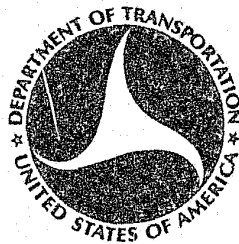


DOT P 5200.10

TRUCK TERMINAL CARGO SECURITY EFFECTIVENESS COMPARED TO COMPANY-WIDE SECURITY



MAY 1974

34937

U.S. Department of Transportation
Office of Transportation Security
Washington, D.C. 20591

~~FINAL REPORT~~

PHASE II

TRUCK TERMINAL CARGO SECURITY EFFECTIVENESS
COMPARED TO COMPANY-WIDE SECURITY -

Prepared for

U. S. Department of Transportation
Office of Transportation Security

NCJRS

JUN 29 1976

ACQUISITIONS

by

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INTRODUCTION

An August 1973 Department of Transportation publication, DOT P 5200.7, "A Cooperative Approach to Cargo Security in the Trucking Industry," documented a successful collective security program initiated by seven interstate motor carriers, each operating a terminal in the same high-loss area of northern New Jersey. As a group, the participating truck terminals reduced theft-related claims by 53.8% and total claims by 39.8%. There was an additional security expenditure of \$67,669 which produced a \$283,516 reduction in theft-related claims paid during 1972.

All participating terminals experienced reductions in both theft-related claims paid and in claims paid for all causes. This overall reduction in claims paid for all causes supports the conclusion that security programs directed primarily at theft-related losses can also have a favorable impact on a company's overall claim ratio.

An earlier DOT study, DOT P 5200.4, "Increased Profits Through Freight Claim Reduction," documented the fact that up to 50% of claim reductions can be applied directly to profits. In the case of the seven-terminal project (DOT P 5200.7) nearly \$110,000 was added to corporate profits of the parent companies as a result of the security improvements.

This report describes a follow-on study to compare the theft-related and total claim reduction experience of the seven trucking terminals in respect to their parent companies, during the same period. The objective of the study was to determine if the experience of the terminals was shared by the parent companies, to what degree and why.

The significant statistics are that while the seven terminals reduced their theft-related claims by 53.6%, the seven parent companies reduced these claims by only 11.6%. It is also noteworthy that the seven terminals reduced all claims by 39.8%, while the seven parent companies reduced all claims by only 13.8%. The seven trucking terminals which participated in the cooperative security program reduced theft claims by about five times more and total claims by about three times more than the parent companies.

The Department of Transportation believes that this report gives further dramatic evidence that good cargo security is a practical and cost-effective means to increase company profits. The claim reductions experienced by the seven parent companies were consistent with an overall trend toward claim reduction throughout the trucking industry during 1972.

However, the dramatic reduction in theft claims paid at the seven terminals, by a factor of nearly five times that of the parent companies' experience, can only be attributed to the improved security program. In fact, in most cases the claim reductions achieved by the participating terminal account for a large measure of the reported company-wide improvements in claim reductions.

Certainly, participation in the seven-terminal project was a positive expression of the awareness and commitment of top management at the parent companies to specific theft-related claim reduction programs at high-loss terminals. We can only conjecture as to the amount of additional profit that would have been earned by the participating companies had improvement in security been implemented system wide.

CHAPTER I
EXECUTIVE SUMMARY

During 1972, Executive Services, Inc. (ESI) contracted with seven trucking terminals to provide security services. The services provided included an initial security survey, recommendations for improved security, special services such as background investigations and surveillance, continued security management and consulting, and, where appropriate, guard service.

The Department of Transportation (DOT) contracted with ESI to collect operating and claims data from the terminals and to analyze the data to determine the effectiveness and cost benefits of the added security.

As reported by ESI in the Phase I Final Report (Report No. DOT P 5200, 7), the seven terminals spent \$67,669 for added security and saved \$283,516 in theft-related claims (\$295,442 in all claim categories). For purposes of this report, theft-related claims include claims paid for shortages, theft, pilferage and hijacking. Total claims (or all claims) include theft-related claims paid as well as claims paid for all other causes of loss, i. e., damage, wreck or catastrophe, delay, and loss due to heat or cold. Details for individual companies noting how these savings were achieved are given in the Phase I report.

The purpose of Phase II was to relate the impact of improved security operations at the seven terminals to company-wide operations of their respective parent companies. This report presents comparisons of the reductions in theft-related claims and in claims for all causes as achieved by each terminal to those achieved by the parent company.

The collective results of the improved security at the terminals are dramatic and can be summarized as follows:

- o The terminals reduced theft-related losses five times more than the parent companies.
- o The terminals reduced all claims three times more than the parent companies.
- o The terminals reduced their claim ratio by at least 10 times the national average.
- o The participating companies increased net profits by up to \$110,000, after taxes and expenses associated with security improvements.

It can be concluded that the improved terminal security directly reduced theft-related claims and claims for all causes, making additional funds available for other needs or producing greater profits. The terminals undertook action programs to improve security; the parent companies did not. The terminals significantly

reduced outlays for claims; the parent companies did not. Data to support these conclusions are presented in the remainder of this report.

CHAPTER 2

CLAIM REDUCTIONS ACHIEVED BY THE TERMINALS AND PARENT COMPANIES

Table I summarizes the change in theft-related claims and claims paid for all causes for the seven terminals and the seven parent companies. Throughout this report changes in claims, claim ratios and other parameters are calculated as the value in 1971 minus the value in 1972. Thus, if the value decreased, the change is shown as a negative number. These data show that, as a group:

- o The seven terminals reduced theft-related claims by \$283,516 (53.6%).
- o The seven parent companies reduced theft-related claims by \$228,400 (11.6%).
- o The seven terminals reduced all claims by \$295,442 (39.8%).
- o The seven parent companies reduced all claims by \$592,200 (13.8%).

Collectively, the terminals reduced theft-related claims and all claims more than the parent companies. Most of the reduction was achieved in theft-related claims:

- o The terminals reduced theft-related claims about five times more than the parent companies.

- o The terminals reduced all claims about three times more than the parent companies.

The initial thrust of the improved security at the terminals was to reduce theft losses -- this was effective. The improvements in security also helped reduce claims for other causes. The parent companies, without formal programs to improve security, did not perform as well as the terminals.

Table 1. Comparison of Claim and Theft-Related Losses of the
7 Terminals and 7 Parent Companies

	ALL CLAIMS 1971	ALL CLAIMS 1972	71-72 CHANGE		THEFT CLAIMS 1971 (Note 1)	THEFT CLAIMS 1972 (Note 1)	71-72 CHANGE	
			AMOUNT	%			AMOUNT	%
TERMINAL TOTAL (Table A.1)	\$741,895	\$446,453	-\$295,442	-39.8%	\$527,409	\$243,893	-\$283,516	-53.6%
TERMINAL AVERAGE (Table A.1)	\$105,985	\$63,779	-\$42,206	-39.8%	\$75,344	\$34,842	-\$40,502	-53.6%
PARENT COMPANY TOTAL (Table A.3)	\$4,277,000	\$3,684,800	-\$592,200	-13.8%	\$1,970,200 (Note 2)	\$1,741,800 (Note 2)	-\$228,400	-11.6%
PARENT COMPANY AVERAGE (Table A.3)	\$611,000	\$526,400	-\$84,600	-13.8%	\$328,400 (Note 2)	\$290,300 (Note 2)	-\$38,100	-11.6%

Note 1: Theft (Theft-Related) Claims defined as all shortage, known theft and pilferage, and hijacking.

Note 2: Excludes company TWO. See Appendix for further information.

CHAPTER 3

COMPARISON OF TERMINAL AND PARENT COMPANY IMPROVEMENTS TO THE NATIONAL AVERAGE

During 1971 and 1972, there was a general reduction in claims throughout the trucking industry. Some of the claim reduction achieved by the terminals and their parent companies can be attributed to the industry-wide reduction. Table 2 compares the change in claim ratio to the national average.

- o Nationally, the claim ratio reduction ranged between 0.03 to 0.12 percentage points.
- o The terminals reduced their claim ratio by at least 10 times the national average.
- o The parent companies reduced their claim ratio by at least three times the national average.

Two sources were used to determine the national average. The Quarterly Loss and Damage Reports submitted by Carriers to the Interstate Commerce Commission (ICC) shows a 1971-1972 claim ratio reduction of 0.03 percentage points (from 1.12 to 1.09). Data for 1971 includes only the fourth quarter, the first quarter for which reports were filed. The second source, "General Freight Analysis" (GFA) published by the American Trucking Associations (ATA) shows a national claim ratio reduction of 0.12 percentage points (from 1.41 to 1.29). In this source only data for the first

three quarters of 1972 were available at the time of publication. The difference between the sources is primarily due to different treatment of insurance, salvage and interline claims. Both sources indicate that the national claim ratio was reduced in 1972.

Table 2. Terminal, Parent and National Reduction in Claim Ratio, 1971-1972

	1971			1972			71-72 CHANGE IN CLAIM RATIO
	REVENUE (Millions)	TOTAL CLAIMS (Thousands)	AVERAGE CLAIM RATIO (%)	REVENUE (Millions)	TOTAL CLAIMS (Thousands)	AVERAGE CLAIM RATIO (%)	
TERMINALS	\$25.6	\$741.9	2.90	\$26.7	\$446.5	1.67	-1.23
PARENT COMPANIES	\$235.8	\$4,277.0	1.81	\$256.4	\$3,684.8	1.44	-0.37
NATIONAL (QLD Reports) (1600 Carriers)	\$3,888.2 (Note 1)	\$43,368.3 (Note 1)	1.12 (Note 1)	\$11,135.1	\$121,002.5	1.09	-0.03
NATIONAL (ATA, GFA) (500 Carriers)	\$7,249.1	\$101,905.0	1.41	\$6,007.3 (Note 2)	\$77,544.3 (Note 2)	1.29 (Note 2)	-0.12

Note 1: Fourth Quarter only

Note 2: First, Second and Third Quarters only

CHAPTER 4

COMPARISON OF INDIVIDUAL TERMINALS TO PARENT COMPANIES

With few exceptions, the terminals, individually, reduced claims and theft claims more than their respective parent companies. Figures 1 and 2 illustrate the reductions achieved by the terminals and their parent companies.

- o All terminals (except No. FOUR) reduced claims more than their parent company.
- o All terminals (except No. SIX) reduced theft-related claims more than their parent company.
- o All terminals (except No. SIX) reduced theft-related claims by at least twice as much as their parent company. Terminal FOUR fell just short of this performance level. Although detailed theft claim data was not available for terminal TWO, the dramatic reduction in this terminal's claim ratio (Chapter 5) clearly points to significant reduction in theft-related claims.

The comparisons shown in Figures 1 and 2 are made on the basis of percentage reductions. The volume of business at the terminals is generally much smaller than the company-wide volume, so that comparison of absolute dollar reductions is meaningless.

Terminal FOUR discontinued the added security after seven months; this may account for the smaller improvement relative to the parent company. Terminal SIX and the parent company enjoyed a very low claim ratio and had little theft before the improved security was added. They chose to implement the additional security to assure continued good performance. Thus, it is not surprising that their improvement was not as dramatic as that of the other terminals. Note that in most categories of evaluation, the performance of terminal SIX is very close to that of the parent company.

It is also interesting to note that company ONE apparently experienced a company-wide increase in claims and theft but that terminal ONE showed dramatic improvement. This indicates that strong local security and management can reduce claims and theft even in a generally poor company-wide security environment.

Percent Change in Claims

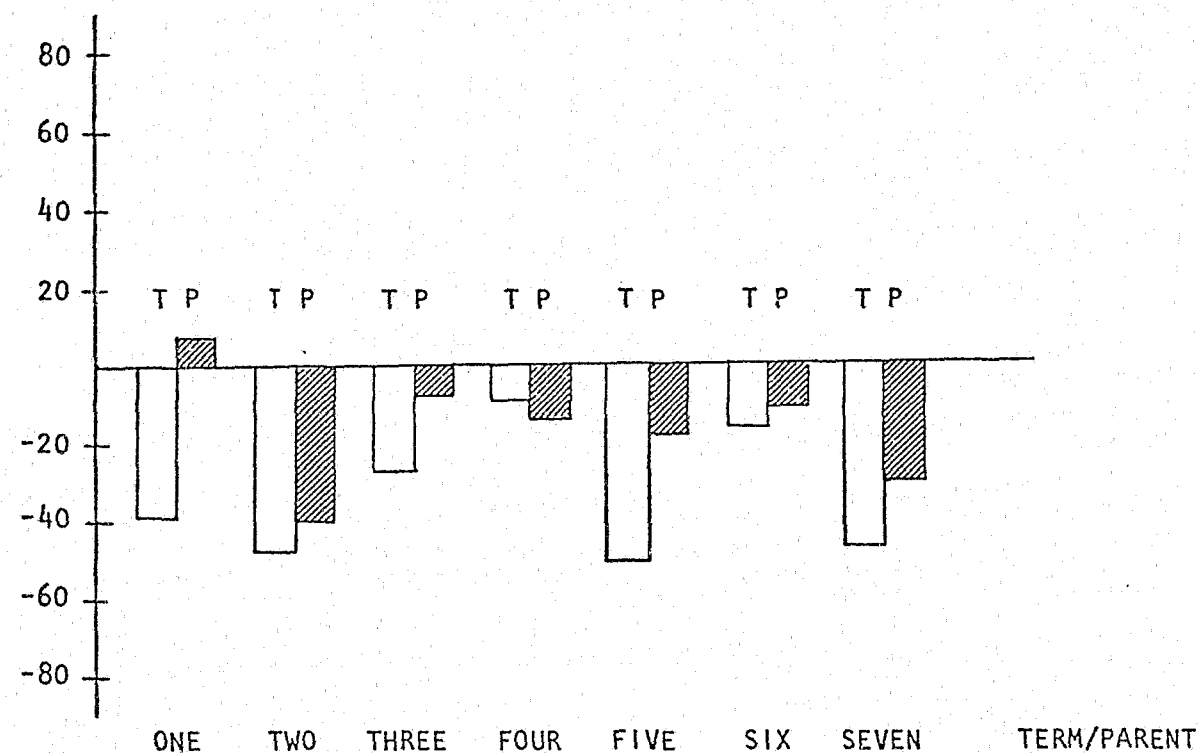


Figure 1. Change in Claims all causes at Terminal (T) and Parent Company (P), 1971-1972 (See Table A.1)

Percent Change in Theft-Related Claims

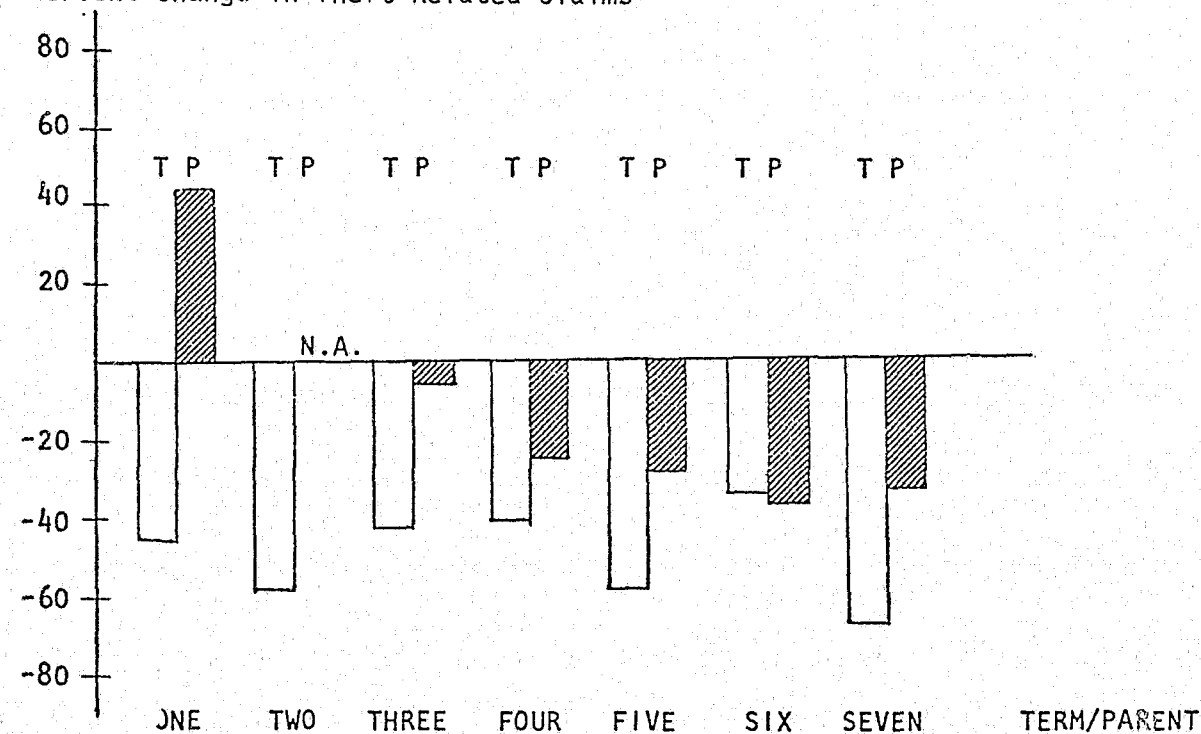


Figure 2. Change in Theft-Related Claims at Terminal (T) and Parent Company (P), 1971-1972 (See Table A.3)

CHAPTER 5

COMPARISON OF TERMINAL AND PARENT COMPANY CLAIM RATIOS

Figure 3 compares the individual terminal reduction in claim ratio to that of their parent company. The data are tabulated in Table A.5.

- o All terminals reduced their claim ratio more than their parent company.
- o With the exception of terminal FOUR, all terminals reduced their claim ratio by at least twice as much as their parent company. Terminal FOUR fell just short of this performance level.

Percent Change in Claim Ratio

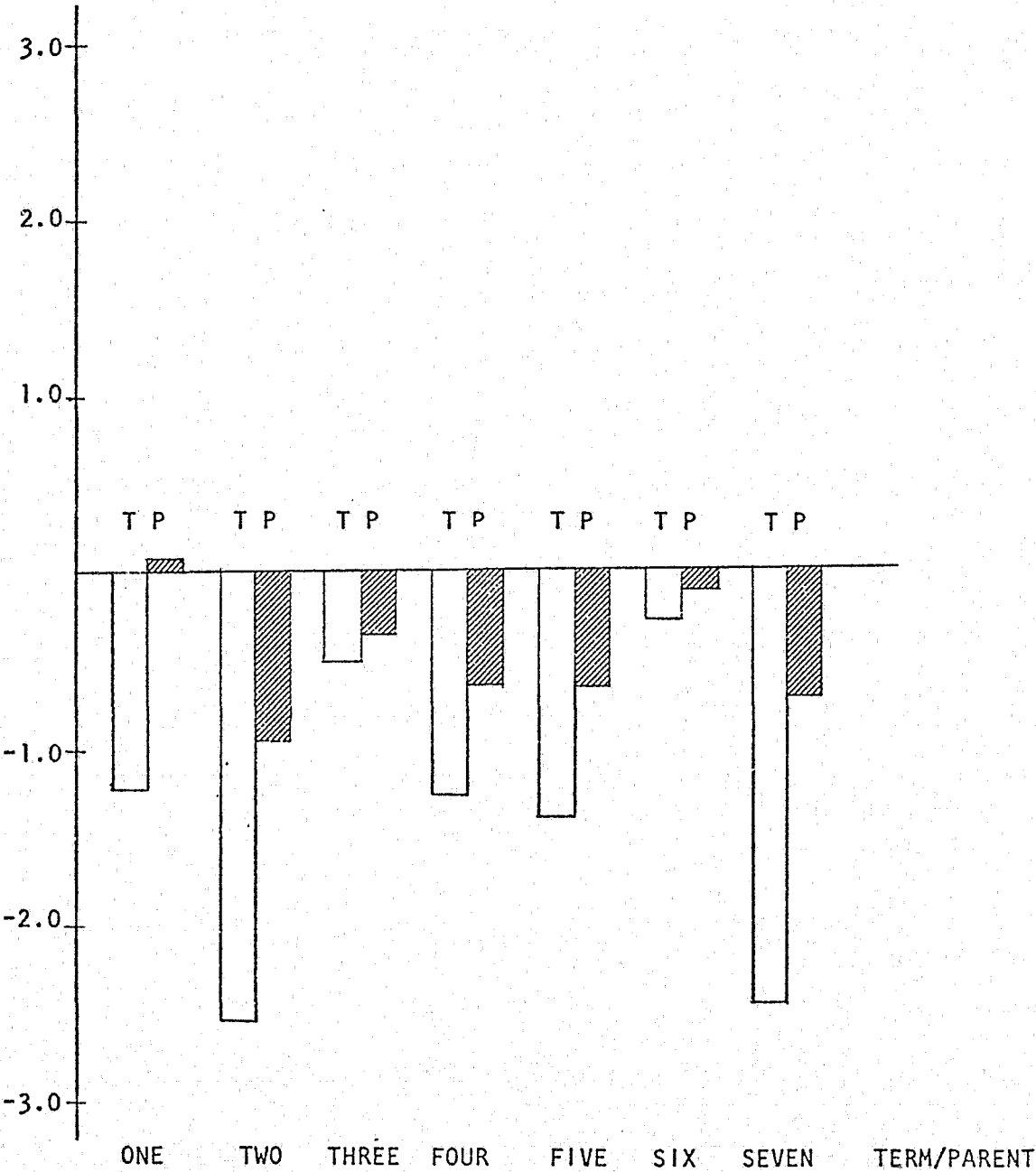


Figure 3. Comparison of Terminal (T) and Parent Company (P) Change in Claim Ratio, 1971-1972

COMPARISON OF TERMINAL AND PARENT COMPANY THEFT-RELATED CLAIMS

Figure 4 compares the reduction in the amount of theft-related losses achieved by terminals and their parent companies. Theft-related claims paid for CY 1971 and 1972 are compared. The data are tabulated in Table A.6.

- o All terminals reduced the amount of theft-related claims paid by significantly more than their parent company.

Note again that terminal ONE achieved a local reduction in theft while company-wide theft-related losses increased.

Percent Change in Theft-Related Claims

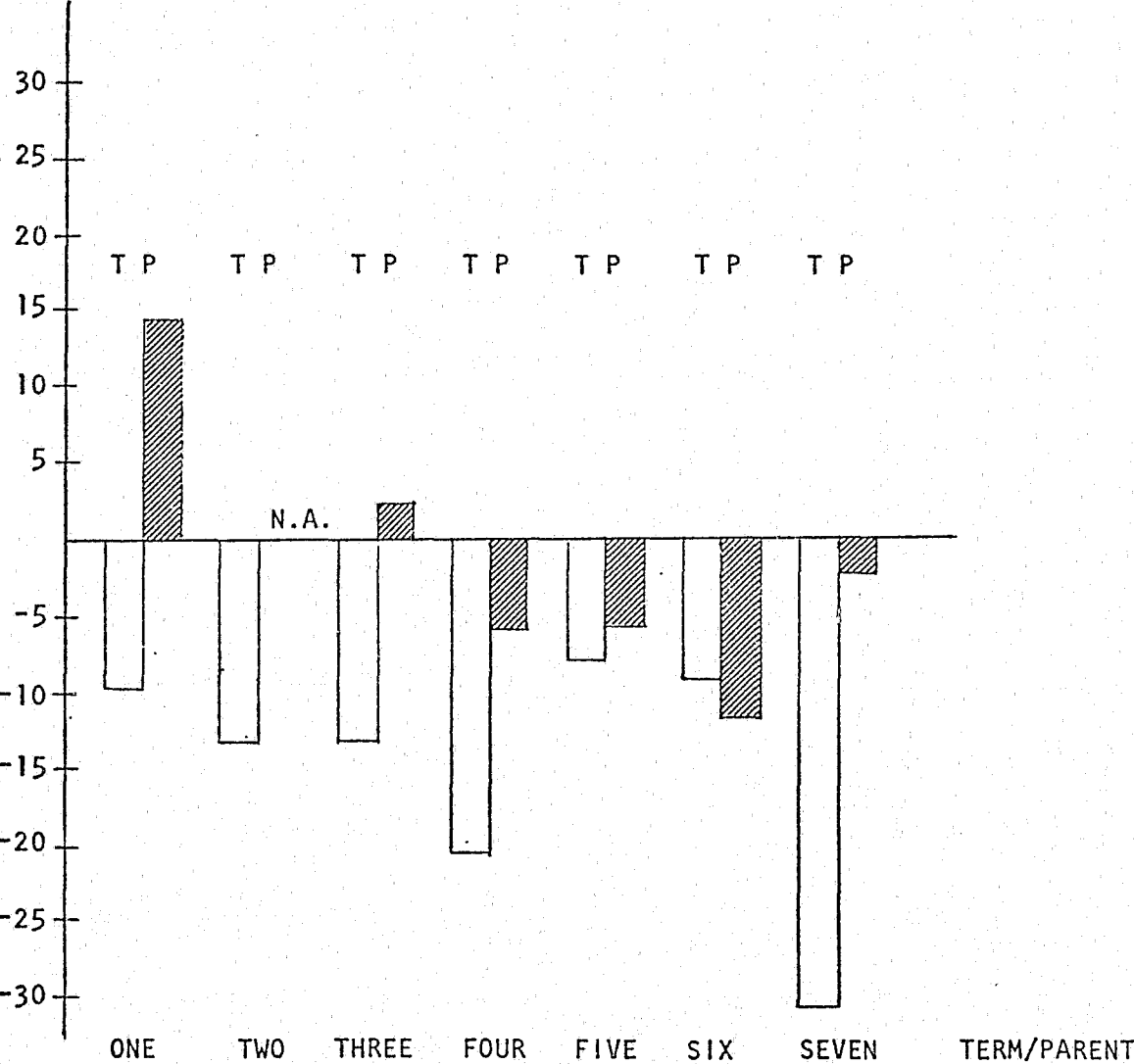


Figure 4. Comparison of Terminal (T) and Parent Company (P) Change in Theft-Related Claims Paid 1971-1972

CHAPTER 7

CONCLUSIONS

Each of the terminals implemented security improvements during 1972. The initial thrust of the added security was directed at reducing theft losses and these losses were dramatically reduced. The security program also reduced claims for all other causes of loss and damage.

- o The terminals spent \$67,669 and experienced a reduction of \$295,442 in total claims; most of this reduction (\$283,516) was for theft-related claims.
- o The terminals reduced theft-related claims by 53.6%.
- o The terminals reduced total claims by 39.8%.
- o Collectively, the reduction in claims resulted in increased corporate profits of up to \$110,000 after taxes and expenses for security improvements.

Most of the parent companies did not improve security and did not achieve as much in total claims and theft-related claim reductions. The terminal claim reductions account for a large part of the reported company-wide improvements in claim reductions.

- o The parent companies reduced theft claims by 11.6%.
- o The parent companies reduced total claims by 13.8%.

Nationally, claims for all causes were reduced during 1971 and 1972, but the reductions at the participating terminals were at least 10 times the national average.

With few exceptions, the terminals reduced claims, claims ratio and amount of theft more than their respective parent companies.

Terminal FOUR did not reduce claims as much as the parent company, perhaps, because the added security was discontinued after seven months. Terminal SIX reduced claims and theft about as much as the parent company. Both entered this program with good security and low claims which were maintained through this test effort. Terminal ONE reduced claims and theft by strong local management, while the parent company experienced increases in both categories.

By all methods of comparison, the direct effect of improved security at the terminals is clearly demonstrated. Theft and theft-related losses were dramatically reduced. No hijacking or major theft occurred at any of the terminals during 1972. Claims from all other causes were also reduced. The parent companies did not implement improvements in security and achieved significantly less claim and theft reduction.

APPENDIX
SUMMARY OF BASIC CLAIM AND THEFT DATA
1971 - 1972

The basis for evaluating terminal and parent company performance was to compute changes in total claim payments and payments for theft-related claims. Changes in these costs were computed for 1972 compared to 1971.

Terminal claim and revenue data were collected by ESI from terminal management during Phase I of the study. Parent company data were collected by DOT from company management and given to ESI.

Table A.1 summarizes total claim costs, theft-related claim costs and changes in these costs for the seven terminals.

Table A.2 shows terminal revenue, claim costs, claim ratio, theft claim costs and the percentage of total claims which were theft-related.

Tables A.3 and A.4 present corresponding company-wide data.

Table A.5 is a tabulation of claim ratios and changes in claim ratio for the terminals and the parent companies.

Table A.6 is a tabulation of amount of theft and change in amount of theft for the terminals and parent companies.

The terminal data in Tables A.1 and A.2 are complete and believed to be accurate. They were compiled on a continuing basis during 1972 and were checked and verified by terminal management prior to publishing the Phase I report.

The company data in Tables A.3 and A.4 are not as complete. Management for Company TWO could not furnish accurate theft data for 1971. ESI checked their fourth quarter 1971 Quarterly Loss and Damage Report (QLDR) hoping that this data might be extrapolated, but data in that report was not complete. Company THREE's 1971 theft data was extrapolated from their fourth quarter QLDR, thus it is not as accurate as is desired.

Data in Tables A.5 and A.6 were compiled from the data in the previous tables.

The accuracy of data from which the national average claim ratios for 1971 and 1972 were determined is discussed in Chapter 3 of the Report.

Table A.1 Terminal Cargo Claim and Theft Data, 1971 and 1972

TERMINAL	ALL CLAIMS. 1971	ALL CLAIMS 1972	71-72 CHANGE		*THEFT CLAIMS 1971	*THEFT CLAIMS 1972	71-72 CHANGE	
			AMOUNT	%			AMOUNT	%
ONE	\$184,416.	\$111,493	-\$72,923	-39.5%	\$149,377	\$80,163	-\$69,214	-46.3%
TWO	\$166,815	\$87,771	-\$79,044	-47.5%	\$105,093	\$43,886	-\$61,207	-58.2%
THREE	\$117,000	\$84,550	-\$32,450	-27.7%	\$74,880	\$43,121	-\$31,759	-42.4%
FOUR	\$42,174	\$38,214	-\$3,960	-9.4%	\$25,304	\$14,903	-\$10,401	-41.4%
FIVE	\$52,706	\$25,667	-\$27,039	-51.3%	\$30,306	\$12,782	-\$17,524	-57.8%
SIX	\$15,897	\$13,446	-\$2,451	-15.4%	\$6,438	\$4,249	-\$2,189	-34.0%
SEVEN	\$162,887	\$85,312	-\$77,575	-47.6%	\$136,011	\$44,789	-\$91,222	-67.0%
TOTAL	\$741,895	\$446,453	-\$295,442	-39.8%	\$527,409	\$243,893	-\$283,516	-53.6%
AVERAGE	\$105,985	\$63,779	-\$42,206	-39.8%	\$75,344	\$34,842	-\$40,502	-53.6%

*Theft - All shortages, known theft and pilferage, and hijackings

Table A.2 Terminal Claim Ratio and Amount of Theft Data, 1971-1972

TERMINAL		REVENUE (Millions)	NET CLAIMS (Thousands)	CLAIM RATIO (%)	THEFT CLAIMS (Thousands)	% OF CLAIMS WHICH WERE THEFT-RELATED
ONE	71 72	\$5.5 5.2	\$184.4 111.5	3.35 2.14	\$149.4 80.2	81.0 71.9
TWO	71 72	3.5 3.9	166.8 87.8	4.77 2.25	105.1 43.9	63.0 50.0
THREE	71 72	6.2 6.2	117.0 84.6	1.89 1.36	74.9 43.1	64.0 51.0
FOUR	71 72	3.2 3.6	42.2 38.2	1.32 1.06	25.3 14.9	60.0 39.0
FIVE	71 72	2.1 2.3	52.7 25.7	2.51 1.12	30.3 12.8	57.5 49.8
SIX	71 72	1.8 2.1	15.9 13.4	0.88 0.64	6.4 4.2	40.5 31.6
SEVEN	71 72	3.3 3.4	162.9 85.3	4.94 2.51	136.0 44.8	83.5 52.5

Table A.3 Parent Company Cargo Claim and Theft Data, 1971-1972

PARENT COMPANY	ALL CLAIMS 1971 (Thousands)	ALL CLAIMS 1972 (Thousands)	71-72 CHANGE		THEFT CLAIMS 1971 (Thousands)	THEFT CLAIMS 1972 (Thousands)	71-72 CHANGE	
			AMOUNT (Thousands)	%			AMOUNT (Thousands)	%
ONE	\$1046.9	\$1109.5	+\$62.6	+6.0%	\$417.6	\$601.8	+\$184.2	+44.1%
TWO	362.4	219.4	-143.0	-39.5%	N.A.	159.6	--	--
THREE	230.0	209.7	-20.3	-8.8%	135.2	128.2	-7.0	-5.2%
FOUR	646.5	557.8	-88.7	-13.7%	316.7	237.0	-79.7	-25.2%
FIVE	1316.5	1089.2	-227.3	-17.3%	675.7	489.4	-186.3	-27.6%
SIX	139.0	123.4	-15.6	-11.2%	63.8	41.6	-22.2	-34.8%
SEVEN	535.7	375.8	-159.9	-29.8%	361.2	243.8	-117.4	-32.5%
TOTAL	\$4277.0	\$3684.8	-\$592.2	-13.8%	\$1970.2*	\$1741.8*	-\$228.4*	-11.6%*
AVERAGE	\$611.0	\$526.4	-\$84.6	-13.8%	\$328.4*	\$290.3*	-\$38.1*	-11.6%*

*does not include Company Two

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Table A.4 Parent Company Claim Ratio and Amount of Theft Data, 1971-1972

PARENT COMPANY		REVENUE (Millions)	NET CLAIMS (Thousands)	CLAIM RATIO (%)	THEFT CLAIMS (Thousands)	% OF CLAIMS WHICH WERE THEFT-RELATED
ONE	71 72	\$55.4 57.5	\$1046.9 1109.5	1.89 1.93	\$417.6 601.8	39.9 54.2
TWO	71 72	16.7 18.2	362.4 219.4	2.17 1.21	N.A. 159.6	-- 72.7
THREE	71 72	16.6 17.5	230.0 209.7	1.38 1.20	135.7 128.2	58.8 61.1
FOUR	71 72	43.4 45.8	646.5 557.8	1.49 1.22	316.7 237.0	49.0 42.4
FIVE	71 72	64.0 77.4	1316.5 1089.2	2.06 1.41	675.7 489.4	51.3 44.9
SIX	71 72	17.2 17.6	139.0 123.4	0.81 0.70	63.8 41.6	45.9 33.7
SEVEN	71 72	22.5 22.4	535.7 375.8	2.39 1.68	361.2 243.8	67.4 64.9

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Table A.5 Change in Terminal and Parent Company Claim Ratios, 1971-1972

TERMINAL OR COMPANY	TERMINAL			PARENT COMPANY		
	1971 CLAIM RATIO (Table A.2)	1972 CLAIM RATIO (Table A.2)	71-72 CHANGE IN CLAIM RATIO	1971 CLAIM RATIO (Table A.4)	1972 CLAIM RATIO (Table A.4)	71-72 CHANGE IN CLAIM RATIO
ONE	3.35	2.14	-1.21	1.89	1.93	+0.04
TWO	4.77	2.25	-2.52	2.17	1.21	-0.96
THREE	1.89	1.36	-0.53	1.38	1.20	-0.18
FOUR	1.32	1.06	-1.26	1.49	1.22	-0.67
FIVE	2.51	1.12	-1.39	2.06	1.41	-0.65
SIX	0.88	0.64	-0.24	0.81	0.70	-0.11
SEVEN	4.94	2.51	-2.43	2.39	1.68	-0.71
NATIONAL (see Table 2)	--	--	-0.03 to -0.12	--	--	-0.03 to -0.12

Table A.6 Change In Terminal and Parent Company Amount of Theft, 1971-1972

TERMINAL OR COMPANY	TERMINAL			PARENT COMPANY		
	1971 % OF CLAIMS FOR THEFT (Table A.2)	1972 % OF CLAIMS FOR THEFT (Table A.2)	71-72 CHANGE IN AMOUNT OF THEFT	1971 % OF CLAIMS FOR THEFT (Table A.4)	1972 % OF CLAIMS FOR THEFT (Table A.4)	71-72 CHANGE IN AMOUNT OF, THEFT
ONE	81.0%	71.9%	-9.1% pts.	39.9	54.2	+14.3% p
TWO	63.0	50.0	-13.0	N.A.	72.7	N.A.
THREE	64.0	51.0	-13.0	58.8	61.1	+2.3
FOUR	60.0	39.0	-21.0	49.0	42.4	-6.6
FIVE	57.5	49.8	-7.7	51.3	44.9	-6.4
SIX	40.5	31.6	-8.9	45.9	33.7	-12.2
SEVEN	83.5	52.5	-31.0	67.4	64.9	-2.5

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END