
MOTOR TRAFFIC MANAGEMENT

by

H. E. STOCKER, B.S.

*President, Harry E. Stocker, Associates, Inc.;
Transport Counsel; Formerly Associate Professor
of Transportation, New York University; Inter-
state Commerce Commissioner Practitioner.*

REVISED EDITION

New York
PRENTICE-HALL, INC.

DEDICATED
TO
DOT, PAT, AND BOB

Preface to the Revised Edition

THE FINE reception accorded the first edition of *Motor Traffic Management* has encouraged the author to prepare a revised edition. The various chapters have been brought up to date, and the results of numerous transportation studies made during the past few years have been included.

The new chapter on motor carrier operations in wartime, when expediting shipments is of vital importance, should be especially useful to the traffic man.

The author is especially grateful to his wife, his daughter, and his son, who helped with the manuscript, as well as to August W. Heckman, I.C.C. Practitioner and counsel for the New Jersey Motor Truck Association, to W. J. Mallon of the Horton Motor Lines, to the Middle Atlantic States Motor Carrier Conference, Inc., and to the York Motor Express Company.

H. E. S.

Preface to the First Edition

THE motor transportation industry has, by the enactment of the Federal Motor Carrier Act, 1935, been plunged into a whirling vortex of changing conditions. So rapid and so sweeping are these changes that something more than the usual experience in the transportation business is necessary in the preparation of a volume on motor traffic management. It is not alone sufficient that the changes be recorded and their effects upon the industry be noted, but we must go deeper into the subject in a sincere endeavor to determine the reasons for the various changes. If the reasons for past changes are known, it is then far easier to predict, with some degree of accuracy, the course of future expected revisions.

Because of this, much original research work was undertaken in the preparation of many of the subjects covered in the various chapters. It was necessary not only to analyze the practices of many of the motor transportation organizations, both large and small, but also to analyze the history of railroad regulation and the theories presented by the advocates of the regulation of transportation.

I am indebted to a great many persons and organizations for information and assistance supplied. So many have thus participated that space does not permit the mentioning of all of them. However, special mention must be made of the following: Robert Hutcherson, Traffic Manager of the Associated Oil Company of San Francisco; August W. Heckman, I.C.C. Practitioner and Counsel for the New Jersey Motor Truck Association, who gave liberally of his time and legal knowledge; H. D. Horton, President of the Horton Motor Lines; L. S. Reidel, President of the York Motor Express Company; C. O. Burgin, Traffic Manager of the Port of Stockton, California; the Association of American Railroads; the American Trucking Associations, Inc.; Dr. C. S. Morgan and Arthur White, of the Interstate Commerce Commission; the Railroad Commission of the State of California; the Washington State Highway Cost Commission; the U. S. Department of Commerce;

the U. S. Bureau of Public Roads; and various State Regulatory Commissions throughout the country.

I am especially grateful to my wife, who assisted me with the manuscript, and to Gerard E. McNamara, who came to me as a student and remained as a friend and business associate. Without his assistance, in a multitude of ways, this book could not have been completed at this time, when it is believed it will be of particular value to the reader.

H. E. S.

Introduction

Traffic management may be divided into seven major divisions:

1. Legal basis of regulation.
2. Economics of transportation.
3. Transportation service factors.
4. Selling transportation service.
5. Rate construction.
6. Construction and use of tariffs.
7. Preparation and use of various documents, forms and so forth.

The objective of the writer has been to provide a practical working volume for all who are interested in motor traffic management, including students of motor transportation. An attempt has been made to answer questions raised by those who are faced with immediate problems and who, at present, do not have the time necessary to analyze them thoroughly.

For example, the objective with reference to rates has been to describe in plain English, understandable by all, exactly how rates are constructed; to clear up misunderstandings which have persisted for years on the value of service principle and other rate making factors, because some transportation men have been specialists of narrow vision and small understanding, while others have been forced to keep too close to their work. No one is more misled than he who keeps his head in his own "cabbage patch"; that is, accepts traditional points of view and methods without analyzing them in the light of present-day conditions. Too frequently we accept something which we see around us every day, when a thorough analysis would disclose that the reasons for its existence have ceased years ago. It reminds the writer of the story of the British Admiralty. In recent years, one of the officers of the Admiralty, noticing a sentry on duty at a doorway, decided to ascertain why a sentry was so placed. A search through the records revealed the following facts. Some hundred years ago, the wife of an officer of the Admiralty called at her husband's

office. When she passed through a doorway, her skirt brushed against the doorsill, which had been freshly painted, and became soiled. She complained to her husband about this matter, and immediately a sentry was posted at the doorway to warn other visitors about the fresh paint.

Even the extreme partisan may, if he will, benefit by knowing the facts. Some months ago an issue of the New York *Evening Journal* carried a story in point told by Edwin C. Hill:

Several years ago, a friend of mine asked Lincoln Steffens why the reformers had failed.

"From Tom Johnson on down, you've had 30 years of it now," said my friend. "There's just as much graft as ever. Why didn't you change anything? What's the matter?"

"Because we didn't have sense enough to go after facts," said Steffens. "That is, important facts. We won a great many engagements, but we did not engage in or win any fight worth while. We were battling shadows all those years. We were angry, emotional, and ignorant. There isn't any hope for the country or the world until we humbly seek facts, and learn not to get mad if they don't come out our way."

The majority of traffic men, motor truck, railroad, and industrial, as well as Interstate Commerce Commission Practitioners, are so busy with their day-to-day problems that they have little or no time in which to analyze thoroughly fundamental problems which are becoming of increasingly greater importance as the motor transportation industry proceeds down the road of federal regulation. This volume is planned to assist them in reaching accurate conclusions as well as to assist in the solution of problems that are still in a debatable stage and for which no accurate conclusions are possible.

The approach to the subject matter of a book is important. Five distinct approaches to the subject of motor traffic management were possible: (1) from the point of view of the railroads; (2) from the point of view of the motor carrier industry; (3) from the point of view of the shippers; (4) from the point of view of the general public; and (5) from the scientific point of view, i.e., to ascertain the truth rather than to represent any partisan viewpoint.

This book approaches the subject matter from the last viewpoint. Because of this it will be of the greatest value to all readers, except the extreme partisan, no matter what their interests, since it approaches the subject of motor traffic management

in the manner of the scientist, and the reader gains a sense of confidence from words emanating from an unprejudiced source dealing realistically with facts and fundamental principles of a subject.

A scientific point of view spurns guesswork, traditional precepts, and maxims; it considers opinions worth the while only when facts are lacking. This type of viewpoint necessitates keeping one's mind open to new ideas and information, because, otherwise, accurate thinking is impossible. The scientific mind endeavors, with well-developed technique, to find the facts concerning a subject and to form non-partisan conclusions based upon these facts.

The truth exists whether or not it is admitted by partisan interests. It is the purpose of the writer to ascertain that truth and to publish it so that it shall be made available for all who are interested in and who may benefit by a knowledge of the truth.

All other things being equal, the advantage rests more and more with the man who possesses the greatest amount of scientific knowledge. This has been proved in so many fields, from warfare to housekeeping, that it is beyond question.

However, one fault of scientists is that, when in communication with non-scientists, they use language which is highly technical and, consequently, not understood. Charles Kettering puts it this way:

First of all the pure scientist and the practical engineer ought to speak the same language. For instance, the scientist will say: "Chlorophyll makes food by photosynthesis." But if we translate the Greek roots into English, the sentence reads: "Green leaves build up food with the help of light." Anyone can understand that. So, if we are going to get by the boundaries between different kinds of technical men, the first thing to do is to get them to speak the same language.

Hence, the writer has avoided the use of terms which are not generally known and has used plain English words rather than impressive words meaning simple things.

For the benefit of students, as well as others, technical terms are defined in the Glossary.

Table of Contents

CHAPTER		PAGE
	INTRODUCTION	vii
I.	ORGANIZATION AND MANAGEMENT OF A MOTOR CARRIER	1
	Need for a well-planned organization	1
	Organization flexibility	2
	Selection of personnel	2
	Training the personnel	3
	Records	4
	General characteristics of well-managed organizations ..	4
	Types of organizations	5
	Functions of the general administration	6
	Operations department	7
	Accounting department	7
	Traffic department	8
	Safety and insurance department	8
II.	COMPARATIVE ADVANTAGES OF MOTOR AND RAILROAD	
	TRANSPORTATION	13
	Transportation largely competitive	13
	Inherent advantages of motor transportation	13
	Packing	18
	Turnover of capital	23
	Comparative fixed costs	23
	Comparative joint costs	23
	Heavy traffic density decreases cost per vehicle	25
	Highway costs borne by land-owners and others	27
	Land and community service	28
	Provision of highways has always been a function of the government	32
	City streets	33
	Mass production	37
	Inherent advantages of rail transportation	51
	Railroad management has complete control of traffic	52
	Large plant in excess of normal needs	52
	Railroads have large diversity of traffic	52
	Fewer restrictions by railroads in acceptance of freight ...	54
III.	SELLING TRANSPORTATION SERVICE	55
	Importance of the selling organization	55
	All selling the same fundamentally	55
	The point of view of carriers and shippers	56

CHAPTER	PAGE
III. SELLING TRANSPORTATION SERVICE (<i>Cont.</i>)	
Need for modern sales methods	56
Selection and training of salesmen	58
Division of territories among salesmen	60
Records	60
Compensation of salesmen	60
Advertising	63
IV. IS HIGHWAY TRANSPORTATION SUBSIDIZED?	67
The subsidy problem	67
National defense	68
Highway construction and maintenance and unemployment relief	68
Public utility concept	73
Government ownership alternative to public utility concept	75
Is motor truck transportation subsidized?	76
Transportation of a 143-ton gun over city streets and highways	77
Thickness of highway pavements	78
County and township roads	81
Distinction between theoretical and practical considerations	81
Highway maintenance costs	82
Conclusion on added highway construction costs	83
Effect of trucks on grades and curves	84
Highway landscaping	84
Width of highway lanes	84
Bridges	85
The use factor	86
Out-of-pocket principle applied to highway costs	88
Highway income from motor trucks	89
Total truck taxes	92
Trucks use highways during off-peak periods	92
Seasonal peaks	93
Relationship of motor trucks to peak responsibility	94
Tax collections increasing	96
V. FEDERAL REGULATION OF MOTOR TRANSPORTATION ...	97
History of regulation	97
Differences between railroads and other industries	98
Monopolistic character of the railroads	99
Railroads perform public duties	99
Eminent domain	100
Waste of capital	100
Regulation of rates	101
Change in the character of the railroads	102
Competition has exceeded profitable limits	103
Distribution of traffic	104
Disturbance of marketing conditions	107
Other studies	109

TABLE OF CONTENTS

xiii

CHAPTER

PAGE

V. FEDERAL REGULATION OF MOTOR TRANSPORTATION

(Cont.)

Advent of the motor truck makes the problem of effective regulation more complex	111
Contract and private carriers	111
Small-scale operations	113
Theoretical and practical aspects of regulation	114
The shippers' point of view	116
Conflict of interests	116
Unfair legislation	117
Group interests conflict	118
Forms of regulation	120
Power of the government to regulate highways	121
History of the regulation of interstate motor transportation	122
Provisions of the Motor Carrier Act	124
Controlling the supply of transportation service	124
Commissions do not control the amount of equipment	128
Basic transportation policies	128
Summary	129

VI. CONSTRUCTION OF FREIGHT RATES

Introduction	131
Rate-making theories	132
Rates subject to pricing principles	134
Scientific rates impractical	136
Class rates	137
Commodity rates	137
Classifications	137
Origin of the National Motor Freight Classification	139
Construction of classification ratings	140
Value-of-service principle	141
Values used for rate-making	143
Volume, regularity, and direction of traffic	146
Weight in pounds per cubic foot	147
Claims	150
Traffic density	152
Type of equipment	153
Competition	153
Carrier competition	154
Competition between commodities	154
Market competition	154
State of an industry	155

VII. CONSTRUCTION OF FREIGHT RATES (Continued)

Construction of class rates	156
Railroad rates must be studied	156
Mileage class rates	156
Rate-making factors	158
Terminal cost studies	164
Traffic density	165

VII. CONSTRUCTION OF FREIGHT RATES (*Continued*)(*Cont.*)

Average haul	165
Topography	166
Percentage of freight moving under each class	169
Financial condition of the carriers	169
Operating ratios	170
Present truck rates	170
New England rates	171
Rail rates as a basis for motor truck rates	172
Freight forwarders' class rates	174
Multi-minima rates	175
Computation of distances	179
Special types of rates	182

VIII. CONSTRUCTION OF FREIGHT RATES (*Continued*)

Commodity rates	184
Commodity rates established because of special conditions	184
Rates not fixed by formula	187
Volume of traffic	189
Competition	189
Private carriers	190
Out-of-pocket cost principle	192
Methods of stabilizing rates	199
Multi-minima rates	202

IX. MISCELLANEOUS CHARGES—RULES AND REGULATIONS

Minimum charges	204
Types of miscellaneous charges	204
Demurrage charges are provided to force shippers and consignees to unload trucks promptly	207

X. COMPILATION OF MOTOR TARIFFS

Tariffs are transportation price lists	209
Types of tariffs	209
Comments on compilation of tariffs	210
Concurrences	211
Effective date of tariff	211
Publication and filing of tariff	212
Posting of tariffs	212
Publication of motor carrier tariffs and schedules	212
General procedure of motor tariff bureaus	215
Middle Atlantic States Motor Carrier Conference, Washington, D. C.	220
Inter-territorial bureau procedure	220

XI. HOW TO USE TARIFFS

Steps in reading a motor freight tariff	226
Commodity rates	230

TABLE OF CONTENTS

xv

CHAPTER

PAGE

How to Use TARIFFS (*Cont.*)

Exceptions to the classification	232
Class rates	234
General instructions	234

XII. MOTOR TRANSPORTATION DOCUMENTS	237
Bills of lading	243
Uniform motor carrier bill of lading	247
Terms and conditions of the bill of lading	247
Freight bills	248
Credit for payment of freight charges	251
Under- and overcharge claims	255
Loss and damage claims	257

XIII. MOTOR CARRIER OPERATIONS	266
Basic principles of motor transportation	268
Interchanging trailers	270
How the shipper and consignee can help	272
Containers and removable bodies	275
Weary men accomplish less	276
Design must be based upon sound principles of freight handling	286
Facilities for motor trucks	286
Modern trucks and obsolete terminals	287
Research and interchange of ideas and data	287
Method of analyzing transportation operations	289
Research must be widespread and continuous	289
The organization needed	290

APPENDICES

Appendix A. Synopsis of Motor Carrier Act, 1935 ..	293
Appendix B. Bibliography	333
Appendix C. Glossary	338

CITATION OF AUTHORITIES	361
-------------------------------	-----

INDEX	365
-------------	-----

Illustrations

FIGURE	PAGE
1. <i>A tractor-trailer unit operating in a forest</i>	18
2. <i>Salesman's report</i>	61
3. <i>U. S. Army cannon en route to destination</i>	77
4. <i>Comparative maintenance costs of various types of pavements</i>	83
5. <i>A page from "1941 Automobile Facts and Figures"</i>	95
6. <i>Receipts of milk by motor truck and by railroad</i>	107
7. <i>Loading motor truck by mechanical equipment</i>	112
8. <i>Tank-truck for transporting gasoline, and a stainless steel trailer with side and rear doors</i>	126
9. <i>Combination passenger bus and motor truck</i>	130
10. <i>Special-type trailer</i>	134
11. <i>A page from the National Motor Freight Classification</i>	138
12. <i>Combination of terminal and over-the-road equipment</i>	162
13. <i>Open-top motor truck for local deliveries</i>	163
14. <i>Commodity rates</i>	186
15. <i>Special truck for handling logs</i>	194
16. <i>Mileage scale of rates</i>	200
17. <i>A page from the Household Goods Tariff</i>	201
18. <i>Proposal for rate change</i>	216
19. <i>The area covered by the Middle Atlantic States Motor Carrier Conference, Inc.</i>	219
20. <i>Portion of a rate docket</i>	221
21. <i>Portion of a disposition advice</i>	222
22. <i>Title page of tariff</i>	225
23. <i>Table of contents of a tariff</i>	227
24. <i>Page from tariff showing rules and regulations</i>	228
25. <i>Commodity index of tariff</i>	229
26. <i>Page from tariff showing commodity rates</i>	230
27. <i>Page showing class rate scale numbers</i>	231
28. <i>Page showing class rates</i>	233
29. <i>Page showing commodity multi-minima rates</i>	235
30. <i>Pick-up order</i>	238
31. <i>Copy of load report</i>	241
32. <i>Uniform straight bill of lading</i>	242

FIGURE	PAGE
33. <i>Uniform order bill of lading</i>	244
34. <i>Uniform through export bill of lading</i>	246
35. <i>Freight bill</i>	249
36. <i>Freight bill for order bill of lading shipments</i>	249
37. <i>Form to be filled out by customer seeking credit privileges</i> ...	250
38. <i>Statement sent when payment has been delayed</i>	251
39. <i>Credit memorandum</i>	252
40. <i>Form of letter</i>	253
41. <i>Letter used when returning check to shipper</i>	254
42. <i>Notice of debit</i>	255
43. <i>Correction record</i>	256
44. <i>"Through long distance" or "Truck log"</i>	257
45. <i>Form to record charges collected by drivers</i>	258
46. <i>Form used for tracing shipments</i>	259
47. <i>Form used for presentation of loss and damage claims</i>	260
48. <i>Acknowledgment of receipt of claim</i>	261
49. <i>Shipper's standard form for handling concealed loss and damage claims</i>	262
50. <i>Consignee's standard form for handling concealed loss and damage claims</i>	263
51. <i>Report of loss or damage to freight inspected after delivery</i> ...	264
52. <i>Platform manager's report of damaged merchandise received at terminal</i>	265
53. <i>A tractor semi-trailer unit loading at a city terminal</i>	269
54. <i>Three semi-trailers and one tractor</i>	271
55. <i>Fork truck handling warehouse-type pallets</i>	272
56. <i>Fork truck handling sling-type pallets</i>	273
57. <i>Industrial-type tractor and trailers at a terminal</i>	277

CHAPTER I

Organization and Management of a Motor Carrier

Need for a well-planned organization. With the establishment of the motor truck as an accepted means of transportation, and with most of the early equipment and operating difficulties solved or well on the road to solution, increasing attention is being given to the organization of the motor carrier and its management. Because of severe competition from the railroads and the decline in net revenues, good management is necessary to assist the carriers in decreasing their costs and increasing their services to the shipping public, and also to sell these services effectively. To this end it is essential that the machinery of the organization function in all of its departments with the least conflict, duplication, and waste, and with the maximum effectiveness.

An organization may be planned carefully and may appear perfect on paper, but the results will not be satisfactory in terms of profits, the true measure of organization efficiency, unless it is well managed. The greatest profits go to those operators who manage their business the best: those who give recognition to the methods which have proved to be the most productive of profits in managing a transportation organization.

The executives in all successful industrial companies make use of the best methods and most modern equipment to get the best results from their respective managerial abilities. The same is true of the better-managed motor transportation agencies. Such organizations are constantly on the alert for new ways of reducing costs and increasing traffic.

Analysis of many transportation organizations, all the way from a one-man trucking company to a large railroad system, shows that the management methods needed to put most motor truck organizations on a more profitable basis already exist. These methods have proved definitely successful and therefore are valuable guides to those who wish to improve the effectiveness of their

own organizations and have not the time to analyze motor transportation organizations throughout the country.

Many motor transportation organizations are more effective than railroad organizations because it is possible for the president and other officers, and frequently the owner, to know personally every traffic salesman and a great many, if not all, of the shippers. In one company, which operates over 400 motor trucks, the president knows all the traffic salesmen. He tells them of the plans of the organization and creates interest and enthusiasm in the work of the company. In addition, the president knows personally many of the shippers using the company's services—a decided factor in the success of the organization.

Organization flexibility. The crystallization of organization into rigid methods, practices, and points of view, which characterize many railroad organizations, must be avoided to obtain the best results. Flexibility has proved essential to the best profit results in any kind of business.

The writer, during the past thirty years, has seen many opportunities lost in transportation organizations because of the excessive centralization of authority. Costly decisions have been made because of incorrect and inadequate information.

A vast amount of valuable information in the minds of members of every organization is not utilized to the fullest extent unless the traffic salesmen, stenographers, clerks, and other employees are encouraged to use that which they know for the benefit of the organization. One way to abolish this waste is to pick good men and women for the various jobs and then minimize the amount of supervision they get from "the boss."

A rate clerk in one motor transportation company told the writer that he saw very little of his boss. The rate clerk was picked to do the job because he was considered competent, and then he was permitted to do his work without interference by the boss.

Contrasted with that example, we find men who, regardless of their lack of tariff and other experience, seem to think that because they are in charge of an organization, or a division of an organization, they must supervise every little detail. In the first illustration, the result was an effective and loyal organization, and in the latter case, inefficiency and a low state of morale.

Selection of personnel. The ability to manage the training of the personnel of an organization is an important consideration in