051 lbs.	95.3¢

The drug company cost was stated at 87.1¢ per hundredweight without a detailed statement as to how it was computed.

Carrier costs—driver and vehicle operating expenses. These expenses for the common carriers are directly comparable with the proprietary costs. According to the Commission studies, most pickup and delivery service is handled in single-unit trucks, and drivers operate under much the same pay scale. Line-haul service uses the larger vehicle combinations, but line-haul cost is not significantly large for short-haul distances.

However, the vehicle and driver cost per 100 pounds of freight is much lower for the for-hire operations. This requires some explana-

29. Another kind of charge is a high fixed rate and no mileage expenses up to a certain point. The hardware shipper, for instance, leased vehicles at a cost of \$12.00 a day + 9.5¢ per mile for all mileage in excess of 60 mi. The total cost for a 100-mile day would be \$50 (\$12.00 + 9.5¢ x 40 mi.).

tion. The maximum efficiency in the use of vehicle and labor cost factors, it will be remembered, is attained by moving the most freight possible per hour or per mile. In this performance the common carriers excel. In the Los Angeles and San Francisco territories, single unit trucks are calculated to handle 1640 lbs. and 2200 lbs. per hour respectively; this amounts to almost 15,000 lbs. and 20,000 lbs. over a nine-hour day. Since these quantities include both pickup and delivery, they must be cut in half to be compared with the weight per day carried in the private vehicles, but even after this adjustment is made they exceed the pounds per day carried in the paint and hardware vehicles. The load handled at each pickup and delivery stop also averages higher for the carriers:

<i>Weight of Shipment</i>	<i>Ave. Load Per Stop</i>	
	<i>S. F. Territory</i>	<i>L. A. Territory</i>
Under 100 lbs.	512	388
100-500 lbs.	730	653
500-1000 lbs.	1329	1326

The hardware traffic, by comparison, has a single pickup of 5051 lbs., but this is diluted over an average of 23 delivery stops per day. The paint traffic averages more weight per stop, 896 lbs., but there are fewer stops per day, 8.43. Finally, the average load per vehicle-mile is only about 3,000 lbs. for the private vehicles, and this is to be compared with the average load of 16,000 lbs. for the line-haul movement of LTL traffic calculated by the Commission for the carriers. The disadvantage of an "18% load factor" was noted by the hardware shipper.

The net result of these higher performance factors by the for-hire carriers is to reduce their vehicle and driver expenses well below the same costs for private transport. A rough comparison of the costs can be made for the average weight of shipments, which was 221 lbs. at each delivery stop for the hardware traffic and 897 lbs. for the paint traffic. The carrier costs for the 100-500 lb. and 500-1000 lb. weight brackets are lower than the private vehicle costs:

<i>Shipment Weight</i>	<i>Vehicle and Driver Costs</i>	
	<i>Carrier</i>	<i>Private</i>
100- 500 lbs.	\$.833 per cwt.	\$.953 per cwt.
500-1000 lbs.	.503 per cwt.	.648 per cwt.

Carrier costs—other expenses. This picture is completely altered by the addition of the other expenses of commercial carrier service:

<i>Carrier Cost Categories</i>	<i>Shipment Weight</i>	
	<i>100-500 lbs.</i>	<i>500-1000 lbs.</i>
P. & D. and Line-Haul	\$.833 per cwt.	\$.503 per cwt.
Platform Handling	.206 per cwt.	.116 per cwt.
Billing and Collecting	.100 per cwt.	.032 per cwt.
Indirect	.288 per cwt.	.165 per cwt.
	<hr/>	<hr/>
	\$1.427 per cwt.	\$.816 per cwt.

The for-hire carrier cost now appears to be well above the private vehicle level.

These additional expenses are the necessary consequence of assembling loads from a number of different shippers for collective handling.³⁰ They involve the movement of loads through terminals, the mechanics of pricing the service to the shippers, and the overhead and other administrative expenses of running a separate organization for transport purposes. In short, these expenses must be met in order to achieve the lower costs per 100 pounds of vehicle and driver expenses which results from the collective handling of large quantities of freight per hour and per mile. It may, of course, be asked whether some of these expenses must also be met by shippers using private vehicles. A certain amount of overhead cost is indeed included in a vehicle rental figure or is borne directly by the shipper if he owns his own vehicle fleet. However, as one shipper pointed out, "we are already operating trucks in and around Oakland so there would be practically no additional overhead costs. If the proposed rates are adopted, I don't think there would be any question but what we would put on our own truck for this operation."

Estimated Savings. The actual savings estimated by the shippers on traffic which might be diverted to proprietary transport is measured by the difference between freight rates and private vehicle costs. In the following table these are expressed in cents per 100 pounds and for the entire one-month sample of traffic supplied by the shippers.

<i>Shipper</i>	<i>In cents per cwt.</i>			<i>Total Weight</i>	<i>Total Saving</i>
	<i>Average Rate</i>	<i>Proprietary Cost</i>	<i>Saving</i>		
Drugstore	134	87	47	261,976 lbs.	\$1,226.00
Hardware	129	95	34	126,281 lbs.	421.00
Paint	87	65	22	173,887 lbs.	394.00

30. Some of them are avoided in peddle trip service, for which the Commission study includes only one allowance for terminal handling, instead of two, for a shipment. The elimination of the terminal cost requires a slightly higher pickup and delivery charge, however, because less average weight per stop is estimated. The peddle trip costs by shipment weight groups are:
100-500 lbs. \$1.302 per cwt.
500-1000 lbs. 0.753 per cwt.

The rate averages represented here are taken from the rates in existence at the time of the proceedings; they are generally below the average full cost level for this traffic.

This comparison should not imply that the shipper would be indifferent as between alternatives when rates and proprietary costs were exactly the same. The decision to use proprietary transport is usually made because of a very substantial saving, and it also includes various intangible costs which cannot easily be given an exact money value, such as the problems of running a trucking operation, dealing with organized labor, etc. As the hardware shipper testified: "We hesitate entering the trucking business. The [company] is in the merchandising, not the transportation, field. However, we are left with no alternative when faced with the cold facts of costs of transportation which are fantastic when considered from the point of view of what the traffic can or will bear."

Shipper position. What are the chances that the shippers will carry out the expressed intention to expand their proprietary operations on low-cost traffic?

The rate analyst of the Public Utilities Commission thought they were strong: "The testimony of record indicates that the threat of additional proprietary transportation is quite real. This segment of traffic is important to for-hire carriers."³¹ The shippers, realizing that their traffic is highly regarded by the trucking companies, urged that this fact be recognized in the form of lower rates, based upon the lower costs of multiple lot loading, than are charged to other shippers. If the carriers and the Commission were to agree to provide lower rates the traffic might be retained by the carriers; if they did not agree, the traffic might be lost to the carriers. Either way the result would be to increase the burden upon the other shippers. Reduction of the rates would eliminate "cross-subsidization" within the rate structure. Loss of the traffic would reduce the average pounds per pickup-and-delivery stop of the carriers and thus raise the average cost of the remaining shipments.

However, the expansion of the range of proprietary operations tends to reduce the economic advantage of large multiple lot loading. With greater distance, a higher proportion of operating costs are variable with mileage, and the proprietary trucker suffers the higher costs of moving partly-loaded vehicles, in contrast to the higher load factors on the line-haul semitrailers of the carriers. Also, the destination points become more scattered, thereby cutting the number of stops per hour that a private vehicle would make on the average. Assuming the same average weight per stop to be delivered, the total pounds per

31. CALIFORNIA P.U.C., SUGGESTED REVISION IN MINIMUM RATES, RULES, AND REGULATIONS, *op. cit. supra* note 21.

day of deliveries would decrease; hence, less weight could be loaded on a single vehicle at the point of origin. Consequently, the daily operating expenses, such as driver wages (up to an 8-hour minimum), would increase per 100 pounds of freight. The shippers, at the time of this proceeding, had restricted their proprietary operations to those highly populous areas close around the point of shipment. The leased vehicles of the hardware shipper which were then in operation averaged 39 stops per day, 129 lbs. per stop, and less than 100 mi. per trip. The cost of this service was only 79¢ per hundredweight despite the low average weight of deliveries, a figure substantially less than the 95¢ per hundredweight cost that the shipper estimated for expanded proprietary service. A still higher cost could be anticipated from further expansion.

If traffic were mostly in one direction, the effect of increasing distance upon costs would be less pronounced. In the case of the drugstore traffic, for example, there was a fairly dense movement over the route between the warehouse in Los Angeles and the San Diego area, more than 100 miles to the south. The shipper moved part of the freight in private vehicles. However, the carriers took advantage of the lower cost of transporting these shipments by providing a split delivery rate to the shipper, on which 73% of the San Diego freight tonnage of the carriers moved.

But the position of the shippers is generally an uncertain one. There are recognized and measurable savings from the dual policies of using private vehicles to carry short-haul shipments, which capitalizes on the advantages of multiple loading, and using for-hire carriers for the longer distances, where the advantage is that of mingling loads with the traffic of other shippers. But eventually the effort to lower the cost of moving one portion of the traffic acts to raise the cost of moving the remainder. The carriers' pickup-and-delivery expenses are not related to the length of haul, so that the loss of low-cost shipments to private transport on the short haul will increase the cost of pickup and delivery on the remaining long-haul traffic. It may well be asked which policy really minimizes the total distribution cost of the shipper. Complete conversion to proprietary transport would without question be more expensive than complete dependence upon common carriers. But the shippers may save money by specialized transport of "cream" traffic only to pay part of the saving out again in increased freight rates on for-hire transport.

Carrier Position

The common carriers, which haul a mixture of low-cost and high cost traffic, are being squeezed by circumstance. If a carrier offers the same rate on all shipments which are identical in character but

not in cost, it may find that the low-cost traffic is diverted to private vehicles by the shippers. If it goes very far in differentiating rates in proportion to cost, the way is open for charges of discrimination by shippers and a disorganization of the common carrier rate structures. One result might be to defeat the attempt of public policy to "stabilize" the rate level. The Commission has urged that high-cost traffic be charged higher-than-minimum rates; the carriers have replied that this action would be impractical for a single carrier. But might not this problem be avoided if one carrier were to specialize only on low-cost traffic, and charged the minimum rate, while another carrier confined itself exclusively to high-cost traffic and priced it accordingly, well above the minimum?

It is the carriers' view that such a policy would be impossible if they are to continue to act as common carriers, holding themselves out for general hire. In point of fact, says a carrier statement, "the shipper, in dealing with general commodity traffic, will not pay more than the rate established by the Commission. And equally factually, competition between carriers in this state is so great that no carrier would long maintain its traffic under present conditions on a rate level higher than that maintained by his fellows."³² If this is true—and experience suggests that it is—³³ all competing carriers would have to handle high-cost and low-cost traffic in similar proportions in order to survive. Therefore, cross-subsidization of traffic would be inevitable at an average rate level which was compensatory to the carriers. The only real alternative, according to the carriers, is that rate differentiation on similar shipments be sanctioned in the minimum rate levels established by law. Intense shipper opposition has greeted this proposal.

The shippers and the carriers are apparently agreed about the nature of low-cost traffic in small shipments. It is freight which averages high weight per pickup-and-delivery stop. The carrier version is that this traffic consists of shipments having a high average weight or which may be picked up "loaded to go" at the shipper's door and delivered direct to the consignee without terminal handling. One carrier stated that its operating ratio (the ratio of costs to

32. Petition of Draymen's Association of San Francisco and Draymen's Association of Alameda County for Rehearing and Reconsideration of Decision No. 55249, Dated July 9, 1957, Case. No. 5432, note 1, *supra*.

33. Another carrier statement observes: "This brings up the question of the practicability of one or two carriers charging higher rates than those prescribed for the industry generally. Our experience has been that our competitive condition is worsened by having such a rate structure in effect, as shippers are not inclined to favor us with traffic as long as we have higher rates than our competitors in a portion of our territory. Our losses have been greater since the publication of higher rates than they were before. Our total volume has not decreased very much but we have received a higher percentage of unprofitable traffic." Statement of H. J. Bischoff on Re-Hearing of Decision No. 55249, note 1, *supra*.

revenues) on some samples of short-distance traffic which required terminal handling was almost 120 per cent; traffic in the same territory which did not require terminal service had an operating ratio of only 87 per cent.³⁴ The difference in the revenue per 100 pounds to the carrier scarcely reflected the difference in cost:

<i>Shipment Weight Group</i>	<i>Ave. Revenue per Cwt.</i>	
	<i>Terminal Handling</i>	<i>No Terminal Handling</i>
Under 100 lbs.	252¢	213¢
100-300 lbs.	144¢	132¢
300-1,000 lbs.	120¢	130¢
1,000-1,500 lbs.	113¢	129¢
Over 1,500 lbs.	85¢	79¢

For shipments under 500 lbs. the carriers have proposed surcharges, and higher minimum charges per shipment. It is uncertain whether these rates could be adjusted to retain the traffic of the multiple lot shippers threatening the use of private vehicles.

The motor carriers' position is the difficult one of attempting to reconcile the public obligation, and the economic advantage, of being certified to accept the traffic of any and all shippers with the obvious economies of specialized service. The common carrier function in motor trucking seems to be at cross purposes with specialization. Railroads are economically suited to be mass haulers, and this fact favors their operation as common carriers. Investment in roadbed and equipment needed for the minimum standard of service is high relative to each carload of freight, and unit costs fall with rising traffic volume over a wide range. In some ways the most specialized type of railroad, such as one that lives mainly from coal traffic, is best suited to be a common carrier: the addition of a few carloads of miscellaneous commodities to a train adds little to cost and may contribute much to revenues. But in trucking the addition of one more trailer-load requires an equally proportionate change in total cost, composed of a vehicle, a driver, and local handling service. If these facilities must be held on a standby basis to absorb seasonal or unexpected traffic demands, the marginal cost is even higher. A specialized trucker who can adjust to a single and predictable traffic flow usually has the best opportunity to minimize cost if traffic volume is large enough to fill up a truck.

V

The minimum rate controls in California have been an expression of public interest in protecting and preserving a strong common carrier system. But can it be said that this purpose is being promoted if one

34. *Ibid.*

consequence of maintaining a high minimum rate level is to divert profitable traffic to private vehicles? Equally in the public interest is low-cost transportation. The shipper who is entitled to it by reason of his traffic characteristics, but denied it in the for-hire rate structures, may simply turn his back upon the carriers and minimize his distribution costs by the proprietary method.

The shipper testimony in the California rate cases has not questioned the adequacy of the service furnished by the carriers but rather the prices at which it is supplied. Yet, a general rate level must be high enough to insure adequate service. Under regulation, we have observed, there has been a considerable flexibility permitted the carriers in rate-making under different traffic conditions, even when there is discrimination between persons and places. But common carriage, by reason of its service to many customers under varied conditions, must have some rate uniformity based upon average costs and traffic conditions.³⁵ In pricing practice generally, and for transport rates especially, this is true when the seller is large and there are many small buyers.

James C. Nelson pointed out some years ago that minimum rate regulation, which has favored a considerable amount of rate uniformity, was established partly because of a feeling that the common carrier is "handicapped by the obligations of his common-law and statutory basis."³⁶ Other means of protecting the carrier's status have been the control of entry of companies wishing to carry freight for revenue, and the prohibition of unauthorized for-hire transportation to the extent permitted by law. And why protect the common carrier? In defense of the small shipper—too small to engage for-hire carriers under special contract or operate his own vehicles efficiently, and therefore dependent upon common carrier service.³⁷ It was also in-

35. Although stressing rate uniformity for varying distances, Bonavia's comment applies here: "The tariff abandons the attempt of the contract system to take into account *all* the circumstances affecting each individual bargain, and assembles transactions in groups according to some convenient distinction. Where the total money sum (and thus the maximum possible deviation from the ideal contract price) is not very large, the transport tariff can be simplified into a 'zone tariff,' applicable between all points within a certain radius, or even a 'flat rate' irrespective of distance." BONAVIA, *THE ECONOMICS OF TRANSPORT* 81 (1947).

36. Nelson, *New Concepts in Transportation Regulation*, The National Resources Planning Board, *TRANSPORTATION AND NATIONAL POLICY* 215 (1942).

37. However, Nelson observed in 1942 that the small shipper had other alternatives. "Small shippers are not so helpless in comparison with the large shippers as they once were. The small shipper, too, may frequently avail himself of the direct alternative of supplying his own motor-freight service by buying a truck or trucks, without bearing operating costs higher than the large private carrier. . . . Of perhaps more importance, the small shipper now has the advantage of many competing motor common carriers, in addition to normal rail and water alternatives, to which he may turn. These alternatives of small shippers are frequently more attractive than their former one of bearing the costs of appealing to a regulatory body. . . ." *Ibid.*

tended to protect cities and regions which do not develop enough traffic to take advantage of specialized service against "undue preference or prejudice" in the rate structure.

But the pressures of trucking competition have already disposed of much of the content in the preference and prejudice law, whether applied to small shippers or small regions. Some questions might well be raised about the idea that equality in rates for similar shipments is a public obligation of for-hire carriers, essential to prevent discrimination between persons and places. Milne and Laing have advanced the idea that the prohibition in law of undue preference or prejudice in railroad rates developed as a restraint upon the monopoly position once enjoyed by the railroads, and that discrimination between shippers which reflect cost differences and interagency competition in transport in no way violate the basic common carrier obligation. "It is true," they say, "that the obligation compels acceptance of all traffic for which the railways have facilities to carry, they cannot pick and choose, but the duty connotes nothing as to the charges and terms and conditions attaching to the acceptance of traffic."³⁸ If a customer is willing to pay the costs of a particular service, the obligation is that he not be denied the service he seeks. This reasoning seems equally appropriate for common motor carrier service and in the highly competitive trucking market the likelihood that rate uniformity can be maintained with differences in cost among traffic is rather less than in the railroad industry.

The Milne and Laing theory of restricting the interpretation of the common carrier concept by excluding price consideration suggests an alternative course for California's policy to meet the problems of increasing proprietary trucking. In advocating protection of the common carrier system with rate uniformity for apparently similar traffic, the California Commission has made two proposals. First, the Commission has urged a policy of differential pricing whereby high-cost traffic is subsidized. Such pricing practice can be carried out in two ways—(a) low-cost traffic for a particular class of traffic subsidizes the high-cost traffic of that same class of traffic, or (b) other classes of traffic (say the long-haul volume traffic) subsidize that class of traffic which the common carriers are losing to proprietary carriers (for example, the short-haul small shipment traffic). In both cases uniform rates are imposed for apparently similar traffic. As we have observed, the competitive nature of trucking in California prevents the former price policy from working, and the same intense competition will not allow the latter type of cross subsidization in the constant-cost trucking industry. The second Commission proposal is to restrict the operations of specialized for-hire carriers, thus re-

38. MILNE & LAING, *THE OBLIGATION TO CARRY* 56 (1956).

quiring a larger proportion of for-hire carriers to serve as common carriers and share the high-cost traffic. While the Commission has long advocated tighter control over permitted carriers, carrying out its recommendations will not completely remove the competition of specialized motor trucking, for there exists a large area of specialized trucking which cannot be eliminated by the requested enlargement of regulatory authority—that is, the true proprietary trucking operation.

The other possible policy is revision of the minimum rate tariffs to account for cost differences on apparently similar traffic, recognizing that the carriers are not apt to make such a change without the support of the law. This course of action may be necessary in order that common carrier service be continued; at least it does not run counter to the Milne and Laing interpretation of the common carrier concept stressing service obligations. However, it would place the entire burden of covering the high costs of particular traffic upon those furnishing such traffic. This is in contrast to spreading the burden among a much larger group of shippers, the current California policy, with the resulting erosion of the common carriers' profitable traffic and a subsequent increase in rates for the remaining traffic. If the current rate structures still retain the practice of low-cost traffic subsidizing some high-cost traffic, there will be some shipper resistance to this revision. But as erosion of the carriers' low-cost traffic continues, the high-cost shippers will find that by necessity their rates are raised closer to their actual costs. Those costs are further increased as the low-cost shippers divert profitable traffic to their own vehicles.

Our analysis of the California cases has shown that public policy must not only balance the interests of one class of shipper, which can save money by private trucking, against those of another class, which must bear the brunt of higher freight rates. When the low-cost shipper and the high-cost shipper are both the same shipper, the objective of low-cost transportation in the public interest is less well defined. From the shipper's position, of course, it is entirely sensible to achieve the economies of his cream traffic with proprietary transport while, at the same time, appearing before public authority to oppose freight rate increases on the remainder, but the long-run merit of this approach is more doubtful. It cannot have the same appeal to those who have the responsibility of representing the public interest.

The public interest in low-cost transportation extends to the society as a whole, within which there are high-cost and low-cost shippers. Minimum rate policy designed to protect and preserve common carriers is in a position essentially similar to the shipper who

finds that a means of saving money upon part of his traffic serves to raise the cost of carrying the rest of it. In the long run the transportation bill of the society may be minimized through strong public policies for the benefit of common carriers. However, the California experience indicates that rate regulation directed to this end will be effective only to the extent that it recognizes cost differences among carrier traffic and adjusts rate levels in the same proportion.