Part-Time Operator Assignment Methods

U.S. Department
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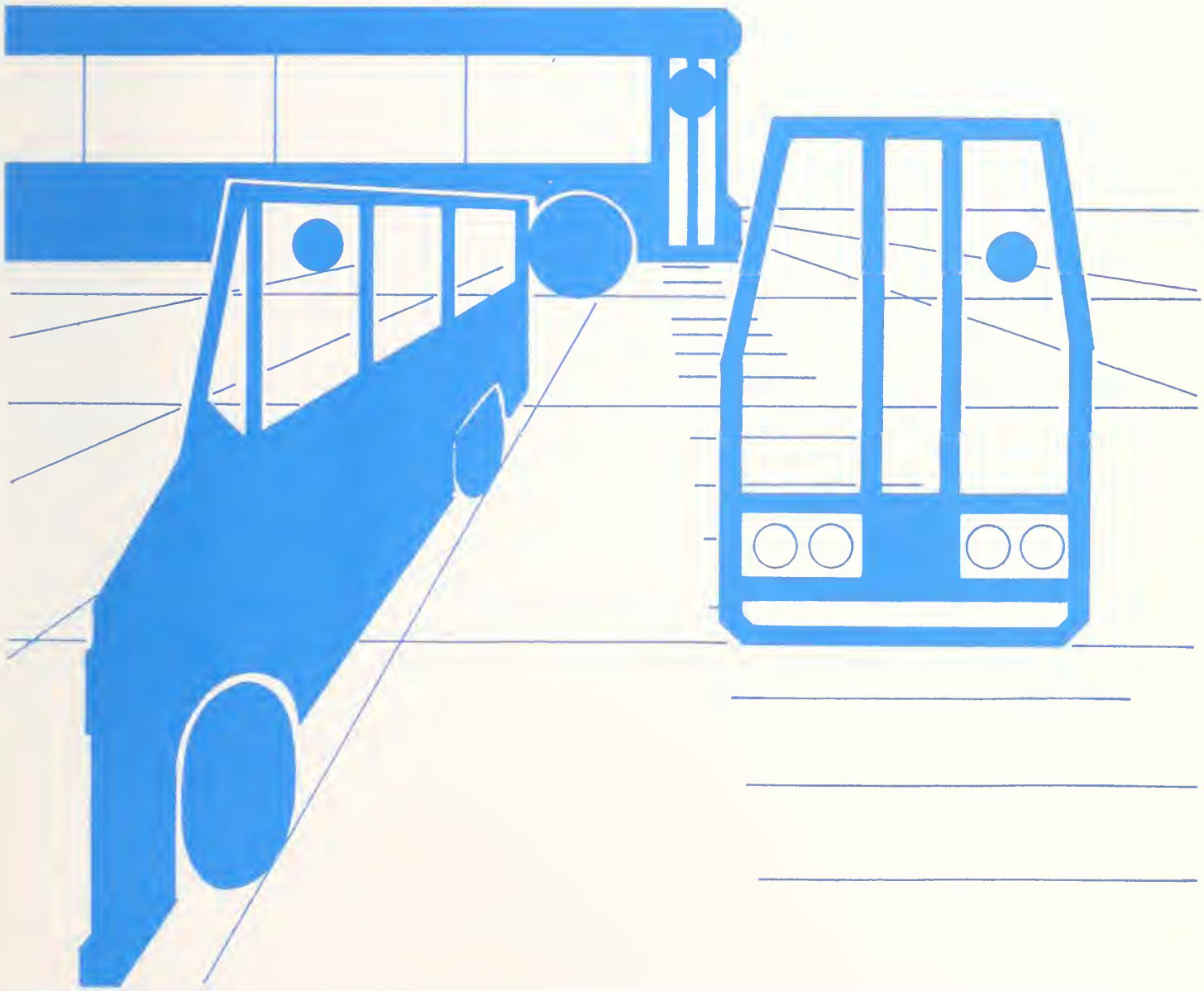
October 1984



UMTA Technical Assistance Program

Part-Time Operator Assignment Methods

Final Report
October 1984

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FOREWORD

The use of part-time operators (PTO's) to provide transit service in peak periods has received considerable attention in recent years. Since operator wages and benefits account for nearly one-half of total operating costs in many transit systems, many transit managers have looked to using PTO's as a way to reduce costs. The use of PTO's has become popular; three of every four transit systems are now permitted to use PTO's and one of every twenty operators in the United States is now a PTO.

The methods that are used to assign work to PTO's can greatly affect the size of cost savings that result from employing PTO's. Recognizing their importance, the UMTA Office of Methods and Support funded a study to identify and assess the different methods that are being used by transit systems. While no method emerged as the preferred approach, a number of important issues regarding the use of PTO's were identified in the study. We believe that the results of this study which are documented in this report are important to transit systems which use PTO's.

Further information on this UMTA project can be obtained from Brian McCollom, Office of Methods and Support (URT-41),(202) 426-9271.

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INTRODUCTION

The Importance of Part-Time Operators

Productivity in the transit industry is a subject of increasing attention as capital and operating costs have risen and fare box recovery ratios have fallen in recent years. Transit costs have risen faster than the economy in general. The cost of a motorbus rose by 202 percent, and diesel fuel for buses rose by 588 percent, between 1972 and 1980, compared to an increase of 97 percent in the U.S. Department of Labor Consumer Price Index, according to the American Public Transit Association (APTA).[1/] The fare box recovery ratio fell from 73.6 percent to 37.8 percent over the same period.

Transportation wages and fringe benefits account for nearly half of total operating costs. Transportation salaries and wages accounted for 32 percent, and fringe benefits another 13 percent, of total 1980 transit operating expenses, according to APTA. It is logical, therefore, to focus on controlling labor costs in the effort to improve transit productivity.

Operator labor costs are significantly effected by the work rule provisions that are a fundamental part of all operator-management contracts.[2/] These work rules were formulated in response to the peaked nature of transit demand. Approximately two-thirds of all daily transit passengers are carried during the morning and late afternoon work commuter peak periods. Less than half this number of passengers is carried in the early morning, mid-day and late evening periods.

1/ APTA 1981 Transit Fact Book.

2/ Chomitz, Kenneth M. and Lave, Charles A., "Forecasting the Financial Effects of Work Rule Changes," Transportation Quarterly, July, 1983.

This demand variation pattern is necessarily reflected in the service schedule. The numbers of vehicles (including spares) and operators (including absence and vacation extras) are determined by the peak period passenger demand. Of the total number of vehicles in service during the morning and late afternoon peak periods, nearly one-half are idle during the middle of the day. Similarly, twice as many operators are needed in the two peak periods compared to the base period. Only some operators can receive eight-hour straight assignments. The other operators are needed in the morning and afternoon peak periods, but not in between.

Peak period service can be provided in three ways: (1) by assigning operators to split runs which include both a morning and afternoon shift and a break in between; (2) by assigning operators to short tripper assignments; or (3) by working short trippers on an overtime basis. A "tripper" assignment is a short piece of work with no break between the sign-on and sign-off time, typically involving one to three hours work time. Each approach can be costly, involving spread premiums, unproductive guarantee pay, or overtime pay. Operators assigned to split runs may actually work only four to six hours but are faced with a twelve or thirteen-hour workday, since the morning peak period typically begins at 6 or 7 AM and the afternoon peak period ends at 6 or 7 PM. Operators receive additional "spread premiums" to compensate them for working such long days. They typically receive a one-half time premium for each hour worked beyond 10-1/2 to 13 hours after their first sign-on time. A maximum spread time may be specified in the labor agreement limiting the length of an operator's workday, and, therefore, the number of trippers that can be combined into split runs. Operators assigned to only one tripper run may work only two or three hours per day but are guaranteed a full day's pay, typically eight hours. Very short trippers may be worked by full-time operators on an overtime basis after completing the regular runs. These operators typically receive one and one-half pay for each hour worked at overtime.

The use of part-time operators (PTO's) can signficantly reduce the cost of providing peak period service, thereby improving labor productivity, for the following reasons:

1. PTO's are subject to less restrictive work rules than their full-time operator (FTO) counterparts. In nearly eight out of every ten transit systems, PTO's receive no guarantee pay per assignment.

The median guarantee at transit systems that have one is only two hours per assignment, compared to a guarantee of eight hours for FTO's.

2. PTO's typically receive no spread or overtime premiums. However, they may be subject to a maximum spread time, or effectively restricted to working only single trippers, by daily or weekly work hour limitations.

3. PTO's almost always receive lower fringe benefits than FTO's. A transit system can save on both fixed and variable fringe benefit costs if a PTO obviates the need to hire an additional FTO.

4. PTO's earn lower wages than FTO's at two out of every ten systems permitted to use FTO's.

Accordingly, the use of PTO has become widespread, including systems of all sizes, in all regions of the nation. Three out of four systems are currently permitted to use PTO's, and one out of every twenty operators nationwide is a PTO.

Study Purpose

The purposes of this study were to:

1. Examine the extent to which PTO's are currently used by the U.S. transit industry.

2. Identify methods currently used to assign PTO's to work assignments selected from existing schedules.

3. Identify methods currently used to consider PTO's in the preparation of transit schedules.

This study also attempted to identify how PTO utilization is affected in practice by changes to work rule and other provisions of labor agreements.

However, this study identified few agencies that have evaluated the effect on PTO use of such work rule provisions as maximum work hours, maximum spreads or types of work permitted. This study identified no agencies that have reported the results of experimental runcuts which explored available trade-offs involved in labor contract negotiations. Management's efforts have instead been directed toward increasing the limit on the maximum number of PTO's permitted, since the current limits are typically less than the number of PTO's needed to operate all part-time eligible pieces of work as currently defined by their labor agreements.

Factors such as the effect of PTO's on supervisory costs, union moral and solidarity, absenteeism, turnover and hiring costs, and the cost of the contract concessions necessary to win the right to use PTO's can potentially influence management's decisions on whether or not, and how, to utilize part-time operators. This study was not intended to address these issues. Neither are the direct costs savings attributable to reduced overtime, spread premium, guarantee and fringe benefit payments addressed in this study. These topics are potential subjects for future research.

Report Outline

Chapter 2 of this report describes the extent of PTO use in the U.S. transit industry, and provides a national perspective on the range and norms of contractual provisions affecting PTO's. Included in this section are discussions of the number of PTO's currently employed in the industry, PTO wages, PTO work rules and PTO fringe benefits.

Chapter 3 describes the rationale for selecting the sample of transit agencies contacted, interviewed and visited during the course of this study. Each agency is described in terms of operating characteristics, number of FTO's and PTO's employed, PTO wages and fringe benefits, PTO work rules and how PTO's are utilized. The methods used by these agencies to assign PTO's to pieces of work selected from existing runcuts, for incorporating PTO's into runcuttting procedures and for evaluating the effects of PTO utilization in response to labor agreement changes are briefly described in this section.

Chapter 4 describes the methodologies currently used by three transit systems to assign PTO's to pieces of work selected from existing runcuts. These methodologies are potentially transferrable to other transit systems that are currently permitted, or may be permitted in the future, to use PTO's. A critique of each method is provided which identifies the variables considered and the applicability to other agencies.

Chapter 5 describes how three agencies have modified existing runcuts in order to make the most cost-effective use of PTO's. Also, the automated runcutting procedures used to schedule both PTO's and FTO's at two agencies are presented.

Finally, Chapter 6 presents a summary of the state of PTO labor practice, describes additional methods or variables which could be considered and makes recommendations for future research.

NATIONAL PERSPECTIVE ON THE EXTENT OF PART-TIME OPERATOR USE

Introduction

This chapter describes the extent of part-time operator (PTO) use at U.S. transit systems and provides a national perspective on the range and norms of contractual provisions affecting PTO's. The sources of data that were used to prepare this section included Comparative Labor Practices Reports No. 3 (Number of Employees by Type) and 5 (Part-Time Operators) compiled by the American Public Transit Association (APTA), and telephone interviews and site visits conducted as part of this study. Report Number 3 reflects the number of employees as of November, 1982; Report Number 5 is current through March, 1983. These reports are based on a sample of 228 transit systems.

These data indicate that the use of PTO's is widespread, including systems of all sizes, in all regions of the nation. Operator union contracts contain the terms and conditions upon which PTO's may be employed. Three out of four contracts permit the use of PTO's, and one out of every 20 operators nationwide is a PTO. The typical PTO: (1) is a union member, (2) is paid at or near the full-time operator (FTO) wage scale, (3) is permitted to work a maximum of 25 to 30 hours per week, (4) is permitted to work only tripper service, (5) receives no guarantee per assignment or premium pay, and (6) receives reduced fringe benefits compared to their FTO counterparts. PTO seniority is generally not transferrable to FTO status. About half of the sample agencies require that all PTO's be laid off before any FTO's are laid off.

Number of PTO's

One hundred seventy-six, or 77 percent, of the 228 sample transit agencies are permitted to use PTO's. Of the 20 largest transit systems (measured in terms of number of FTO's employed), 13, or 65 percent, are permitted to use FTO's. The largest of these are the Southern California Rapid Transit District (SCRTD), the Washington Metropolitan Area Transit Authority (WMATA), the San Francisco Municipal Railway (Muni), the Massachusetts Bay Transportation Authority (MBTA) in Boston and A.C. Transit in Oakland, California. The nation's two largest agencies, the New York City Transit Authority (NYCTA) and the Chicago Transit Authority (CTA) are not permitted to use PTO's.

However, both use a limited number of part-time administrative staff, and the CTA uses 122 part-time maintenance employees.

The average size of systems permitted to use PTO's is 265 full- and part-time operators. The average size of systems prohibited from using PTO's is 741 operators overall, or 370 operators excluding the NYCTA, Manhattan & Bronx Surface Transit Operating Authority and the CTA. The largest numbers of PTO's are employed by Seattle Metro (915), the SCRTD in Los Angeles (416), the MBTA in Boston (266), WMATA in Washington, D.C. (263), San Francisco Muni (200), the Tri-County Metropolitan Transit District of Oregon (Tri-Met) in Portland (131) and the Metropolitan Transit Commission (MTC) in Minneapolis-St. Paul (129).

The 228 sample agencies employ á total of 80,729 FTO's and 4,402 PTO's. This number of PTO's is equivalent to 5.45 percent of the number of FTO's, or 5.17 percent of the total operator workforce. Therefore, one of every 20 operators nationwide is a PTO.

The 176 systems permitted to use PTO's employ a total of 42,173 FTO's and 4,402 PTO's. This number of PTO's is equivalent to 10.44 percent of the number of FTO's, or 9.45 percent of the total operator workforce. That is, nearly one out of every 10 operators at systems permitted to use PTO's are PTO's.

It is estimated that approximately 5,010 PTO's are permitted to be employed at the 64 agencies where the maximum number of PTO's permitted is expressed as a percentage of the number of FTO's. These agencies actually employ 3,032 PTO's, or 60.5 percent of the permitted number of PTO's.

Of the 176 contracts permitting the use of PTO's, 86 (or 49 percent) have no expressed provision limiting the number that can be employed. Sixty-four systems express the maximum number of PTO's permitted as a percentage of the number of FTO's. These percentages range from 5 to 100 percent, with an average of 14.82 percent. Seven systems express the maximum number of PTO's based on the number of scheduled runs, biddable runs, unsigned trippers or peak hour trippers. For example, the Dallas Transit System limits the number of PTO's to 80 percent of the number of "unsigned" trippers (i.e., the number of trippers eligible for, but not bid by FTO's). Fifteen systems specify an actual maximum number of PTO's. Eureka/Arcata, California; the

University of Massachusetts Transit Service in Springfield, Massachusetts; Blacksburg, Virginia and the Campus Bus Service in Akron, Ohio employ only PTO's.

PTO Wages

PTO's typically earn the same, or slightly lower wages than FTO's. Nearly eight out of every ten PTO's (79 percent) earn the same wages as FTO's. Six percent earn approximately 50 to 74 percent of FTO wages, and 14 percent receive between 75 and 99 percent of FTO wages. The lowest PTO wages are paid in Springfield, Missouri, and Newport News/Hampton, Virginia at 55 and 57 percent of FTO wages, respectively. The Bay Area Rapid Transit (BART) system is the only system identified that pays PTO's a higher wage than FTO's. BART PTO's receive 110 percent of the FTO wage rate.

PTO Work Rules

The use of PTO's can significantly reduce the cost of providing peak period service because they are subject to less restrictive work rules than their FTO counterparts. At nearly eight out of every ten transit systems, PTO's receive no guarantee per assignment. Sixteen percent receive guarantees of up to two hours, five percent are guaranteed two or to five hours and one percent are guaranteed more than five hours pay per assignment. The median PTO guarantee, where applicable is only two hours, compared with the typical eight hour daily guarantee received by FTO's.

Spread Premiums. PTO's typically do not receive spread premiums. The Central Contra Costa (California) Transit Authority was the only system identified that pays PTO's a one-half time spread premium after 10 hours, if the spread exceeds 12 hours. Spread premiums are not an issue at some systems since PTO's may be restricted to one-piece runs by contract (e.g., the SCRTD in Los Angeles), or a maximum daily work hour limitation effectively restricts PTO's to working one-piece runs.

Types of Work. Two-thirds (66 percent) of the sample agencies have no specified limitation on the types of work that may be performed by PTO's. Three-fourths (75 percent) of the other agencies limit PTO's to weekday, peak hour or school tripper service. The remaining agencies limit PTO's to weekday, school or other special assignments.

Maximum Hours. As shown in Table 1, the median value of the maximum number of hours per week that can be worked by PTO's is between 25 and 30 hours per week. Nearly one out of every four agencies have no work hour limitations.

PTO Fringe Benefits

Union Membership. PTO's almost always receive fewer fringe benefits than FTO's, as indicated in Table 2. At nearly nine out of every 10 transit agencies, PTO's are union members and are therefore represented and protected by grievance and arbitration procedures. However, seniority as a PTO is transferrable to full-time status at only three out of every 10 systems.

Layoffs. About four out of every 10 systems (42 percent) require that all PTO's be laid off before any FTO's are laid off. Most systems do not have such a lay off provision.

Transportation. About half of all transit systems grant FTO free transportation. About three-fourths of these agencies extend this privilege to PTO's and their dependents while the others limit it to PTO's only.

Other Benefits. Most transit systems do not grant sick leave, holiday, vacation, health-welfare insurance or retirement benefits to PTO's. Onefourth of all transit systems give PTO's full or reduced sick leave. About one-third of all transit systems give PTO's full or reduced holiday, vacation and retirement benefits. About four of every ten PTO's receive full or reduced health/welfare insurance benefits. About two-thirds of all agencies grant full or prorated uniform allowances to their PTO's.

TABLE 1
MAXIMUM PTO WORK HOURS PER WEEK[1/]

Maximum Work Hours Per Week	Number of Systems	Percent	Cumulative Percent
≤ 20	22	16.2	16.2
21-25	32	23.5	39.7
26-30	31	22.8	62.5
31-35	5	3.7	66.2
36-40	13	9.6	75.8
> 40	1	0.7	76.5
No Limit	32	23.5	100.0
Total	136	100.0	

Notes: 1/ Based on APTA Comparative Labor Practices Report Number 5 -- Part-Time Operators.

TABLE 2
SUMMARY OF PTO BENEFITS[1/]

PTO Benefit	Yes	No	Prorated Or Reduced Benefit	Total
Union Membership?	136 (87.2%)	17 (10.9%)	3 (1.9%)	156 (100.0%)
Seniority Transferable?	45 (28.8%)	111 (71.2%)	-- (--)	156 (100.0%)
Layout Provision?	65 (41.7%)	81 (51.9%)	10 (6.4%)	156 (100.0%)
Free Transportation?	58 (37.7%)	78 (50.6%)	18 (11.7%)	154 (100.0%)
Uniform Allowance?	68 (43.9%)	57 (36.8%)	30 (19.3%)	155 (100.0%)
Sick Leave?	20 (12.7%)	117 (74.6%)	20 (12.7%)	157 (100.0%)
Holidays?	27 (17.2%)	104 (66.2%)	26 (16.6%)	157 (100.0%)
Vacation?	27 (17.2%)	97 (61.8%)	33 (21.0%)	157 (100.0%)
Health/Welfare?	30 (19.1%)	94 (59.9%)	33 (21.0%)	157 (100.0%)
Retirement?	39 (24.8%)	105 (66.9%)	13 (8.3%)	157 (100.0%)

Notes: 1/ Based on APTA Comparative Labor Practices Report Number 5 -- Part-Time Operators.

STUDY METHODOLOGY

Introduction

This chapter describes the rationale used in this study to select a sample of transit agencies to contact regarding their PTO assignment, runcutting and contract evaluation methodologies. Each agency is described in terms of its operating characteristics, number of FTO's and PTO's employed, PTO wages and fringe benefits, PTO work rules and how PTO's are used. Those data indicate that the sample agencies are fairly representative of the national averages in terms of PTO wages and benefits and PTO work rules.

Sample Selection

The 24 transit systems listed in Table 3 were selected from the more than 200 systems listed in APTA Comparative Labor Practices Report Number 5: Part-Time Operators. An attempt was made to obtain a representative sample of transit systems based on: (1) the number of FTO's and PTO's employed and (2) geographic location. These selected systems generally employ 20 or more PTO's, and/or are permitted to employ a number of PTO's equal to at least 10 percent of all FTO's. These systems range in size from 60 to 4,249 FTO's, and from 14 to 590 PTO's. (One property -- the Greater Cleveland Regional Transit Authority (RTA) had no PTO's since all were laid off in May, 1982 when service was reduced.) Five systems are located in California, two each are located in Virginia, Michigan and Missouri, and one each is located in 12 other states and the District of Columbia. Five systems included in a PTO and fiscal organizational impact study presently being conducted at the University of California at Irvine were not included in this sample in order to avoid duplication of effort.

Representatives of each of the 24 sample agencies were contacted by telephone to determine the status of their PTO programs, and to determine if the methods they use to assign PTO's might be applicable to other transit systems. Sixteen of these agencies were selected to be interviewed based on these initial contacts. The results of interviews with operations, schedules and personnel department staff at these 16 agencies are summarized in Appendix B. Seven agencies with potentially transferrable assignment, runcutting and/or contract evaluation methodologies were visited by the project investigators. The findings of these visits are presented in detail in Chapters 4, 5 and 6,

TABLE 3
TRANSIT AGENCIES CONTACTED IN THIS STUDY

PROPERTY NAME	NUMBER OF FTO'S	NUMBER OF PTO'S	INITIAL CONTACT	TELE-PHONE INTER-VIEW	SITE VISIT
ANN ARBOR, MI.: AATA	80	19	X		
BOSTON, MASS: MBTA	1,533	266	X	X	
BALTIMORE, MD.: MTA	1,295	75	X		
CHAMPAIGN/URBANA, ILL.	61	26	X	X	
CLEVELAND RTA	1,198	0	X	X	
DALLAS TRANSIT SYSTEM	596	28	X	X	
DENVER RTD	851	25	X	X	
DES MOINES, IA.: MTA	104	34	X		
INDIANAPOLIS, IND.	292	22	X	X	
KALAMAZOO, MI.: MTS	62	18	X		
KANSAS CITY KCATA	405	47	X	X	X
LOS ANGELES: SCRTD	4,980	416	X	X	X
LOUISVILLE, KY/IND.	392	31	X	X	
MIAMI, FL.: METRO	1,020	3	X		
NEWPORT NEWS/HAMPTON, VA.	96	9	X		
NORFOLK/ PORTSMOUTH, VA.	235	40	X		
ST. LOUIS: BI-STATE	1,113	0	X		
S.F.: A.C. TRANSIT	1,445	0	X	X	X
S.F.: CCC TRANSIT AUTH.	60	36	X	X	X
S.F. MUNI RAILWAY	1,889	200	X	X	X
SAN JOSE, CAL.	1,139	44	X	X	X
SYRACUSE: CNY CENTRO	207	35	X	X	
TUSCON, AZ.	195	14	X	X	
WASHINGTON, D.C.: WMATA	2,773	263	X	X	X

respectively.

Operating Characteristics

Table 4 summarizes the operating characteristics of the 16 transit systems included in the telephone interview phase of this study. These characteristics illustrate the peaked nature of transit demand, and summarize the key work rule provisions governing the use of FTO's.

The peak-to-base service ratio ranges from 1.6 at the SCRTD in Los Angeles, Muni in San Francisco and the SCCTA in San Jose, California, to 3.2 at the Dallas Transit System. That is, there are approximately 60 to 220 percent more vehicles in service during peak periods than during the mid-day period at these sample agencies. As described in Chapter 1, this creates the need to cut split runs or trippers covering both peaks, or to work regular operators at overtime before or after they have completed their regular runs. This type of service is costly to provide because of the maximum spread, spread premium, overtime and daily guarantee work rule provisions governing the use of FTO's.

The maximum spread for FTO's is 12 or 13 hours at nine systems, thus limiting the number of split runs which can be operated by FTO's. There is no maximum spread time at five systems.

FTO's receive spread premiums after 10 hours at seven systems, after 10.5 to 11 hours at four systems and after 11.25 to 12 hours at five systems. Overtime premiums apply after eight hours work per day and/or 40 hours per week. In some cases, overtime applies after eight hours or after completion of a regularly assigned run. FTO's can receive both overtime and spread premiums at half of the sample agencies; the other half does not allow "pyramiding" of overtime and spread premiums. FTO's are generally guaranteed eight hours per day, and/or 40 hours per week, except at the Dallas Transit System where FTO's are guaranteed 78 hours pay every two weeks. The need to incur spread and overtime premiums, and guarantee pay, results in payment of more operator pay hours than work hours received. This is reflected in the pay-to-platform hour ratio, which ranges from 1.02 at Suntran in Tucson to 1.27 at the SCRTD in Los Angeles.

TABLE 4
OPERATING CHARACTERISTICS

PROPERTY NAME	NUMBER OF FTO'S	PEAK-TO-BASE RATIO	MAX SPREAD (HOURS) (1)	SPREAD PREMIUM THRESHOLD (HOURS) (1)	OT PREMIUM THRESHOLD (HOURS) (2)	OT AND SPREAD PENALTY?	FTO GUARANTEE /DAY (HOURS) (1)	PAY-TO-PLAT RATIO	TYPE OF RUNS		
									STRAIGHT	SPLITS	TRIPPERS
BOSTON, MASS: MBTA	1,533	2.5	13	10	8	YES	8	-	-	-	-
CHAMPAIGN/URBANA, ILL.	61	-	-	12	8/40	NO	8	-	-	-	-
CLEVELAND RTA	1,198	-	13	11	8/40	YES	8	-	389	405	12
DALLAS TRANSIT SYSTEM	596	3.2	13	12	8	NO	7.8	-	181	295	88
DENVER RTD	851	-	-	10.75	8/R/40	NO	8	-	-	-	182
INDIANAPOLIS, IND.	292	-	13	10	8/R/40	YES	8	-	-	-	-
KANSAS CITY KCATA	405	2.5	NL	11	8/R	YES	8	1.18	117	129	67
LOS ANGELES: SCRTD	4,980	1.6	NL	10	8	NO	8	1.27	-	-	-
LOUISVILLE, KY/IND.	392	-	13	11.25	8/R/40	NO	8	-	-	-	-
S.F.: A.C. TRANSIT	1,445	2.2	12	10	8/R	YES	8	1.13	456	322	351
S.F. MUNI RAILWAY (3)	1,889	1.6	12	10	8	NO	8	1.12	-	-	-
S.F.: CCC TRANSIT AUTH.	60	-	NL	12	10/40	YES	8	1.04	42	25	22
SAN JOSE, CAL.	1,139	1.6	12	10	8/R	NO	8	1.11	287	220	128
SYRACUSE: CNY CENTRO	207	-	13	10.5	R	YES	8	-	-	-	-
TUSCON, AZ.	195	1.7	NL	12	R	NO	8	1.02	86	71	28
WASHINGTON, D.C.: WMATA	2,773	-	NL	10	8/40	YES	8	-	-	-	-

NOTES: (1) REGULAR OPERATORS ONLY.
(2) KEY: 8 = 8 HOURS/DAY.
8/R = 8 HOURS/DAY OR RUN TIME.
8/40 = 8 HOURS/DAY AND 40 HOURS/WEEK.
8/R/40 = 8 HOURS/DAY OR RUN TIME, AND 40 HOURS/WEEK.
(3) MOTORBUS AND TROLLEYBUS OPERATIONS ONLY.
(4) " - ": DATA NOT AVAILABLE.
(5) NL: NO LIMITATION.

Number of PTO's

The use of PTO's is a very recent development at most of the 16 sample agencies (see Table 5). Three-fourths of the sample agencies were first permitted to use PTO's in 1980 or after. WMATA in Washington, D.C. and the SCRTD in Los Angeles were first permitted to use PTO's in 1978 and 1979, respectively. The Dallas Transit System has used PTO's for the last 12 years.

Eleven systems expressed the maximum number of PTO's permitted as a percentage of FTO employment. For these agencies, the percent of PTO's permitted ranged from seven to 15 percent, with an average of 11.7 percent. This compares with the national average of 14.8 percent. Indianapolis is limited to 30 PTO's, and Kansas City is limited to 80 PTO's or 10 percent of all work hours. FTO's can bid on all trippers at the Dallas Transit System, and PTO's are limited to 80 percent of the unsigned trippers. There is no expressed limit to the number of PTO's at Champaign/Urbana and at the Central Contra Costa County (California) Transit Authority (CCCTA).

The actual use of PTO's expressed as a percent of the FTO work force, ranges from 0 percent at the Cleveland RTA to 68.7 percent at the CCCTA. The Cleveland RTA has not employed PTO's since service was reduced and FTO's were layed off in May, 1982. The sample agencies employ approximately 76.1 percent of the permitted number of PTO's, or 82.4 percent excluding the Cleveland RTA. This compares with the national average of 60.5 percent.

PTO Wages and Fringe Benefits

The PTO wages and fringe benefits paid by the sample transit agencies are fairly representative of national averages. All sample PTO's are union members, except at the Dallas Transit System and SunTran in Tucson (see Table 6). Approximately 88 percent of the sample agencies grant PTO's free transportation and uniform allowances, compared with the national averages of 50 percent and 67 percent, respectively. Most sample agencies grant no sick leave, holidays, vacations, paid health/welfare insurance or retirement benefits. Only 13 to 19 percent of the sample agencies grant PTO's full or partial benefits. All of the sample PTO's agencies pay the same wages as FTO's with the exception of the Denver RTD where PTO's receive 80 percent of FTO wages.

TABLE 5
NUMBER OF PTO's

PROPERTY NAME	PTO's PERMITTED SINCE:	NUMBER OF PTO's	NUMBER OF PTO's	PERCENT PTO's PERMITTED	ACTUAL PERCENT PTO's	ACTUAL/ PERMITTED (PERCENT)
BOSTON, MASS: MBTA	3/82	994	203	NL	20.6%	NA
CHAMPAIGN/URBANA, ILL.	-	60	21	NL	35.0%	NA
CLEVELAND RTA (4)	1/1/80	1,198	0	10	0.0%	0.0%
DALLAS TRANSIT SYSTEM	1971	618	28	NA	4.5%	NA
DENVER RTD	3/1/82	900	23	15	2.6%	17.0%
INDIANAPOLIS, IND. (4)	-	292	22	NA	7.5%	73.3%
KANSAS CITY KCATA	1/82	355	52	NA	14.6%	65.0%
LOS ANGELES: SCRTD	1979	4,249	590	15	13.9%	92.6%
LOUISVILLE, KY/IND. (4)	-	392	31	10	7.9%	79.1%
S.F.: A.C. TRANSIT	6/81	1,398	42	10	3.0%	30.6%
S.F. MUNI RAILWAY	7/80	1,820	224	12	12.3%	102.6%
S.F.: GGC TRANSIT AUTH.	6/7/81	67	46	NL	68.7%	NA
SAN JOSE, CAL.	1980	660	80	10	5.7%	96.5%
SYRACUSE: CNY CENTRO	-	155	20	10	12.9%	129.0%
TUSCON, AZ.	1980	194	14	7	7.2%	103.1%
WASHINGTON, D.C.: WMATA (4)	8/26/78	2,773	263	15	9.5%	63.2%

NOTES: (1) NA: NOT APPLICABLE
(2) NL: NO LIMITATION.
(3) " - ": DATA NOT AVAILABLE
(4) NUMBER OF PTO's AND PTO's OBTAINED FROM APTA COMPARATIVE LABOR PRACTICES REPORT NUMBER 5.

TABLE 6
PTO WAGES AND FRINGE BENEFITS

PROPERTY NAME	TOP PAY RATE (% PTO)	FREE TRANSPORTATION	UNIFORM ALLOWANCE	SICK LEAVE	HOLIDAYS	VACATION	HEALTH/ WELFARE	RETIREMENT	UNION MEMBERSHIP?
BOSTON, MASS: MBTA	100	YES	YES	NO	NO	NO	NO	P	YES
CHAMPAIGN/URBANA, ILL.	100	NO	YES	P	NO	P	P	NO	YES
CLEVELAND RTA	100	YES	YES	NO	NO	NO	NO	NO	YES
DALLAS TRANSIT SYSTEM	100	YES	P	NO	NO	NO	NO	NO	NO
DENVER RTD	80	YES	P	NO	NO	NO	NO	NO	YES
INDIANAPOLIS, IND.	100	P	YES	NO	NO	NO	NO	NO	YES
KANSAS CITY KCATA	100	YES	YES	NO	NO	NO	NO	NO	YES
LOS ANGELES: SCRTD	100	YES	YES	NO	NO	NO	NO	NO	YES
LOUISVILLE, KY/IND.	100	YES	YES	NO	NO	NO	NO	NO	YES
S.F.: A.C. TRANSIT	100	YES	P	NO	NO	NO	NO	NO	YES
S.F.: CCC TRANSIT AUTH.	100	NO	NO	NO	NO	YES	NO	NO	YES
S.F. MUNI RAILWAY	100	YES	YES	P	P	P	P	P	YES
SAN JOSE, CAL.	100	YES	YES	P	P	P	P	P	YES
SYRACUSE: CNY CENTRO	100	P	P	NO	NO	NO	NO	NO	YES
TUSCON, AZ.	100	YES	NO	NO	NO	NO	NO	NO	NO
WASHINGTON, D.C.: WMATA	100	YES	YES	NO	NO	NO	NO	NO	YES

NOTES: (1) P: PRORATED OR REDUCED BENEFIT

PTO Work Rules

As shown in Table 7, seven of the sample agencies provide no guarantee per assignment to their FTO's. Those that do provide an average guarantee of 2:20 hours, compared with the typical eight-hour guarantee for FTO's. The CCCTA was the only system identified which pays a spread premium to PTO's. They pay a one-half time spread premium after 10 hours if the total spread exceeds 12 hours. Two-thirds of the agencies interviewed have no maximum spread for PTO work. Those that do have maximum PTO spreads which are comparable to those applicable to FTO's.

Three-fourths of the agencies interviewed restricted PTO's to some type of tripper service. Some were also allowed to perform other duties, such as extraboard and weekend work. Two agencies -- the MBTA in Boston and CCCTA -- apparently have no contractual limitations on the types of work that PTO's can perform. The sample agencies generally limited PTO's to 224 to 30 hours per week, with an average of 26.7 hours.

How PTO's Are Used

No two of the sample agencies utilize PTO's in exactly the same way, as indicated in Table 8. Some agencies utilize only PTO's on tripper assignments, while most use both FTO's and PTO's. The extraboard may be worked by FTO's only, PTO's only or both FTO's and PTO's. In cases where FTO's work some or all tripper assignments, some assignments may be assigned by the station dispatcher, bid on a daily overtime or quarterly basis, or some combination of the two.

The KCATA in Kansas City, the CCCTA in Walnut Creek, California and SunTran in Tucson operate all tripper service with PTO's. The other 13 agencies interviewed in this study operate tripper service with both FTO's and PTO's, since the numbers of PTO's are not sufficient to work all tripper service.

The KCATA operates 117 straight runs and 129 split runs with a total of 355 FTO's. The remaining 67 trippers are operated by 52 PTO's each of whom works no more than 25 hours per week.

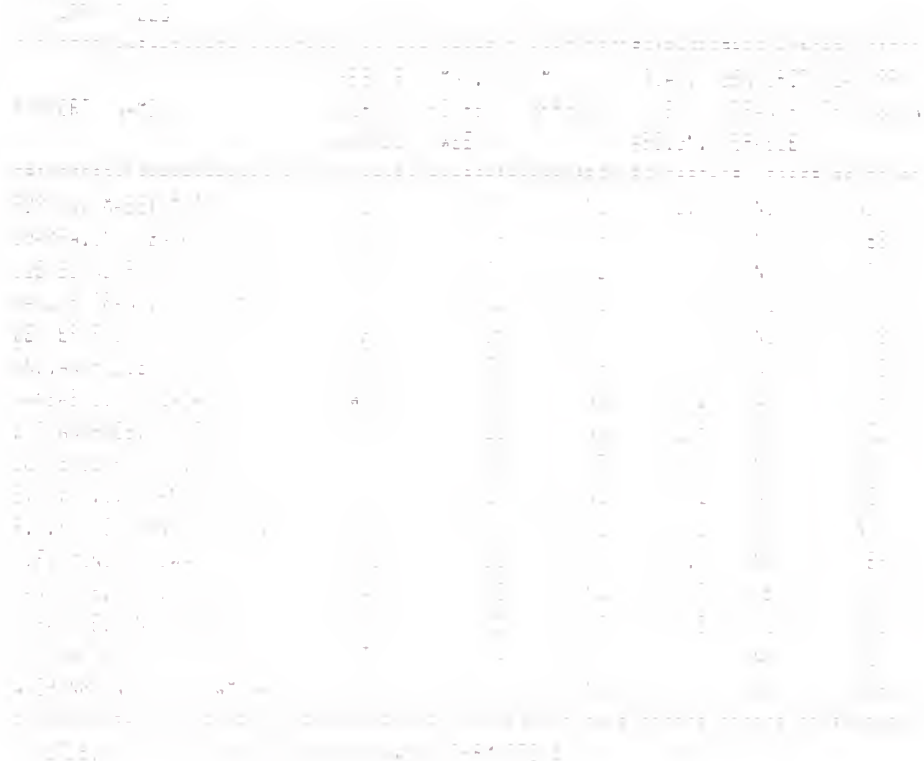


TABLE 8
HOW PTO's ARE USED

PROPERTY NAME	TRIPPERS WORKED BY		EXTRABOARD WORKED BY		
	PTO's ONLY	FTO's AND PTO's	FTO's ONLY	PTO's ONLY	FTO's AND PTO's
BOSTON, MASS: MBTA		X			X
CHAMPAIGN/URBANA, ILL.		X			X (4)
CLEVELAND RTA		X	X		
DALLAS TRANSIT SYSTEM		X	X		
DENVER RTD		X	-	-	-
INDIANAPOLIS, IND.	-	-	-	-	-
KANSAS CITY KCATA	X		X		
LOS ANGELES: SCRTD		X	X		
LOUISVILLE, KY/IND.		X			X(4)
S.F.: A.C. TRANSIT		X	X		
S.F.: CCC TRANSIT AUTH.	X			X	
S.F. MUNI RAILWAY		X			X (4)
SAN JOSE, CAL.		X	X		
SYRACUSE: CNY CENTRO		X			X(4)
TUSCON, AZ.	X(2)	X(3)	X(3)		X(2)
WASHINGTON, D.C.: WMATA		X			X

NOTES (1) " - ": DATA NOT AVAILABLE.
(2) DURING SCHOOL YEAR.
(3) DURING SUMMER.
(4) PTO's CAN WORK AS ABSENCE EXTRAS IF NO FTO EXTRABOARD OPERATOR IS AVAILABLE.

The CCCTA has no limit on the permitted number of PTO's or the types of work they are allowed to operate. They have tailored their work force composition to take maximum advantage of the less restrictive PTO work rules, and have achieved the low pay-to-platform hour ratio of 1.04. The CCCTA operates 42 weekday straight runs and 25 weekday split runs with a payroll of 67 FTO's. Twenty-two PTO's are employed to work 22 weekday trippers, and to provide all Saturday service. Twenty-four PTO's are employed as extraboard operators. The CCCTA was the only system identified that operates its extraboard exclusively with PTO's. Thus, the CCCTA pays relatively little make-up time, spread premiums and overtime premiums.

SunTran is unique in that PTO's work all scheduled trippers during the school year when the service profile is relatively flat; both FTO's and PTO's work trippers during the summer when peak service is relatively high due to decreased mid-day demand caused by intense summer heat. The summer, 1983 service schedule was composed of 86 straight runs, 71 split runs and 28 trippers. The school year schedule included 90 straight runs, 80 split runs and only three scheduled trippers. PTO's cannot work all trippers during the summer due to the seven percent limitation on the number of PTO's, and the 24-hour PTO work week. PTO's work off of the extraboard, in addition to providing all tripper service, during the school year. PTO's work weekend trippers at all times of the year.

FTO's only operate off of the extraboard at the MBTA in Boston, the Cleveland RTA, the Dallas Transit System, the KCATA in Kansas City, the SCRTD in Los Angeles, AC Transit, and the SCCTA in San Jose, California. PTO's are used as extraboard operators when the FTO extraboard is exhausted at Champaign/Urbana, Illinois, in Louisville, Kentucky, at the Muni Railway in San Francisco and at Syracuse Centro. The first duty of Muni's PTO extra workers is to provide sick and vacation relief to regular PTO's. Their secondary duty is to work regular runs which have been broken up into five-hour or shorter segments in instances where the FTO extraboard is exhausted. FTO and PTO tripper assignments are worked off of the extraboard at WMATA in Washington, D.C.

METHODS OF ASSIGNING PTO'S BASED ON EXISTING RUN CUTS

Introduction

The PTO assignment methodologies used by three systems are presented in this chapter. These systems are: (1) the Washington Metropolitan Area Transit Authority, (2) the Southern California Rapid Transit District and (3) the Alameda-Contra Costa Transit District. The methodologies used by these agencies are illustrative of the range of techniques currently being applied in the transit industry to assign PTO's to existing runs. These procedures may be useful in assessing comparable procedures currently used by other agencies and in developing new driver assignment procedures.

Each of the three agencies included in this chapter has more part-time eligible pieces of work than they have PTO's to fill them. The question they face is "What pieces of work should be assigned to PTO's in order to achieve the greatest cost savings?" Each uses a different methodology to address this question.

The work rules governing the use of PTO's strongly influences the assignment procedure at each agency. As shown in Table 9, PTO's are limited to 10 percent of the number of FTO's at each division of the SCRTD, compared with 10 percent systemwide at WMATA. PTO's are limited to 15 percent at each division of AC Transit, and 10 percent systemwide. PTO assignments can contain no more than five hours work time or less than 2-1/2 hours work time daily, or no more than 25 hours weekly, at the SCRTD, compared to only a 30-hour weekday limit at WMATA. PTO's can work no more than five hours daily, or 25 hours weekly, at AC Transit. PTO's can only work weekday trippers at each system. PTO's can work split runs (i.e., an AM and PM tripper) at each system. PTO's can work split runs (i.e., an AM and PM tripper) at WMATA and AC Transit, but can only work one assignment per day (i.e., an AM or PM tripper) at the SCRTD. Since each of these rules must be considered, the PTO assignment procedures at the SCRTD, WMATA and AC Transit are differnet.

Washington Metropolitan Area Transit Authority (WMATA)

WMATA uses a three-step approach to assigning work to PTO's. First, AM and PM trippers are rank ordered, based on descending pay time. Second, the

TABLE 9

COMPARISON OF SELECTED PTO WORK RULES
AT THE SCRTD, WMATA AND AC TRANSIT

	System		
Work Rule	SCRTD	WMATA	AC Transit
Maximum Percent PTO's	10	10	10 to 15
Organizational Level at which maximum number of PTO's is computed	At Each Division	Systemwide	10% System-wide, or 15% at each Division
Daily PTO Work Time Limits	2-1/2 to 5 hours	None	5 hours
Weekly PTO Work Time Limits	25 Hours	30 Hours	25 Hours
Types of Work Allowed	Weekday Trippers	Trippers Trippers	Weekday Trippers
Can PTO's Work Split Runs	No	No	Yes

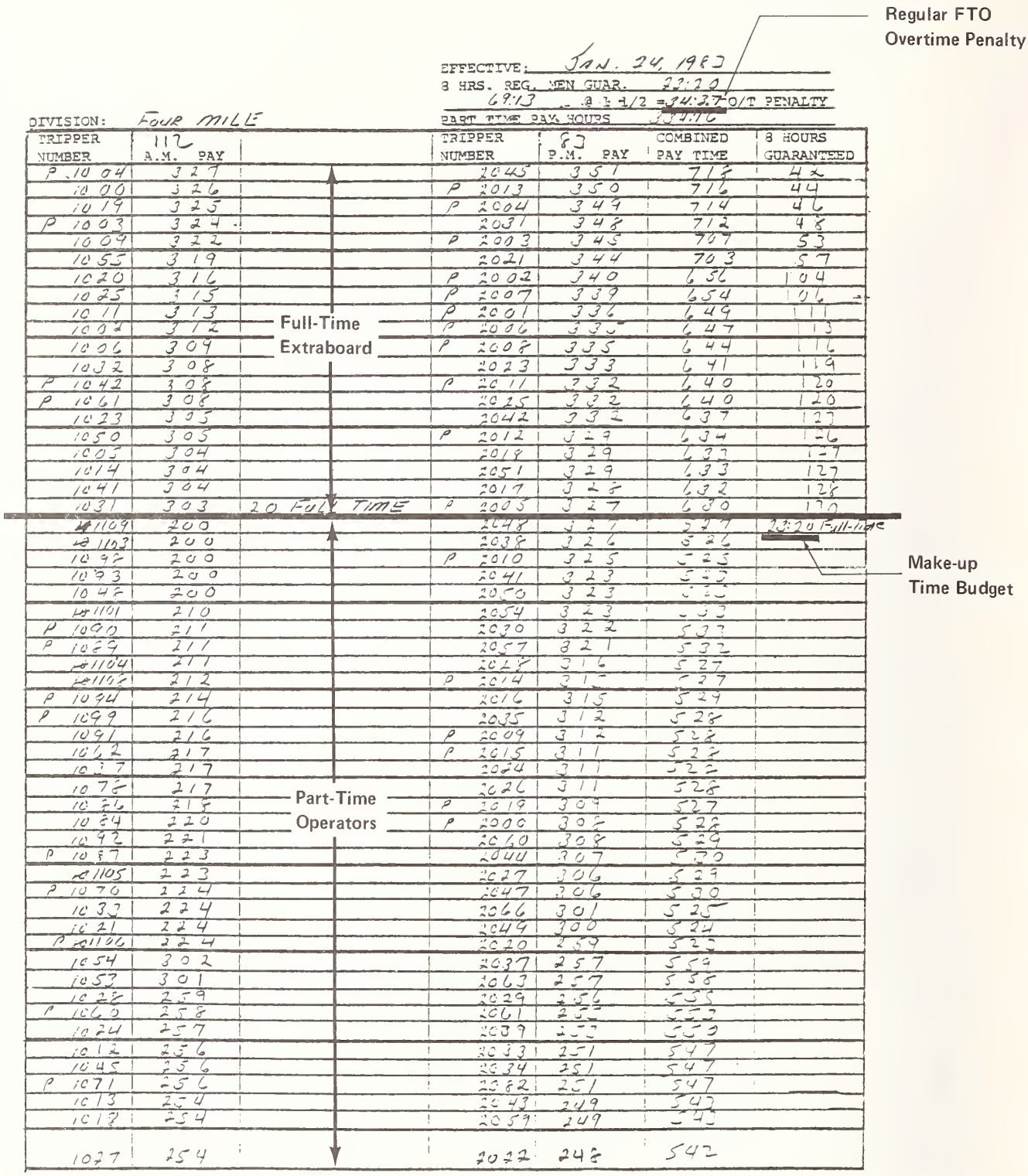
number of FTO's and PTO's working trippers off of the extraboard is determined for each division by WMATA's schedules section. Finally, the tripper pairs with the highest pay times are assigned to FTO's by WMATA's Operations Department; the remaining pairs are assigned to PTO's. Each of these steps is described in more detail below.

Full-time extraboard operators, full-time regular operators and part-time operators work trippers at WMATA. The number of regular FTO's working trippers is calculated at each division as the difference between the number of AM and PM trippers at that division. For example, 29 regular FTO's worked trippers at WMATA's Four Mile Run Division which had 112 AM trippers and 83 PM trippers for the schedule effective January 24, 1983. Each of these operators works a single-piece tripper on an overtime basis before or after finishing their regular daily run., They are assigned the shortest trippers in order to minimize overtime premiums. In the case of the Four Mile Run Divison, the 29 shortest AM trippers ranged from 2:00 to 2:37 pay hours.

Approximately 70 percent of the remaining trippers are assigned to PTO's; 30 percent are assigned to full-time extraboard operators (i.e., FTO's). This 70/30 split was calculated to comply with the contract provision which limits the maximum number of PTO's to 10 percent of the number of FTO's, systemwide. (An 80/20 or 85/15 split would have been calculated and used if more than 10 percent PTO's are permitted).

FTO's and PTO's are assigned to AM and PM paired trippers (or "married" trippers) based on the criterion of combined pay time. The objective of WMATA's Schedules Section is to minimize make-up time (or the difference between the eight-hour guarantee and combined pay time) paid to FTO's. AM and PM trippers are each rank-ordered by descending pay time. The highest paid AM tripper is then "married" to the highest paid PM tripper, the second highest paid AM tripper is "married" to the second highest PM tripper, and so forth.

Table 10 shows how the AM and PM trippers were paired at WMATA's Four Mile Run Division for the schedule effective January 24, 1983. This table ranks each AM and PM tripper by number by descending pay time. The combined pay time is shown in column 6, and difference between the eight-hour guarantee and combined pay time (i.e., make-up time) is shown in column 7.



TRIPPER NUMBER	A.M. PAY		TRIPPER NUMBER	P.M. PAY	COMBINED PAY TIME	8 HOURS GUARANTEED
P 1004	327		2045	351	718	42
1000	326		P 2013	350	716	44
1019	325		P 2004	348	714	46
P 1003	324		2031	348	712	48
1009	322		P 2003	345	707	53
1055	319		2021	344	703	57
1020	316		P 2002	340	656	104
1025	315		P 2007	339	654	106
1011	313		P 2001	336	649	111
1002	312		P 2006	333	647	113
1006	309		P 2008	335	644	116
1032	308		2023	333	641	119
P 1042	308		P 2011	332	640	120
P 1061	308		2025	332	640	120
1023	305		2042	332	637	123
1050	305		P 2012	329	634	126
1005	304		2018	329	633	127
1014	304		2051	329	633	127
1041	304		2017	328	632	128
1031	303		P 2005	327	630	130
#1109	200		2048	327	627	23:20 Full-time
#1103	200		2038	326	626	
1037	200		P 2010	325	625	
1043	200		2041	323	623	
1045	200		2050	323	623	
#1101	210		2054	323	623	
P 1090	211		2030	322	533	
P 1027	211		2057	321	532	
#1104	211		2047	316	527	
#1102	212		P 2014	315	527	
P 1094	214		2016	315	529	
P 1099	216		2035	312	528	
1091	216		P 2009	312	528	
1062	217		P 2015	311	528	
1017	217		2024	311	528	
1076	217		2026	311	528	
1021	218		P 2019	309	527	
1034	220		P 2000	308	528	
1092	221		2040	308	529	
P 1087	223		2044	307	530	
#1105	223		2027	306	529	
P 1076	224		2047	306	530	
1033	224		2046	301	525	
1021	224		2049	300	524	
P #1106	224		2020	299	523	
1054	302		2037	257	559	
1057	301		2063	257	558	
1022	259		2029	256	555	
P 1060	258		2061	255	553	
1024	257		2039	255	553	
1012	256		2033	251	547	
1045	256		2034	251	547	
P 1071	256		2062	251	547	
1013	254		2043	249	543	
1018	254		2059	249	543	
1027	254		2022	248	542	

Table 10
Rank Order of AM and PM Trippers at WMATA's Four Mile Run Division

EFFECTIVE:

8 HRS. REG. MEN GUAR.

@ 1 1/2 = O/T PENALTY

DIVISION: FOUR MILE

PART TIME PAY HOURS

TRIPPER NUMBER	112 A.M. PAY	TRIPPER NUMBER	63 P.M. PAY	COMBINED PAY TIME	8 HOURS GUARANTEED
1035	253	2049	244	537	
1039	253	2064	244	537	
1040	253	2056	243	536	
P 1080	253	2052	243	536	
1001	252	2053	243	535	
1015	252	2058	242	534	
1079	252	2040	241	533	
P 1077	252	2046	240	532	
1004	251	2036	238	529	
1049	251	2055	236	527	
1017	250	2070	236	526	
1026	250	2032	235	525	
1043	249	2078	231	521	
P 1044	249	2075	224	514	
1068	250	2067	217	507	
1016	245	2060	211	459	
1030	245	2075	201	449	
1073	248	2081	200	448	
1067	247	2062	200	446	
C 1010	246	2067	1	446	
P 1052	246	2071		445	
P 1057	243	2072		443	
1007	242	2077		442	
1065	242	2074		442	
1034	240	2078		440	
1051	239	2077		439	
P 1025	238	2079		439	
1022	237	20		334:11 PART-TIME	
1046	237	20			
1047	236	20			
P 1047	236	20			
1055	235	20			
1032	234	20			
P 1029	234	20			
1026	233	20			
P 1066	233	20			
P 1076	233	20			
P 1069	232	20			
P 1102	232	20			
1107	232	20			
1022	231	20			
C 1052	231	20			
1063	230	20			
P 1083	230	20			
1021	229	20			
P 1075	228	20			
1064	228	20			
1029	227	20			
1046	226	20			
1088	226	20			
1056	225	20			
1072	225	20			
1074	225	20			
1100	225	20			
1110	200	20			
1111	200				

Part-Time Operators

Regular Full-Time Operators Working Overtime

PTO Pay Hours

69:13 Full-Time Regular FTO Work Hours

Table 10 (con't.)

Rank Order of AM and PM Trippers at WMATA's Four Mile Run Division

In the case of the Four Mile Run Division, this yielded 83 "married" trippers effective January 24, 1983. The 20 "married" pairs with the greatest combined pay times (and, hence, lowest combined make-up times) were assigned to FTO's. The combined make-up time for the top 20 married trippers is then determined in order to establish a daily make-up time budget for each division. In this case, the Four-Mile Run Division had a budget of 23:20 hours of daily make-up time effective January 24, 1983. Part-time paid hours is equal to 334:16 hours, or 5:18 hours per day per PTO, on average. The overtime penalty, calculated at one-half times the number of hours worked by regular FTO's assigned single piece trippers, also appears at the top of this sheet and is equal to 34:37 hours.

Make-up time budgets are provided to WMATA's Operations Department. Division dispatchers (or "bookkeepers") can combine AM and PM trippers in any way they wish; they do not have to combine trippers in the same way as the Schedules Section, but they must adhere to the make-up budgets established by the Schedules Section.

WMATA's procedure is completely manual and can be conducted quickly based on existing run cuts at each division. It minimizes make-up time but does not consider regular extraboard operator overtime premiums, FTO spread premiums, or fringe benefits for PTO's or FTO's. Regular extraboard operator overtime premiums were not an issue at the Four Mile Run division since no tripper pair exceeded 7:18 hours combined pay time. FTO spread premiums may or may not be significant, depending on the amount of unscheduled spread premium being paid to regular extraboard operators. WMATA's spread premium threshold is 11-1/2 hours for extraboard FTO's. If an early AM tripper is combined with a late PM tripper, the operator assigned this tripper pair could be entitled to a premium of one-half time for all time worked beyond 11-1/2 hours. It is not possible to determine the extent of unscheduled spread premium that would be incurred for the tripper pairs shown in Table 10.

Southern California Rapid Transit District (SCRTD)

The SCRTD uses a two-step procedure to assign work to PTO's. First, part-time eligible pieces of work are identified at each division based on the constraints of the labor agreement and on other practical considerations

specified by SCRTD's Transportation Department. Second, these pieces of work are rank-ordered and the highest ranked pieces are assigned to PTO's; the remaining work is assigned to FTO's. PTO's are restricted to working only single-piece, weekday tripper assignments at the SCRTD.

Only certain trippers within a division are eligible to be worked by PTO's at the SCRTD. They must, by contract, (1) be "non-biddable" by regular FTO's; (2) have at least 2-1/2 of work; and (3) have no more than 5 hours of work. "Biddable" trippers are defined by the Schedules Department as short peak period pieces of work that are worked at overtime by regular FTO's before or after their regular runs. They are generally less than 2-1/2 hours work time and are less costly to work at overtime than by extraboard FTO's. Unlike WMATA, the SCRTD does not define the number of biddable trippers as the difference between the number of AM and PM trippers. Therefore, after the two biddable trippers have been assigned to regular FTO's, the numbers of AM and PM trippers may not be equal at the division. As a result, not all full-time extraboard operators are assigned an AM/PM tripper pair. Some full-time extraboard operators must work an AM or PM tripper and stand extra during the remainder of the day.

Additional constraints on the definition of part-time "eligible" runs have been specified by SCRTD's Transportation Department. These are strictly practical in nature, not contractual, and provide day-to-day continuity of work for both PTO's and FTO's. If a run is not part-time eligible five days a week (Monday through Friday) and/or will not be operated with regularity in the schedule period, it is excluded. Examples of such runs are "School Days Only", "Race Days Only", etc. "School/School Holiday", "Race/Non-Race" or "Bowl/-Non-Bowl" runs are included if both "School" and "School Holiday", "Race" and "Non-Race", or "Bowl" and "Non-Bowl" are eligible. If, however, one is excluded for contractual reasons then the other will also be excluded to maintain continuity of work.

TABLE 11
SAMPLE OF FIVE PART-TIME
ELIGIBLE AM TRIPPERS AT SCRTD DIVISION 1

Run Number	Sign-On Time	Sign-Off Time	Work Time (Hours)
75-501	4:32 AM	8:04 AM	3:32
68-502	5:12	8:23	3:11
30-501	5:09	8:31	3:22
55-502	5:00	8:43	3:43
18-502	5:15	8:36	3:21

Source: List of 49 part-time eligible AM trippers worked at SCRTD's Division 1 for the schedule effective June 26, 1983.

SCRTD's prioritization algorithm consists of three procedural steps. First, AM and PM trippers are separated, and listed in ascending sign-on and sign-off times, respectively. For example, the five AM trippers in Table 11 would be reorganized as shown in Table 12, iteration 1. The tripper signing on at 4:32 AM would be listed first and followed in order by those trippers signing on at 5:00, 5:09, 5:12 and 5:15 AM, respectively. Thus, runs representing the most spread cost (i.e., the earliest pull-outs) will be placed at the top of the list. These runs are best worked by PTO's since PTO's receive no spread premiums.

In the second step, the time savings that would result from exchanging the positions of run N with run N+1, N+2 and all subsequent runs are considered. This is done by computing the time savings of operating run N with an FTO and run N+1 with a PTO. The increase in FTO spread time is calculated, at time and one-half the difference in sign-on time for AM trippers, or sign-off time for PM trippers. Next, the decrease in work time paid to PTO's is calculated, at straight time, since PTO's are paid for only the hours they work, without overtime or spread premiums.

TABLE 12
EXAMPLE OF SCRTD'S PART-TIME OPERATOR ASSIGNMENT ALGORITHM

Rank	Sign On Time	FTO Spread Premium Difference	Sign Off Time	Work Time	PTO Work Time Difference	Sum of Differences
Iteration 1: Examine Exchanging 4:32 AM Run						
1	**4:32 AM**		**8:04 AM**	**3:32**		
	5:00	+42	8:43	3:43	+11	+53
	5:09	+55-1/2	8:31	3:22	-10	+45-1/2
	5:12	+60	8:23	3:11	-21	+39
	5:15	+64-1/2	8:36	3:21	-11	+53-1/2
Iteration 2: Examine Exchanging 5:00 AM Run						
1	**4:32 AM**		**8:04 AM**	**3:32**		
	5:12	**+18**	**8:23**	**3:11**	**-32**	**-14**
	5:09	+13-1/2	8:31	3:22	-21	-7-1/2
	5:00		8:43	3:43		
	5:15	+22-1/2	8:36	3:21	-22	+1/2
Iteration 3: Examine Exchanging 5:09 AM Run						
1	**4:32 AM**		**8:04 AM**	**3:32**		
	5:12		**8:23**	**3:11**		
	5:09		**8:31**	**3:22**	**+21**	**+7-1/2**
	5:00	-13-1/2	8:43	3:43		
	5:15	+9	8:36	3:21	-1	+8
Iteration 4: Examine Exchanging 5:00 AM Run						
1	**4:32 AM**		**8:04 AM**	**3:32**		
	5:12		**8:23**	**3:11**		
	5:09		**8:31**	**3:22**		
	5:00		**8:43**	**3:43**		
	5:15	+22-1/2	8:36	3:21	-22	+1/2
Iteration 5						
1	**4:32 AM**		**8:04 AM**	**3:32**		
	5:12		**8:23**	**3:11**		
	5:09		**8:31**	**3:22**		
	5:00		**8:43**	**3:43**		
	5:15		**8:36**	**3:21**		

The increase in FTO spread is then added to the decrease in PTO work time. If the sum is negative, the decrease in PTO work time is greater than the increase in FTO spread time, and run N+1 is less costly to be worked by a PTO than by an FTO. In this case the positions of run N and run N+1 should be exchanged. If the sum is positive, the increase in FTO spread time more than offsets any PTO work time savings and the positions should not be exchanged.

All sums are positive relative to the 4:32 AM run shown in Table 12, iteration 1, and no changes are made. The 4:32 AM run is therefore ranked first among the five AM trippers.

In iteration 2, the 5:00 AM run is compared to the 5:09, 5:12 and 5:15 AM runs, respectively. The 5:09 and 5:12 AM runs have negative sums of 7-1/2 and 14 minutes, respectively. The 5:12 AM run is ranked second, since it has the most negative sum. That is, the 5:12 AM run has the highest net decrease in PTO work time compared to the 5:00 AM run.

These computations are repeated in iterations 3 through 5. The 5:09 AM run is ranked third in iteration 3; the 5:00 AM run is ranked fourth in iteration 4. The final rankings are shown in iteration 5. It can be observed that the same ranking would be obtained by listing the runs in ascending order of the sum of differences computed in iteration 1.

The rank-ordered list of AM and PM trippers constitute a prioritized list of PTO assignments for each of SCRTD's 13 divisions. These lists are forwarded to the Transportation Department for use on a routine daily basis in assigning work to PTO's and FTO's. The complete list of prioritized AM and PM trippers at SCRTD's Division 1 for the schedule effective June 26, 1983, is shown in Table 13. This table includes 49 AM trippers and 40 PM trippers. (Note that the five AM runs shown in Table 12 are ranked 1, 7, 8, 9 and 10 in Table 13.) If, for example, 40 PTO's were permitted at Division 1, the top 20 AM trippers and the top 20 PM trippers would be assigned to PTO's. The remaining 20 AM trippers and 29 PM trippers would be assigned to FTO's.

The SCRTD procedure is completely automated. It explictly considers FTO spread premiums and PTO pay time; it implictly considers FTO make-up time. It does not, however, consider full-time extraboard operator overtime premiums, or fringe benefits for PTO's or FTO's.

T80090
PAGE 1 OF 9 -- AM ASSIGNMENTS -- (RUN DATE 060183)

NON-BIDDABLE AM TRIPPERS EFFECTIVE 06-26-83
- PART TIME ELIGIBLE -
- DIVISION - 3201

PRIOR-ITY	RUN NO.	SIGN ON	SIGN OFF	WORK TIME	NAME	BADGE NO.
1	75-501	432	804	332		
2	55-501	450	804	314		
3	18-501	504	816	312		
4	55-503	520	810	250		
5	462-501	515	814	259		
6	75-502	511	822	311		
7	68-502	512	823	311		
8	30-501	509	831	322		
9	55-502	500	843	343		
10	18-502	515	836	321		

Table 13
Prioritization of AM and PM Trippers at SCRTD Division 1

T80090
PAGE 2 OF 9 -- AM ASSIGNMENTS -- (RUN DATE 060183

NON-BIDDABLE AM TRIPPERS EFFECTIVE 06-26-8
- PART TIME ELIGIBLE -
DIVISION - 3201

PRIOR-ITY	RUN NO.	SIGN ON	SIGN OFF	WORK TIME	NAME	BADGE NO.
11	75-503	521	838	317		
12	826-501	515	852	337		
13	16-501	537	842	305		
14	30-504	539	844	305		
15	30-502	512	907	355		
16	26-503	529	903	334		
17	30-503	519	910	351		
18	26-501	509	918	409		
19	18-503	531	910	339		
20	68-505	541	906	325		

Table 13 (con't.)

Prioritization of AM and PM Trippers at SCRTD Division 1

T80090
PAGE 3 OF 9 -- AM ASSIGNMENTS -- (RUN DATE 060183)

NON-BIDDABLE AM TRIPPERS EFFECTIVE 06-26-83
- PART TIME ELIGIBLE -
DIVISION - 3201

PRIOR-ITY	RUN NO.	SIGN ON	SIGN OFF	WORK TIME	NAME	BADGE NO.
21	18-506	559	858	259		
22	68-503	512	928	416		
23	18-504	541	914	333		
24	16-503	554	910	316		
25	55-504	535	921	346		
26	75-504	548	917	329		
27	56-501	609	910	301		
28	75-505	550	921	331		
29	68-501	501	952	451		
30	30-505	543	934	351		

Table 13 (con't.)
Prioritization of AM and PM Trippers at SCRTD Division 1

T80090
PAGE 4 OF 9 -- AM ASSIGNMENTS -- (RUN DATE 060183)

NON-BIDDABLE AM TRIPPERS EFFECTIVE 06-26-83
- PART TIME ELIGIBLE -
DIVISION - 3201

PRIOR-ITY	RUN NO.	SIGN ON	SIGN OFF	WORK TIME	NAME	BADGE NO.
31	16-504	606	925	319		
32	75-506	557	934	337		
33	460-504	557	934	337		
34	68-506	547	940	353		
35	56-502	623	922	259		
36	26-506	628	922	254		
37	16-502	546	948	402		
38	26-505	559	942	343		
39	26-502	522	1009	447		
40	16-505	624	940	316		

Table 13 (con't.)
Prioritization of AM and PM Trippers at SCRTD Division 1

T80090
PAGE 5 OF 9 -- AM ASSIGNMENTS -- (RUN DATE 060183)

NON-BIDDABLE AM TRIPPERS EFFECTIVE 06-26-83
- PART TIME ELIGIBLE -
DIVISION - 3201

PRIOR-ITY	RUN NO.	SIGN ON	SIGN OFF	WORK TIME	NAME	BADGE NO.
41	32-501	518	1015	457		
42	462-502	542	1005	423		
43	26-504	554	1000	406		
44	460-503	533	1018	445		
45	68-507	548	1012	424		
46	68-504	535	1030	455		
47	460-505	615	1013	358		
48	18-505	557	1034	437		
49	462-503	545	1043	458		

Table 13 (con't.)
Prioritization of AM and PM Trippers at SCRTD Division 1

T80090
PAGE 6 OF 9 -- PM ASSIGNMENTS -- (RUN DATE 060183)

NON-BIDDABLE PM TRIPPERS EFFECTIVE 06-26-83
- PART TIME ELIGIBLE -
DIVISION - 3201

PRIOR-ITY		RUN NO.	SIGN ON	SIGN OFF	WORK TIME	NAME	BADGE NO.
1		16-606	417	727	310		
2		460-604	413	713	300		
3		462-602	345	805	420		
4		68-604	314	802	448		
5		18-608	327	736	409		
6		18-607	325	724	359		
7	HOL	30-605	340	651	311		
7	SCH	30-605	223	651	428		
8		16-607	315	739	424		
9	HOL	68-601	339	650	311		
9	SCH	68-601	235	650	415		
10		55-603	322	714	352		

Table 13 (con't.)
Prioritization of AM and PM Trippers at SCRTD Division 1

T80090
PAGE 7 OF 9 -- PM ASSIGNMENTS -- (RUN DATE 060183)

NON-BIDDABLE PM TRIPPERS EFFECTIVE 06-26-83
- PART TIME ELIGIBLE -
- DIVISION - 3201 -

PRIOR-ITY	RUN NO.	SIGN ON	SIGN OFF	WORK TIME	NAME	BADGE NO.
11	68-603	301	748	447		
12	460-602	323	658	335		
13	460-601	333	634	301		
14	462-601	255	737	442		
15	30-603	324	635	311		
16	75-606	250	730	440		
17	16-605	257	716	419		
18	18-606	249	717	428		
19	30-602	313	624	311		
20	75-603	305	637	332		

Table 13 (con't.)
Prioritization of AM and PM Trippers at SCRTD Division 1

T80090
PAGE 8 OF 9 -- PM ASSIGNMENTS -- (RUN DATE 060183)

NON-BIDDABLE PM TRIPPERS EFFECTIVE 06-26-83
- PART TIME ELIGIBLE -
DIVISION - 3201

PRIOR-ITY	RUN NO.	SIGN ON	SIGN OFF	WORK TIME	NAME	BADGE NO.
21	68-602	244	712	428		
22	30-604	257	647	350		
23	30-607	241	715	434		
24	16-604	241	658	417		
25	55-601	238	649	411		
26	75-604	229	639	410		
27	75-605	218	658	440		
28	16-602	245	558	313		
29	26-602	210	702	452		
30	18-603	217	647	430		

Table 13 (con't.)
Prioritization of AM and PM Trippers at SCRTD Division 1

T80090
PAGE 9 OF 9 -- PM ASSIGNMENTS -- (RUN DATE 060183)

NON-BIDDABLE PM TRIPPERS EFFECTIVE 06-26-83
- PART TIME ELIGIBLE -
DIVISION - 3201

PRIOR-ITY	RUN NO.	SIGN ON	SIGN OFF	WORK TIME	NAME	BADGE NO.
31	30-601	221	611	350		
32	55-602	157	653	456		
33	75-602	208	629	421		
34	16-601	228	547	319		
35	56-601	229	540	311		
36	18-604	152	648	456		
37	18-602	159	634	435		
38	18-601	200	627	427		
39	826-601	215	549	334		
40	75-601	118	610	452		

Table 13 (con't.)
Prioritization of AM and PM Trippers at SCRTD Division 1

A comparison of AM/PM tripper pairs 1 through 10, and 31 through 40 at SCRTD's Division 1, taken from Table 13 indicates that pairs 1 through 10 would incur 2.6 times more in spread premiums if they were worked by FTO's than pairs 31 through 40 (i.e., 50:17 versus 18:59 hours). Pairs 1 through 10 would incur fewer work hours than pairs 31 through 40. By both of these measures -- spread premiums and work time -- it is more cost-effective to work pairs 1 through 10 by PTO's than by FTO's.

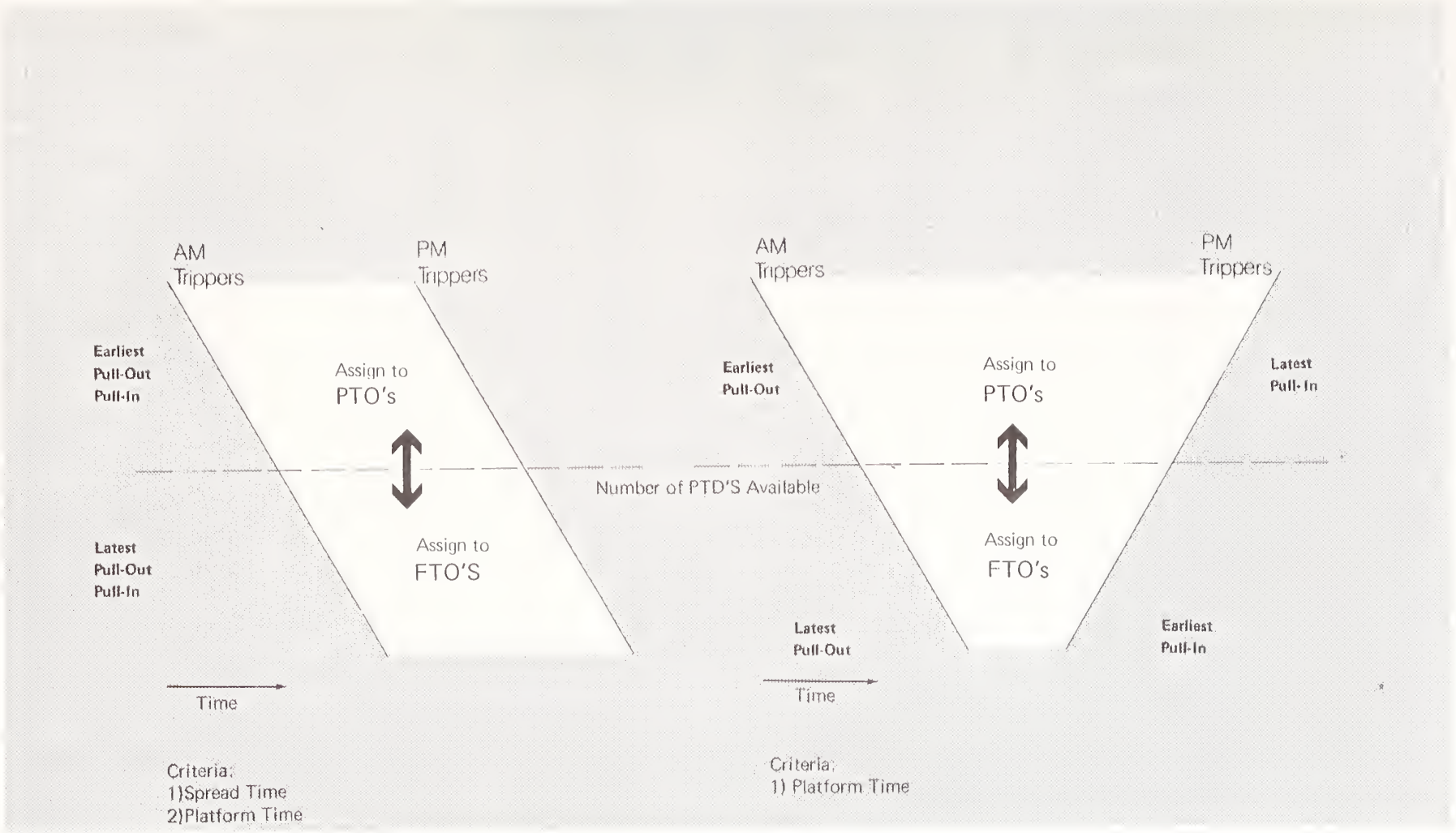
Tripper pairs 1 through 10 would incur no make-up time; pairs 31 through 40 would incur only 25 minutes make-up time. Make-up time is small since all pay time (including spread premiums) are included in an FTO's eight-hour daily guarantee stipulated in SCRTD's labor agreement.

None of the tripper pairs would incur overtime in addition to the spread premium since, under SCRTD's labor agreement, where more than one overtime provision is involved, only that provision which creates the greatest compensation applies.

The SCRTD is presently experimenting with an alternate procedure which is graphically illustrated in Figure 1. Under the new procedure, AM trippers would be ordered in ascending pull-out time, but PM trippers would be ordered according to descending pull-in time. AM trippers with the same pull-out times, and PM trippers with the same pull-in times, would be ordered by ascending work times. This procedure would result in less spread premiums paid to FTO's, but more work time paid to PTO's. The effects on FTO overtime and make-up time have not been tested. The computational details of this new procedure are presently being developed, and no results are currently available.

Alameda-Contra Costa
Transit District (AC Transit)

AC Transit uses a less formalized procedure for assigning operators to part-time eligible pieces of work than the SCRTD or WMATA. Under AC Transit's labor agreement, PTO's: (1) are guaranteed two hours per day, but can work no more than five hours per day or 25 hours per week, (2) can work only on weekdays, (3) cannot exceed 10 percent of FTO's systemwide, or 15 percent at any division and (4) must orginate and terminate their assignments at a division (i.e., no on-street relief).



A. Current Assignment algorithum

B. Alternate Assignment

Figure 1
SCRTD PTO Assignment Algorithms

AC Transit's Schedules Department selects PTO assignments from among all eligible pieces of work at each division based on a number of criteria derived from the labor agreement work rule provisions and other considerations. These criteria include:

1. PTO's should generally work close to the five-hour daily limitation.

2. PTO's should generally be assigned to early pull-outs and late pull-ins, to reduce spread premiums paid to full-time extraboard operators.

3. PTO's should generally work split runs, instead of straight runs.

4. If PTO's work a split run, they should work the same line in the AM and PM, since PTO's break in on only one line.

5. FTO's (i.e., "expensive" labor) should be assigned to contract service operated for BART and others by AC Transit.

6. FTO's must work runs which are relieved on the street, according to the labor contract.

7. Individual PTO preferences regarding work times, work hours and days off may also be taken into account.

The Schedule Department's suggestions are forwarded to the Operations Department which may take these suggestions or assign PTO's to alternate runs.

A review of listings of all trippers at two AC Transit's four divisions, the suggestions of the Schedules Department and actual assignments made by the Operations Department, indicates that the criteria listed above are used not as absolute constraints but as general guidelines for assigning trippers to PTO's and extraboard FTO's.

Comparison of Methodologies

A comprehensive procedure for assigning PTO's to runs selected from existing schedules would consider PTO pay hours, FTO make-up time, FTO spread

premiuns and overtime, and PTO and FTO fringe benefits. The procedures used by WMATA, the SCRTD and AC Transit consider some, but not all, of these variables, as indicated in Table 14.

Each property considers PTO pay hours, WMATA considers FTO make-up time, and both SCRTD and AC Transit consider FTO spread premiums in assigning PTO's to existing runs. None of these properties include FTO extraboard overtime or FTO or PTO fringe benefits in driver assignment decisions.

The importance of considering full-time extraboard operator spread premiums depends on a system's spread rule provisions and service profile. Spread premiums are most onerous at systems with relatively short maximum spread times and spread penalty thresholds, relatively sharp peaks and relatively long AM and PM peak periods. Spread premiums were shown to be significant at the SCRTD, but may or may not be as important at WMATA or AC Transit. The consideration of both spread and overtime premiums is especially important at systems such as AC Transit which pay both overtime and spread penalties where applicable.

Fringe benefits are an important factor in determining which trippers to assign to regular FTO's on an overtime basis in order to avoid the fixed fringe benefit costs that would be incurred by additional extraboard operators. A significant operator cost savings may be attributable to the lower fringe benefits received by PTO's.

AC Transit is currently experimenting with an automated runcutting procedure which considers each of the variables listed in Table 14 when cutting both FTO and PTO runs. This procedure and others are described in the next chapter.

TABLE 14
COMPARISON OF PTO ASSIGNMENT PROCEDURES

	Property		
	WMATA	SCRTD	AC TRANSIT
Type of Procedure			
Automated		*	
Manual	*		*
Variables Considered			
PTO Pay Hours	Yes	Yes	Yes
FTO Make-up Hours	Yes	No	No
FTO Spread Premiums	No	Yes	Yes
FTO Overtime	No	No	No
PTO Fringe Benefits	No	No	No
FTO Fringe Benefits	No	No	No

METHODS FOR INCORPORATING PTO'S IN RUNCUTTING PROCEDURES

Introduction

This chapter contains a summary of transit agencies who have modified their runcutting procedures to incorporate the use of PTO's. First, the Massachusetts Bay Transportation Authority (MBTA) and the Kansas City Area Transportation Authority (KCATA) are presented as examples of agencies which have re-cut costly FTO runs to create PTO runs, and thereby reduce FTO spread premiums and unproductive make-up time. Second, the procedure used by the SCRTD to cut more part-time eligible runs in order to utilize the full complement of PTO's permitted at a central city division is described. Finally, the automated runcutting procedures used to schedule both PTO's and FTO's at the San Franciso Municipal Railway (Muni) and AC Transit are presented.

Manual Methods

Massachusetts Bay Transportation Authority (MBTA). The introduction of PTO's at the MBTA in January, 1982, has permitted the authority to re-cut selected FTO runs to eliminate costly spread penalties and make-up time. The MBTA, by contract, must schedule all FTO work into regular runs with an eight-hour guarantee and a limit of 8:15 hours work time. The MBTA must schedule work so that no more than 70 percent of all runs can exceed an 11-hour spread. The spread premium threshold is 10 hours; the maximum spread is 13 hours.

The approach taken by the MBTA for scheduling PTO's has focused on the elimination of the two most costly types of FTO runs: (1) those including paid make-up time, and (2) those with spreads in excess of 11 hours.[1/] For the first type of runs, PTO's are substituted on regular FTO runs which included an average of 1-1/2 hours of unnecessary and unproductive make-up time (i.e., so-called "additional" runs).

1/ Multisystems, "An Assessment of Part-Time Operator Experience at the MBTA", June, 1983.

In the second case, by recutting a set of FTO runs, PTO runs are cut to cover long spreads without incurring spread premiums. As illustrated in Figure 2, three FTO runs consisting of 24 work hours (and long spread times) are assigned to four PTO's working six hours each. PTO's are limited at the MBTA to 30 hours per week.

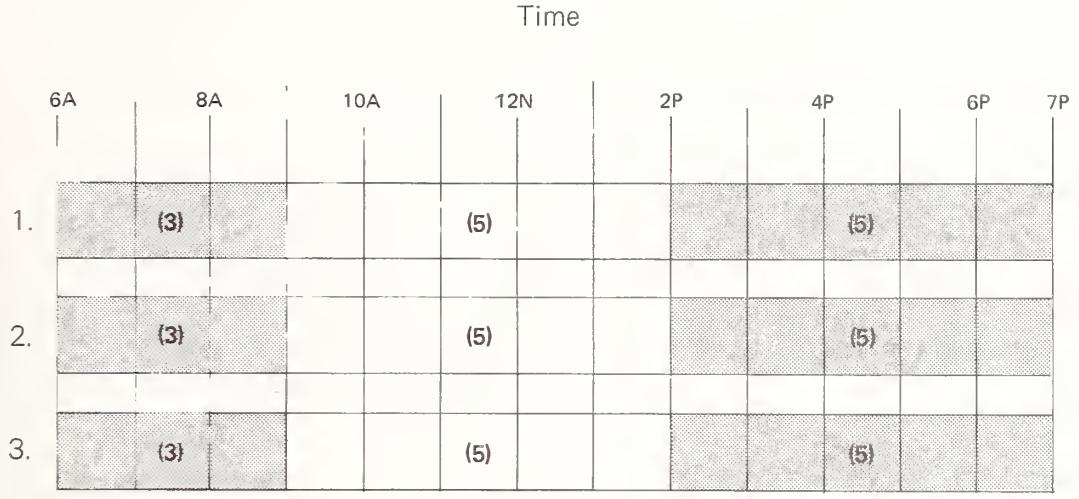
The majority of PTO's at the MBTA are scheduled over a 12-13 hour workday during which they have a six to seven-hour unpaid break in the middle of the day. The MBTA has not split two-piece FTO runs into two one-piece runs to be assigned to two different PTO's because of: (1) the difficulty of recruiting and training new operators; and (2) the perception that the overall objective is to maximize cost savings by reducing unnecessary make-up time and spreads in excess of 11 hours.

Kansas City Area Transportation Authority. The KCATA is an example of an agency which has split two-piece FTO runs. The KCATA employs 355 FTO's and 52 PTO's. PTO's can work up to 25 hours per week and may operate weekday and Saturday trippers and charters, and can cover for FTO absences on weekends. They are guaranteed two hours per assignment.

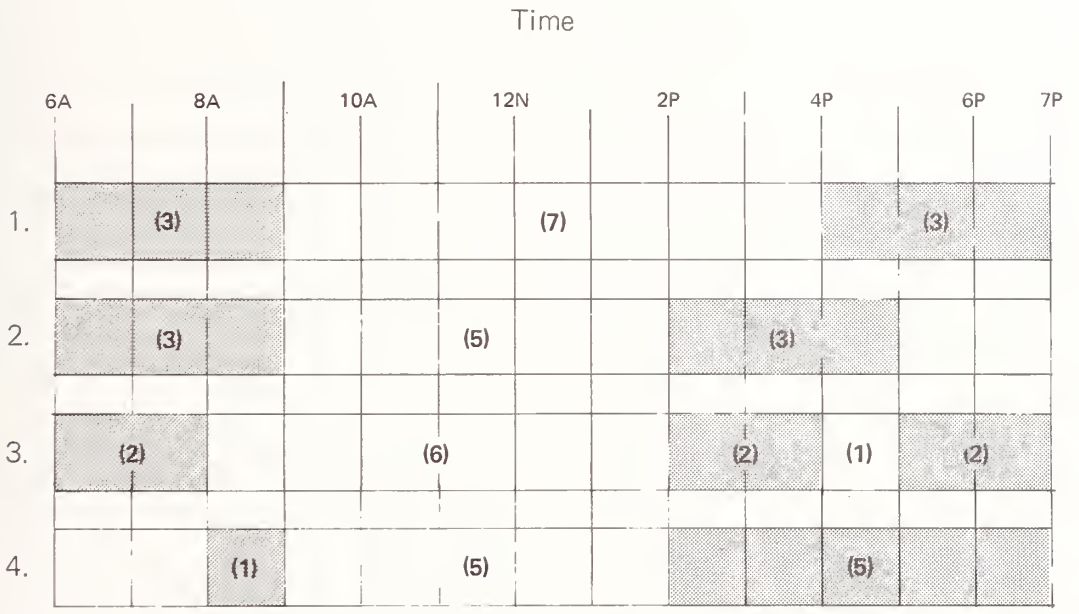
The KCATA has created PTO runs from existing FTO runs by: (1) substituting PTO's for FTO's on existing peak period trippers, and (2) uncoupling FTO split runs to create PTO tripper runs. In January, 1982, before KCATA was permitted to use PTO's, the schedule included 122 straight runs, 169 split runs and 27 trippers. The July, 1983 schedule includes 117 straight runs, 129 split runs and 67 trippers. All straight and split runs are worked by FTO's. All trippers are worked by PTOs, as single-piece runs or in pairs. The 67 trippers consist of all trippers and selected uncoupled split runs formerly worked by FTO's. (Some service was also eliminated between January, 1982 and July, 1983 when service to Johnson County, Kansas was eliminated.)

The net result was a reduction in the pay-to-platform hour ratio from 1.23 to 1.18 overall. Average pay hours per FTO run increased slightly, from 8.81 to 8.83 hours, over the same period.

The KCATA also claims to have reduced excess base day service through the use of PTO's. Industry work rules tend to encourage base day service which exceeds demonstrated demand. Since the KCATA and other systems must: (1)



A. Three (3) FTO Runs ...



B. Re-Cut To Four (4) PTO Runs

Figure 2

Example of How Three FTO Runs are Re-Cut as Four PTO Runs at the MBTA

maintain a fleet of vehicles sufficient to cover the peak, (2) provide sufficient peak period manpower and (3) guarantee each FTO at least eight hours pay regardless of actual productive time spent, additional service can be provided on the "shoulders" of the peak period at little additional expense. However, PTO's are not subject to an eight-hour daily guarantee at the KCATA; PTO's are guaranteed only two hours per assignment. This has encouraged the KCATA to shorten longer peak period trippers, and thereby reduce unproductive FTO make-up time. However, the cost savings attributable to reduced base day service could not be determined.

Southern California Rapid Transit District (SCRTD). Systems which are limited to a given number of PTO's at each division may encounter an issue not faced by systems with systemwide limitations: division with relatively flat peak-to-base service ratios may not have a sufficient number of weekday trippers to assign to the maximum permitted number of PTO's. In such cases, the system must create more part-time eligible runs from existing FTO runs in order to utilize their full complement of PTO's. This issue is most frequently encountered at central city divisions which operate mostly straight runs throughout the day. Outlying divisions typically have more sharply peaked service profiles, resulting in more peak period tripper runs than PTO's.

The SCRTD was faced with this issue at its Division 18. The following options were considered to create more part-time eligible trippers:

1. A long straight run could be broken into two or more shorter runs. For example, a 12-hour run could be broken into an eight-hour FTO run and a four-hour PTO run.

2. "Biddable" trippers (i.e., trippers that are eligible to be bid and worked by FTO's on an overtime basis after completing their regular run) could be redesignated as "non-biddable" trippers. (Since biddable trippers are short pieces of work at SCRTD, they might be combined with a segment of a regular run in order to meet the 2-1/2 hour minimum requirement for part-time eligible work.)

3. An unassigned, part-time eligible run in another division could be worked from the central city division.

4. Long trippers which are currently assigned to FTO's could be shortened, or short trippers could be lengthened, in order to meet the size constraints on part-time eligible trippers.

The SCRTD chose to break up long straight runs to create more part-time eligible trippers since it was believed that this option would result in the most cost effective use of avaialble PTO's.

Automated Runcutting Procedures

The MBTA, KCATA and SCRTD are examples of systems which have manually adjusted runs which were cut without regard to differences in wages, fringe benefits and work rules between PTO's and FTO's. At least two systems -- the San Francisoco Municipal Railway (Muni) and AC Transit -- have implemented, or are experimenting with, automated procedures which cut both FTO and PTO runs for a given service schedule. Muni presently uses Version 5.01 of the RUCUS runcutting package developed by Kenneth Roberts & Associates, Inc. Both Muni and AC Transit are experimenting with the RAMCUTTER package which utilizes a zero/one integer programming approach developed by Research Applications for Mangement Inc. Other automated procedures developed by Sage, the University of Montreal and Vista Systems may also cut both FTO and PTO runs for a given service schedule. These were not, however, reviewed in this study.

San Francisco Municipal Railway (Muni). Muni utilizes Version 5.01 of the RUCUS runcutting package developed by Kenneth Roberts & Associates, to schedule both PTO's and FTO's. This version of RUCUS is composed of several runcutting modules which are used in an iterative fashion. It is different from previous versions of RUCUS because output of other modules can be used as input data for the runcutting modules. Previous versions of RUCUS required a complete run of the package before the input parameters could be changed. The updated RUCUS approach may also be used to manually cut FTO and PTO runs for a given service schedule.

The RUCUS approach used by Muni is best described by means of the example presented in Table 15; this example summarizes an actual run cut in effect August 24, 1983, at Muni's Potrero Division. Ten trolley coach lines are operated from Potrero. A total of 223 runs were cut for the August 24, 1983 schedule: 136 straight runs, 85 split runs and 2 trippers. Thirty-four PTO's are available at Potrero. They are permitted to work "short runs" and a PTO extraboard, up to five hours a day, 25 hours a week. PTO's are guaranteed 3-1/2 hours per assignment.

A.
Step 1:
Parameters for "ONEPCE" to cut AM straight runs

```
ONEPCE VERS: 5.01 PARAMS ARE
 ERLYST     =   550    (0) 1-PIECE RUNS BEFORE THIS TIME
 LATEST     =  9999    (9999) 1-PIECE RUNS AFTER THIS TIME
 MINSTR     =   714    (0) MIN PLAT - 1-PIECE RUNS
 AVGSTR     =   810    (0) AVG PLAT - 1-PIECE RUNS
 MAXSTR     =   850    (0)   MAX PLAT - 1-PIECE RUNS
 MAXSPD     =  1059    (0)   MAX SPREAD

ONEPCE-VERS: 5.01
```

B.
Step 2:
Parameters for "ONEPCE" subroutine to cut PM straight runs

```
ONEPCE VERS: 5.01 PARAMS ARE
 ERLYST     =     0    (0) 1-PIECE RUNS BEFORE THIS TIME
 LATEST     =  1800    (9999) 1-PIECE RUNS AFTER THIS TIME
 MINSTR     =   714    (0) MIN PLAT - 1-PIECE RUNS
 AVGSTR     =   810    (0) AVG PLAT - 1-PIECE RUNS
 MAXSTR     =   850    (0)   MAX PLAT - 1-PIECE RUNS
 MAXSPD     =  1059    (0)   MAX SPREAD

ONEPCE-VERS: 5.01
```

Table 15
Summary of RUCUS Parameters for Muni's Potrero Division

C.
Step 3:
Parameters for "DIVDSP" subroutine to divide remaining work into two nearly equal pieces

```
DIVDSP-VERS: 5.01  PARAMS ARE:
 MAXPCE     =   545   MAX PLAT - ANY PIECE OF 2-PCE RUN
 AVGPCE     =   400   TARGET PLAT - ANY PIECE OF 2-PCE RUN
 MINPCE     =    30   MIN PLAT - ANY PIECE OF 2-PCE RUN
 ALTDIV     =     F   (F) DIVIDE INTO EQUAL PIECES
                      (T) DIVIDE INTO SH SH L & L SH SH

DIVDSP-VERS: 5.01
```

D.
Step 4:
Parameters for "MAGIC" subroutine to cut two-piece runs —Set for 34 part-time runs

```
MAGIC-VERS: 5.01  PARAMS ARE:
 MAXSPD     =  1159   MAX SPREAD - 2 PIECE RUN
 MINSPD     =  1015   MIN SPREAD - 2 PIECE RUN
 MINPLT     =   320   MIN PLAT - 2 PIECE RUN
 AVGPLT     =   345   AVG PLAT - 2 PIECE RUN
 MAXPLT     =   439   MAX PLAT - 2 PIECE RUN
 MINPCE     =   100   MIN PLAT - ANY PIECE OF 2-PCE RUN
 AVGPCE     =   210   AVG PLAT - ANY PIECE OF 2-PCE RUN
 MAXPCE     =   350   MAX PLAT - ANY PIECE OF 2-PCE RUN
 MINSWG     =   600   MIN SWING - 2 PIECE RUN
 MAXSWG     =   930   MAX SWING - 2 PIECE RUN
 NUMPT      =    34   MAX NUMBER OF PART TIME RUNS DESIRED
 OFLPEN     =     0   OFFLINE PENALTY

SFOMAGIC-VERS: 5.00
```

Table 15 (con't.)
Summary of RUCUS Parameters for Muni's Potrero Division

E.
Step 5:
Parameters for "MAGIC" subroutine to cut two-piece full-time runs

```
MAGIC-VERS: 5.01  PARAMS ARE:
 MAXSPD    =  1159   MAX SPREAD - 2 PIECE RUN
 MINSPD    =     0   MIN SPREAD - 2 PIECE RUN
 MINPLT    =   645   MIN PLAT - 2 PIECE RUN
 AVGPLT    =   830   AVG PLAT - 2 PIECE RUN
 MAXPLT    =   900   MAX PLAT - 2 PIECE RUN
 MINPCE    =   100   MIN PLAT - ANY PIECE OF 2-PCE RUN
 AVGPCE    =   400   AVG PLAT - ANY PIECE OF 2-PCE RUN
 MAXPCE    =   715   MAX PLAT - ANY PIECE OF 2-PCE RUN
 MINSWG    =    30   MIN SWING - 2 PIECE RUN
 MAXSWG    =   300   MAX SWING - 2 PIECE RUN
 NUMPT     =  9999   MAX NUMBER OF PART TIME RUNS DESIRED
 OFLPEN    =     0   OFFLINE PENALTY

$FOMAGIC-VERS: 5.00
```

F.
Step 6:
Parameters for "MAGIC" subroutine to cut two-piece full-time runs

```
MAGIC-VERS: 5.01  PARAMS ARE:
 MAXSPD    =  1159   MAX SPREAD - 2 PIECE RUN
 MINSPD    =     0   MIN SPREAD - 2 PIECE RUN
 MINPLT    =   645   MIN PLAT - 2 PIECE RUN
 AVGPLT    =   830   AVG PLAT - 2 PIECE RUN
 MAXPLT    =   900   MAX PLAT - 2 PIECE RUN
 MINPCE    =   100   MIN PLAT - ANY PIECE OF 2-PCE RUN
 AVGPCE    =   400   AVG PLAT - ANY PIECE OF 2-PCE RUN
 MAXPCE    =   715   MAX PLAT - ANY PIECE OF 2-PCE RUN
 MINSWG    =    30   MIN SWING - 2 PIECE RUN
 MAXSWG    =   400   MAX SWING - 2 PIECE RUN
 NUMPT     =  9999   MAX NUMBER OF PART TIME RUNS DESIRED
 OFLPEN    =     0   OFFLINE PENALTY

$FOMAGIC-VERS: 5.00
```

Table 15 (con't.)
Summary of RUCUS Parameters for Muni's Potrero Division

G.
Step 7:
Parameters for "SWITCH" subroutine to optimize cut if possible by switching the pieces between runs

```
SWITCH-VERS: 5.01  PARAMS ARE:
 MAXSPD    =  1159   MAX SPREAD - 2 PIECE RUN
 MINPLT    =   645   MIN PLAT - 2 PIECE RUN
 AVGPLT    =   830   AVG PLAT - 2 PIECE RUN
 MAXPLT    =   905   MAX PLAT - 2 PIECE RUN
 MINPCE    =    40   MIN PLAT - ANY PIECE OF 2-PCE RUN
 AVGPCE    =   400   AVG PLAT - ANY PIECE OF 2-PCE RUN
 MAXPCE    =   720   MAX PLAT - ANY PIECE OF 2-PCE RUN
 MINSWG    =    30   MIN SWING - 2 PIECE RUN
 MAXSWG    =   345   MAX SWING - 2 PIECE RUN
 OFLPEN    =     0   OFFLINE PENALTY

 SWITCH VERS: 5.00
```

Table 15 (con't.)
Summary of RUCUS Parameters for Muni's Potrero Division

The RUCUS methodology uses an eight-step procedure. In Steps 1 and 2, all long blocks are cut into straight runs. As shown in Table 15, all runs beginning before 5:50 AM and ending after 6:00 PM are made into straight runs. The minimum and maximum platform times are specified as 7:14 and 8:50 hours, respectively, with an average of 8:10 hours. The maximum spread time is specified as 10:59 hours. (The spread premium threshold is 10 hours). These parameters are established in an iterative fashion, through repeated attempts to improve the results of previous runs by adjusting each parameter. The straight runs are then "frozen" and are not modified in subsequent steps.

In step 3, the work remaining after the straight runs are cut are divided into two nearly equal pieces with a target platform time of 4:00 hurs. The minimum and maximum platform times are specified as 0:30 and 5:45 hours for any piece of a two-piece run.

In step 4, 34 two-piece PTO runs are cut with relatively long spread and swing times. The minimum spread for PTO runs is specified as 10:15 hours. As a matter of policy, 11:59 hours is used as the maximum spread for PTO runs; 11:59 hours is the maximum spread for FTO runs established by Muni's labor agreement. Swing times for PTO runs are specified as 6:00 to 9:30 hours. The minimum and maximum platform times for PTO two-piece runs are specified as 3:20 and 4:39 hours, respectively, in accordance with the 3-1/2 hour guarantee and 5 hours work per day limitation stipulated for PTO's in Muni's labor agreement. The PTO two-piece runs are then "frozen" and are not modified in subsequent steps.

FTO two-piece runs are cut from all remaining work in steps 5 and 6. In both steps, the maximum spread time and average platform time are specified as 11:59 and 8:30 hours, respectively. FTO swing time is limited to no more than 3:00 hours in step 5.

The work remaining from step 5 is then cut in step 6 into two-piece runs with a maximum swing of 4:00 hours. All other parameters are held constant between steps 5 and 6.

An attempt is made to reduce costs in step 7 by switching pieces between two two-piece runs output from steps 5 and 6. Any one-piece trippers remaining after step 7 are manually worked into the cut.

Table 16 summarizes the results of the RUCUS run cut effective August 24, 1983 at the Potrero Division. FTO runs have 72 hours work overtime but no spread overtime; PTO's apparently work all runs with more than 10 hours spread. FTO make-up time is approximately 27 hours. The pay-to-platform hour ratio is 1.08 for straight runs, 1.11 for split runs and 1.09 overall. The two unassigned trippers, which were manually worked into the cut, had 3:48 pay hours, and a pay-to-platform ratio of 1.10.

AC Transit. Muni and AC Transit are currently experimenting with an automated runcutting procedure which takes into direct account the wages, fixed and variable overhead, and work rules governing the use of both PTO's and FTO's when searching for a least cost runcut for a given service schedule. This package, called the RAMCUTTER, was developed by Research Applications for Management, Inc. (RAM). The earliest version of the RAMCUTTER was developed in 1980 by RAM in consultation with the Tri-County Metropolitan Transit District of Oregon (Tri-Met). Development continued in 1981 and 1982 at both Tri-Met and Muni in San Francisco. An improved version of the RAMCUTTER was developed and tested in late 1982 at AC Transit.

The RAMCUTTER minimizes total annualized cost incurred for scheduled work time, fixed and variable overhead and other allowances for both FTO's and PTO's, subject to a series of constraints imposed by the labor agreement and the schedule department. These constraints include both "hard" constraints which cannot be violated (such as a maximum five-hour workday for PTO's) and "soft" constraints which can be violated. For example, AC Transit penalizes run cuts which include trippers that pull in after 8:00 PM. Run cuts which include no trippers that pull in after 8:00 PM are more acceptable to AC Transit's schedule department than those that do.

AC Transit utilizes a total of 270 input parameters which specify minimum/maximum constraints, various thresholds, penalties and bonuses, output formats, etc. Thirty-four of these variables affect the use of PTO's. These parameters include such "hard" constraints as the maximum percentage of PTO's, hourly pay rate, and maximum pay time. The "soft" rules include penalties for runs starting before a specified time, runs ending after a specified times, pieces of work below a specified threshold size, runs with platform times less than a specified time, etc. The schedules department can also penalize (or bonus up) part time in general, thereby reducing or increasing

```
$$$$$$$$23APR83              POTRERO   WEEKDAY   RUNS  TC    IN EFFECT 08/24/83

TOTAL RUNS (INCLUDES TRIPPERS)                    223
        ONE-PIECE RUNS                    118
        TWO-PIECE RUNS                    103
          TWO-PIECE STRAIGHTS       18
          TWO-PIECE SPLITS          85
        TRIPPERS                            2

TOTAL PLATFORM TIME (INCLUDES TRIPPERS)       1701:25
        ONE-PIECE RUNS                    972:07
        TWO-PIECE RUNS                    725:50
          TWO-PIECE STRAIGHTS      139:51
          TWO-PIECE SPLITS         585:59
        TRIPPERS                            3:28

TOTAL PAY HOURS (INCLUDES TRIPPERS)           1856:58
        ONE-PIECE RUNS                   1052:15
        TWO-PIECE RUNS                    800:55
          TWO-PIECE STRAIGHTS      148:12
          TWO-PIECE SPLITS         652:43
        TRIPPERS                            3:48

TOTAL SPREAD (TWO-PIECE SPLITS)   1096:01

TOTAL SWING  (TWO-PIECE SPLITS)    354:51

TOTAL REPORT AT A                   23:00
      CLEAR  AT B                    0:
      REPORT AT C                    6:30
      CLEAR  AT D                    0:

TOTAL TRAVEL AT A                    0:
      TRAVEL AT B                    0:
      TRAVEL AT C                    0:
      TRAVEL AT D                    0:

TOTAL WORK OVERTIME                 72:00
      SPREAD OVERTIME                0:
      PLATFORM MAKEUP               26:58
      PIECE MAKEUP                   0:
      SWING PAY                      0:

AVERAGE PLATFORM TIME (INCLUDES TRIPPERS)       7:37
        ONE-PIECE RUNS                    8:14
        TWO-PIECE RUNS                    7:02
          TWO-PIECE STRAIGHTS       7:46
          TWO-PIECE SPLITS          6:53
        TRIPPERS                            1:44

AVERAGE PAY-HOURS (INCLUDES TRIPPERS)           8:19
        ONE-PIECE RUNS                    8:55
        TWO-PIECE RUNS                    7:46
          TWO-PIECE STRAIGHTS       8:14
          TWO-PIECE SPLITS          7:40
        TRIPPERS                            1:54
                                          -6-
```

Table 16
Summary of Run Cut for Muni's Potrero Division

```
$$$$$$$$23APR83              POTRERO   WEEKDAY   RUNS  TC    IN EFFECT 08/24/83

TOTAL RUNS (INCLUDES TRIPPERS)                    223
        ONE-PIECE RUNS                    118
        TWO-PIECE RUNS                    103
          TWO-PIECE STRAIGHTS       18
          TWO-PIECE SPLITS          85
        TRIPPERS                            2

TOTAL PLATFORM TIME (INCLUDES TRIPPERS)       1701:25
        ONE-PIECE RUNS                  972:07
        TWO-PIECE RUNS                  725:50
          TWO-PIECE STRAIGHTS       139:51
          TWO-PIECE SPLITS          585:59
        TRIPPERS                          3:28

TOTAL PAY HOURS (INCLUDES TRIPPERS)           1856:58
        ONE-PIECE RUNS                 1052:15
        TWO-PIECE RUNS                  800:55
          TWO-PIECE STRAIGHTS       148:12
          TWO-PIECE SPLITS          652:43
        TRIPPERS                          3:48

TOTAL SPREAD (TWO-PIECE SPLITS)   1096:01

TOTAL SWING  (TWO-PIECE SPLITS)    354:51

TOTAL REPORT AT A                   23:00
      CLEAR  AT B                    0:
      REPORT AT C                    6:30
      CLEAR  AT D                    0:

TOTAL TRAVEL AT A                    0:
      TRAVEL AT B                    0:
      TRAVEL AT C                    0:
      TRAVEL AT D                    0:

TOTAL WORK OVERTIME                 72:00
      SPREAD OVERTIME                0:
      PLATFORM MAKEUP               26:58
      PIECE MAKEUP                   0:
      SWING PAY                      0:

AVERAGE PLATFORM TIME (INCLUDES TRIPPERS)      7:37
        ONE-PIECE RUNS                  8:14
        TWO-PIECE RUNS                  7:02
          TWO-PIECE STRAIGHTS       7:46
          TWO-PIECE SPLITS          6:53
        TRIPPERS                        1:44

AVERAGE PAY-HOURS (INCLUDES TRIPPERS)          8:19
        ONE-PIECE RUNS                  8:55
        TWO-PIECE RUNS                  7:46
          TWO-PIECE STRAIGHTS       8:14
          TWO-PIECE SPLITS          7:40
        TRIPPERS                        1:54
                                        -6-
```

Table 16 (con't)
Summary of Run Cut for Muni's Potrero Division

the number of part-time runs cut by the RAMCUTTER. Annual fixed overhead costs for each PTO and FTO, and variable overhead expressed as a percentage of PTO and FTO pay times, are also direct inputs to the RAMCUTTER.

There is a very large number of potential solutions for assigning PTO's and FTO's to a given service schedule. It is not practical to test each of these alternatives to identify the least-cost solution, even with modern electronic computers. A greater number of alternatives can be tested as schedulers allocate more and more computer time to the problem.

AC Transit's schedulers operate the RAMCUTTER in an iterative fashion. A few minutes of computer time are allocated to produce an initial runcut. Additional runs are then produced using the same amount of computer time by tightening or loosening certain constraints or rules in order to achieve implementable runcuts which are acceptable to the schedules department and others. Once the input parameter values are established, the schedulers can then allocate a greater amount of computer time to achieve a more nearly optimal solution.

At AC Transit, the RAMCUTTER input file consists of a complete listing of every trip for every block scheduled at a division. The listing includes the scheduled times at which each block: (1) pulls out of and pulls into the division, (2) arrives and leaves route terminals, and (3) passes relief points. Table 17 shows the input data for a portion of Block 110101 which leaves Division 2 at 3:28 AM and returns at 5:58 PM. (All times are given in seconds). Outputs include a: (1) Job LOGFILE; (2) sumary of the runcut; and (3) synopsis of runs. The LOGFILE summarizes all parameter values set by the user and any errors that might occur.

The runcut summary consists of six tables (see Table 18):

1. Runs Summary lists the number and efficiency (i.e., platform-topay hour ratio) for each type of run, including straights, splits, frag runs, full- and part-time extraboard runs and frag pieces.

2. Runs Breakdown summarizes the total number of platform hours, overtime, spread time and various allowances by run type.

LABEL: PRTC42 -PCRM

SPOOLED: 83-09-06.14:26
STARTED: 83-09-06.14:26, ON: PRC FY: PRC

TIME	TERMINAL ID. OF RELIEF POINT	SHOWS RELIEF POINT	BASIC I.D.	LINE NUM.			
12480	990202		110101	101	-1	-0	1
13140	52514A		110101	101	1	0	1
14100	10105		110101	101	-1	0	1
14760	10105		110101	101	1	0	0
15960	52514A		110101	101	-1	0	0
17340	52514A		110101	101	1	0	1
18240	10105		110101	101	-1	0	1
18300	10105		110101	101	1	0	0
19560	52514A		110101	101	-1	0	0
20280	52514A		110101	101	1	0	1
21300	10105		110101	101	-1	0	1
21600	10105		110101	101	1	0	0
22620	52514A		110101	101	0	0	0
23040	505		110101	101	-1	0	0
23340	505		110101	101	1	0	1
23760	52514A		110101	101	0	0	1
25020	10105		110101	101	-1	0	1
25200	10105		110101	101	1	0	0
26220	52514A		110101	101	0	0	0
26040	505		110101	101	-1	0	0
27600	505		110101	101	1	0	1
28020	52514A		110101	101	0	0	1
29280	10105		110101	101	-1	0	1
31200	10105		110101	101	1	0	0
32280	52514A		110101	101	0	0	0
32700	505		110101	101	-1	0	0
34080	505		110101	101	1	0	1
34560	52514A		110101	101	0	0	1
35640	10105		110101	101	-1	0	1
36240	10105		110101	101	1	0	0
37200	1530GGA		110101	101	0	0	0
38280	10225		110101	101	-1	0	0
38280	10225		110101	101	1	0	1
39820	7285GSA		110101	101	0	0	1
39540	10105		110101	101	-1	0	1
40200	10105		110101	101	1	0	0
41280	52514A		110101	101	0	0	0
41880	1245		110101	101	-1	0	0
42960	1245		110101	101	1	0	1
43560	52514A		110101	101	0	0	1
44640	10105		110101	101	-1	0	1
45240	10105		110101	101	1	0	0
46200	1530GGA		110101	101	0	0	0
47280	10225		110101	101	-1	0	0
47280	10225		110101	101	1	0	1
47820	7285GSA		110101	101	0	0	1
48540	10105		110101	101	-1	0	1
49200	10105		110101	101	1	0	0
50280	52514A		110101	101	0	0	0
50700	505		110101	101	-1	0	0
52080	505		110101	101	1	0	1
52560	52514A		110101	101	0	0	1
53640	10105		110101	101	-1	0	1
54240	10105		110101	101	1	0	0
55200	1530GGA		110101	101	0	0	0
56280	10225		110101	101	-1	0	0
56280	10225		110101	101	1	0	1
56820	7285GSA		110101	101	0	0	1
57540	10105		110101	101	-1	0	1
58200	10105		110101	101	1	0	0
59340	52514A		110101	101	0	0	0
59940	1245		110101	101	-1	0	0
60600	1245		110101	101	1	0	1
61200	52514A		110101	101	0	0	1
62280	10105		110101	101	-1	0	1
62700	10105		110101	101	1	0	0
63780	52514A		110101	101	0	0	0
end 64080	505		110101	101	-1	0	0
64680	990202		110101	101	1	2	0

Table 17
RAMCUTTER Input Data for AC Transit Line 12

Table 18

FINAL DIV. 2 WEEKDAY RUNCUT...LEVEL C

*** TABLE #1: RUNS SUMMARY ***

RUN TYPE	NUMBER	EFFIC.
STRAIGHT	125	94.40
SPLIT	73	89.68
FRAG RUN	38	90.86
EX BD FT	31	76.28
EX ED FT	14	91.40
FRAG PCE	1	93.33
TOTAL	282	89.21

*** TABLE #2: RUNS BREAKDOWN ***

RUN TYPE	PLATF	BETWN	OVRTM	TRNIN	TRAVL	ALLOW	REPRT	ELAPS	TOTAL
STRAIGHT	1043:52	4:46	31:21	6:25	C:CO	12:42	9:00	C:CO	1108:06
SPLIT	584:04	C:00	8:11	4:30	9:24	9:25	15:00	21:59	652:33
FRAG RUN	289:46	C:00	0:36	3:05	4:48	9:42	1C:20	4C:C4	358:21
EX BD FT	221:36	C:CO	C:CC	2:30	C:CO	23:54	9:00	37:02	294:02
EX BD PT	62:13	C:CC	C:CC	1:10	C:CO	C:00	4:40	C:CO	68:03
FRAG PCE	2:20	C:CC	0:CC	C:00	C:CO	0:00	C:10	C:GO	2:3C
TOTAL	2203:51	4:46	4C:C8	17:40	14:12	55:43	48:10	99:05	2483:35

*** TABLE #3: ANNUALIZED DOLLAR COSTS ***

RUN TYPE	SALARIES	OVERHEAD	TOTAL COST
STRAIGHT	$3,411,85C	$1,622,283	$5,C34,133
SPLIT	$2,CC9,2C7	1947,41?	$2,956,620
FRAG RUN	$1,1C3,362	1493,174	$1,596,536
EX BD FT	1905,331	1402,324	$1,3C7,657
EX BD PT	1146,4?9	145,4C5	$192,091

Table 18
Summary of AC Transit RAMCUTTER Run

```
                    **********************
                    * TABLE #4: EXTREMES *
                    **********************

 RUN NUMBER  27 IS THE WORST STRAIGHT RUN WITH EFFICIENCY 80.90 PERCENT.
 RUN NUMBER 127 IS THE WORST SPLIT    RUN WITH EFFICIENCY 76.79 PERCENT.
 RUN NUMBER 167 IS THE WORST FRAG RUN RUN WITH EFFICIENCY 75.84 PERCENT.
 RUN NUMBER 272 IS THE WORST EXTENDED RUN WITH EFFICIENCY 55.51 PERCENT.
 RUN NUMBER  58 HAS THE EARLIEST ROAD RELIEF AT .      9:03AM
 RUN NUMBER 106 HAS THE LATEST ROAD RELIEF AT          7:33PM


                    **********************
                    * TABLE #5: WARNINGS *
                    **********************

THE PERCENT OF REGULAR RUNS THAT ARE STRAIGHTS IS              63.13
THE PERCENT OF REGULAR RUNS WITH SPREAD LESS THAN 10:30 IS     37.37
THE PERCENT OF FRAG PIECES LINKED INTO FRAGMENTARY RUNS IS     45.51
THE PERCENT OF PART TIME OPERATORS IS                           5.24
THE NUMBER OF AFTERNOON FRAG PIECES IS    1
THE NUMBER OF MORNING FRAG PIECES IS      0
THE NUMBER OF MID DAY FRAG PIECES IS      0


                    ********************************
                    * TABLE #6: LINE INFORMATION *
                    ********************************

 LINE 101 HAS 11 REGULAR RUNS ASSIGNED TO IT
    THE 3 EARLIEST PULLOUTS ON THIS LINE ARE
        3:29AM  - SEE RUN 152 - STRAIGHT
        5:03AM  - SEE RUN 153 - STRAIGHT
        5:46AM  - SEE RUN 226 - STRAIGHT
    THE 3 LATEST PULLINS ON THIS LINE ARE
        1:42XM  - SEE RUN 162 - STRAIGHT
        2:17XM  - SEE RUN 162 - STRAIGHT
        9:38PM  - SEE RUN 160 - STRAIGHT

 LINE 51  HAS 21 REGULAR RUNS ASSIGNED TO IT
    THE 3 EARLIEST PULLOUTS ON THIS LINE ARE
        4:21AM  - SEE RUN 45 - STRAIGHT
```

Table 18 (con't)

Summary of AC Transit RAMCUTTER Run

```
                    ******************************
                    * TABLE FOR LINE INFORMATION *
                    ******************************


LINE 101 HAS 11 REGULAR RUNS ASSIGNED TO IT
  THE 3 EARLIEST PULLOUTS ON THIS LINE ARE
       3:29AM  - SEE RUN 152 - STRAIGHT
       5:03AM  - SEE RUN 153 - STRAIGHT
       8:46AM  - SEE RUN 226 - STRAIGHT
  THE 3 LATEST PULLINS ON THIS LINE ARE
       3:42PM  - SEE RUN 163 - STRAIGHT
       2:17PM  - SEE RUN 162 - STRAIGHT
       9:38PM  - SEE RUN 160 - STRAIGHT

LINE 51  HAS 21 REGULAR RUNS ASSIGNED TO IT
  THE 3 EARLIEST PULLOUTS ON THIS LINE ARE
       4:21AM  - SEE RUN  85 - STRAIGHT
       4:37AM  - SEE RUN  86 - STRAIGHT
       4:51AM  - SEE RUN  87 - STRAIGHT
  THE 3 LATEST PULLINS ON THIS LINE ARE
       2:33PM  - SEE RUN 119 - STRAIGHT
       2:07PM  - SEE RUN 122 - STRAIGHT
       1:55PM  - SEE RUN 121 - STRAIGHT

LINE 40  HAS 26 REGULAR RUNS ASSIGNED TO IT
  THE 3 EARLIEST PULLOUTS ON THIS LINE ARE
       4:19AM  - SEE RUN  49 - STRAIGHT
       4:51AM  - SEE RUN  50 - STRAIGHT
       5:22AM  - SEE RUN  51 - STRAIGHT
  THE 3 LATEST PULLINS ON THIS LINE ARE
       2:38PM  - SEE RUN  75 - STRAIGHT
       2:29PM  - SEE RUN  73 - STRAIGHT
       1:44PM  - SEE RUN  74 - STRAIGHT

LINE 88  HAS 11 REGULAR RUNS ASSIGNED TO IT
  THE 3 EARLIEST PULLOUTS ON THIS LINE ARE
       4:50AM  - SEE RUN 138 - STRAIGHT
       5:10AM  - SEE RUN 139 - STRAIGHT
       5:30AM  - SEE RUN 140 - STRAIGHT
  THE 3 LATEST PULLINS ON THIS LINE ARE
       1:23PM  - SEE RUN 151 - STRAIGHT
      12:53PM  - SEE RUN 150 - STRAIGHT
      12:23PM  - SEE RUN 149 - STRAIGHT

LINE 106 HAS 17 REGULAR RUNS ASSIGNED TO IT
  THE 3 EARLIEST PULLOUTS ON THIS LINE ARE
       4:51AM  - SEE RUN 186 - STRAIGHT
       5:37AM  - SEE RUN 179 - STRAIGHT
       5:57AM  - SEE RUN 189 - STRAIGHT
  THE 3 LATEST PULLINS ON THIS LINE ARE
       2:57PM  - SEE RUN 207 - STRAIGHT
       2:16PM  - SEE RUN 208 - STRAIGHT
      12:57PM  - SEE RUN 206 - STRAIGHT
```

Table 18 (con't)
Summary of AC Transit RAMCUTTER Run

```
LINE 18  HAS 15 REGULAR RUNS ASSIGNED TO IT
  THE 3 EARLIEST PULLOUTS ON THIS LINE ARE
      4:50AM  - SEE RUN  27 - STRAIGHT
      5:15AM  - SEE RUN  28 - STRAIGHT
      5:45AM  - SEE RUN  29 - STRAIGHT
  THE 3 LATEST PULLINS ON THIS LINE ARE
      1:01XM  - SEE RUN  44 - STRAIGHT
     10:26PM  - SEE RUN  43 - STRAIGHT
      9:01PM  - SEE RUN  41 - STRAIGHT

LINE 150 HAS 14 REGULAR RUNS ASSIGNED TO IT
  THE 3 EARLIEST PULLOUTS ON THIS LINE ARE
      4:03AM  - SEE RUN 220 - STRAIGHT
      4:24AM  - SEE RUN 221 - STRAIGHT
      4:44AM  - SEE RUN 222 - STRAIGHT
  THE 3 LATEST PULLINS ON THIS LINE ARE
      2:15XM  - SEE RUN 235 - STRAIGHT
      1:55XM  - SEE RUN 23e - STRAIGHT
      1:40XM  - SEE RUN 234 - STRAIGHT

LINE 151 HAS 11 REGULAR RUNS ASSIGNED TO IT
  THE 3 EARLIEST PULLOUTS ON THIS LINE ARE
      4:40AM  - SEE RUN 209 - STRAIGHT
      4:44AM  - SEE RUN 210 - STRAIGHT
      5:10AM  - SEE RUN 211 - STRAIGHT
  THE 3 LATEST PULLINS ON THIS LINE ARE
      2:01XM  - SEE RUN 219 - STRAIGHT
      2:00XM  - SEE RUN 218 - STRAIGHT
      8:33PM  - SEE RUN 217 - STRAIGHT

THE OTHER LINES HAVE FEWER THAN 10 REGULAR RUNS
```

Table 18 (con't)
Summary of AC Transit RAMCUTTER Run

3. Annualized Dollar Costs provides salary and overhead costs, by run type.

4. Extremes, include straight, split, frag and full-time extraboard runs with the worst efficiencies, and the runs with the earliest and latest road reliefs.

5. Warnings, list several parameters which are covered by the labor agreement, including:

   - Percent regular runs that are straights.
   - Percent regular runs with spreads less than 10:30 hours.
   - Percent PTO's.
   - Number of afternoon, morning and mid-day frag pieces.

6. Line Information lists the three earliest pull-outs and three latest pull-ins by time, run number and run type, for each line having 10 or more regular runs, since the AC Transit labor agreement specifies that, on all lines having 10 or more runs, the first three runs out and the last three runs in at night shall be straight runs.

The synopsis of runs consists of a complete listing of all runs, for all lines at the division being cut, including extraboard work. Table 19 shows the results for AC Transit Line 12. In addition to complete listings of all runs for each line, the synopsis of runs lists all extraboard pieces of work including full-time extraboard, part-time extraboard and school holiday runs.

The RAMCUTTER and RUCUS Version 5.01 are both automated procedures that consider both PTO's and FTO's when cutting runs for a given service schedule. Both consider differences in PTO and FTO work rules. The RAMCUTTER also considers PTO and FTO fixed and variables overhead costs which RUCUS does not. In addition, the RAMCUTTER incorporates a greater number of constraints regarding start and end times, road reliefs, platform times, etc. which help to generate acceptable, implementable run cuts. A comparison of the RAMCUTTER and RUCUS Version 5.01 by the greater of

RUN	RUN TYPE	RTE	LIN	BLOCK#	RLF	START	FINISH	RLF	SPREAD	PCEFLT	PLATFM	BTWNTM	OVERTM	TURNIN	TRAVEL	ALOWTM	REPORT	ELAPTM	TOTAL
4	SPLIT	12	12	C12CC4	D2	5:COAM	1C:C3AM	D2	9:22	5:03	7:54	C:CC	0:CC	C:05	C:C9	C:CC	C:1C	C:00	8:17
			51	C51CC9	4B	11:31AM	2:32PM	4B		2:51									
5	STRAIGHT	12	12	C12CC1	D2	5:27AM	1:37PM	14	8:1C	8:1C	8:1C	0:0C	0:05	C:GC	C:00	C:CC	C:1C	C:00	8:25
6	SPLIT	12	12	C12CC2	D2	5:5CAM	11:55AM	14	1C:16	6:05	8:56	C:CC	0:29	C:0C	C:C3	C:CC	C:1C	C:C9	9:50
			83	C83CC1	MK	1:15PM	4:C6PM	MK		2:51									
7	FRAG RUN	12	12	C12CC3	D2	6:C1AM	1C:55AM	14	12:04	4:54	9:24	G:CC	0:12	C:05	C:13	C:CC	C:2C	1:02	10:21
			51	C51C23	D2	2:25PM	6:C5PM	D2		3:30									
7	SCHL HOL	12	12	C12CC3	D2	6:C1AM	1C:55AM	14	12:04	4:54	7:16	G:CC	0:0C	C:05	C:18	C:21	C:2C	1:02	9:22
			51	C51C23	D2	2:43PM	6:C5PM	D2		2:22									
8	SPLIT	12	83	C83CC2	MK	5:18AM	12:45PM	MK	9:41	3:37	7:45	C:CC	0:00	C:C5	C:C6	C:C4	C:1C	C:CC	8:1C
			12	C12CC4	D2	2:41PM	6:59PM	D2		4:18									
9	SPLIT	12	12	C12CC3	14	1C:55AM	2:37PM	14	8:49	3:42	7:22	C:CC	0:00	C:05	C:21	C:12	C:00	C:00	8:CC
			65	C65CC1	AH	4:C4PM	7:44PM	D2		3:4C									
10	STRAIGHT	12	12	C12CC2	14	11:55AM	9:36PM	D2	9:41	9:41	9:41	C:CC	0:5C	C:05	C:00	C:CC	C:CC	C:00	10:36
11	STRAIGHT	12	12	C12CC1	14	4:3CPM	1:C4AM	D2	8:34	8:34	8:34	C:CC	0:17	C:05	C:CC	C:CC	C:00	C:00	8:56
12	STRAIGHT	12	12	C12CC3	14	4:55PM	1:18AM	D2	8:23	8:23	8:23	C:CC	0:11	C:05	C:00	C:CC	C:CC	C:00	8:39

Table 19
RAMCUTTER Synopsis of Run for Line 12

the RAMCUTTER at Tri-Met in Portland, Oregon indicate that the procedures result in solutions of approximately equal cost.

CONCLUSIONS AND RECOMMENDATIONS

The major conclusions of this study regarding the methods for determining the use of part-time operators are as follows:

- The use of part-time operators (PTO's) is widely regarded as a means of reducing the cost of providing peak period transit service, thereby improving transit productivity, because:

  1. PTO's are govered by less restrictive work rules than their full-time operator (FTO) counterparts.

  2. PTO's tyically receive no spread or overtime premiums.

  3. PTO's almost always receive lower fringe benefits than FTO's.

  4. PTO's sometimes earn lower wages than FTO's.

- The use of PTO's is widespread, including transit systems of all sizes, in all regions of the nation. Three-fourths of all U.S. transit systems are permitted to use PTO's; one of every twenty operators nationwide is a PTO.

- PTO's are typically used to provide peak period tripper service, but may perform other duties at some systems.

- A variety of procedures are being used to assign PTO's to pieces of work selected from existing runcuts. These procedures consider PTO pay hours, FTO make-up hours, FTO spread premiums and/or FTO overtime in deciding which pieces to assign to FTO's and which to assign to PTO's. No procedure was identified that considered all of these variables, or PTO or FTO fringe benefits.

- RUCUS Version 5.01 and RAMCUTTER are promising computerized procedures that incorporate PTO's directly into the runcutting process. RUCUS is presently used at San Francisco Muni, and the RAMCUTTER is in the testing stages at both Muni and AC Transit.

- Few systems have evaluated the effect on the use of PTO's of such work rule provisions as maximum work hours, maximum spread or types of work permitted. This study identified no systems that have reported the results of experimental runcuts which explored available trade-offs involved in labor contract negotiations.

APPENDIX A

COMPARATIVE LABOR PRACTICES: PART-TIME OPERATORS

URBANIZED AREA/ PROPERTY	NUMBER OF FTO'S	NUMBER OF PTO'S	NUMBER OF OTHER PART-TIMERS	PTO'S PER-MITTED?	OTHER PART-TIMERS PER-MITTED?	PERCENT PTO'S PER-MITTED?	PERCENT OTHERS PER-MITTED?	TYPES OF WORK ALLOWED	MAX HOURS PER WEEK	
ABILENE, TX.	16	5	4	1	1	A	A	-	NA	1
AKRON,OH:METRO REG TR AUTH	163	0	0	1	0	20	NA	S	20	2
AKRON: CAMPUS BUS SERV.	0	91	25	1	1	99999	A	-	NA	3
ALBUQUERQUE,NM	137	15	0	1	1	A	A	-	32	4
ALLENTOWN/BETHLEHEM,PA	85	0	5	0	1	NA	A	-	NA	5
ALTOONA,PA	25	6	0	1	0	40	NA	-	-	6
AMES,IA	10	23	2	1	1	A	A	-	40	7
ANCHORAGE,AK	74	19	1	1	1	A	A	-	40	8
ANDERSON,SC	9	0	0	0	0	NA	NA	NA	NA	9
ANN ARBOR,MI	80	19	3	1	1	15	15	-	35	10
APPLETON,WI	33	21	2	1	1	A	A	-	30	11
ATLANTA,GA	1,254	12	12	1	1	A	A	-	NA	12
AUGUSTA,GA	46	0	0	0	0	NA	NA	NA	NA	13
AUSTIN,TX	127	8	0	1	1	A	A	T,O	20	14
BALTIMORE,MD: MTA	1,295	75	15	1	1	10	A	T	30	15
BALT.: AIRWAY LIMO SVCE	27	27	4	1	1	A	A	-	42.5	16
BATTLE CR	19	4	0	1	0	A	NA	-	30	17
BAY CITY,MI	64	0	1	0	1	NA	A	NA	NA	18
BILLINGS,MONTANA	22	2	0	1	0	A	NA	-	NA	19
BINGHAMPTON,NY	54	10	1	1	1	A	A	-	NA	20
BIRMINGHAM,AL	111	0	1	1	1	10	A	T	NA	21
BLACKSBURG,VA	0	45	3	1	1	99999	A	NA	NA	22
BOISE CITY,ID	31	2	3	1	1	A	A	-	NA	23
BOONE,NC	8	12	0	1	0	A	NA	NA	NA	24
BOSTON,MA	1,533	266	0	1	1	15	15	W	30	25
BRIDGEPORT,CT	86	0	0	0	1	NA	A	NA	NA	26
BROCKTON,MA	70	0	0	0	1	NA	A	NA	NA	27
BUFFALO,NY	580	1	3	1	1	A	A	-	NA	28
BURLINGTON,VT	31	45	0	1	1	A	A	-	NA	29
CANTON,OH	64	0	3	0	1	NA	A	NA	NA	30
CHAMPAIGN/URBANA,IL	61	26	7	1	1	A	A	-	NA	31
CHARLESTON,WV	102	0	2	0	1	NA	A	NA	NA	32
CHARLOTTE,NC	150	0	0	1	0	10	NA	WT,O	25	33
CHARLOTTESVILLE:UNV.TRAN.SV	5	73	2	1	1	A	A	-	0.5	34
CHATTANOOGA,TN/GA	76	0	1	1	1	A	A	T	25	35
CHICAGO,IL/NW IN: CTA	6,117	0	157	0	1	NA	A	NA	NA	36
CHI.: GARY PUBLIC TRP COR	103	0	0	1	0	A	NA	ST	25	37
CHI.: NO.SUBURBAN MTD	160	0	0	1	1	10	10	NA	20	38
CINCINNATI OH/KY: SORTA	513	0	15	1	1	7.5	A	T	25	39
CINC.: TR AUTH OF NO. KY	111	6	0	1	1	A	A	O	25	40
CLEVELAND,OH:GREAT CLV.RTA	1,198	0	0	1	1	10	A	T	30	41
CLE.: MAPLE HGTS TR DEPT	29	0	0	0	0	NA	NA	NA	NA	42
COLUMBIA,MO	17	3	0	1	0	A	NA	-	NA	43
COLUMBUS,OH	439	0	0	0	1	NA	A	NA	NA	44
DALLAS/FTWORTH:DALLAS TR SY	596	28	33	1	1	A	A	O	NA	45
D/FW: CITRAN	141	21	0	1	1	A	A	PT	30	46
DAVPRT/ROCK IS:DAV.DEPT.TRP	41	0	0	1	0	A	NA	-	NA	47
DAV.: ROCK IS CO MET MTD	41	10	0	1	0	A	NA	T,O	30	48

DAYTON,OH	312	0	0	0	0	NA	NA	NA	NA	49
DECATUR,IL	25	0	0	1	0	A	NA	T	25	50
DENVER/BOULDER,CO	851	25	4	1	1	15	A	WPT	25	51
DES MOINES,IA	104	34	6	1	1	A	A	-	NA	52
DETROIT:DETROIT DEPT.TRP.	1,066	0	0	0	0	NA	NA	NA	NA	53
DET.: SEMTA: L6E BUS	534	43	24	1	1	15	A	WT,HT,O	30	54
DET.: SEMTA: SM BUS	-	-	-	1	1	40	40	-	24	55
DULUTH/SUPERIOR,MN	97	10	5	1	1	10	A	-	25	56
DURHAM,NC:DUKE POWER CO	41	0	0	0	0	NA	NA	NA	NA	57
CHAPEL HILL TRANSIT	40	20	1	1	1	A	A	-	NA	58
ELGIN,IL	34	0	6	0	1	NA	A	-	NA	59
ELMIRA,NY	30	8	0	1	0	A	NA	-	20	60
EL PASO,TX	170	18	3	1	1	A	A	NA	NA	61
ERIE,PA	85	0	0	0	0	NA	NA	NA	NA	62
EUGENE,OR	113	0	0	1	1	15	15	-	30	63
EUREKA,CA:ARCATA& MAD RIVER	0	11	0	1	0	99999	NA	-	36	64
FAIRBANKS,AK	14	7	2	1	1	A	A	-	NA	65
FARGO/MOORHEAD,ND/MN:METRO	12	5	1	1	1	A	A	NA	NA	66
FLINT,MI	80	11	0	1	1	15	A	-	30	67
FORT LAUDERDALE,FL	301	0	4	1	1	A	A	-	NA	68
FORT WAYNE,IN	89	0	0	0	0	NA	NA	NA	NA	69
FRESNO,CA	139	0	0	1	1	A	A	T	NA	70
GASTONIA,NC	9	1	0	1	1	A	A	-	NA	71
GRAND RAPIDS,MI	98	0	0	1	0	A	NA	T,O	20	72
GREENFIELD,MA	16	4	1	1	1	A	A	-	30	73
GREENSBORO,NC	37	0	0	0	0	NA	NA	NA	NA	74
HARRISBURG,PA	87	0	3	1	1	A	A	-	NA	75
HARTFORD, CONN.	358	0	0	0	0	NA	NA	NA	NA	76
CONN.: NEW HAVEN,CT	189	0	0	0	0	NA	NA	NA	NA	77
CONN.: STAMFORD,CT	41	0	0	0	0	NA	NA	NA	NA	78
HIGH POINT,NC	16	3	1	1	1	A	A	-	NA	79
HONOLULU,HI	702	0	0	0	0	NA	NA	NA	NA	80
HOUSTON,TX:MTA	921	0	0	0	0	NA	NA	NA	NA	81
HUNTINGTON,WV/KY/OH	21	0	0	1	1	A	A	-	NA	82
INDIANAPOLIS,IN	292	22	22	1	1	A	A	T,O	30	83
IOWA CITY,IA	23	23	3	1	1	A	A	-	40	84
JACKSON,MI	32	5	2	1	1	A	A	-	NA	85
JACKSON,MS	44	0	0	0	1	NA	A	NA	NA	86
JACKSONVILLE,FL	250	0	0	0	0	NA	NA	NA	NA	87
JAMESTOWN,NY	18	3	0	1	0	A	NA	NA	NA	88
JANESVILLE,WI	16	13	0	1	1	A	A	-	30	89
JEFFERSON CITY,MO	9	8	2	1	1	A	A	-	30	90
JOHNSTOWN,PA	43	0	2	0	1	NA	A	NA	NA	91
JUNEAU,AK	13	7	0	1	0	A	NA	-	NA	92
KALAMAZOO,MI	62	18	2	1	1	34	A	-	40	93
KANSAS CITY,MO/KS	405	47	4	1	1	A	A	-	25	94
KNOXVILLE,TN	98	0	0	0	1	NA	A	NA	NA	95
LA CROSSE,WI/MN	29	3	0	1	0	A	NA	O	NA	96
LAFAYETTE/WEST LAF,IN	37	0	2	1	1	A	A	-	20	97
LANCASTER,PA	44	2	3	1	1	5	A	-	24	98
LAREDO,TX	48	0	0	1	1	A	A	-	NA	99
LAS VEGAS,NV	55	0	0	0	0	NA	NA	NA	NA	100
LEXINGTON/FAYETTE,KY	62	0	0	1	0	A	NA	-	25	101
LIMA,OH	12	2	3	1	1	A	A	-	40	102
LINCOLN,NE	80	3	1	1	1	10	A	WT,O	25	103
LITTLE ROCK,AR	79	0	0	0	1	NA	A	NA	NA	104

LOS ANGELES:SCRTD	4,980	416	0	1	0	15	NA	WT,HT,O	25	105
L.A.: CULVER CITY MUN BUS	36	0	0	1	0	A	NA	-	40	106
L.A.: LG BEACH PUB TRP CO	277	18	9	1	1	10	A	T	30	107
L.A.: ORANGE COUNTY TD	774	44	25	1	1	10	A	WT	25	108
L.A.: SANTA MONICA MUN BU	146	15	3	1	1	10	A	-	30	109
LOUISVILLE,KY/IN	392	31	4	1	1	10	A	-	25	110
LOWELL,MA/NH	32	0	2	1	1	20	A	-	20	111
LUBBOCK,TX	40	64	4	1	1	A	A	NA	NA	112
LYNCHBURG,VA	41	2	1	1	1	A	A	-	25	113
MADISON,WI	200	15	9	1	1	15	A	S	-	114
MANKATO,MN	5	20	2	1	1	A	A	-	-	115
MEMPHIS,TN/AR/MS	248	0	9	0	1	NA	A	NA	NA	116
MIAMI,FL	1,020	3	2	1	1	10	A	P	24	117
MIDDLETOWN,OH	8	12	1	1	1	A	A	NA	NA	118
MIDLAND,TX	25	3	0	1	0	A	NA	NA	NA	119
MILWAUKEE,WI	972	28	20	1	1	7	7	-	30	120
MINNEAPOLIS/ST.PAUL,MN	1,290	129	0	1	1	10	A	T	30	121
MOBILE,AL	57	0	0	1	1	A	A	-	-	122
MONROE,MI	24	6	0	1	0	A	NA	-	32	123
MONTGOMERY,AL	44	0	1	1	1	10	15	-	20	124
MUNCIE,IN	34	3	3	1	1	14	A	-	-	125
NASHVILLE/DAVIDSON,TN	173	0	0	0	0	NA	NA	NA	NA	126
NEW BEDFORD/FALL RIV.MA:NEWBED.	58	0	0	0	0	NA	NA	NA	NA	127
NEW ORLEANS REG. TRANS.AUTH	703	0	0	1	1	10	A	-	25	128
N.O.: LOUISIANA TR CO	47	1	0	1	1	10	10	-	-	129
N.O.: WESTSIDE TR LINES	44	0	0	1	1	A	A	-	-	130
NEWPORT NEWS/HAMPTON,VA	96	9	9	1	1	A	A	-	-	131
NEW YORK/N.E.NJ:NYC TR AUTH	10,743	0	33	0	1	NA	A	NA	NA	132
NYC: MANHATTAN & BRONX ST	3,537	0	0	0	1	NA	A	NA	NA	133
NYC: METRO SUB BUS AUTH	501	0	0	0	1	NA	A	NA	NA	134
NYC: NJ TRANSIT BUS	2,384	0	6	0	1	NA	A	NA	NA	135
NYC: LONG ISLAND RR	453	0	0	0	0	NA	NA	NA	NA	136
NYC: PT AUTH TR HUDSON	168	0	0	0	0	NA	NA	NA	NA	137
NYC: JAMAICA BUSES,INC.	162	0	0	0	0	NA	NA	NA	NA	138
NYC: LIBERTY LINES	311	0	13	1	1	A	A	-	-	139
NORFOLK/PORTSMOUTH,VA	235	40	3	1	1	A	A	-	20	140
NORWALK,CT	35	6	0	1	1	A	A	-	40	141
OKLAHOMA CITY,OK	102	6	0	1	1	15	A	T,O	30	142
OLYMPIA,WA	51	6	6	1	1	A	A	-	35	143
ONEONTA,NY	5	23	3	1	1	A	A	-	-	144
OSHKOSH,WI	24	2	0	1	1	A	A	-	-	145
OWENSBORO,KY	11	4	0	1	1	A	A	-	40	146
OXNARD/VENTURA,CA	45	6	4	1	1	A	A	-	-	147
PEORIA,IL	76	7	0	1	1	A	A	-	30	148
PHIL./PA/NJ:S.E.PA TRP AUTH	2,751	0	0	0	0	NA	NA	NA	NA	149
PHIL.: NON-COMMUTER RAIL	2,493	0	0	0	0	NA	NA	NA	NA	150
PHIL.: COMMUTER RAIL	258	0	0	1	0	A	NA	-	-	151
PHIL.: PORT AUTH TR CORP	51	1	2	1	1	A	A	-	-	152
PHEONIX,AZ	335	0	0	1	1	15	A	T,S	20	153
PITTSBURGH,PA	1,614	0	0	0	0	NA	NA	NA	NA	154
PORT ARTHUR,TX	7	4	1	1	1	A	A	-	40	155
PORTLAND,OR/WA:TRI-CO METRO	1,011	131	14	1	1	14	A	WT,O	30	156
PORT.: CLARK CO.PTBA	49	20	4	1	1	A	A	-	35	157
PROVIDENCE/NEWPORT,RI	360	0	0	0	1	NA	A	NA	NA	158
PUEBLO,CO	18	0	3	0	1	NA	A	NA	NA	159
PULLMAN,WA	0	0	0	1	0	A	NA	-	20	160

RENO,NV	38	2	0	1	1	A	A	-	30	161
RICHLAND/KENNEWICK,WA	75	1	3	1	1	A	A	-	21	162
RICHMOND,VA	263	0	0	1	0	10	NA	-	30	163
ROANOKE,VA	44	0	0	1	1	A	A	NA	NA	164
ROCHESTER,NY	346	0	0	0	1	NA	A	NA	NA	165
ROCKFORD,IL	62	6	0	1	1	15	A	0	25	166
SACRAMENTO,CA	318	6	5	1	1	10	A	T	30	167
SAGINAW,MI	23	22	0	1	0	A	NA	-	-	168
ST.CLOUD,MN	27	0	5	1	1	A	A	-	-	169
ST.JOSEPH,MO/KS	35	0	0	1	1	A	A	-	-	170
ST.LOUIS/ALTON,MO/IL	1,113	0	0	1	0	10	NA	W,0	30	171
ST.PETERSBURG,FL:MTS	113	0	1	0	1	NA	A	NA	NA	172
StP: PINELLAS SUNCOAST TA	85	4	1	1	1	10	10	W	20	173
SALT LAKE/OGDEN,UT:SALT LA.	275	52	0	1	1	20	A	-	-	174
SAN ANTONIO,TX	592	6	20	1	1	A	A	-	-	175
SAN BERN/RIVSDE,CA:OMNITRAN	140	10	0	1	0	20	NA	-	30	176
SB/R: RIVERSIDE TR AGENCY	59	6	3	1	1	10	A	T,0	25	177
SAN DIEGO,CA:SAN DIEGO TR	513	8	0	1	0	10	NA	T	25	178
S.D.: NO.SAN DIEGO CO TD	184	32	1	1	1	A	A	-	30	179
SAN.F./OAKLAND:SF BAY AREA	232	0	53	1	1	A	A	-	-	180
S.F.: AC TRANSIT	1,445	0	0	1	0	10	NA	W	25	181
S.F.: GOLDEN GATE BUS	345	26	2	1	1	10	A	T	17.5	182
S.F.: GOLDEN GATE FERRY	23	0	2	0	1	NA	A	NA	NA	183
S.F.MUNI RAILWAY	1,889	200	4	1	1	12	A	0	25	184
S.F.: SAN MATEO CO TD	237	36	2	1	1	10	5	0	30	185
S.F.: CCC TRANSIT AUTH.	60	36	2	1	1	A	A	-	30	186
SAN JOSE,CA	1,139	44	0	1	0	10	NA	T	25	187
SAN JUAN,PR	678	0	0	0	0	NA	NA	NA	NA	188
SANTA BARBARA,CA	102	0	1	1	1	15	A	WT,0	25	189
SANTA CRUZ,CA	178	4	1	1	1	10	A	T	25	190
SANTA ROSA,CA	21	5	1	1	1	A	A	-	40	191
SARASOTA/BRADENTON,FL:SARA.	16	4	1	1	1	A	A	NA	NA	192
SCRAN./WILK-BAR,PA:LUZERNE	78	0	1	0	1	NA	A	NA	NA	193
SCR/WB: CO.OF LACKAWANNA	54	0	0	0	0	NA	NA	NA	NA	194
SEASIDE/MONTERRREY,CA	53	14	0	1	0	A	NA	-	-	195
SEATTLE,WA:MUNI METRO SEATT	1,120	915	0	1	0	100	NA	WT	-	196
SEA: EVERETT TRANSIT	48	0	2	1	1	A	A	-	-	197
SEA: COMMUNITY TRANSIT	93	0	1	1	1	A	A	-	-	198
SHREVEPORT,LA	85	0	0	1	0	A	NA	0	20	199
SIMI VALLEY,CA	11	3	1	1	1	A	A	-	-	200
SIOUX FALLS,SD	12	7	3	1	1	A	A	-	30	201
SOUTH BEND,IN/MI	84	0	1	1	1	A	A	S,0	20	202
SPARTANBURG,SC	15	0	0	0	0	NA	NA	NA	NA	203
SPOKANE,WA	172	37	1	1	1	15	A	T	25	204
UNIV.MASS TR SVCE	0	134	6	1	1	99999	A	-	40	205
SPRINGFIELD,MO	43	5	0	1	1	25	A	-	40	206
STATE COLLEGE,PA	26	3	2	1	1	A	A	-	-	207
STOCKTON,CA	68	0	2	1	1	10	A	T	25	208
SYRACUSE/AU/OSW,NY:SYRACUSE	207	35	23	1	1	10	A	-	25	209
AUBURN,NY	12	13	2	1	1	A	A	-	-	210
OSWEGO,NY	7	8	1	1	1	A	A	NA	NA	211
TACOMA,WA	237	36	0	1	0	A	NA	NA	NA	212
TALLAHASSEE,FL	45	15	2	1	1	A	A	NA	NA	213
TOLEDO,OH/MI	219	30	0	1	1	15	A	WT,S	15	214
TOPEKA,KS	32	0	5	1	1	A	A	-	20	215
TUCSON,AZ	195	14	0	1	0	7	NA	T,0	24	216

TULSA,OK	127	2	3	1	1	8	A	T	20	217
UTICA/ROME,NY	33	18	1	1	1	A	A	-	-	218
WACO,TX	18	1	4	1	1	A	A	FT	-	219
WALLA WALLA,WA	17	6	0	1	0	A	NA	-	20	220
WASHINGTON,DC/MD/VA	2,773	263	72	1	1	15	A	T	30	221
WEST PALM BEACH,FL	89	0	0	0	0	NA	NA	NA	NA	222
WICHITA,KS	73	0	0	1	0	10	NA	-	20	223
WILLIAMSPORT,PA	23	1	0	1	1	A	A	-	-	224
WINSTON-SALEM,NC	56	0	0	1	1	10	A	-	-	225
YAKIMA,WA	16	13	1	1	1	A	A	-	-	226
YORK,PA	22	2	1	1	1	A	A	-	20	227
YOUNGSTOWN/WARREN,OH	59	11	2	1	1	20	A	T	20	228

COMPARATIVE LABOR PRACTICES: PART-TIME OPERATORS

URBANIZED AREA/ PROPERTY	TOP PAY RATE (% FTO)	UNION MEMBERS?	SENIORITY TRANS-FERABLE?	PTO LAYOFF PRO-VISION?	GUARANTEE PER ASSIGN. (HOURS)	FREE TRANS-PORTATION	UNIFORM ALLOW-ANCE?	
ABILENE, TX.	100	NA	NA	NA	NA	NA	NA	1
AKRON,OH:METRO REG TR AUTH	100	1	0	1	2	P	1	2
AKRON: CAMPUS BUS SERV.	NA	NA	NA	NA	NA	NA	NA	3
ALBUQUERQUE,NM	100	0	0	0	0	0	0	4
ALLENTOWN/BETHLEHEM,PA	NA	NA	NA	NA	NA	NA	NA	5
ALTOONA,PA	100	1	1	0	0	0	0	6
AMES,IA	75	1	1	0	0	0	1	7
ANCHORAGE,AK	100	1	1	0	0	1	1	8
ANDERSON,SC	NA	NA	NA	NA	NA	NA	NA	9
ANN ARBOR,MI	100	1	1	0	0	0	0	10
APPLETON,WI	80	1	1	1	0	0	0	11
ATLANTA,GA	100	NA	NA	NA	NA	NA	NA	12
AUGUSTA,GA	NA	NA	NA	NA	NA	NA	NA	13
AUSTIN,TX	80	1	0	1	0	1	1	14
BALTIMORE,MD: MTA TRAN AD	100	1	0	1	0	1	1	15
BALT.: AIRWAY LIMO SVCE	100	1	0	1	0	0	1	16
BATTLE CR, MI	65	1	0	1	0	0	0	17
BAY CITY,MI	NA	NA	NA	NA	NA	NA	NA	18
BILLINGS,MONTANA	100	1	1	0	0	1	0	19
BINGHAMPTON,NY	100	1	1	0	2	0	0	20
BIRMINGHAM,AL	100	1	0	0	0	1	1	21
BLACKSBURG,VA	100	NA	NA	NA	NA	NA	NA	22
BOISE CITY,ID	100	1	1	0	0	0	0	23
BOONE,NC	NA	NA	NA	NA	NA	NA	NA	24
BOSTON,MA	100	1	0	1	2	1	1	25
BRIDGEPORT,CT	NA	NA	NA	NA	NA	NA	NA	26
BROCKTON,MA	NA	NA	NA	NA	NA	NA	NA	27
BUFFALO,NY	100	1	0	0	0	0	0	28
BURLINGTON,VT	100	1	1	0	0	0	1	29
CANTON,OH	NA	NA	NA	NA	NA	NA	NA	30
CHAMPAIGN/URBANA,IL	100	1	0	1	0	0	P	31
CHARLESTON,WV	NA	NA	NA	NA	NA	NA	NA	32
CHARLOTTE,NC	100	1	0	1	1	1	1	33
CHARLOTTESVILLE:UNV.TRAN.SV	88	0	1	0	0	0	0	34
CHATTANOOGA,TN/GA	100	1	1	0	2	P	P	35
CHICAGO,IL/NW IN: CTA	NA	NA	NA	NA	NA	NA	NA	36
CHI.: GARY PUBLIC TRP COR	100	1	0	1	1.5	1	1	37
CHI.: NO.SUBURBAN MTD	100	1	0	1	0	0	0	38
CINCINNATI OH/KY: SORTA	100	1	0	P	0	1	1	39
CINC.: TR AUTH OF NO. KY	100	1	0	1	0	1	P	40
CLEVELAND,OH:GREAT CLV.RTA	100	1	0	1	0	1	1	41
CLE.: MAPLE HGTS TR DEPT	NA	NA	NA	NA	NA	NA	NA	42
COLUMBIA,MO	100	0	0	1	0	0	0	43
COLUMBUS,OH	NA	NA	NA	NA	NA	NA	NA	44
DALLAS/FTWORTH:DALLAS TR SY	82	1	1	0	3	1	P	45
D/FW: CITRAN	100	1	0	1	0	0	0	46
DAVPRT/ROCK IS:DAV.DEPT.TRP	NA	NA	NA	NA	NA	NA	NA	47
DAV.: ROCK IS CO MET MTD	100	1	1	1	1	1	1	48

DAYTON,OH	NA	NA	NA	NA	NA	NA	NA	49
DECATUR,IL	100	1	0	1	2	0	1	50
DENVER/BOULDER,CO	80	1	0	1	0	P	P	51
DES MOINES,IA	100	0	0	0	0	0	0	52
DETROIT:DETROIT DEPT.TRP.	NA	NA	NA	NA	NA	NA	NA	53
DET.: SEMTA: LGE BUS	NA	NA	NA	NA	NA	NA	NA	54
DET.: SEMTA: SM BUS	93	1	0	1	0	0	P	55
DULUTH/SUPERIOR,MN	100	1	1	0	0	0	P	56
DURHAM,NC:DUKE POWER CO	NA	NA	NA	NA	NA	NA	NA	57
CHAPEL HILL TRANSIT	100	0	0	0	0	0	0	58
ELGIN,IL	NA	NA	NA	NA	NA	NA	NA	59
ELMIRA,NY	86	P	1	0	0	0	1	60
EL PASO,TX	NA	NA	NA	NA	NA	NA	NA	61
ERIE,PA	NA	NA	NA	NA	NA	NA	NA	62
EUGENE,OR	81	1	0	P	0	1	1	63
EUREKA,CA:ARCATA& MAD RIVER	100	1	0	0	0	0	1	64
FAIRBANKS,AK	100	1	1	1	0	NA	NA	65
FARGO/MOORHEAD,ND/MN:METRO	NA	NA	NA	NA	NA	NA	NA	66
FLINT,MI	100	1	0	0	0	1	1	67
FORT LAUDERDALE,FL	100	1	0	0	0	0	0	68
FORT WAYNE,IN	NA	NA	NA	NA	NA	NA	NA	69
FRESNO,CA	100	1	0	1	0	1	P	70
GASTONIA,NC	100	0	0	0	0	0	0	71
GRAND RAPIDS,MI	60	1	0	1	0	0	P	72
GREENFIELD,MA	100	1	0	1	0	0	1	73
GREENSBORO,NC	NA	NA	NA	NA	NA	NA	NA	74
HARRISBURG,PA	100	0	0	0	0	0	0	75
HARTFORD, CONN.	NA	NA	NA	NA	NA	NA	NA	76
CONN.: NEW HAVEN,CT	NA	NA	NA	NA	NA	NA	NA	77
CONN.: STAMFORD,CT	NA	NA	NA	NA	NA	NA	NA	78
HIGH POINT,NC	77	0	0	0	0	0	0	79
HONOLULU,HI	NA	NA	NA	NA	NA	NA	NA	80
HOUSTON,TX:MTA	NA	NA	NA	NA	NA	NA	NA	81
HUNTINGTON,WV/KY/OH	100	1	1	0	1	1	1	82
INDIANAPOLIS,IN	100	1	0	P	0	P	1	83
IOWA CITY,IA	100	1	1	0	0	1	1	84
JACKSON,MI	100	1	1	0	0	1	P	85
JACKSON,MS	NA	NA	NA	NA	NA	NA	NA	86
JACKSONVILLE,FL	NA	NA	NA	NA	NA	NA	NA	87
JAMESTOWN,NY	NA	NA	NA	NA	NA	NA	NA	88
JANESVILLE,WI	63	1	0	0	0	0	P	89
JEFFERSON CITY,MO	99	0	0	0	0	0	0	90
JOHNSTOWN,PA	NA	NA	NA	NA	NA	NA	NA	91
JUNEAU,AK	100	1	0	0	2	0	P	92
KALAMAZOO,MI	97	1	0	1	NA	1	1	93
KANSAS CITY,MO/KS	100	1	0	1	2	P	1	94
KNOXVILLE,TN	NA	NA	NA	NA	NA	NA	NA	95
LA CROSSE,WI/MN	100	0	0	0	0	0	0	96
LAFAYETTE/WEST LAF,IN	75	1	0	1	0	1	1	97
LANCASTER,PA	100	1	0	1	0	1	0	98
LAREDO,TX	100	1	1	0	0	1	1	99
LAS VEGAS,NV	NA	NA	NA	NA	NA	NA	NA	100
LEXINGTON/FAYETTE,KY	100	1	0	P	0	P	0	101
LIMA,OH	100	1	0	0	0	1	1	102
LINCOLN,NE	100	1	0	1	0.5	0	P	103
LITTLE ROCK,AR	NA	NA	NA	NA	NA	NA	NA	104

LOS ANGELES:SCRTD	100	1	0	1	2.5	P	1	105
L.A.: CULVER CITY MUN BUS	100	1	1	0	0	0	0	106
L.A.: LG BEACH PUB TRP CO	100	1	0	1	0	1	1	107
L.A.: ORANGE COUNTY TD	100	1	0	1	0	1	1	108
L.A.: SANTA MONICA MUN BU	85	1	0	0	0	0	0	109
LOUISVILLE,KY/IN	100	1	0	P	0	1	1	110
LOWELL,MA/NH	100	0	0	0	0	0	0	111
LUBBOCK,TX	NA	NA	NA	NA	NA	NA	NA	112
LYNCHBURG,VA	100	1	1	P	0	0	P	113
MADISON,WI	100	1	0	1	1	1	1	114
MANKATO,MN	72	P	0	0	0	0	0	115
MEMPHIS,TN/AR/MS	NA	NA	NA	NA	NA	NA	NA	116
MIAMI,FL	100	1	0	1	1.5	P	P	117
MIDDLETOWN,OH	NA	NA	NA	NA	NA	NA	NA	118
MIDLAND,TX	NA	NA	NA	NA	NA	NA	NA	119
MILWAUKEE,WI	NA	1	0	1	0	1	1	120
MINNEAPOLIS/ST.PAUL,MN	100	1	0	1	0	1	1	121
MOBILE,AL	100	1	0	0	0	0	P	122
MONROE,MI	100	1	1	1	0	0	0	123
MONTGOMERY,AL	75	1	0	1	0	0	1	124
MUNCIE,IN	100	1	1	0	2	1	0	125
NASHVILLE/DAVIDSON,TN	NA	NA	NA	NA	NA	NA	NA	126
NEW BEDFORD/FALL RIV.MA:NEW	NA	NA	NA	NA	NA	NA	NA	127
NEW ORLEANS REG. TRANS.AUTH	70	1	0	0	0	P	0	128
N.O.: LOUISIANA TR CO	100	1	0	0	0	1	0	129
N.O.: WESTSIDE TR LINES	78	1	0	0	0	0	0	130
NEWPORT NEWS/HAMPTON,VA	57	1	0	0	0	0	1	131
NEW YORK/N.E.NJ:NYC TR AUTH	NA	NA	NA	NA	NA	NA	NA	132
NYC: MANHATTAN & BRONX ST	NA	NA	NA	NA	NA	NA	NA	133
NYC: METRO SUB BUS AUTH	NA	NA	NA	NA	NA	NA	NA	134
NYC: NJ TRANSIT BUS	NA	NA	NA	NA	NA	NA	NA	135
NYC: LONG ISLAND RR	NA	NA	NA	NA	NA	NA	NA	136
NYC: PT AUTH TR HUDSON	NA	NA	NA	NA	NA	NA	NA	137
NYC: JAMAICA BUSES,INC.	NA	NA	NA	NA	NA	NA	NA	138
NYC: LIBERTY LINES	100	1	1	0	0	1	1	139
NORFOLK/PORTSMOUTH,VA	100	1	1	0	0	P	P	140
NORWALK,CT	100	1	1	0	0	1	1	141
OKLAHOMA CITY,OK	100	1	0	1	0	1	1	142
OLYMPIA,WA	100	1	0	0	0	P	P	143
ONEONTA,NY	NA	NA	NA	NA	NA	NA	NA	144
OSHKOSH,WI	NA	0	0	0	0	0	0	145
OWENSBORO,KY	100	0	1	0	0	0	1	146
OXNARD/VENTURA,CA	100	1	1	0	0	0	1	147
PEORIA,IL	65	1	0	1	2	0	P	148
PHIL./PA/NJ:S.E.PA TRP AUTH	NA	NA	NA	NA	NA	NA	NA	149
PHIL.: NON-COMMUTER RAIL	NA	NA	NA	NA	NA	NA	NA	150
PHIL.: COMMUTER RAIL	100	0	0	0	0	0	0	151
PHIL.: PORT AUTH TR CORP	100	1	0	0	8	1	1	152
PHEONIX,AZ	75	1	0	1	1	P	P	153
PITTSBURGH,PA	NA	NA	NA	NA	NA	NA	NA	154
PORT ARTHUR,TX	100	1	1	0	0	1	1	155
PORTLAND,OR/WA:TRI-CO METRO	100	1	0	1	2	P	P	156
PORT.: CLARK CO.PTBA	84	1	0	0	0	0	0	157
PROVIDENCE/NEWPORT,RI	NA	NA	NA	NA	NA	NA	NA	158
PUEBLO,CO	NA	NA	NA	NA	NA	NA	NA	159
PULLMAN,WA	100	1	1	0	0	0	1	160

RENO,NV	100	0	1	0	0	0	0	161
RICHLAND/KENNEWICK,WA	100	1	1	0	0	1	1	162
RICHMOND,VA	100	1	0	1	0	1	1	163
ROANOKE,VA	NA	NA	NA	NA	NA	NA	NA	164
ROCHESTER,NY	NA	NA	NA	NA	NA	NA	NA	165
ROCKFORD,IL	100	1	0	1	0	1	1	166
SACRAMENTO,CA	100	1	0	1	0	1	1	167
SAGINAW,MI	74	1	1	0	0	0	P	168
ST.CLOUD,MN	100	1	0	0	0	0	1	169
ST.JOSEPH,MO/KS	100	1	1	1	0	1	0	170
ST.LOUIS/ALTON,MO/IL	100	1	0	1	0	1	1	171
ST.PETERSBURG,FL:MTS	NA	NA	NA	NA	NA	NA	NA	172
StP: PINELLAS SUNCOAST TA	90	1	0	1	0	0	0	173
SALT LAKE/OGDEN,UT:SALT LA.	100	1	0	0	6.5	0	P	174
SAN ANTONIO,TX	100	1	0	0	0	0	0	175
SAN BERN/RIVSDE,CA:OMNITRAN	100	1	0	P	0	0	P	176
SB/R: RIVERSIDE TR AGENCY	100	1	0	1	0	0	1	177
SAN DIEGO,CA:SAN DIEGO TR	100	1	0	1	0	NA	1	178
S.D.: NO.SAN DIEGO CO TD	100	1	0	0	0	0	P	179
SAN.F./OAKLAND: BART	110	1	0	0	4	0	0	180
S.F.: AC TRANSIT	100	1	0	1	2	P	1	181
S.F.: GOLDEN GATE BUS	85	1	0	1	0	1	0	182
S.F.: GOLDEN GATE FERRY	NA	NA	NA	NA	NA	NA	NA	183
S.F.MUNI RAILWAY	100	1	1	P	3.5	1	P	184
S.F.: SAN MATEO CO TD	100	1	0	1	4	1	1	185
S.F.: CCC TRANSIT AUTH.	100	1	0	0	0	0	0	186
SAN JOSE,CA	100	1	0	1	NA	1	0	187
SAN JUAN,PR	NA	NA	NA	NA	NA	NA	NA	188
SANTA BARBARA,CA	100	1	0	1	0	P	P	189
SANTA CRUZ,CA	100	1	0	0	4	1	1	190
SANTA ROSA,CA	100	1	1	0	0	0	1	191
SARASOTA/BRADENTON,FL:SARA.	NA	NA	NA	NA	NA	NA	NA	192
SCRAN./WILK-BAR,PA:LUZERNE	NA	NA	NA	NA	NA	NA	NA	193
SCR/WB: CO.OF LACKAWANNA	NA	NA	NA	NA	NA	NA	NA	194
SEASIDE/MONTERRREY,CA	100	1	1	0	4	1	1	195
SEATTLE,WA:MUNI METRO SEATT	100	1	0	1	2.33	1	1	196
SEA: EVERETT TRANSIT	100	1	1	0	NA	1	1	197
SEA: COMMUNITY TRANSIT	100	P	0	1	0	0	0	198
SHREVEPORT,LA	100	1	0	0	0	0	0	199
SIMI VALLEY,CA	100	1	1	0	0	0	1	200
SIOUx FALLS,SD	NA	NA	NA	NA	NA	NA	NA	201
SOUTH BEND,IN/MI	100	1	0	1	0	P	0	202
SPARTANBURG,SC	NA	NA	NA	NA	NA	NA	NA	203
SPOKANE,WA	100	1	0	0	2	0	1	204
UNIV.MASS TR SVCE	100	0	0	0	0	0	0	205
SPRINGFIELD,MO	55	1	1	0	0	0	1	206
STATE COLLEGE,PA	100	1	1	0	2	1	0	207
STOCKTON,CA	100	1	0	0	0	P	1	208
SYRACUSE/AU/OSW,NY:SYRACUSE	100	1	0	1	1.5	P	P	209
AUBURN,NY	100	NA	NA	NA	1.5	NA	NA	210
OSWEGO,NY	100	NA	NA	NA	1.5	NA	NA	211
TACOMA,WA	100	1	1	0	0	1	1	212
TALLAHASSEE,FL	100	NA	NA	NA	NA	NA	NA	213
TOLEDO,OH/MI	70	1	0	1	0	0	0	214
TOPEKA,KS	80	1	0	1	0	1	P	215
TUCSON,AZ	100	1	0	P	0	1	0	216

TULSA,OK	100	1	0	1	0	0	0	217
UTICA/ROME,NY	75	1	1	1	NA	0	0	218
WACO,TX	100	0	0	1	0	0	0	219
WALLA WALLA,WA	100	1	0	0	0	0	0	220
WASHINGTON,DC/MD/VA	100	1	0	P	0	1	1	221
WEST PALM BEACH,FL	NA	NA	NA	NA	NA	NA	NA	222
WICHITA,KS	100	1	0	1	0	0	0	223
WILLIAMSPORT,PA	100	1	1	0	0	1	1	224
WINSTON-SALEM,NC	100	1	0	0	0	0	1	225
YAKIMA,WA	100	1	0	0	0	0	0	226
YORK,PA	100	1	0	0	0	0	0	227
YOUNGSTOWN/WARREN,OH	100	1	0	1	0	1	P	228

COMPARATIVE LABOR PRACTICES: PART-TIME OPERATORS

URBANIZED AREA/ PROPERTY	SICK LEAVE	HOLI-DAYS	VACATION	HEALTH WELFARE	RETIRE-MENT	
ABILENE, TX.	NA	NA	NA	NA	NA	1
AKRON,OH:METRO REG TR AUTH	0	0	0	0	0	2
AKRON: CAMPUS BUS SERV.	NA	NA	NA	NA	NA	3
ALBUQUERQUE,NM	0	0	0	0	0	4
ALLENTOWN/BETHLEHEM,PA	NA	NA	NA	NA	NA	5
ALTOONA,PA	0	0	0	1	0	6
AMES,IA	P	P	P	P	0	7
ANCHORAGE,AK	1	1	1	1	0	8
ANDERSON,SC	NA	NA	NA	NA	NA	9
ANN ARBOR,MI	P	P	P	P	0	10
APPLETON,WI	0	0	P	0	1	11
ATLANTA,GA	NA	NA	NA	NA	NA	12
AUGUSTA,GA	NA	NA	NA	NA	NA	13
AUSTIN,TX	0	0	0	0	0	14
BALTIMORE,MD: MTA TRAN AD	0	0	0	P	0	15
BALT.: AIRWAY LIMO SVCE	1	1	1	1	1	16
BATTLE CR, MI	0	0	0	0	0	17
BAY CITY,MI	NA	NA	NA	NA	NA	18
BILLINGS,MONTANA	1	P	1	1	1	19
BINGHAMPTON,NY	0	0	0	P	1	20
BIRMINGHAM,AL	0	0	0	0	0	21
BLACKSBURG,VA	NA	NA	NA	NA	NA	22
BOISE CITY,ID	P	P	P	0	0	23
BOONE,NC	NA	NA	NA	NA	NA	24
BOSTON,MA	0	0	0	0	1	25
BRIDGEPORT,CT	NA	NA	NA	NA	NA	26
BROCKTON,MA	NA	NA	NA	NA	NA	27
BUFFALO,NY	0	0	0	0	0	28
BURLINGTON,VT	0	1	1	1	0	29
CANTON,OH	NA	NA	NA	NA	NA	30
CHAMPAIGN/URBANA,IL	P	0	P	P	0	31
CHARLESTON,WV	NA	NA	NA	NA	NA	32
CHARLOTTE,NC	0	0	0	P	1	33
CHARLOTTESVILLE:UNV.TRAN.SV	0	0	0	0	0	34
CHATTANOOGA,TN/GA	0	0	0	0	0	35
CHICAGO,IL/NW IN: CTA	NA	NA	NA	NA	NA	36
CHI.: GARY PUBLIC TRP COR	0	0	0	0	0	37
CHI.: NO.SUBURBAN MTD	0	0	0	0	0	38
CINCINNATI OH/KY: SORTA	0	0	0	0	0	39
CINC.: TR AUTH OF NO. KY	0	0	0	0	P	40
CLEVELAND,OH:GREAT CLV.RTA	0	0	0	0	0	41
CLE.: MAPLE HGTS TR DEPT	NA	NA	NA	NA	NA	42
COLUMBIA,MO	0	0	0	0	0	43
COLUMBUS,OH	NA	NA	NA	NA	NA	44
DALLAS/FTWORTH:DALLAS TR SY	0	0	0	0	1	45
D/FW: CITRAN	0	0	0	0	0	46
DAVPRT/ROCK IS:DAV.DEPT.TRP	NA	NA	NA	NA	NA	47
DAV.: ROCK IS CO MET MTD	0	0	0	0	1	48

DAYTON,OH	NA	NA	NA	NA	NA	49
DECATUR,IL	0	0	0	0	0	50
DENVER/BOULDER,CO	0	0	0	P	P	51
DES MOINES,IA	0	0	0	0	0	52
DETROIT:DETROIT DEPT.TRP.	NA	NA	NA	NA	NA	53
DET.: SEMTA: LGE BUS	0	0	0	0	0	54
DET.: SEMTA: SM BUS	0	0	0	0	0	55
DULUTH/SUPERIOR,MN	0	0	0	0	0	56
DURHAM,NC:DUKE POWER CO	NA	NA	NA	NA	NA	57
CHAPEL HILL TRANSIT	P	0	P	P	0	58
ELGIN,IL	NA	NA	NA	NA	NA	59
ELMIRA,NY	0	0	0	1	1	60
EL PASO,TX	NA	NA	NA	NA	NA	61
ERIE,PA	NA	NA	NA	NA	NA	62
EUGENE,OR	0	0	0	P	0	63
EUREKA,CA:ARCATA& MAD RIVER	P	P	0	0	0	64
FAIRBANKS,AK	1	1	1	1	1	65
FARGO/MOORHEAD,ND/MN:METRO	NA	NA	NA	NA	NA	66
FLINT,MI	0	P	P	0	0	67
FORT LAUDERDALE,FL	0	0	0	0	0	68
FORT WAYNE,IN	NA	NA	NA	NA	NA	69
FRESNO,CA	P	1	1	P	0	70
GASTONIA,NC	1	0	0	0	0	71
GRAND RAPIDS,MI	0	P	P	0	0	72
GREENFIELD,MA	0	1	0	0	0	73
GREENSBORO,NC	NA	NA	NA	NA	NA	74
HARRISBURG,PA	0	0	0	0	0	75
HARTFORD, CONN.	NA	NA	NA	NA	NA	76
CONN.: NEW HAVEN,CT	NA	NA	NA	NA	NA	77
CONN.: STAMFORD,CT	NA	NA	NA	NA	NA	78
HIGH POINT,NC	0	0	0	0	0	79
HONOLULU,HI	NA	NA	NA	NA	NA	80
HOUSTON,TX:MTA	NA	NA	NA	NA	NA	81
HUNTINGTON,WV/KY/OH	1	1	1	1	1	82
INDIANAPOLIS,IN	0	0	0	0	0	83
IOWA CITY,IA	P	P	P	P	P	84
JACKSON,MI	0	1	1	P	1	85
JACKSON,MS	NA	NA	NA	NA	NA	86
JACKSONVILLE,FL	NA	NA	NA	NA	NA	87
JAMESTOWN,NY	NA	NA	NA	NA	NA	88
JANESVILLE,WI	0	0	0	P	0	89
JEFFERSON CITY,MO	0	0	0	0	0	90
JOHNSTOWN,PA	NA	NA	NA	NA	NA	91
JUNEAU,AK	P	P	P	P	P	92
KALAMAZOO,MI	P	P	P	P	P	93
KANSAS CITY,MO/KS	0	0	0	0	0	94
KNOXVILLE,TN	NA	NA	NA	NA	NA	95
LA CROSSE,WI/MN	0	0	0	0	0	96
LAFAYETTE/WEST LAF,IN	0	0	0	1	1	97
LANCASTER,PA	0	0	0	0	0	98
LAREDO,TX	0	1	1	1	1	99
LAS VEGAS,NV	NA	NA	NA	NA	NA	100
LEXINGTON/FAYETTE,KY	0	0	0	0	0	101
LIMA,OH	0	1	1	1	1	102
LINCOLN,NE	0	0	0	0	0	103
LITTLE ROCK,AR	NA	NA	NA	NA	NA	104

LOS ANGELES:SCRTD	0	0	0	P	0	105
L.A.: CULVER CITY MUN BUS	0	0	0	0	0	106
L.A.: LG BEACH PUB TRP CO	0	0	0	0	0	107
L.A.: ORANGE COUNTY TD	1	P	P	1	1	108
L.A.: SANTA MONICA MUN BU	0	0	0	0	0	109
LOUISVILLE,KY/IN	0	0	0	0	0	110
LOWELL,MA/NH	0	0	0	0	0	111
LUBBOCK,TX	NA	NA	NA	NA	NA	112
LYNCHBURG,VA	0	0	0	0	0	113
MADISON,WI	1	1	1	1	1	114
MANKATO,MN	0	P	P	0	0	115
MEMPHIS,TN/AR/MS	NA	NA	NA	NA	NA	116
MIAMI,FL	P	P	P	0	P	117
MIDDLETOWN,OH	NA	NA	NA	NA	NA	118
MIDLAND,TX	NA	NA	NA	NA	NA	119
MILWAUKEE,WI	0	0	0	0	0	120
MINNEAPOLIS/ST.PAUL,MN	0	P	0	0	0	121
MOBILE,AL	0	0	0	0	0	122
MONROE,MI	0	0	P	P	0	123
MONTGOMERY,AL	0	0	0	0	0	124
MUNCIE,IN	0	1	1	1	1	125
NASHVILLE/DAVIDSON,TN	NA	NA	NA	NA	NA	126
NEW BEDFORD/FALL RIV.MA:NEW	NA	NA	NA	NA	NA	127
NEW ORLEANS REG. TRANS.AUTH	0	0	0	0	0	128
N.O.: LOUISIANA TR CO	0	1	1	1	1	129
N.O.: WESTSIDE TR LINES	0	0	0	P	0	130
NEWPORT NEWS/HAMPTON,VA	0	1	1	0	1	131
NEW YORK/N.E.NJ:NYC TR AUTH	NA	NA	NA	NA	NA	132
NYC: MANHATTAN & BRONX ST	NA	NA	NA	NA	NA	133
NYC: METRO SUB BUS AUTH	NA	NA	NA	NA	NA	134
NYC: NJ TRANSIT BUS	NA	NA	NA	NA	NA	135
NYC: LONG ISLAND RR	NA	NA	NA	NA	NA	136
NYC: PT AUTH TR HUDSON	NA	NA	NA	NA	NA	137
NYC: JAMAICA BUSES,INC.	NA	NA	NA	NA	NA	138
NYC: LIBERTY LINES	1	1	1	1	1	139
NORFOLK/PORTSMOUTH,VA	P	P	P	P	P	140
NORWALK,CT	0	P	1	P	0	141
OKLAHOMA CITY,OK	0	0	0	0	0	142
OLYMPIA,WA	P	P	P	P	P	143
ONEONTA,NY	NA	NA	NA	NA	NA	144
OSHKOSH,WI	0	0	0	0	0	145
OWENSBORO,KY	0	0	0	0	0	146
OXNARD/VENTURA,CA	P	P	P	P	1	147
PEORIA,IL	0	0	0	0	0	148
PHIL./PA/NJ:S.E.PA TRP AUTH	NA	NA	NA	NA	NA	149
PHIL.: NON-COMMUTER RAIL	NA	NA	NA	NA	NA	150
PHIL.: COMMUTER RAIL	0	0	0	0	0	151
PHIL.: PORT AUTH TR CORP	1	1	1	0	0	152
PHEONIX,AZ	0	0	0	0	0	153
PITTSBURGH,PA	NA	NA	NA	NA	NA	154
PORT ARTHUR,TX	1	1	1	1	1	155
PORTLAND,OR/WA:TRI-CO METRO	0	P	P	P	P	156
PORT.: CLARK CO.PTBA	0	0	0	0	0	157
PROVIDENCE/NEWPORT,RI	NA	NA	NA	NA	NA	158
PUEBLO,CO	NA	NA	NA	NA	NA	159
PULLMAN,WA	1	1	1	1	1	160

RENO,NV	0	0	0	0	0	161
RICHLAND/KENNEWICK,WA	0	P	0	0	1	162
RICHMOND,VA	0	0	0	0	0	163
ROANOKE,VA	NA	NA	NA	NA	NA	164
ROCHESTER,NY	NA	NA	NA	NA	NA	165
ROCKFORD,IL	0	0	0	0	0	166
SACRAMENTO,CA	0	0	P	0	0	167
SAGINAW,MI	0	P	P	P	P	168
ST.CLOUD,MN	1	1	1	1	1	169
ST.JOSEPH,MO/KS	0	1	1	1	1	170
ST.LOUIS/ALTON,MO/IL	0	0	0	0	0	171
ST.PETERSBURG,FL:MTS	NA	NA	NA	NA	NA	172
StP: PINELLAS SUNCOAST TA	0	0	0	0	0	173
SALT LAKE/OGDEN,UT:SALT LA.	P	P	P	P	0	174
SAN ANTONIO,TX	0	0	0	0	0	175
SAN BERN/RIVSDE,CA:OMNITRAN	0	0	0	0	0	176
SB/R: RIVERSIDE TR AGENCY	0	0	0	0	0	177
SAN DIEGO,CA:SAN DIEGO TR	0	0	0	0	P	178
S.D.: NO.SAN DIEGO CO TD	0	0	P	0	P	179
SAN.F./OAKLAND:SF BAY AREA	0	0	0	0	0	180
S.F.: AC TRANSIT	0	0	0	0	0	181
S.F.: GOLDEN GATE BUS	0	0	0	0	0	182
S.F.: GOLDEN GATE FERRY	NA	NA	NA	NA	NA	183
S.F.MUNI RAILWAY	P	P	P	1	1	184
S.F.: SAN MATEO CO TD	P	P	P	P	1	185
S.F.: CCC TRANSIT AUTH.	0	0	P	0	0	186
SAN JOSE,CA	1	1	1	1	0	187
SAN JUAN,PR	NA	NA	NA	NA	NA	188
SANTA BARBARA,CA	0	0	0	0	1	189
SANTA CRUZ,CA	1	1	P	P	1	190
SANTA ROSA,CA	1	0	0	1	1	191
SARASOTA/BRADENTON,FL:SARA.	NA	NA	NA	NA	NA	192
SCRAN./WILK-BAR,PA:LUZERNE		NA	NA	NA	NA	193
SCR/WB: CO.OF LACKAWANNA	NA	NA	NA	NA	NA	194
SEASIDE/MONTERRREY,CA	1	1	1	1	1	195
SEATTLE,WA:MUNI METRO SEATT	0	0	0	P	1	196
SEA: EVERETT TRANSIT	1	1	1	1	1	197
SEA: COMMUNITY TRANSIT	0	0	0	0	0	198
SHREVEPORT,LA	0	0	0	P	0	199
SIMI VALLEY,CA	0	1	1	1	1	200
SIOUX FALLS,SD	NA	NA	NA	NA	NA	201
SOUTH BEND,IN/MI	0	0	0	P	0	202
SPARTANBURG,SC	NA	NA	NA	NA	NA	203
SPOKANE,WA	0	0	P	P	0	204
UNIV.MASS TR SVCE	0	0	0	0	0	205
SPRINGFIELD,MO	0	0	0	1	0	206
STATE COLLEGE,PA	1	1	1	1	0	207
STOCKTON,CA	0	0	0	0	0	208
SYRACUSE/AU/OSW,NY:SYRACUSE	0	0	0	0	0	209
AUBURN,NY	NA	NA	NA	NA	NA	210
OSWEGO,NY	NA	NA	NA	NA	NA	211
TACOMA,WA	P	0	0	1	1	212
TALLAHASSEE,FL	NA	NA	NA	NA	NA	213
TOLEDO,OH/MI	0	0	0	0	0	214
TOPEKA,KS	0	0	P	0	0	215
TUCSON,AZ	0	0	0	0	0	216

TULSA,OK	0	0	0	0	0	217
UTICA/ROME,NY	0	P	P	P	1	218
WACO,TX	0	0	0	0	0	219
WALLA WALLA,WA	0	0	P	0	0	220
WASHINGTON,DC/MD/VA	P	P	P	P	P	221
WEST PALM BEACH,FL	NA	NA	NA	NA	NA	222
WICHITA,KS	0	0	0	0	0	223
WILLIAMSPORT,PA	1	1	1	1	1	224
WINSTON-SALEM,NC	0	0	0	0	0	225
YAKIMA,WA	P	0	P	0	0	226
YORK,PA	0	0	0	0	0	227
YOUNGSTOWN/WARREN,OH	0	0	0	0	0	228

APPENDIX B

Property: Boston, Massachusetts: MBTA

Contact(s): Nigil Wilson, John Antanucci , Multi Systems

at MBTA

Work Rule Provisions

Part-Time Operators Permitted Since: March, 1982
Number (Percent) Part-Time Operators Permitted: 250 (15 percent) subject to legal
Types of Work Allowed: no restrictions determinants.
Maximum Work Hours Per Week/Day: 30/6
Maximum Spread: 13
Top Pay Rate: $11.0475
Top Pay Rate As Percent of Full-Time Top Pay Rate:
Union Membership: yes
Seniority Transferrable to Full-Time Status: No
All Must Be Laid Off Before Full-Time: yes
Guarantee Per Assignment: 2 hours/day
Free Transportation: employee, retired
Uniform Allowance: yes
Sick Leave: 10 days/year
Holidays: 12
Vacation:
Health and Welfare:
Retirement:

Notes:

System Characteristics

Number of Districts:
Number of:
Full-Time Operators: 984
Part-Time Operators: 203
Part-Time as Percent of Full-Time: 20.6%
Actual Part-Time as Percent of Permitted Part-Time: 81.2%
Peak-to-Base Service Ratio: 2.5
Maximum Spread: 13
Spread Premium Threshold: 10-11th hour 1 1/2 x Base Pay; greater than 11 hrs. 2x Base Pay
Guarantee: FTO 8 hrs/day; PTO 2hrs/day
Pay-to-Platform Hour Ratio:
Type of Runs:
Straights:
Splits:
Trippers: A.M. P.M.
Extraboard:

Notes:

Boston Massachusetts: MBTA

Use of Part-Time Operators

Tripper Assignments Worked by:
Full-Time Only:_____
Part-Time Only:_____
Full-Time and Part-Time:__x__
Extraboard Worked by:
Full-Time Only:__x__
Part-Time Only:_____
Full-Time and Part-Time:_____
If Full-Time Operators Work Tripper Assignments:
Full-Timers Bid Runs:_____
Are Assigned Runs:__x__
Bid Some, Are Assigned Others:_____
Full-Timers Bid Daily or Quarterly:__quarterly__
Full-Timers Work Trippers
On Overtime Basis:_____
As Part of Regular Week's Work:__x__
Criteria for Assigning Trippers to Full-Time vs. Part-Time Operators:

Notes:

Effect on Runcutting:

Runcutting Procedure:_____
Effects of Part-Time Labor:_____

Reduction to spread penalty payments

Effect on Service Changes:

Property: Champaign-Urbana Mass Transit District

Contact(s): Mr. James Dhon, Director of operations

and Mr. Roff Palton, planner.

Work Rule Provisions

Part-Time Operators Permitted Since:
Number (Percent) Part-Time Operators Permitted:
Types of Work Allowed: operators for when extraboard is exhausted; charter work; pieces that can not be built into a regular run.
Maximum Work Hours Per Week/Day:
Maximum Spread:
Top Pay Rate: $9.22
Top Pay Rate As Percent of Full-Time Top Pay Rate: 100%
Union Membership: yes
Seniority Transferrable to Full-Time Status: no
All Must Be Laid Off Before Full-Time:
Guarantee Per Assignment:
Free Transportation: yes
Uniform Allowance: uniform shirts after 500 hours
Sick Leave: 4 days/year
Holidays: up to 11
Vacation: 2 to 5 days
Health and Welfare: hospitalization/surgical, major medical; dental 100% employer
Retirement:

Notes:

System Characteristics

Number of Districts:
Number of:
- Full-Time Operators: 60
- Part-Time Operators: 21
- Part-Time as Percent of Full-Time:
- Actual Part-Time as Percent of Permitted Part-Time:

Peak-to-Base Service Ratio:
Maximum Spread:
Spread Premium Threshold: 12 hours
Guarantee: 8 hrs./min.; 40 hrs/week for extraboard
Pay-to-Platform Hour Ratio:
Type of Runs:
- Straights:
- Splits:
- Trippers: A.M. P.M.
- Extraboard:

Notes:

Use of Part-Time Operators

Tripper Assignments Worked by:
Full-Time Only:_____
Part-Time Only:_____
Full-Time and Part-Time: x
Extraboard Worked by:
Full-Time Only:_____
Part-Time Only:_____
Full-Time and Part-Time: x
If Full-Time Operators Work Tripper Assignments:
Full-Timers Bid Runs:_____
Are Assigned Runs: x
Bid Some, Are Assigned Others:_____
Full-Timers Bid Daily or Quarterly:_____
Full-Timers Work Trippers
On Overtime Basis:_____
As Part of Regular Week's Work: x
Criteria for Assigning Trippers to Full-Time vs. Part-Time Operators:

Notes:

Effect on Runcutting:

Runcutting Procedure:_____
Effects of Part-Time Labor:_____

Spread time, guarantee, and overtime payments have been reduced since initiation of PTO's.

Effect on Service Changes:

Property: Cleveland Regional Transit Authority (RTA)

Contact(s): Charles H. Kiessling, Sr.
Chief Schedule Maker - 216/566-5100

Work Rule Provisions

Part-Time Operators Permitted Since: January 1, 1980
Number (Percent) Part-Time Operators Permitted: 10 % at each district
Types of Work Allowed: Trippers only
Maximum Work Hours Per Week/Day: 30 hours/week; no daily limit
Maximum Spread: Twelve (12) hours plus one-half (1/2) trip of platform time
Top Pay Rate:
Top Pay Rate As Percent of Full-Time Top Pay Rate: 100%
Union Membership: yes
Seniority Transferrable to Full-Time Status: no
All Must Be Laid Off Before Full-Time: yes
Guarantee Per Assignment: None
Free Transportation: yes
Uniform Allowance: yes
Sick Leave: no
Holidays: no
Vacation: no
Health and Welfare: no
Retirement: no

Notes:

System Characteristics

Number of Districts: Four (4), not including North Olmstead, Maple Heights and Brecksville satellites which are not covered by RTA labor agreement.
Number of:
Full-Time Operators:
Part-Time Operators: 0(1)
Part-Time as Percent of Full-Time: 0
Actual Part-Time as Percent of Permitted Part-Time: 0
Peak-to-Base Service Ratio:
Maximum Spread: 13 hours of platform time
Spread Premium Threshold: 11 hours
Guarantee: 8 hours/day for regular runs, 6 hours/day for trippers
Pay-to-Platform Hour Ratio:
Type of Runs:
Straights: 389 (179 early; 28 afternoon; 182 late)
Splits: 384
Trippers: 33(2) (12 straight, 21 swing)
Extraboard: 10-15%

Notes:
(1) All part-time operators were layed off in May, 1982 when service was reduced. The full complement of 10% part-time operator was utilized prior to May, 1982.
(2) Regular runs, by definition, pay 7:30 or more; trippers pay less than 7:30. Regular runs guarantee 8:00 hours; tripper guarantee 6:00 hours. All straights and splits are regular runs.

Cleveland Regional Transit Authority (RTA)

Use of Part-Time Operators

Tripper Assignments Worked by:
- Full-Time Only: _____
- Part-Time Only: _____
- Full-Time and Part-Time: x

Extraboard Worked by:
- Full-Time Only: x
- Part-Time Only: _____
- Full-Time and Part-Time: _____

If Full-Time Operators Work Tripper Assignments:
- Full-Timers Bid Runs: x
- Are Assigned Runs: _____
- Bid Some, Are Assigned Others: _____
- Full-Timers Bid Daily or Quarterly: Quarterly
- Full-Timers Work Trippers
  - On Overtime Basis: _____
  - As Part of Regular Week's Work: x

Criteria for Assigning Trippers to Full-Time vs. Part-Time Operators:

Not applicable

Notes:

Effect on Runcutting:

Runcutting Procedure: Manual

Effects of Part-Time Labor:

A number of trippers sufficient to assign all part-time operators work was created during each runcut prior to May, 1982. The number of trippers that can be created to be worked by part-timers is limited under the labor agreement: (1) to 12% of regular runs systemwide or 15% at each district, (2) by the 30-hour per week limitation on the number of hours that can be worked by part-timers and (3) by the provision that one-third of the scheduled trippers may not be subject to splitting and/or reassignment.

Effect on Service Changes:

None

Property: Dallas Transit System

Contact(s): Bobby Faulkenberry

214/827-3400

Work Rule Provisions

Part-Time Operators Permitted Since: Over 12 years
Number (Percent) Part-Time Operators Permitted: 80% of scheduled number of unsigned trippers
Types of Work Allowed: Unsigned peak hour trippers, emergencies
Maximum Work Hours Per Week/Day: No limit
Maximum Spread: None
Top Pay Rate: $7.73/hour
Top Pay Rate As Percent of Full-Time Top Pay Rate: 100% of beginning rate for full-time operators
Union Membership: No
Seniority Transferrable to Full-Time Status: No
All Must Be Laid Off Before Full-Time:
Guarantee Per Assignment: 3 hours
Free Transportation: yes
Uniform Allowance: yes (1/2 allowance after one full year of employment)
Sick Leave: no
Holidays: no
Vacation: no
Health and Welfare: no
Retirement: no

Notes:

System Characteristics

Number of Districts: Two (2), East Dallas and Oakcliff
Number of:
Full-Time Operators: 615-618
Part-Time Operators: 28
Part-Time as Percent of Full-Time: 4.5%
Actual Part-Time as Percent of Permitted Part-Time: 100%
Peak-to-Base Service Ratio: 3.2. (439 peak units, 137 base units)
Maximum Spread: 13 hours
Spread Premium Threshold: 12 hours
Guarantee: 8 hours for regular runs, 3 hours for trippers
Pay-to-Platform Hour Ratio: NA
Type of Runs:
Straights: 161 (65 AM, 54 PM, 42 straight day)
Splits: 295
Trippers: 88 A.M. 37 P.M. 51
Extraboard: 102 operators (65 in East Dallas, 37 in Oakcliff)

Notes:

Dallas Transit System

Use of Part-Time Operators

Tripper Assignments Worked by:
Full-Time Only:_____
Part-Time Only:_____
Full-Time and Part-Time: x(1)
Extraboard Worked by:
Full-Time Only: x
Part-Time Only:_____
Full-Time and Part-Time:_____
If Full-Time Operators Work Tripper Assignments:
Full-Timers Bid Runs:_____
Are Assigned Runs:_____
Bid Some, Are Assigned Others: x
Full-Timers Bid Daily or Quarterly: Bi-Annually
Full-Timers Work Trippers
On Overtime Basis: x(3)
As Part of Regular Week's Work:_____
Criteria for Assigning Trippers to Full-Time vs. Part-Time Operators:

Notes:

(1) All trippers are eligible for bid by full-time operators, based on seniority, at each general mark-up. In East Dallas, there are 29 A.M. and 41 P.M. trippers. About 5 A.M. and 20 P.M. trippers are unsigned, and therefore eligible to be worked by part-time operators.

(2) Unsigned trippers which are not worked by part-time operators are assigned to full-time extraboard operators.

(3) Extraboard operators work on straight-time basis.

Effect on Runcutting:

Runcutting Procedure: Manual
Effects of Part-Time Labor: None

Effect on Service Changes:

None

Property: Denver Regional District (RTD)

Contact(s): Michael T. Landers, Director of Transportation
Department of Transit Operations, (303) 777-8600

Work Rule Provisions

Part-Time Operators Permitted Since: March 1, 1982
Number (Percent) Part-Time Operators Permitted: 15% (1)
Types of Work Allowed: Weekday (Monday thru Friday) a.m.and/or p.m. peak hour trippers
Maximum Work Hours Per Week/Day: 25 hours/week; 5 hours/day not bid by regular
Maximum Spread: None operators(2)
Top Pay Rate: $8.75/hour (3)
Top Pay Rate As Percent of Full-Time Top Pay Rate: 80%
Union Membership: Yes
Seniority Transferrable to Full-Time Status: No
All Must Be Laid Off Before Full-Time: Yes
Guarantee Per Assignment: None
Free Transportation: Yes
Uniform Allowance: 75% of full-time allowance
Sick Leave: No
Holidays: No
Vacation: No
Health and Welfare: Covered by Social Security Act
Retirement: No

Notes: (1) Part-time retired RTD operators may be excluded from 15% limitation.
(2) All trippers in the Boulder Intercity Division, and no less than 67 a.m. and 67 p.m. trippers in the Metro Operating Divisions, must be available for bid by full-time operators.
(3) Part-time earn mininum wage (3.65/hr) during 23-day training period. This will be increased to 6.75/hr.

System Characteristics

Number of Districts:
Number of:
Full-Time Operators: 900
Part-Time Operators: 23 (1)
Part-Time as Percent of Full-Time: 2.5%
Actual Part-Time as Percent of Permitted Part-Time: 17%
Peak-to-Base Service Ratio:
Maximum Spread:
Spread Premium Threshold: 10-3/4 hours
Guarantee: 8 hours/day; 40 hours/week
Pay-to-Platform Hour Ratio:
Type of Runs:
Straights:
Splits:
Trippers: A.M. 92 P.M. 90 Total 182
Extraboard:

Notes: (1) 60 to 80 part-time operators will be added at the December sign-up.

Use of Part-Time Operators

Tripper Assignments Worked by:
Full-Time Only:_____
Part-Time Only:_____
Full-Time and Part-Time: X
Extraboard Worked by:
Full-Time Only:_____
Part-Time Only:_____
Full-Time and Part-Time:_____
If Full-Time Operators Work Tripper Assignments:
Full-Timers Bid Runs: X
Are Assigned Runs:_____
Bid Some, Are Assigned Others:_____
Full-Timers Bid Daily or Quarterly:_____
Full-Timers Work Trippers
On Overtime Basis: X
As Part of Regular Week's Work:_____
Criteria for Assigning Trippers to Full-Time vs. Part-Time Operators:

Notes:

Effect on Runcutting:

Runcutting Procedure: RUCUS
Effects of Part-Time Labor:_____

The amount of service provided by the RTD was increased in recent months. Fewer straight runs, and more tripper runs, will be cut for the December sign-up. The number of part-time operators will be increased from 23 to about 60 or 80 to work these additional trippers.

Effect on Service Changes: More peak period service will be provided without significantly increasing base service.

Property: Kansas City Area Transportation Authority

Contact(s): John J. Dobies, Director of System Development

(816) 346-0200

Work Rule Provisions

Part-Time Operators Permitted Since: January 1982
Number (Percent) Part-Time Operators Permitted: 80, or 10% of all paid operator hours
Types of Work Allowed: Weekday trippers, Saturday extra, charters, weekend absenteeism
Maximum Work Hours Per Week/Day: 25 hours/week; no daily limit
Maximum Spread: NONE
Top Pay Rate: $11.46, as of 7/1/83
Top Pay Rate As Percent of Full-Time Top Pay Rate: 100%
Union Membership: YES
Seniority Transferrable to Full-Time Status: No
All Must Be Laid Off Before Full-Time: Yes
Guarantee Per Assignment: 2 hours
Free Transportation: Yes
Uniform Allowance: Yes, after 2,080 hours of work
Sick Leave: No
Holidays: No
Vacation: No
Health and Welfare: No
Retirement: No

Notes:

System Characteristics

Number of Districts: One (1)
Number of:
Full-Time Operators: 355
Part-Time Operators: 52 (or 5% of paid operator hours)
Part-Time as Percent of Full-Time: 14.6% (or7.5% of all paid operator hours)
Actual Part-Time as Percent of Permitted Part-Time: 65%
Peak-to-Base Service Ratio: 2.5
Maximum Spread: 12-1/2 hours for 75% of regular runs; 13 hours for 90% of regular runs
Spread Premium Threshold: 11 hours
Guarantee: 8 hours/day
Pay-to-Platform Hour Ratio: 1.10 for straights, 1.25 for splits, and 1.15 for trippers; 1.18 overall
Type of Runs:
Straights: 117
Splits: 129
Trippers: 67 A.M. — P.M. —
Extraboard:

Notes:

February 1, 1982 w/ current

Use of Part-Time Operators

Tripper Assignments Worked by: (1)
Full-Time Only: _____
Part-Time Only: X
Full-Time and Part-Time: _____
Extraboard Worked by: (2)
Full-Time Only: _____
Part-Time Only: _____
Full-Time and Part-Time: X
If Full-Time Operators Work Tripper Assignments:
Full-Timers Bid Runs: NA
Are Assigned Runs: NA
Bid Some, Are Assigned Others: NA
Full-Timers Bid Daily or Quarterly: NA
Full-Timers Work Trippers
On Overtime Basis: NA
As Part of Regular Week's Work: NA
Criteria for Assigning Trippers to Full-Time vs. Part-Time Operators:
Part-time operators work all trippers which pay 2 hours or less; full-time operators work all trippers which pay more than 2 hours.

Notes:
(1) Runs are cut so that full-timers are scheduled to work all straights and splits, and part-timers work all trippers.
(2) There are separate full-time and part-time extra-boards on weekdays. Both full and part-timers work the extraboard on weekend days.

Effect on Runcutting:

Runcutting Procedure: Computerized procedure developed by KCATA
Effects of Part-Time Labor: _____

Split runs are being "uncoupled" to create trippers that can be worked by part-timers. According to the labor agreements, regular runs cannot be uncoupled to create part-time work.

Effect on Service Changes:

"Shoulder" trips (i.e., service provided immediately before or after peak periods of demand) have been reduced as a result of the use of part-time operators.

Property: Los Angeles: Southern California Rapid Transit District (RTD)

Contact(s): Jim Thomason, Administrative Services Coordinator

(213) 972-6436

Work Rule Provisions

Part-Time Operators Permitted Since: 1979
Number (Percent) Part-Time Operators Permitted: 15% of full-time operators
Types of Work Allowed: Weekday trippers between 2-1/2 and 5 hours only
Maximum Work Hours Per Week/Day: 25 hours/week
Maximum Spread: NONE
Top Pay Rate: $11.48 (1)
Top Pay Rate As Percent of Full-Time Top Pay Rate: 100%
Union Membership: Yes
Seniority Transferrable to Full-Time Status: No
All Must Be Laid Off Before Full-Time: Yes
Guarantee Per Assignment: 2-1/2 hours
Free Transportation: Yes
Uniform Allowance: Yes
Sick Leave: No
Holidays: No
Vacation: No
Health and Welfare: Covered by Social Security Act and workman's compensation
Retirement: No

Notes:
(1) 43.6% fringes for full-time operators, 8.8% for part-time operators

System Characteristics

Number of Districts: 13
Number of:
Full-Time Operators: 4,249
Part-Time Operators: 590
Part-Time as Percent of Full-Time: 13.9%
Actual Part-Time as Percent of Permitted Part-Time: 92.6%
Peak-to-Base Service Ratio: 1.64 (sept. 1982)
Maximum Spread: NONE
Spread Premium Threshold: 11 hours extra, 10 hours regular
Guarantee: 8 hours/day
Pay-to-Platform Hour Ratio: 1.27
Type of Runs:
Straights:
Splits:
Trippers: A.M. P.M.
Extraboard: 30%

Notes:

Use of Part-Time Operators

Tripper Assignments Worked by:
Full-Time Only:_____
Part-Time Only:_____
Full-Time and Part-Time: X (1)
Extraboard Worked by:
Full-Time Only: X
Part-Time Only:_____
Full-Time and Part-Time:_____
If Full-Time Operators Work Tripper Assignments:
Full-Timers Bid Runs:_____
Are Assigned Runs:_____
Bid Some, Are Assigned Others: X (2)
Full-Timers Bid Daily or Quarterly: Bi-Annually
Full-Timers Work Trippers
On Overtime Basis: X (biddable trippers) (2)
As Part of Regular Week's Work: X (non-biddable trippers, standing extra)(3)
Criteria for Assigning Trippers to Full-Time vs. Part-Time Operators:

First, minimize spread premium payments. Second, assign longer runs to full-time operators, shorter runs for part-time operators.

Notes:
(1) Part-timers can only work 2-1/2- to 5-hour trippers; all other trippers must be worked by full-timers.
(2) The number of biddable trippers is equal to the difference between the number of A.M. and P.M. trippers at each division. Short "biddable" trippers usually less than 2-1/2 hours, are worked by full-time operators on an overtime basis.
(3) Non-biddable trippers not worked by part-time operators (because they are less than 2-1/2 hours or more than 5 hours, or because of the limit on the number of part-time operators) are assigned to full-time operators standing extra.

Effect on Runcutting:
Runcutting Procedure: RUCUS
Effects of Part-Time Labor:_____

Effect on Service Changes:

Property: Louisville Transit Authority

Contact(s): James Mertz, Director of Operations

Work Rule Provisions

Part-Time Operators Permitted Since:
Number (Percent) Part-Time Operators Permitted: 10%
Types of Work Allowed: trippers
Maximum Work Hours Per Week/Day: 25 Week
Maximum Spread: 13
Top Pay Rate: $9.50
Top Pay Rate As Percent of Full-Time Top Pay Rate: 100%
Union Membership: Yes
Seniority Transferrable to Full-Time Status: No
All Must Be Laid Off Before Full-Time: Yes
Guarantee Per Assignment:
Free Transportation: Yes
Uniform Allowance: Yes
Sick Leave: 10 days/year; up to maximum accumulation of 85 days
Holidays:
Vacation: 1 year-5days; 2 years-10; 6 years-15; 12 years-20; 20years-25; 30 years-30
Health and Welfare: Major Medical,Hospitalization, Dental and 90% employer
Retirement:

Notes:

System Characteristics

Number of Districts: (2)
Number of:
- Full-Time Operators:
- Part-Time Operators: 38
- Part-Time as Percent of Full-Time:
- Actual Part-Time as Percent of Permitted Part-Time:

Peak-to-Base Service Ratio:
Maximum Spread: 13 hours for split runs
Spread Premium Threshold: after 11-1/4 hours
Guarantee: Extraboard-40 hours per week
Pay-to-Platform Hour Ratio:
Type of Runs:
- Straights:
- Splits:
- Trippers: A.M. P.M.
- Extraboard:

Notes:

Use of Part-Time Operators

Tripper Assignments Worked by:
- Full-Time Only:_____
- Part-Time Only: X
- Full-Time and Part-Time:_____

Extraboard Worked by:
- Full-Time Only:_____
- Part-Time Only:_____
- Full-Time and Part-Time: X (if all full-time operators exhausted)

If Full-Time Operators Work Tripper Assignments:
- Full-Timers Bid Runs:_____
- Are Assigned Runs:_____
- Bid Some, Are Assigned Others:_____
- Full-Timers Bid Daily or Quarterly:_____
- Full-Timers Work Trippers
  - On Overtime Basis:_____
  - As Part of Regular Week's Work:_____

Criteria for Assigning Trippers to Full-Time vs. Part-Time Operators:

Notes:

Effect on Runcutting:

Runcutting Procedure:_____
Effects of Part-Time Labor:_____

Louisville has found that part-time operators who convert to full-time operators have, in general, better work performance than directly hired full-time operators.

Effect on Service Changes:

Property: S.F.: Alameda-Contra Costa Transit District (AC Transit)

Contact(s): George Grandeson, Assistant Manager

(415) 891-4777

Work Rule Provisions

Part-Time Operators Permitted Since: June 1981
Number (Percent) Part-Time Operators Permitted: 15% at each division; 10% systemwide
Types of Work Allowed: Weekday frags
Maximum Work Hours Per Week/Day: 25 hours/week, 5 hours /day
Maximum Spread: NONE
Top Pay Rate: $12.07
Top Pay Rate As Percent of Full-Time Top Pay Rate: 100%
Union Membership: Yes
Seniority Transferrable to Full-Time Status: No
All Must Be Laid Off Before Full-Time: Yes
Guarantee Per Assignment: 2 hours/ day
Free Transportation: Yes
Uniform Allowance: Prorated
Sick Leave: No
Holidays: No
Vacation: No
Health and Welfare: Covered by Social Security Act and Workman's Compensation
Retirement: No

Notes:

System Characteristics

Number of Districts: 4
Number of:
Full-Time Operators: 1,398
Part-Time Operators: 42
Part-Time as Percent of Full-Time: 3.0%
Actual Part-Time as Percent of Permitted Part-Time: 30%
Peak-to-Base Service Ratio: 2.15
Maximum Spread: 12 hours, regular runs; 12.15 hours, frag run; 13 hours, extraboard
Spread Premium Threshold: 10 hours
Guarantee: 8 hours
Pay-to-Platform Hour Ratio: 1.13
Type of Runs:
Straights: 456
Splits: 322
Trippers: A.M. 178 P.M. 173
~~Extraboard:~~
RELIEF: 139
Notes:

Alameda-Contra Costa Transit District (AC Transit) (continued)

Use of Part-Time Operators

Tripper Assignments Worked by:
- Full-Time Only: _____
- Part-Time Only: _____
- Full-Time and Part-Time: X

Extraboard Worked by:
- Full-Time Only: X
- Part-Time Only: _____
- Full-Time and Part-Time: _____

If Full-Time Operators Work Tripper Assignments:
- Full-Timers Bid Runs: _____
  - Are Assigned Runs: X
  - Bid Some, Are Assigned Others: _____
- Full-Timers Bid Daily or Quarterly: NA
- Full-Timers Work Trippers
  - On Overtime Basis: _____
  - As Part of Regular Week's Work: X

Criteria for Assigning Trippers to Full-Time vs. Part-Time Operators:

Notes:

Effect on Runcutting:

Runcutting Procedure: Manual
Effects of Part-Time Labor: None

Effect on Service Changes: None

Property: S.F.: Central Contra Costa Transit Authority (CCCTA)

Contact(s): Cheryl Rodriguez, Director of Personnel
William Garlock, Schedule Maker (415) 930-8999

Work Rule Provisions

Part-Time Operators Permitted Since: Inception of CCCTA, June 7, 1981, (1)
Number (Percent) Part-Time Operators Permitted: No limitation
Types of Work Allowed: all types
Maximum Work Hours Per Week/Day: Generally less tha 30 hours/week; no daily limit
Maximum Spread: None (2)
Top Pay Rate: $8.04/hour
Top Pay Rate As Percent of Full-Time Top Pay Rate: 100%
Union Membership: Yes
Seniority Transferrable to Full-Time Status: No
All Must Be Laid Off Before Full-Time: No
Guarantee Per Assignment: 2 hours/day
Free Transportation: No
Uniform Allowance: No
Sick Leave: No
Holidays: No
Vacation: Yes
Health and Welfare: No
Retirement: No

Notes: (1) Predecessor private agency used part-time operators for charter service.
(2) Part-time operators receive additional time of one-half for all hours over 10 hours, if spread exceeds 12 hours.

System Characteristics

Number of Districts: One (1)
Number of:
Full-Time Operators: 67
Part-Time Operators: 46
Part-Time as Percent of Full-Time: 68.7%
Actual Part-Time as Percent of Permitted Part-Time: NA
Peak-to-Base Service Ratio:
Maximum Spread: None
Spread Premium Threshold: 12 hours
Guarantee: 7-3/4 hours/day; 8 hours beginning Fall, 1984
Pay-to-Platform Hour Ratio: 1.04
Type of Runs: (1)
Straights: 42 (22 A.M., 20 P.M.)
Splits: 25
Trippers: A.M. -------- P.M. 22 (2) (21 include 8 to 10 hours work on Saturday)
Extraboard: 24

Notes: (1) Part-timers operate all Saturday service. Part-time runs generally consist of one (1) all-day Saturday assignment, plus one (1) tripper per weekday. Full-timers operate all regular straight and split runs, Monday thru Friday.
(2) Weekday trippers range from 2:45 to 4:00 hours.

Use of Part-Time Operators

Tripper Assignments Worked by:
Full-Time Only: _____
Part-Time Only: X (1)
Full-Time and Part-Time: _____
Extraboard Worked by:
Full-Time Only: _____
Part-Time Only: X
Full-Time and Part-Time: _____
If Full-Time Operators Work Tripper Assignments:
Full-Timers Bid Runs: NA
Are Assigned Runs: NA
Bid Some, Are Assigned Others: NA
Full-Timers Bid Daily or Quarterly: NA
Full-Timers Work Trippers
On Overtime Basis: NA
As Part of Regular Week's Work: NA
Criteria for Assigning Trippers to Full-Time vs. Part-Time Operators: NA

Notes:
(1) Part-timers bid on assignments by seniority

Effect on Runcutting:

Runcutting Procedure: Manual
Effects of Part-Time Labor: None

Effect on Service Changes:

None. Service is expanding with each new sign-up. Sign-ups occur three (3) times each year.

Property: S.F.: San Francisco Municipal Railway

Contact(s): Richard Sinigiani, Deputy General Manager, Operations (415) 558-2353
John Saragosa, Operations; Charles Romeyn, Schedules (415) 558-4062

Work Rule Provisions

Part-Time Operators Permitted Since: July 1980
Number (Percent) Part-Time Operators Permitted: 12% untilJune 30, 1984
Types of Work Allowed: Short runs and part-time operator extraboard; no cable car work
Maximum Work Hours Per Week/Day: 25 hours/week; 8 hours/day
Maximum Spread: 12 hours used as policy
Top Pay Rate: $12.00/hour, plus cost of living allowance
Top Pay Rate As Percent of Full-Time Top Pay Rate: 100%
Union Membership: Yes
Seniority Transferrable to Full-Time Status: No
All Must Be Laid Off Before Full-Time: Yes
Guarantee Per Assignment: 3-1/2 hours
Free Transportation: Yes
Uniform Allowance: Yes
Sick Leave: Prorated
Holidays: Prorated
Vacation: Prorated
Health and Welfare: Prorated
Retirement: Prorated

Notes:

System Characteristics

Number of Districts: Six (6), 2 motor coach, 2 trolleybus, 1 light rail, 1 cable car
Number of:
Full-Time Operators: 1,820
Part-Time Operators: 224
Part-Time as Percent of Full-Time: 12.3%
Actual Part-Time as Percent of Permitted Part-Time: 100%
Peak-to-Base Service Ratio: Approx. 1.6 for motor coach and trolleybus; approx. 1.3 for light rail service
Maximum Spread: 12 hours
Spread Premium Threshold: 10 hours
Guarantee: 8 hours/day
Pay-to-Platform Hour Ratio: 1.12 for motor coach and trolleybus; 1.53 for light rail service (1)
Type of Runs: NA
Straights:
Splits:
Trippers: A.M. P.M.
Extraboard:

Notes:
(1) For schedule in effect 1/12/83

Use of Part-Time Operators (1)

Tripper Assignments Worked by:
Full-Time Only:_____
Part-Time Only:_____
Full-Time and Part-Time: X
Extraboard Worked by:
Full-Time Only:_____
Part-Time Only:_____
Full-Time and Part-Time: X
If Full-Time Operators Work Tripper Assignments:
Full-Timers Bid Runs: X
Are Assigned Runs:_____
Bid Some, Are Assigned Others:_____
Full-Timers Bid Daily or Quarterly: Quarterly
Full-Timers Work Trippers
On Overtime Basis:_____
As Part of Regular Week's Work: X (bid as part of regular run)
Criteria for Assigning Trippers to Full-Time vs. Part-Time Operators: Minimize make-up time paid to full-time operators, subject to 5 hours/day and 12-hour maximum spread time provisions for part-time operators.

Notes: (1) Separate bidding systems are maintained for part-time and full-time operators. Runs are designated as either full-time or part-time. Part-time extraboard operators provide part-time operator sick and vacation relief, and, secondarily, relief on regular full-time runs when the full-time extraboard is exhausted. (Regular full-time runs are split up into 5-hour or shorter segments.) No part-time operator can be assigned to work left vacant by full-time operators unless no full-time operators on the extraboard are available. Similarily, full-timers can work part-time runs if no part-timers are available.

Effect on Runcutting:

Runcutting Procedure: RUCUS
Effects of Part-Time Labor:_____

Effect on Service Changes:

Property: San Jose, California: Santa Clara County Transportation Agency

Contact(s): William Wakaluk, Assistant Director of Operations, (408) 299-4384
Michael Aro, Director of Schedules, (408) 299-4901

Work Rule Provisions

Part-Time Operators Permitted Since: 1980
Number (Percent) Part-Time Operators Permitted: 10% of full-time operators if 854 or more; 5% if less than 854 full-time operators
Types of Work Allowed: Weekdays only
Maximum Work Hours Per Week/Day: 5 hours/day
Maximum Spread: None
Top Pay Rate: $12.54
Top Pay Rate As Percent of Full-Time Top Pay Rate: 100%
Union Membership: Yes
Seniority Transferrable to Full-Time Status: Yes
All Must Be Laid Off Before Full-Time: Yes
Guarantee Per Assignment: 3 hours
Free Transportation: Yes
Uniform Allowance: Yes
Sick Leave: Yes, prorated
Holidays: Yes, prorated
Vacation: Yes, prorated
Health and Welfare: Covered by Social Security Act
Retirement: Yes, prorated

Notes:

System Characteristics

Number of Districts: Five (5)
Number of:
Full-Time Operators: 860
Part-Time Operators: 83
Part-Time as Percent of Full-Time: 9.7%
Actual Part-Time as Percent of Permitted Part-Time: 96.5%
Peak-to-Base Service Ratio: 1.59
Maximum Spread: 12 hours
Spread Premium Threshold: 10 hours
Guarantee: 8 hours/day
Pay-to-Platform Hour Ratio: 1.107 (for full-time work only)
Type of Runs:
Straights: 287
Splits: 135
Trippers: ~~A.M.~~ ~~P.M.~~ 298 (1)
Extraboard:

Notes: (1) 170 trippers are combined to form 85 "frag" runs, defined as 2-peice split runs within a 12:01 to 12:15 spread. Of the remaining 128 trippers, 83 are assigned to part-time and 45 to full-time extraboard operators.

Santa Clara County TRansportation Agency (continued)

Use of Part-Time Operators (1)

Tripper Assignments Worked by:
Full-Time Only:_____
Part-Time Only:_____
Full-Time and Part-Time: X
Extraboard Worked by:
Full-Time Only: X
Part-Time Only:_____
Full-Time and Part-Time:_____
If Full-Time Operators Work Tripper Assignments:
Full-Timers Bid Runs:_____
Are Assigned Runs: X
Bid Some, Are Assigned Others:_____
Full-Timers Bid Daily or Quarterly: NA
Full-Timers Work Trippers
On Overtime Basis:_____
As Part of Regular Week's Work: X (standing extra)
Criteria for Assigning Trippers to Full-Time vs. Part-Time Operators:

Notes: (1) All straight, split, and "frag" runs are bid by full-time operators. Eighty-three (83) trippers are assigned to part-timers and 45 are worked by full-time extraboard operators. By contracts, maximum of 60% of all trippers can be combined into "frag" runs. Frag runs are more cost-effective than tripper pairs worked by full-time extraboard operators.

Effect on Runcutting:

Runcutting Procedure: RUCUS
Effects of Part-Time Labor: None

Effect on Service Changes: none

Property: Syracuse, New York: CNY Central

Contact(s): Mr. Lewis Preollo, Service Supervisor

Work Rule Provisions

Part-Time Operators Permitted Since:
Number (Percent) Part-Time Operators Permitted: 10%
Types of Work Allowed: charter trips, school trips, work not bid by full-time operators
Maximum Work Hours Per Week/Day: 25 hours/week
Maximum Spread: 13
Top Pay Rate:
Top Pay Rate As Percent of Full-Time Top Pay Rate:
Union Membership:
Seniority Transferrable to Full-Time Status:
All Must Be Laid Off Before Full-Time:
Guarantee Per Assignment:
Free Transportation:
Uniform Allowance:
Sick Leave:
Holidays:
Vacation:
Health and Welfare:
Retirement:

Notes:

System Characteristics

Number of Districts:
Number of:
- Full-Time Operators: 155 (170-175 in fall)
- Part-Time Operators: 20 (9 additional in training)
- Part-Time as Percent of Full-Time:
- Actual Part-Time as Percent of Permitted Part-Time:

Peak-to-Base Service Ratio:
Maximum Spread:
Spread Premium Threshold:
Guarantee:
Pay-to-Platform Hour Ratio:
Type of Runs:
- Straights:
- Splits:
- Trippers: A.M. P.M.
- Extraboard:

Notes:

Use of Part-Time Operators

Tripper Assignments Worked by:
Full-Time Only:_____
Part-Time Only:_____
Full-Time and Part-Time: X
Extraboard Worked by:
Full-Time Only:_____
Part-Time Only:_____
Full-Time and Part-Time: X (first priority is full-time operators, then full-time
If Full-Time Operators Work Tripper Assignments:operators on RDO; then part-time operators
Full-Timers Bid Runs:_____
Are Assigned Runs:_____
Bid Some, Are Assigned Others:_____
Full-Timers Bid Daily or Quarterly:_____
Full-Timers Work Trippers
On Overtime Basis: X
As Part of Regular Week's Work:_____
Criteria for Assigning Trippers to Full-Time vs. Part-Time Operators:

Notes:

Effect on Runcutting:

Runcutting Procedure:_____
Effects of Part-Time Labor:_____

Overtime payments have been substantially reduced.

Effect on Service Changes:

Property: Transit Management of Tuscon, Inc. (Sun Tran)

Contact(s): George Patton, Director of Schedules

(602) 623-4301

Work Rule Provisions

Part-Time Operators Permitted Since: About 2-1/2 years
Number (Percent) Part-Time Operators Permitted: 7%
Types of Work Allowed: Trippers only
Maximum Work Hours Per Week/Day: 24 hours/week; no daily limit
Maximum Spread: None
Top Pay Rate: $8.00 hour
Top Pay Rate As Percent of Full-Time Top Pay Rate: 100%
Union Membership: No
Seniority Transferrable to Full-Time Status: No
All Must Be Laid Off Before Full-Time: Yes (1)
Guarantee Per Assignment: None
Free Transportation: Yes
Uniform Allowance: No
Sick Leave: NO
Holidays: No
Vacation: No
Health and Welfare: Covered by Social Security Act
Retirement: No

Notes:
(1) Operators hired prior to April 1, 1983 will not be laid off while part-time operators are employed.

System Characteristics

Number of Districts: One (1)
Number of:
Full-Time Operators: 194
Part-Time Operators: 14
Part-Time as Percent of Full-Time: 7.2%
Actual Part-Time as Percent of Permitted Part-Time: 100%
Peak-to-Base Service Ratio: 1.72 (1)
Maximum Spread: None
Spread Premium Threshold: 12 hours
Guarantee: 40 hours/week
Pay-to-Platform Hour Ratio: 1.02
Type of Runs: (2)
Straights: 86
Splits: 71
Trippers: ~~--A.M.----------P.M.-----~~ 28 (3)
Extraboard: 26 operators

Notes:
(1) Peak-to-base service ratio is being increased in an effort to better serve work commuter trips.
(2) August mark-up (i.e., school year schedule) includes 90 straights, 80 splits and only 3 scheduled trippers
(3) Trippers average about 2-1/2 hours

Transit Management of Tuscon, Inc. (Sun Tran) (continued)

Use of Part-Time Operators

Tripper Assignments Worked by: (1)
- Full-Time Only: _____
- Part-Time Only: X (during school year)
- Full-Time and Part-Time: X (during summers)

Extraboard Worked by: (2)
- Full-Time Only: X (during summers)
- Part-Time Only: _____
- Full-Time and Part-Time: X (during school year)

If Full-Time Operators Work Tripper Assignments:
- Full-Timers Bid Runs: _____
  - Are Assigned Runs: X (from the extraboard during Summer)
  - Bid Some, Are Assigned Others: _____
- Full-Timers Bid Daily or Quarterly: NA
- Full-Timers Work Trippers
  - On Overtime Basis: _____
  - As Part of Regular Week's Work: X

Criteria for Assigning Trippers to Full-Time vs. Part-Time Operators:

(1) Minimize make-up time paid to full-time operators; utilize part-timers, 24 hour/week limitations. Full-timers work some trippers in summer as part of 40 hour/week. Part-timers also work weekend trippers during all times of the year.

(2) Part-timers work plug runs during school year, in addition to scheduled trippers.

Notes:

Effect on Runcutting:

Runcutting Procedure: BUSSCHED (developed by ATE
Effects of Part-Time Labor: None

Effect on Service Changes:

More peak period service is being added in an effort to better serve commuter trips.

Property: Washington Metropolitan Area Transit Authority

Contact(s): Milland "Blackie" Saey, Transit Engineering and Safety Office, Operation Planning, Schedules Section

Work Rule Provisions

Part-Time Operators Permitted Since: August 26, 1978
Number (Percent) Part-Time Operators Permitted: 10% of full-time operators
Types of Work Allowed: Regularly scheduled trippers
Maximum Work Hours Per Week/Day: 30 hours/week; no daily limit
Maximum Spread: None
Top Pay Rate: (as of 7/1/80): $9.87/hour, plus cost-of-living escalation (2)
Top Pay Rate As Percent of Full-Time Top Pay Rate: 100%
Union Membership: Yes
Seniority Transferrable to Full-Time Status: No
All Must Be Laid Off Before Full-Time: Yes (1)
Guarantee Per Assignment: None
Free Transportation: Yes
Uniform Allowance: Yes
Sick Leave: No
Holidays: No
Vacation: No
Health and Welfare: Covered by Social Security Act
Retirement: No

Notes:
(1) Yes, except where it can be demonstrated that the lay off of full-time operators would have occurred in the absence of part time operators.
(2) Part-timers earn 9% fringe benefits, compared to 46% for full-timers.

System Characteristics

Number of Districts:
Number of:
Full-Time Operators:
Part-Time Operators:
Part-Time as Percent of Full-Time:
Actual Part-Time as Percent of Permitted Part-Time:
Peak-to-Base Service Ratio:
Maximum Spread: None (13 hours used as policy)
Spread Premium Threshold: 10 hours for regular operators, 11 1/2 hours for extra operators
Guarantee: 8 hours/day
Pay-to-Platform Hour Ratio:
Type of Runs:
Straights:
Splits:
Trippers: A.M. 522 P.M. 406 Total: 928
Extraboard:

Notes:

Use of Part-Time Operators

Tripper Assignments Worked by:
Full-Time Only:_____
Part-Time Only:_____
Full-Time and Part-Time: X (1)
Extraboard Worked by:
Full-Time Only:_____
Part-Time Only:_____
Full-Time and Part-Time: X
If Full-Time Operators Work Tripper Assignments:
Full-Timers Bid Runs:_____
Are Assigned Runs: X
Bid Some, Are Assigned Others:_____
Full-Timers Bid Daily or Quarterly: NA
Full-Timers Work Trippers
On Overtime Basis:_____
As Part of Regular Week's Work: X
Criteria for Assigning Trippers to Full-Time vs. Part-Time Operators:

Minimize make-up time (or the difference between the 8-hour guarantee and combined pay time) paid to full-time operators.

Notes:

(1) All trippers are included on the extraboard.

Effect on Runcutting:

Runcutting Procedure: Manual
Effects of Part-Time Labor: None

Effect on Service Changes: The combined effects of the use of part-time operators and a change in the definition of a regular run has been to increase the number, and proportion, of trippers. Effective December 23, 1980, the definition of a regular run was changed from any run yielding six (6) hours pay or more, to any run yielding seven (7) hours platform time or more. The full complement of 10% part-timers could not have been utilized under the earlier definition of a regular run, but can be utilized under the new definition.

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