Vehicle Maintenance Practices Among 16(b)(2) Grantees

August 1981
VEHICLE MAINTENANCE
A Study of
Vehicle Maintenance Practices
Among Section 16(b) (2) Grantees

Prepared for the
WASHINGTON STATE DEPARTMENT
OF TRANSPORTATION

By
Caroline L. Feiss, Planner

August 31, 1981

This report was prepared by the Public Transportation and Planning Division, Washington State Department of Transportation, Highway Administration Bldg., Olympia, Washington 98504, with partial financial assistance through a grant from the U.S. Department of Transportation, Urban Mass Transportation Admin., under the Urban Mass Transportation Act of 1966, as amended.
05146

TL
152
.F44
BACKGROUND

This report describes the maintenance management practices of a number of transportation providers in Washington State who are funded by the Urban Mass Transportation Administration's 16(b)(2) program. These providers serve cities of a variety of sizes, and face maintenance problems of varying degrees of complexity.

Although 16(b)(2) providers are legally mandated to meet the needs of one particular set of special users, the material in this report is probably applicable to many other kinds of systems. Potential users might include specialized transportation providers for other groups, rural public transportation systems, coordinated human service transportation providers, small urban transit systems, small private providers, and buspools.

The document includes both an analysis of maintenance practices, plus a heavy sampling of the actual procedures and forms used by the systems which were contacted. Although these procedures may not precisely meet the needs of other providers, the material hopefully will provide ideas for operators on how to develop new maintenance management procedures or refine those which they already have in place.

Because of widespread national interest in alternative approaches to transit maintenance, especially for smaller buses, the Technology Sharing Program of the U. S. Department of Transportation is making this study available to a broader national audience. This process would not be possible without the cooperation of the Washington State Department of Transportation.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Background and Purpose</td>
<td>1</td>
</tr>
<tr>
<td>The Study Process</td>
<td>2</td>
</tr>
<tr>
<td>II. VEHICLE MAINTENANCE PROGRAMS: AN OVERVIEW</td>
<td>4</td>
</tr>
<tr>
<td>The Vehicles</td>
<td>4</td>
</tr>
<tr>
<td>Vehicle Use</td>
<td>8</td>
</tr>
<tr>
<td>Maintenance Frequencies</td>
<td>9</td>
</tr>
<tr>
<td>Who Maintains the Vehicles?</td>
<td>12</td>
</tr>
<tr>
<td>Maintenance Program Supervision</td>
<td>14</td>
</tr>
<tr>
<td>Maintenance Budgets</td>
<td>15</td>
</tr>
<tr>
<td>Driver Training</td>
<td>15</td>
</tr>
<tr>
<td>Maintenance Program Satisfaction</td>
<td>16</td>
</tr>
<tr>
<td>III. RECOMMENDED MAINTENANCE PROGRAM ELEMENTS</td>
<td>17</td>
</tr>
<tr>
<td>IV. WSDOT ASSISTANCE</td>
<td>18</td>
</tr>
<tr>
<td>V. THE COST-EFFECTIVENESS OF MAINTENANCE PROGRAMS</td>
<td>20</td>
</tr>
<tr>
<td>VI. SUMMARY and CONCLUSIONS</td>
<td>24</td>
</tr>
<tr>
<td>APPENDICES</td>
<td></td>
</tr>
<tr>
<td>A. List of Participating Grantees</td>
<td></td>
</tr>
<tr>
<td>B. Sample Maintenance Program Forms Used by Grantees.</td>
<td></td>
</tr>
<tr>
<td>I. Daily safety check record forms</td>
<td></td>
</tr>
<tr>
<td>II. Preventative and major maintenance records</td>
<td></td>
</tr>
<tr>
<td>III. Vehicle maintenance log forms</td>
<td></td>
</tr>
<tr>
<td>IV. Driver training materials</td>
<td></td>
</tr>
<tr>
<td>C. Interview Questionnaire</td>
<td></td>
</tr>
<tr>
<td>FIGURES</td>
<td></td>
</tr>
<tr>
<td>Figure 1 Summary of Grantees' Maintenance Programs</td>
<td>5</td>
</tr>
<tr>
<td>Figure 2 Definitions of Types of Maintenance Used in the Study</td>
<td>10</td>
</tr>
<tr>
<td>Figure 3 Availability of Back-up Vehicles</td>
<td>11</td>
</tr>
<tr>
<td>Figure 4 Relationship of Total Costs to the Frequency of Preventative Maintenance</td>
<td>21</td>
</tr>
</tbody>
</table>
I. INTRODUCTION

Background and Purpose

Under the Urban Mass Transportation Administration (UMTA) Section 16(b)(2) capital assistance program, as administered by the Washington State Department of Transportation (WSDOT), some 38 private nonprofit organizations have been able to acquire vehicles for use in transporting elderly and disabled people within their communities. Built into the regulations governing the program (WAC 468-87-370), are requirements for grantees to adequately maintain their fleets of vehicles at least to the recommended standards set out by the vehicle manufacturer. Since the Section 16(b)(2) program began in 1975, over 150 vehicles have been placed in service and most have received at least minimal maintenance during that time.

Over the years, questions have been raised as to the quality and frequency of maintenance these vehicles are receiving. In February 1981 an evaluation of the Section 16(b)(2) program in Washington was conducted and concerns about the sufficiency of maintenance efforts were voiced. This study is an out-growth of that evaluation and the questions it raised.

Grantees interviewed during the evaluation identified several issues about the maintenance of the Section 16(b)(2) vehicles that are relevant here:

- Are there sufficient maintenance standards to help guide maintenance programs?
- How can State inspections help develop good maintenance practices?
- Are financial problems forcing agencies to cut back on maintenance?

As the WSDOT mulled these questions over, a variety of others surfaced:

- What are the management systems for maintenance programs?
- Does the agency budget specifically identify maintenance?
- Does the agency's driver training program include maintenance-related training?
Does the agency carry out its own maintenance policies?

What problems are agencies facing relative to vehicle maintenance?

What program elements have agencies found that work and enhance vehicle life and usefulness?

What could the WSDOT do to help agencies with their maintenance programs?

The answers to these questions are detailed in the balance of this report which has been designed to provide information to both the WSDOT and the Section 16(b)(2) grantees.

The report's format details what types of maintenance programs are operated by the grantees, which have worked, what might be done by the WSDOT to help and ends with a discussion of the cost-effectiveness of maintenance programs.

The Study Process

The maintenance study design and analysis was contracted to the independent consultant who had performed the Section 16(b)(2) evaluation in the spring of 1981. After some discussion of alternatives, the WSDOT decided to conduct inperson or telephone surveys of all Section 16(b)(2) grantees who were (a) still operating their Section 16(b)(2) vehicles; (b) had two or more years operating experience with those vehicles; and (c) could easily be reached for interviews by WSDOT district staff.

Twenty-six grantees were identified and interviewed during the first two weeks of August (1981). Most of the interviews were conducted as part of site visits by WSDOT personnel involved with the State's paratransit program.

The interview process had the following steps:

- A letter was sent to each grantee agency to be interviewed, informing them of the study and requesting their cooperation.
- A packet was sent to each WSDOT staff interviewer explaining the study, explaining the interview and providing a set of interview questions in a survey format.
- The completed interview surveys were sent back to the consultant for tabulation and analysis and inclusion in this study report.
While the interviewing process worked well and the resulting surveys contained considerable useful information, a number of factors have affected the analysis of the information.

A major problem is the wide variation in operating styles and program designs among special transportation programs. Some of the interviewed grantees run formal, focused operations with paid staffs, computerized records and their own maintenance shops; while others have small operations that run one to four vans in a relatively informal manner with volunteer or part-time, paid drivers and maintenance that occurs "as needed" rather than according to a fixed schedule.

As with their operating styles, the agencies maintain records in myriad ways. Even the monthly reports required by the State contain data compiled in such different ways as to render the information virtually unusable for this type of research. For example, some operators list no maintenance expenses for months on end. For some this simply reflects internal record-keeping that does not separate maintenance costs. Others may not consider oil changes or similar work as maintenance and thus not record costs when those work elements are done. Still others may have some or all maintenance work performed in-house and therefore assume "it doesn't cost anything." From the interviews, it is clear that all programs do perform some maintenance work so the absence of expenditure records for maintenance does not mean an absence of maintenance effort.

The effect of these two problems -- differing operating styles and unparallel records -- is that little quantification of the study results is possible.

Discussions with WSDOT staff and some of the grantees also suggest that patterns established in past years or even in the last six months may be changed by future events such as retirement of older vehicles, addition of new vehicles or new program elements, and budget cuts. In light of these problems and the changing nature of the special transportation programs, this report is focused on maintenance programs that have worked, "tricks of the trade" that other grantees may find valuable and problems that need addressing in the near future.
One final note: Vehicle maintenance is clearly an important topic for all Section 16(b)(2) grantees. Their cooperation and willingness to provide information and copies of maintenance forms underscored their interest in the subject.

II. VEHICLE MAINTENANCE PROGRAMS:
AN OVERVIEW

Efforts to group Section 16(b)(2) grantees to assist in understanding their maintenance programs are likely to be somewhat unsuccessful due to operating style and operating condition differences. In general, programs with more vehicles tend to operate in a more formalized manner than programs with only a few vehicles, although this may reflect a program's manager more than its fleet size. The amount of energy devoted to vehicle maintenance tends to reflect the place those vehicles have in the overall program. Thus agencies that consider themselves "transportation programs" seem to have more formal maintenance programs than do agencies that provide transportation only as to the means to get people to their other program activities. However, there are exceptions to these generalizations.

The following sections provide an overview of the maintenance programs and the factors that affect their design and operation among the Section 16(b)(2) grantees.

The Vehicles

The vehicles themselves are a major determinant of the complexity of a maintenance program and of the prominence that program has as a part of the whole transportation service. Almost all the grantees interviewed have had serious, costly and frustrating problems with their vehicles (both 16(b)(2) purchased and those from other sources). As one transportation manager indicated, his agency had been naive about maintenance requirements and the costs of keeping vans in running order have far exceeded expectations.

The programs that have not experienced serious mechanical problems with their vehicles are programs that make the lightest use of them -- four or less hours of service per day and even days with no use at all. With the exception of two agencies that attribute their mechanical problems to volcanic ash, all but nine of the interviewed agencies reported long histories of engine failures, brake problems,
### FIGURE 1
SUMMARY OF GRANTEES MAINTENANCE PROGRAMS

<table>
<thead>
<tr>
<th>Agency Name</th>
<th>Location</th>
<th>Passenger Fleet Size</th>
<th>MAINTENANCE SCHEDULES</th>
<th>Safety</th>
<th>Preventative</th>
<th>Major</th>
<th>WHO PERFORMS</th>
<th>Major</th>
<th>Maintenance Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SMALLER PROGRAMS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walla Walla Sr. Center</td>
<td>Walla</td>
<td>2</td>
<td>Daily, Scheduled 2/</td>
<td>Drivers</td>
<td>Local Mechanic, Local Garage</td>
<td>$2,228</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kittitas Co. Dev. Center</td>
<td>Ellensburg</td>
<td>4</td>
<td>Daily, Scheduled</td>
<td>Drivers/Own Maint, Man</td>
<td>Dealer</td>
<td>5,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benton/Franklin Red Cross</td>
<td>Kennewick</td>
<td>8</td>
<td>Daily, Scheduled</td>
<td>Drivers</td>
<td>Local Garage, Dealer</td>
<td>- 3/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diversified Industries</td>
<td>Port Angeles</td>
<td>3</td>
<td>Daily, Scheduled</td>
<td>Drivers</td>
<td>Own Shop, Own Shop</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skills Training</td>
<td>Moses Lake</td>
<td>2</td>
<td>Daily, Scheduled/As Needed</td>
<td>Drivers</td>
<td>Own Maint, Man</td>
<td>City of Longview</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Cerebral Palsy</td>
<td>Seattle</td>
<td>8</td>
<td>Daily, Scheduled</td>
<td>Drivers</td>
<td>Service Station</td>
<td>Dealer</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower Columbia CAC</td>
<td>Longview</td>
<td>2</td>
<td>Daily, Scheduled/As Needed</td>
<td>Drivers</td>
<td>Service Station</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Custom Industries</td>
<td>Bellevue</td>
<td>3</td>
<td>Daily, Scheduled/As Needed</td>
<td>Drivers</td>
<td>Service Station</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N.W. Center</td>
<td>Seattle</td>
<td>2</td>
<td>Daily/Weekly, Scheduled</td>
<td>Drivers/Maint. Supervisor</td>
<td>Own Shop</td>
<td>Service Station</td>
<td>1,200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seattle Indian Health Board</td>
<td>Seattle</td>
<td>2</td>
<td>Daily, Scheduled</td>
<td>Drivers</td>
<td>Service Station</td>
<td>Dealer</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. King Co. Multi-Purpose Center</td>
<td>Federal Way</td>
<td>9</td>
<td>Daily, Scheduled</td>
<td>Drivers</td>
<td>Own Shop, Own Shop</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Okanogan Senior Center</td>
<td>Omak</td>
<td>7</td>
<td>Daily, Scheduled/As Needed</td>
<td>Drivers</td>
<td>Service Station</td>
<td>Dealer</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NE Wash, Rural Resource Develop</td>
<td>Colville</td>
<td>7</td>
<td>Daily, Scheduled/As Needed</td>
<td>Drivers</td>
<td>Service Station</td>
<td>Service Station</td>
<td>Not Available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>W.J.S.E.R., Institute</td>
<td>Bothell</td>
<td>1</td>
<td>Daily, As Recommended by Service Sta.</td>
<td>Drivers</td>
<td>Service Station</td>
<td>Service Station</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skagit County Senior Services</td>
<td>Mt. Vernon</td>
<td>5</td>
<td>Daily/Weekly, Scheduled/As Needed</td>
<td>Drivers</td>
<td>Service Station</td>
<td>Service Station</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V.I.C.T.O.R.</td>
<td>Vashon</td>
<td>1</td>
<td>Monthly, Scheduled</td>
<td>Drivers</td>
<td>Service Station</td>
<td>Service Station</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LARGER PROGRAMS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salsa</td>
<td>Spokane</td>
<td>19</td>
<td>Daily, Scheduled/As Needed</td>
<td>Drivers</td>
<td>Own Shop</td>
<td>Own Shop</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yakima Valley Trans, Exchange</td>
<td>Yakima</td>
<td>20</td>
<td>Daily, Scheduled/As Needed</td>
<td>Drivers</td>
<td>Own Shop</td>
<td>Yakima City Shop</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce County Red Cross</td>
<td>Tacoma</td>
<td>18</td>
<td>Daily, Weekly, Scheduled/As Needed</td>
<td>Drivers</td>
<td>Service Station</td>
<td>Dealer</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E.O.C. of Clark Co.</td>
<td>Vancouver</td>
<td>18</td>
<td>Daily, Scheduled</td>
<td>Drivers/Supervisor</td>
<td>Own Shop</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kitsap Housing &amp; Trans, Assoc.</td>
<td>Port Orchard</td>
<td>24</td>
<td>Daily, Scheduled</td>
<td>Drivers</td>
<td>Kitsap Co. Garage</td>
<td>Dealer</td>
<td>48,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chelan-Douglas Council on Aging</td>
<td>Wenatchee</td>
<td>15</td>
<td>Daily, Scheduled</td>
<td>Drivers</td>
<td>Service Station</td>
<td>Dealer</td>
<td>15,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grant County Seniors</td>
<td>Moses Lake</td>
<td>12</td>
<td>Daily, Scheduled/As Needed</td>
<td>Drivers</td>
<td>Service Station</td>
<td>Dealer</td>
<td>2,700</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NE King Co. Multi-Service Center</td>
<td>Bothell</td>
<td>13</td>
<td>Daily, Scheduled/As Needed</td>
<td>Drivers</td>
<td>Own Shop</td>
<td>Own Shop/Service Station</td>
<td>31,200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whatcom Co. Council on Aging</td>
<td>Bellingham</td>
<td>20</td>
<td>At Shift, Changes, Scheduled/As Needed</td>
<td>Drivers</td>
<td>Service Station</td>
<td>Dealer</td>
<td>10,200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sr. Services of Snohomish Co.</td>
<td>Everett</td>
<td>12</td>
<td>Daily, Scheduled</td>
<td>Drivers</td>
<td>Maint. Man</td>
<td>Own Shop</td>
<td>Own Shop</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

1/ Some grantees operate fleets of nonpassenger vehicles (forklifts, trucks). The questions here pertained only to passenger vehicles, some of which were funded with Section 16(b)(2). Section 16(b)(2)-funded vehicles were not segregated from other passenger vehicles since funding source did not seem to have any bearing on how maintenance was performed.
2/ "Scheduled" means adherence to a fixed schedule (e.g., every 3,000 miles or every 3 months, etc.).
3/ No separate line item is kept for passenger vehicle maintenance.
4/ Some items are taken care of on a scheduled basis (see note 2); others are maintained as problems arise (as needed).
improperly mounted wheelchair lifts, etc. caused by poor design or defective parts. For several programs, maintenance budgets have proved to be insufficient because of the ongoing problems.

A report on the Federal Highway Administration (FHWA) Section 147 Demonstration Program (which provided funding for rural programs up to a few years ago) suggests that ongoing maintenance problems were common to all the Section 147 projects and that a number of serious consequences emerged. Chief among these was a loss of credibility (and ridership) for the programs that experienced large amounts of downtime for repair work. As with most of the Section 16(b)(2) grantees interviewed for this study, the Section 147 projects were unlikely to have back-up equipment available (see the discussion on back-up vehicles below).

The FHWA report identified a number of factors that contribute to the impact of maintenance problems. A key factor can be the use of several different types of vehicles in one fleet.

This not only required more mechanical expertise but created additional problems with availability of parts. If no local dealers were available, parts had to be ordered from other areas. This caused abnormal repair delays. While vehicles were down for repairs, other vehicles had to be pressed into extra service. These vehicles were sometimes neglected which caused minor repairs to become major repairs. The problem compounded itself causing service curtailments.*

This description is not unlike problems experienced by a number of Washington’s Section 16(b)(2) grantees. In many cases, repeated parts failures and breakdowns resulting from poor design or heavy use have kept vehicles out of service for weeks at a time.

There is considerable evidence that the cycle of breakdown-repair-breakdown is due to the design of the vehicles being used by the agencies, and the heavy use the

vehicles get under less than ideal conditions. The availability of highly trained, reliable mechanics, and proper parts, also affects this cycle for some programs.

**Vehicle Use**

As has been mentioned above, a major factor affecting maintenance requirements is vehicle use. During the study interviews, a variety of factors were identified that could explain wear and tear on grantees' vehicles. These included:

- City stop-and-go driving
- Heavy use -- up to 40 hours or more per week
- Heavy use of lifts -- wheelchairs damage vehicle interiors
- Vehicle design itself (see above)
- Vehicle age -- almost all programs operate older vehicles in their fleets
- Use of nonassigned drivers
- Unusual environmental factors -- volcanic ash, heavy winds

For most of the grantees who had problems with wear and tear, stop-and-go driving was the key problem. Unavoidable in most programs, this type of driving causes serious wear on brakes and tires.

One way of assessing how vehicles are used is to estimate how much time the vehicles spend on certain types of roads. The assumption is that, for example, freeway driving is probably the least wearing on vehicles, while lots of driving on rural dirt roads, or in heavy, stop-and-go traffic, will result in considerable wear and tear.

While there is considerable variation, almost all trips are made on paved roads (most programs had no travel on unpaved roads; only a few reported more than 5 percent of all trips on unpaved roads). Most programs do little, if any, travel on freeways or major highways, although two programs did report an estimate of 40 percent freeway driving and three others reported 25 percent freeway travel. A
few programs travel on all types of roads (urban, suburban, rural and freeway) but most concentrate their services in urban and suburban areas or in small urban and rural areas. Problems with stop-and-go wear and tear came from programs operating primarily in urban and suburban areas.

Maintenance Frequencies

A theoretical measure of a "good" maintenance program is the degree to which maintenance is prescheduled. This means that, for example, the drivers perform daily maintenance (and safety) inspections before they start their day, and that oil changes and other work is performed regularly according to some timetable. To assess how formal the Section 16(b)(2) grantees' maintenance programs are, relative to maintenance schedules, the grantees were asked how often they perform vehicle safety checks, preventative maintenance and major maintenance work. Figure 2 defines these three types of maintenance work.

At the outset, it is important to note that most of the grantees meet or exceed the standards for maintenance frequency suggested by the vehicle manufacturers. This is not uniformly true for all aspects of the manufacturer's guidelines, but most of the grantees appear to have adapted their schedules to meet their local operating conditions which are generally much harder than those envisioned by the manufacturer.
A few of the programs do have formal maintenance schedules based either on the vehicle manufacturer's or a mechanic's recommendations or on experience. These programs regularly perform preventative and major maintenance every so many miles or so many months. Some programs strongly advocate formal maintenance schedules because they feel they materially affect vehicle performance, safety and life. In addition, these programs indicate that operating on a fixed schedule means that back-up vehicles can be arranged or trips can be rearranged around the out-of-service equipment.

More of the grantee programs operate on some form of flexible maintenance schedule. These programs take care of certain maintenance work on a fixed, schedule basis (daily safety checks, oil changes every 3,000 miles) but other elements are handled on an "as needed" basis. This is true for many programs' tire
service, belt changes, etc. as well as many major maintenance elements including transmission service, engine tune ups and major overhauls. (All but one of the interviewed agencies have daily safety checks).

The difference between setting formal schedules for maintenance work and doing the work "as needed" reflects four major factors: the programs budget, design, philosophy and experience. For example, some programs only perform maintenance work when they have to because their budgets are so tight that preventative maintenance is viewed as a luxury. Other programs feel that regular preventative maintenance saves money in the long run by reducing the chances of a major breakdown or a serious accident.

Other programs have difficulty prescheduling maintenance work because they lack back-up vehicles, and their clients would be stranded without the van service. One of the key findings of this study was how few programs have regular back-up or reserve vehicles available. Only nine of the 26 agencies interviewed had even one vehicle available to be put into service for emergencies or when another vehicle was down for repairs or maintenance. Several of the agencies that do not have back-up vehicles in their own fleets indicated that their local dealers provide back-up vans, if needed, or that another transportation program can help pick up at least a portion of the agency's stranded clients. Figure 3 shows the distribution of back-up vehicles among the interviewed grantee agencies.

Figure 3

Availability of Back-Up Vehicles

<table>
<thead>
<tr>
<th>Number of Back-up Vehicles</th>
<th>Number of Agencies</th>
<th>Average Fleet Size</th>
<th>Percent of Agencies with/without Back-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>14</td>
<td>6.7</td>
<td>53.9% (without)</td>
</tr>
<tr>
<td>1 part time</td>
<td>3</td>
<td>3.3</td>
<td>11.5</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>12.8</td>
<td>23.1</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>18.0</td>
<td>11.5</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td></td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Some agencies that operate on an "as needed" basis in whole or in part indicated that to do otherwise would not meet the vehicles' real maintenance requirements. For example, 4,000 miles may be too long between oil changes if travel conditions are very rough. Furthermore, experience has shown that many parts fail sooner than anticipated. These agencies indicate that performing maintenance work at the time the problem first surfaces is better for the vehicle and can eliminate unnecessary work and expense.

Other interviewed agencies would prefer a fixed, and thus budgetable, schedule for maintenance work but vehicle breakdowns or a long chain of minor mechanical problems have necessitated operating on a more flexible basis.

Who Maintains the Vehicles?

In almost all cases, maintenance activities are split between drivers and one or more mechanics or garages depending on the type of maintenance work required.

Safety Checks: In all but a few cases, vehicle drivers are responsible for daily safety inspections of their vehicles. The drivers perform this job because they are the most familiar with the vehicles. In a few programs the regular, daily maintenance inspections are augmented by a supervisor's review or a weekly inspection by a program mechanic or other person who is not a driver. Drivers have performed safety checks satisfactorily for most programs. While some grantees reported that drivers were not sufficiently thorough or did not meet program requirements, most programs reported being very pleased with the care drivers took in these daily inspections. In almost all cases, safety inspections are reported on a short checklist that drivers complete and turn in to the "office". One program that uses volunteer drivers extensively feels that these drivers would be unwilling to fill out forms and do lots of paper work, so that program's safety inspections are handled by the program supervisor.

Preventative Maintenance: Unlike safety checks, the performance of preventative maintenance work follows virtually no pattern among the grantees. Again, experience and budget, plus the availability of reliable mechanics, affect the assignment of this work. A few programs use drivers to take care of the basic work and have someone else handle the more complex or time-consuming jobs. In
some cases, programs have hired a part-time mechanic to take care of vehicles in-house. In several programs, this mechanic also does safety inspections and keeps the vans clean and ready to run. Several of the larger programs have their own shops and find the availability of regular service substantially improves their operations.

Most grantees have preventative maintenance work performed by a local service station or garage and in a few cases by the dealer. Location, reliability, prompt service and cost seem to be the deciding factors in selecting a place to handle ordinary preventative maintenance work.

Some programs use service stations almost daily as a part of a combined safety check-minor maintenance approach. As vehicles are fueled, the driver or the service station attendant checks fluid levels, tire pressures and similar items and either corrects problems or schedules a service visit.

The few programs that have preventative maintenance work performed by the dealer do so because they have a good relationship (and usually a service cost discount) or there is a lack of affordable, convenient alternatives.

**Major Maintenance:** Most programs appear to have arrived at their choice of a major maintenance provider by trial and error. A few programs have sufficient in-house capacity to be able to handle tune ups and engine overhauls and other large maintenance work themselves. Most programs, including some with in-house mechanical or shop capacities, have major maintenance work performed by a service station, commercial garage or dealer. A couple of programs have tied in with a city or county garage and seem pleased by the work performed and the garages' billing rates. (Some preventative maintenance work is also performed under these contracts.)

Major maintenance work is the area in which the most dissatisfaction was found. A number of grantees indicated that they were still searching for a reliable, trustworthy garage. Others complained of long delays in getting parts or in getting work done. A few indicated that their vehicles had no priority and have been left with work unfinished for considerable periods. Cost is a major problem. Several programs with small numbers of vehicles feel that they are at the mercy of the local garage or dealer who doesn't have to give them fleet rates or service
discounts. On the other hand, most programs reported good experiences with major maintenance work, particularly when they had a long-standing relationship with a garage or dealer and had established a priority for their vehicles and some sort of advantageous pricing policy. One program reported a 20 percent discount on all major maintenance work; others receive fleet discounts on parts and labor.

The most unusual method for hiring out major maintenance work was found in Colville where the N.E. Washington Rural Resource Board seeks bids for maintenance work over $300.00. The procedure, which is followed for all agency purchasing is very simple:

1. A letter detailing the work to be done, the deadline for completion and requesting a bid is sent to a list of local garages, (picked from the telephone book; bid requests are not advertised in the newspapers).

2. Bidders are required to guarantee all work performed. (A 10 percent price overage is allowed to compensate for bid-processing delays.)

3. Bids are reviewed by the Board at their next meeting and the bidder is selected based on the price offered, the guarantee and the agreement to do the listed work in the prescribed time.

The Board has been very pleased with this process. There are enough qualified local garages available to respond to the bids and the process spreads the work through the community which is politically popular. In addition, the bid process allows price comparisons which in a number of cases have resulted in substantial savings (in one case, the price spread was from $650.00 to $1,700.00). The program has found that it is generally able to preschedule its major maintenance work with sufficient time to use the bid process. The only change the Board is considering is raising the point at which bids are sought to $500.00.

Maintenance Program Supervision

Almost all the interviewed grantees had their transportation coordinator or manager supervise maintenance work. In a few cases, an agency's assistant director or other administrative staff person had this responsibility, but generally, the supervisory role fell to chance or to someone who had supervised other aspects of the program. Only one supervisor had actually been a mechanic and that experience was only coincidental to his assignment. "The lack of any alternative"
was the most frequently cited reason supervisors were selected. The program's manager is usually the only option for the many programs that have a manager and a few drivers; the manager logically supervises maintenance along with all other program aspects.

**Maintenance Budgets**

Just over half of the interviewed agencies maintain separate maintenance budgets or line items within larger program budgets. There appears to be no clearly identifiable pattern to explain why some programs keep separate budgets when others do not. There is also no identifiable correlation between the sizes of the budgets and fleet size or annual mileage records.

Most of the agencies that do keep separate maintenance budgets indicate that the amount budgeted has been sufficient to cover costs to date. Others indicate that their budgets are tight and that if any unanticipated major maintenance or repair work is required, the budget will be insufficient. A clear concern here is with the large number of older vehicles being operated. Programs are experiencing high repair rates for these vehicles with little hope for early replacements.

Evidently, most of the programs that do not have an identifiable maintenance budget have not found this to be a problem. Most apparently work well within a larger transportation services budget although one program manager said that he thought a separate budget would be useful, particularly for assuring funding for work late in the year. Another thought a contingency fund could be useful to cover major maintenance work or unanticipated repairs.

**Driver Training**

Grantees were asked whether drivers received any training to help them perform daily maintenance/safety checks or to identify problems requiring maintenance work. Almost all the interviewed programs have some kind of training although much of it is "on-job training" resulting from daily use of a vehicle safety checklist or experience. The following is a summary of the most typical driver training approaches:
Transportation Coordinator/Manager gives individual training and/or rides with new drivers for several hours (or up to a week).

New drivers are screened carefully for their knowledge of vehicles including maintenance requirements. There may be a test with questions such as "How often should the oil be changed in our vans?"

The programs provide drivers with training manuals and other materials about driving and safety (including information about vehicle maintenance). Some of these materials are generated locally; others come from insurance companies, the State Patrol or from other transportation programs.

Classes are offered with films, handouts and talks by State Patrol personnel or mechanics from a local dealership or the program's own shop.

Weekly drivers' meetings are held to discuss problems — including maintenance problems.

Some grantees use one of the approaches listed above and some use a combination. Most of the programs are satisfied with whatever they are able to do although one or two would like to do more driver training — when additional funds become available.

Most of the programs felt that well-trained, alert drivers are the key to identifying problems early. Several respondents indicated that prompt reporting of problems by drivers could save a program great sums of money; drivers have to be aware of the importance of this routine part of their jobs.

Maintenance Program Satisfaction

The interviewees were asked to evaluate how satisfied they have been with their current maintenance program. Almost all the grantees reported being pleased with their maintenance programs and a large number are "very satisfied." Satisfaction seems to relate to a number of factors:

- Drivers who actively take a part in vehicle maintenance and who take the daily inspections seriously and report problems promptly.
- A good working relationship with a trustworthy mechanic whether in one's own shop or outside.
. Prompt service so that downtime is minimized.
. Cost breaks (discounts, fleet rates).
. Vehicles that do not breakdown continuously.
. Record formats that are clear, easy to use and are useful.

A number of agencies indicated that their maintenance program is the outgrowth of much experimentation and many adjustments to fit their operations' particular characteristics. A couple of agencies indicated that their maintenance programs are still evolving.

Agencies with their own shops or own mechanics or maintenance personnel to take care of regular maintenance tend to be very satisfied with the benefits of these resources — lower costs, rapid turn-around time and strong central control. Even programs that only have need for a part-time maintenance person reported being pleased with the arrangement.

As was mentioned earlier, many of the programs that use commercial garages or local government shops report high levels of satisfaction. Again, price breaks, strong rapport and prompt work are the keys. (In some cases, the garages provide night service which assures that the vehicles are available during the day -- an element that improves satisfaction.)

III. RECOMMENDED MAINTENANCE PROGRAM ELEMENTS

Many of the interviewees had suggestions to offer about successful elements of their maintenance programs. The following is a summary of those recommendations.

. A basic component of a working maintenance program is regular inspections by people (drivers, service station attendants, maintenance personnel) who know what to look for. A second component is a clear procedure for reporting problems, handling the problems and putting the vehicle back into service.
Regular schedules for maintenance help programs plan vehicle downtime, arrange for back-up vehicles and budget maintenance work. A 3,000-6,000-12,000 mile service frequency was recommended by several programs.

Good supervision is needed at all times. Safety inspections should be double-checked on a regular basis by a supervisor and all in-house maintenance work, as well as that which is farmed out, should be carefully monitored. Good records are a basic supervisory tool.

Considerable sums can be saved if at least some preventative maintenance work is done in-house. Even small programs with small fleets should consider use of a trained, part-time maintenance person to change the oil, replace small parts, etc.

Yakima Valley Transportation Exchange has a Loss Control Committee that it recommends. The Committee is made up of the maintenance supervisor, the operations manager and a driver who monitors driver hiring, training and ongoing van driving; vehicle equipment and maintenance, accident and other incident reporting and investigation and other aspects of the program that relate to safety and vehicle maintenance. (A copy of the rules governing the committee is in the appendix.)

Care should be taken in selecting or custom designing maintenance records forms. The forms should be simple to use but should be set up so they provide a clear picture of vehicle status. An expense and parts and repair log for each vehicle is valuable for identifying problem patterns so that they can be anticipated. Logs can also be used to determine if preventative maintenance is being performed too often, or not often enough, by comparing maintenance frequency with records of breakdowns and parts replacement.

IV. WSDOT ASSISTANCE

The grantees were asked to identify any assistance they felt might be provided by the State Department of Transportation that would help improve the quality of their maintenance programs. The ideas for possible assistance included fiscal assistance, technical assistance and assistance in finding qualified and affordable mechanics. The following is a summary of the suggestions posed by the interviewed grantees.
. Provide assistance in finding new funding sources to help cover operating costs including maintenance. This would be most useful if information about funding sources were provided with lead time to apply for the funds -- a newsletter would be a good way to spread the information.

. Allow Section 16(b)(2) funds to be used to purchase vehicle maintenance equipment and tools.

. Share information on good programs, new ways to keep vehicles in tip-top shape, etc.

. Arrange for Section 16(b)(2) grantees to use WSDOT shops. (This idea has been investigated with the WSDOT. The shops are not set up to handle the vans operated by the grantees. State shops in most areas have diesel mechanics rather than automotive mechanics. Also, in most areas the shops are working at full capacity. There is some question whether there would be any price break at the State shops since many commercial garage rates are competitive.

. Assist grantees in finding reliable shops by certifying ones with good records.

. Help grantees arrange cooperative maintenance ventures with other private nonprofit van programs, commercial transportation companies (taxis) or the local public transit system. Linking up with other fleets could save money.

. Provide standardized maintenance forms.*

. Work on state purchasing procedures to arrange for better quality equipment and more reliable vendors.

. Assist programs to share information on a regular basis.

. Whatever the state does, it shouldn't cost the grantees any more to maintain their equipment.

. Assist in setting up bulk purchasing programs for parts, fuel, and tools.

. Offer high quality driver training in vehicle maintenance.

. Help new grantees develop their maintenance programs and understand the requirements. Use WUTC** and WSDOT inspections early in the grant period to help grantees get off to a good start.

*Based on the findings of this study, developing a single set of forms to meet all programs' needs may not be feasible.

**Washington State Utilities and Transportation Commission.
There is surprisingly little formal research available on the cost-effectiveness of maintenance programs for paratransit and special transportation programs. Most work that has been done on the topic relates to highway equipment or military vehicles and thus is somewhat difficult to use with any assurance of comparability. Most reports that do deal with special transportation services and mention maintenance simply assume it will be done and make no effort to assess whether it will pay off.

Three short reports on aspects of vehicle maintenance (in other transportation sectors) were identified as having some bearing on special transportation programs. In addition, some of the interviewed grantees were able to offer some insight into the issue of the cost-effectiveness particularly as it relates to preventative maintenance.

William D. Diggs, Administrator of Maintenance and Operations for the Department of Administrative Services for the City of Seattle has kept careful records that show substantial cost and labor time reductions per dispatch hour for the City's street sweepers since a full scale preventative maintenance program was established in 1977.* Under Seattle's program, equipment operators are trained to identify possible problems and to report them. A "debriefing" of operators by maintenance personnel occurs when the sweeper is turned in for maintenance. Use of forms, checklists, regular inspections and scheduled maintenance work resulted in about a 30 percent maintenance cost saving per dispatch hour between 1977 and 1980.

The Diggs' report points out that there are a variety of ways to make preventative maintenance contribute to the overall cost-effectiveness of a program. First, the scope of preventative maintenance must be clearly defined and sufficiently narrow to make it reasonable to do frequently. Second, use of records of breakdowns will

help in scheduling preventative maintenance work frequency (which may or may not coincide with the manufacturer's recommendation). "You certainly do not want to spend time and money where equipment breakdowns are infrequent or create only minor problems," Diggs points out. He says that one way to save money is to evaluate whether it costs more to repair a part or to replace it. He advocates a preventative maintenance program in which the equipment is so well understood that decisions can be easily made as to the amount of work needed and its frequency. Good records are the key to this process, according to Diggs.

One tool the City of Seattle uses to evaluate preventative maintenance (P.M.) program cost-effectiveness is the following chart. To quote Diggs:

The following Chart represents the relationship of Total Costs to the frequency of P.M. and breakdown costs. On the left side of the Chart with little P.M. work done, the breakdown costs are high. As you increase the number of P.M.'s breakdown costs decrease and total cost decreases to its lowest point where the P.M. and breakdown curves cross. Further increasing the frequency of P.M.'s decreases the breakdown costs but with an attendant increase in P.M. costs and Total Costs.

Improvement in your P.M. process can improve your overall cost effectiveness. If you determine you are left or right of center, on the total cost curve, you're not operating in the most effective manner.

Figure 4
Relationship of Total Costs to the Frequency of Preventative Maintenance

(Source: Ibid. page 7)
A second report, this one from the City of Wilmington, Delaware, reviews a test of the cost-effectiveness of four strategies for maintaining the City's police cars.* For a period of nine months, the researchers followed the experience of four subgroups of patrol cars:

1) "Control Group:" These cars were operated under the existing minimal maintenance program where, with the exception of oil changes, vehicle maintenance occurred only "as needed."

2) "Ownership Preventative:" These cars were maintained regularly in the City's own shop. The key here was that two officers were assigned responsibility for the maintenance of each car. (They had to perform regular inspections and point out problems to the shop as well as make certain the car was in the shop for its scheduled tune-ups, etc.)

3) "Nonownership Preventative:" Maintenance was performed regularly in the City shop, but without any designated car "owner" (responsible officer).

4) "Nonownership Preventative Private:" Like Group 3, but work was contracted to a private (commercial) garage.

Despite some major methodological problems with this study, it is valid to conclude that there were cost savings for the second group. Assigning responsibility for keeping the vehicles in good shape to the vehicle users coupled with in-house maintenance work, produced substantial savings.**

The report author suggests that other fleet operators may want to try this test in their own operations. If so, they can avoid some major methodological problems by

---


**These findings have been substantiated in Washington State by several of the Section 16(b)(2) grantees who have used assigned drivers and in-house maintenance support.
using the following test conditions:

. Use the same make of vehicle for all participating vehicles.
. Vehicles should be approximately the same age and have about the same amount of use.
. Vehicles should receive roughly the same amount of use during the test.
. The test should last long enough to compensate for minor use variations and to give sufficient information to analyze.

The third report comes from the Ann Arbor Office of the U.S. Environmental Protection Agency (EPA).* The EPA was testing reports that inspection and maintenance programs could improve fuel efficiency for older model cars (1972-1977) that were fitted with air pollution devices. The EPA was able to show that the vehicles used in the studies underlying the reports were maintained by highly trained (by the EPA) mechanics. Comparably trained mechanics are not available in most communities and without highly trained mechanics, intensive maintenance work with the objective of improving fuel efficiency in older vehicles may not be cost-effective. (The EPA does indicate, however, that newer models have had engineering design changes that can make a good maintenance program produce moderate fuel savings.) The EPA's finding that the quality of the mechanic and the work performed affects cost-effectiveness was pointed out by a number of the Section 16(b)(2) grantees who have found that bargains may not be that in the end.

Among the Section 16(b)(2) grantees interviewed for this study, there was consensus that a good maintenance program can save money and wear and tear on vehicles (and program personnel). Most of the agencies with formal, scheduled preventative maintenance programs reported cost savings and/or reductions in downtime. Most of the agencies could not provide hard numbers to prove the cost-effectiveness of formal maintenance programs. Some were willing to provide examples of cost savings.

---

The South King County Multi-Purpose Center did report on the costs of not providing preventative maintenance. In 1980, the Center had to rebuild engines in three vans (two 1976 and one 1977, all Dodges) which had only about 75,000 miles on them. These vans had had infrequent oil changes and little if any maintenance care. According to the Center's Transportation Manager, these vans should have been useful for 125,000 miles before an engine rebuild would normally be required and that, with proper preventative maintenance, their vehicle life could have exceeded 200,000 to 300,000 miles.

The North East King County Multi-Service Center reported that for the last two years it has had scheduled preventative maintenance every 3,000 to 4,000 miles (or roughly every six to eight weeks). The result has been no serious breakdowns or major repairs during this period. One additional benefit has been an ability to anticipate problems with defective parts. Some vans have had a history of defective parts. The Center's mechanic checks those parts every six to eight weeks and can replace those parts showing unusual wear or other problems before they result in a breakdown. In conjunction with the South King County Multi-Service Center, the North East Center has been stockpiling replacements for potentially defective parts so that substitutions can be made immediately without long delays while parts are ordered.

In contrast to its well-maintained fleet with its low maintenance costs, the North East King County Multi-Service Center is operating some badly maintained vans transferred from another program. Like the South King County Center's experience, these poorly maintained vans are now "oil burners," requiring endless repairs.

VI. SUMMARY AND CONCLUSIONS

In sum, it seems clear that a good maintenance program can be of benefit to special transportation operators particularly if attention is paid to a preventative maintenance effort. Key elements of such a program include:

- Establishment of regular maintenance schedules.
- Assignment of responsibility for various aspects of vehicle maintenance from daily safety checks through major maintenance work. Use of easily-used
records and inspection procedures helps in this process.*

. Use of vehicle logs to keep track of maintenance and repair histories that can help establish need for maintenance work and help avoid unnecessary work.
. Development of in-house capacity to do all or some maintenance work.

Today's rising costs coupled with declining program revenues may curtail good maintenance programs and foreclose the creation of new ones. Certainly some new approaches to maintenance programming have to be explored. Among these are joint maintenance programs shared by two or more agencies; linkages with publicly operated garages (transit, school districts, city or county); parts and fuel purchasing pools and other approaches that take advantage of fleet rates and economics of scale.

The State Department of Transportation can assist in the development of stronger maintenance programs by providing support to programs seeking to develop innovative programs such as joint maintenance operations. Such support could include financial assistance; help in identifying funding sources and useful program elements; assistance with negotiations, etc.

In addition, the State could spearhead an effort to document the types of savings that can be achieved through sound maintenance programs so that the use of such programs can be justified even in times of financial hardship.

Development of a simple reporting form that pinpoints the relationship between vehicle use, vehicle maintenance and vehicle operating costs could be the tool to provide that documentation.

In addition, as better use of existing equipment becomes a higher priority, State-assisted exchanges of information about what works and what does not could help programs stretch the useful lives of their vehicles.

*A set of record forms is appended to this report. These have been provided by many of the 16(b)(2) agencies as models for other agencies to consider.

8/PT6
APPENDIX A

LIST OF PARTICIPATING GRANTEES
<table>
<thead>
<tr>
<th></th>
<th>Name</th>
<th>Organization</th>
<th>Address</th>
<th>City, State</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Syd Pawloski</td>
<td>North/East King County Multi-Service Center</td>
<td>18220 96th N.E. Bothell, WA</td>
<td>Bothell, WA</td>
<td>485-6524</td>
</tr>
<tr>
<td>2</td>
<td>Margo Thornley</td>
<td>W.I.S.E.R. Institute</td>
<td>364-5545</td>
<td>Bothell, WA</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Steve Hutchins</td>
<td>South King County Multi-Service Center</td>
<td>2450 Star Lake Rd. Federal Way, WA</td>
<td>Federal Way, WA</td>
<td>839-8150</td>
</tr>
<tr>
<td>4</td>
<td>John Mautz</td>
<td>Northwest Center for the Retarded</td>
<td>1600 West Armory Way Seattle, WA</td>
<td>Seattle, WA</td>
<td>285-9140</td>
</tr>
<tr>
<td>5</td>
<td>Dave O'Connell</td>
<td>Whatcom County COA</td>
<td>315 Halleck St. Bellingham, WA</td>
<td>Bellingham, WA</td>
<td>733-4030</td>
</tr>
<tr>
<td>6</td>
<td>John Kirby</td>
<td>United Cerebral Palsy Assoc. of King-Sno.Counties</td>
<td>4109 Interlake Ave. N. Seattle, WA</td>
<td>Seattle, WA</td>
<td>632-2827</td>
</tr>
<tr>
<td>7</td>
<td>Tim Holloran</td>
<td>Skagit Co. Senior Services</td>
<td>336-9414</td>
<td>Mt. Vernon, WA</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Warren Raymond</td>
<td>Custom Industries</td>
<td>15155 Bel-Red Road Bellevue, WA</td>
<td>Bellevue, WA</td>
<td>643-0234</td>
</tr>
<tr>
<td>9</td>
<td>Carol Bunting</td>
<td>Seattle Indian Health Board USPHS Hospital</td>
<td>1131 14th Ave. S. Seattle, WA</td>
<td>Seattle, WA</td>
<td>324-9360, ext. 415</td>
</tr>
<tr>
<td>10</td>
<td>Keith Spelhaug/Bill Henderson</td>
<td>Senior Services of Sno. County</td>
<td>3402 112th St. S.W. Everett, WA</td>
<td>Everett, WA</td>
<td>355-1112</td>
</tr>
<tr>
<td>11</td>
<td>Dave Scheiber</td>
<td>V.I.C.T.O.R.</td>
<td>463-5200</td>
<td>Vashon, WA</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Marliene Cheek</td>
<td>Chelan-Douglas COA</td>
<td>104 N. Wenatchee Ave. Wenatchee, WA</td>
<td>Wenatchee, WA</td>
<td>662-3461</td>
</tr>
<tr>
<td>13</td>
<td>Gary Knapp</td>
<td>Skills Training &amp; Emply. Program</td>
<td>Building 2114 Grant Co. Airport Moses Lake, WA</td>
<td>762-5322</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Robert Eash/Margery Biery</td>
<td>Grant County Seniors</td>
<td>765-9249</td>
<td>Moses Lake, WA</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Jeff Russell</td>
<td>Okanogan Senior Citizens Assoc.</td>
<td>826-4391</td>
<td>Omak, WA</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Mike Wolniewicz</td>
<td>Diversified Industries, Inc.</td>
<td>452-9789</td>
<td>Port Angeles, WA</td>
<td></td>
</tr>
</tbody>
</table>
17. Antony Clark  
Pierce County Red Cross  
306 S. 7th St.  
Tacoma, WA  
572-4830

18. Bobbi Soran/Barbara Singleton  
Kitsap Peninsula Housing and Transportation Assoc.  
614 Division St.  
Port Orchard, WA  
876-7171

19. Ed Gilmore  
EOC of Clark County  
2101 East 13th  
Vancouver, WA  
695-1581

20. Marilyn Mays/Judy Wallila  
Lower Columbia CAC  
Longview, WA  
425-3430

21. Gini Heintzman  
Yakima Valley Transp.  
2009 S. 64th Ave.  
Yakima, WA  
965-0038

22. Syd Johns  
Benton/Franklin Red Cross  
404 N. Conway  
Kennewick, WA  
783-6195

23. Jim Larson  
Kittitas Co. Develop. Center  
804 Elmview Rd.  
Ellensburg, WA  
925-6124

24. Karen Martin  
Walla Walla Senior Citizens Center  
Jefferson Park Fieldhouse  
Walla Walla, WA  
529-2850

25. Emilio Zamora  
SASTA  
W. 1027 Broadway Ave.  
Spokane, WA  
747-7137

26. Audrey Rose  
Northeast WA Rural Resource Development Assoc.  
219 S. Elm  
Colville, WA  
684-2515
APPENDIX B

SAMPLE MAINTENANCE
PROGRAM FORMS USED BY GRANTEES

I. Daily Safety Check Record Forms
II. Preventative and Major Maintenance Records
III. Vehicle Maintenance Log Forms
IV. Driver Training Materials
I. DAILY SAFETY CHECK RECORD FORMS
UNITED CEREBRAL PALSY OF KING-SNOHOMISH COUNTIES  
BUS CHECK LIST -- GILLIG ONLY  
TRANSPORTATION DEPARTMENT

START UP:

Check oil
Check water
Check tires Report any problems in these
Check lights areas to Ardel Burmeister

Check air stops -- brakes -- mirrors
Turn on battery

RUNNING:

Air pressure -- 120 lbs. approx.
Oil pressure — 40 - 50 lbs.
Water temperature — 170 degrees

SHUT DOWN:

Shut off battery
Bleed brakes -- in summer, once a week; in winter, every night
Lock up all doors
Be sure emergency brakes are on and bus is left in gear
OPERATING TECHNIQUES AND MANEUVERS

1. Daily Check-In Procedures
   a. Report to and sign in at the office at the scheduled time. (Check with dispatcher the evening before for reporting time.)
   b. Pick up vehicle keys, roster forms, clipboard, donation box and other forms as required.
   c. Add additional names to roster forms as required.
   d. Check with Dispatcher for messages/last minute changes to roster.
   e. Know your addresses

2. Vehicle Inspection
   a. Walk around vehicle to inspect cleanliness of windows, body, mirrors, condition of tires and for any indication of water, oil or gasoline leak.
   b. Inspect inside of vehicle for cleanliness of seats, floor and windows. Check for: emergency equipment availability, working radio, stool, if needed, proper number of wheelchair tie-downs, belts and bars, if required.
   c. Check lights - headlights (High and low beams), turn signals front and rear, brake lights.
   d. Check license plate.
3. Pre-Ignition - The following tasks should be done before the engine is started:

   a. Driver position:
      The driver should position himself/herself so that he/she is within reach of all controls and in position for greatest visibility.

   b. Mirror adjustment:
      - Outside Flat Mirror - adjusted so that driver can see rear tires at ground level in bottom of mirror and rear bumper near the inside edge.
      - Outside Convex Mirror - adjusted to give maximum localized vision to both sides of the van.
      - Inside Mirror - is used to view the passengers.

   c. Fasten seat belt. The driver should use a seat belt.

   d. Record odometer readings

4. Starting the Engine

   a. Automatic transmission - Check parking brake.

   b. Warm-up - Let engine run at fast idle during warm-up period; check oil pressure gauge.

      Note: A 3 to 5 minute warm-up period is all that is necessary prior to driving the vehicle.

   c. Operation Inspection -
      Check service and parking brakes, transmission, engine and steering operation.

NEVER ATTEMPT TO OPERATE YOUR VEHICLE WHEN IT IS IN AN UNSAFE CONDITION.
5. Daily Check Out Procedures
   a. Fill up vehicle if tank is below half.
   b. Report to dispatcher.
   c. Hang up clipboard and vehicle keys.
   d. Turn in ending mileage and transportation coupons, and Donation Box.
   e. Turn in blue Operator's Report card, if applicable.
   f. Sign out.

6. Stopping for loading and unloading
   a. Sight distance - Your vehicle must be clearly visible from front and rear.
   b. Give traffic adequate warning that you are going to load or unload. Slow down, check your mirrors, pull as far to the right as possible, turn on four-way flashing lights prior to stop. Place the vehicle in neutral or park and apply brake. Turn off engine if you are leaving the vehicle for more than one minute, except Headstart.

7. Backing - should be avoided if at all possible.
   a. Straight line backing:
      - Adjust seat properly.
      - Adjust mirrors.
      - Secure responsible observer to watch areas not seen through mirrors.
      - Use flat mirrors inside and outside to guide in straight line backing and judging distance.
   b. There is no excuse for a backing up accident - NEVER.
   c. Pulling into parking spaces.
      - Use flat mirrors inside and outside for judging clearance and distance.
The Driver Will Check Each Day The Appropriate Items On The Vehicle They Are Driving.

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>T</th>
<th>W</th>
<th>TH</th>
<th>F</th>
<th>Date</th>
<th>Mileage</th>
<th>Driver's Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Daily:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Lights:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turn Signals:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tires:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brakes:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mirrors:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weekly:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiator Water Levels:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery Water Level:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speedometer/Odometer:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-Way Flasher:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interior Lights:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Aid Kit Secured:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-Reflectors Secured:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Extinguisher:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Charged</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Certified</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Secured</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body Condition:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wash Van:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Gasolone Purchases:

- Mileage
- No. gallons
- $ cost

The responsibility of each driver will be to report any and all noticeable problems to the Transportation Coordinator so that the problem may be remedied.

Reports will be turned in each Friday to the Transportation Coordinator for review of van maintenance.

Comments: 8-1-5
**C.RANT COUNTY SENIORS**  
**TRANSPORTATION PROGRAM**  
**VEHICLE CHECK LIST**

Inspect Vehicle at beginning of work day, check each item if OK  
Note any defects on bottom of sheet.

<table>
<thead>
<tr>
<th>Date</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>EXTERIOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tires</td>
</tr>
<tr>
<td>Turn Signals</td>
</tr>
<tr>
<td>Van clean</td>
</tr>
<tr>
<td>Head/Tail lights</td>
</tr>
<tr>
<td>Mirrors</td>
</tr>
<tr>
<td>Wipers</td>
</tr>
<tr>
<td>Body</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INTERIOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brakes</td>
</tr>
<tr>
<td>Transmission</td>
</tr>
<tr>
<td>Steering</td>
</tr>
<tr>
<td>Safety Equipment</td>
</tr>
<tr>
<td>Dash Gauges</td>
</tr>
<tr>
<td>Seat Belts</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UNDERHOOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil Level</td>
</tr>
<tr>
<td>Radiator Level</td>
</tr>
</tbody>
</table>
| Transmission Fluid  
(color & level) |
| W/W Fluid Level |
| Battery Connections |
| Belts |
| Amount Gas Added |
| Starting Mileage |
| Driver Initials |

Defects: 

---

---

---

---

(OVER)  
CCS-T-FORM #8-JUN 81
In those vans with lifts inspect lift twice weekly. Check if O.K.
Note any defects on bottom.

<table>
<thead>
<tr>
<th>Date</th>
<th>Ropes</th>
<th>Hoses</th>
<th>Hose attachments</th>
<th>Back stop</th>
<th>Electrical connections</th>
<th>Operation</th>
<th>Leaks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Defects:

**************************************************************

**************************************************************

**************************************************************

**************************************************************

* RETURN THIS SHEET TO MAIN OFFICE EACH FRIDAY
PRE-TRIP INSPECTION

DAILY VEHICLE CHECKLIST

DATE _______ VEHICLE ______________________

MILEAGE: Ending ______________________
Starting ______________________
Daily total ______________________

INSPECT AND CHECK BELOW
ITEMS IF O.K.

A. ENGINE
   1. Oil level ______________________
   2. Radiator level ______________________
   3. Battery level ______________________
   4. Windshield washer level __________
   5. Engine ______________________

B. EXTERIOR
   1. Tires ______________________
   2. Turn signals ______________________
   3. Head lights ______________________
   4. Tail lights ______________________
   5. Mirrors ______________________
   6. Windshield wipers ______________________
   7. Fresh body damage __________
   8. Cleanliness ______________________

C. INTERIOR
   1. Brakes ______________________
   2. Steering ______________________
   3. Transmission ______________________

Safety Equipment:
   4. Fire extinguisher ______________________
   5. Flares ______________________
   6. First aid kit ______________________
   7. Dash gauges ______________________
   8. Radio ______________________
   9. Fresh damage ______________________
  10. Cleanliness ______________________

D. FUEL ADDED ______________________ Gal.
   OIL ADDED ______________________ Qts.
   MILEAGE AT FUELING ______________________

Driver Signature ______________________

B-I-7
**SEATTLE INDIAN HEALTH BOARD**  
Vehicle Condition Report  
(Check opposite defects)

<table>
<thead>
<tr>
<th>DRIVERS NAME</th>
<th>DATE</th>
<th>VEH.#</th>
</tr>
</thead>
</table>

**ENGINE**
- Runs Hot
- Runs Cold
- Misses
- Backfires
- Idles Too Slow
- No Power
- Low Oil Pressure
- Water Leak
- Exhaust Leak
- Pings
- Accelerator Sticks
- Accelerator Stiff
- Hard Starting
- Won't Take Gas
- Cuts Out on a Pull
- Fan Belt

**BRAKES**
- Pull Left
- Pull Right
- Too Sensitive
- Foot Brake Slack
- Hand Brake Slack
- Does Not Release

**BODY**
- Floor Covering
- Seats
- Drivers Seat
- Glass
- Windows Hard to Raise
- Windshield Wipers
- Roof Leaks
- Mirror
- Fire Extinguisher
- First Aid Kit
- Flares

**CLUTCH**
- Grabs
- Slips
- Won't Release
- Chatters
- Pedal Bound
- Pedal Hard

**LIGHTS**
- Headlights Out of Focus
- Headlight Out (R) (L)
- Dome Light Out
- Right Tail Light Out
- Left Tail Light Out
- Right Brake Light Out
- Left Brake Light Out
- Right Blinker Out
- Left Blinker Out
- Four Way Flash Out

**TRANSMISSION**
- Noisy
- Hard to Shift
- Gears Rake
- Jumps Out of Gear
- Won't Shift to High
- Won't Shift to Low
- Gears Rake into High
- Gears Rake into Low

**STEERING**
- Hard Steering
- Shimmy
- Loose Steering

**ELECTRICAL**
- Generator Not Charging
- Starter
- Horn
- Battery
- Heater
- Defroster
- Tachometer
- Speedometer

**CHASSIS**
- Out of Line
- Weak Springs
- Wheel Lugs Loose
- Tires

**OTHER**

**DATE REPAIRED**

---

B-I-8
WALLA WALLA SENIOR CENTER DAILY BUS MAINTENANCE AND SAFETY LOG

<table>
<thead>
<tr>
<th>MAINTENANCE</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Tires</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. L. Front</td>
<td>OK</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. R. Front</td>
<td>OK</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. L. Rear</td>
<td></td>
<td></td>
<td>OK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. R. Rear</td>
<td></td>
<td></td>
<td></td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>E. Spare</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OK</td>
</tr>
<tr>
<td>2. Oil</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Trans.Fluid</td>
<td>OK</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Brakes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Lights</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Seat Belts</td>
<td>OK</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SAFETY</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. First Aid Kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. USCG Fire Extinguisher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Accident Report Forms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Flares</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Flashlight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Chains (traction aids)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### BENTON FRANKLIN TRANSPORTATION
#### DAILY VEHICLE CHECK LIST

<table>
<thead>
<tr>
<th></th>
<th>MON.</th>
<th>TUES.</th>
<th>WED.</th>
<th>THURS.</th>
<th>FRI.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>OIL LEVEL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>BATTERY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>BELTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>FIRE EXTINGUisher</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>CLEANLINESS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>TIRES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>LIGHTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>TURN SIGNALS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>FLASHERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>EXTERIOR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>RADIATOR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>WIPERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>DASH GAuges</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>JACK &amp; HANDLE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>INTERIOR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**COMMENTS:**

**SIGNATURE**

**DATE**
YAKIMA VALLEY TRANSPORTATION - ELDERLY & HANDICAPPED

VAN REPORT

Driver's Name __________________ Van Number ____ Date _________

<table>
<thead>
<tr>
<th>PRE-TRIP INSPECTION</th>
<th>OKAY</th>
<th>NEEDS WORK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. STEERING MECHANISM - EXCESSIVE PLAY?</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>2. HORN</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>3. WINDSHIELD WIPERS</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>4. REAR VISION MIRRORS</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>5. SEAT BELT ARRANGED ON SEATS</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>6. VAN CLEAN INSIDE</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>7. FUEL</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>8. BRAKES - PEDAL &amp; EMERGENCY CHECK</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>9. VAN CLEAN OUTSIDE</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>10. WATER IN BATTERY</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>11. OIL</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>12. PRESSURE IN TIRES</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>13. FLASHERS</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>14. TAIL LIGHTS</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>15. BRAKE LIGHTS</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>16. HEADLIGHTS</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>17. SIGNAL LIGHTS</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>18. COOLANT</td>
<td>_____</td>
<td></td>
</tr>
</tbody>
</table>

COMMENTS: ______________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________

Signature of Examiner ____________________________

B-I-11
PRE-TRIP INSPECTION TEST

DAILY VEHICLE CHECKLIST

DATE ___________ VEHICLE ________________

MILEAGE: END ________________

START ________________

DAILY TOTAL ________________

INSPECT AND CHECK BELOW ITEMS IF O.K.

1. EXTERIOR

- Tires
- Turn Signals
- Head Lights
- Tail Lights
- Fresh Body Damage
- Windshield Wipers
- Cleanliness

2. INTERIOR

- Brakes
- Steering
- Transmission
- Safety Equipment:
  - Fire Extinguisher
  - Flares
  - First Aid Kit
- Dash Gauges
- Radio
- Fresh Damage
- Cleanliness

3. UNDER HOOD

- Oil Level
- Radiator Level
- Battery Level
- Windshield Washer Fluid Level
- Engine

Maintenance Performed

Fuel Added __________________________ gal. COST ________
Oil Added __________________________ qts. COST ________

MILEAGE AT FUELING _______________________

DRIVER SIGNATURE ____________________________

MECHANIC SIGNATURE __________________________

Senior Services of Snohomish Co.
**BUS DRIVERS**

**VEHICLE CONDITION REPORT & CHECKLIST**

**Bus Number:**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Repair Needed</th>
<th>ITEM</th>
<th>Repair Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windshield Glass</td>
<td></td>
<td>Engine</td>
<td></td>
</tr>
<tr>
<td>Windshield Wiper</td>
<td></td>
<td>Cooling System (Radiator)</td>
<td></td>
</tr>
<tr>
<td>Mirrors</td>
<td></td>
<td>Steering</td>
<td></td>
</tr>
<tr>
<td>Gauges (Brake &amp; Engine)</td>
<td></td>
<td>Drive Train</td>
<td></td>
</tr>
<tr>
<td>Horn</td>
<td></td>
<td>Brakes (Service)</td>
<td></td>
</tr>
<tr>
<td>Heater/Defroster/Air-Conditioner</td>
<td></td>
<td>Brakes (Parking)</td>
<td></td>
</tr>
<tr>
<td>Seat Belts</td>
<td></td>
<td>Tires (Tread &amp; Pressure)</td>
<td></td>
</tr>
<tr>
<td>Interior Lights</td>
<td></td>
<td>Wheels</td>
<td></td>
</tr>
<tr>
<td>Windows</td>
<td></td>
<td>Exhaust System</td>
<td></td>
</tr>
<tr>
<td>Seats</td>
<td></td>
<td>Headlights</td>
<td></td>
</tr>
<tr>
<td>Floor</td>
<td></td>
<td>Stop/Taillights</td>
<td></td>
</tr>
<tr>
<td>Emergency Equipment</td>
<td></td>
<td>Turn/Emergency Lights</td>
<td></td>
</tr>
<tr>
<td>Strange or Odd Noises</td>
<td></td>
<td>Reflectors</td>
<td></td>
</tr>
<tr>
<td>Vibrations, etc. (Check and explain at bottom)</td>
<td></td>
<td>Exterior</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interior</td>
<td></td>
</tr>
</tbody>
</table>

**If no defects noted, check:**

**EXPLAIN:** (Repairs completed, etc.)

**Driver or Inspector Signature:** 1/79

**Date:**
II. PREVENTATIVE AND MAJOR MAINTENANCE RECORDS
KITSAP PENINSULA HOUSING AND TRANSPORTATION ASSOCIATION

VEHICLE MAINTENANCE SCHEDULE

CHANGE OIL, LUBE, FILTER
CHECK REAR AND ALL FLUID LEVELS ...................... 4,000 MILES

TUNE UP ................................................... 12,000 MILES

TIRES ROTATED ........................................... 12,000 MILES

TRANSMISSION SERVICE .................................. 24,000 MILES

PACK WHEEL BEARINGS .................................. 24,000 MILES

WINTERIZE AND FLUSH .................................. 24,000 MILES

BRAKES CHECKED ....................................... 24,000 MILES
<table>
<thead>
<tr>
<th>Mileage</th>
<th>Mileage Done</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lube &amp; Oil</td>
<td>Comments:</td>
<td></td>
</tr>
<tr>
<td>Belts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tires</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coolant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Steering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transmission</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear Axle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brake Cylinder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Universal Joint</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tires</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front End</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crankcase Inlet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air Cleaner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheel Bearings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor Storage Canister</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiator &amp; Emission Hoses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brake Linings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tune Up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transmission</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front Ball Joints</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Filter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCV Valve</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ignition System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manifold Heat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear Axle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differential</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Every 6 Months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steering: spring Clip, idle arm</td>
<td>Carb choke shaft, Fast Idle Cam, Pivot Pin</td>
<td></td>
</tr>
<tr>
<td>Front Ball Joints &amp; Seal</td>
<td>Muffler &amp; Spark</td>
<td></td>
</tr>
<tr>
<td>Body Mechanisms</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MAINTENANCE SCHEDULE FOR L.C.C.A.C. VANS

Every 2,000 - 4,000 miles:
1. Change motor oil
2. Replace oil, air, and fuel filters
3. Lubricate chassis

Every 8,000 miles:
1. Check brakes, replace parts if necessary
2. Check wheel bearings, repack, or replace if necessary
3. Clean and lube wheelchair lift

Every 10,000 miles:
1. Rotate tires, replace if necessary

Every 12,000 miles:
1. Tune engine
2. Replace spark plugs

Every 15,000 miles:
1. Service transmission
2. Change oil in rear axle differential

As needed:
1. Spark plugs and coil wires
2. Belts and hoses
3. Other maintenance items as they arise
## ENGINE COMPARTMENT

- Check all wiring for broken insulation, loose terminals etc.
- Check all oil lines/brackets
- Check all fuel lines/brackets
- Check all water lines, hoses & clamps (incl. heater core)
- Check all radiator belts
- Check transmission for leaks
- Neutral switch adjustments
- Blow out radiator fins (inside)
- Radiator filler cap/gasket
- Tail pipe & muffler brackets
- Check battery case & mount
- Check water manifolded for leaks
- Check valve cover gaskets
- Check alternator & mount
- Starter operation
- Check engine mounts
- Check fan, hub & shroud
- Radiator & surge tanks for leaks, loose mounting, etc.
- Check windshield washer case

## UNDER CHASSIS-PIT INSPECTION

- Drag link & tie rod for wear/adj.
- Check fuel tanks for leakage, etc.
- Shock absorbers
- Drive-shaft & U-joints
- Differential-pinion-seals-housing
- Brake release operation & adj.
- Check A/C belts & seal
- Check A/C alternator & mount
- Brake shoe unit
- Wheel seals for oil/grease leaks
- Entire under-chassis of van for defects
- Check differential oil level
- Complete chassis-lubrication as per manufacturers specification
- Lift motor, etc.

### ENGINE COMPARTMENT LUBRICATION

- Service air cleaner
- Change carburetor linkage
- Change oil filter element

### UNDER CHASSIS-PIT INSPECTION

- Check transmission fluid
- Change fuel filter
- Change oil & lube

Note: Refer to manufacturers maintenance manuals for details of inspection procedures, service & repair instructions.
### Interior Inspection

- Free-play in steering wheel
- Brake & accelerator pedal operation
- Horn for sound & operation
- Check all gauges
- Shift lever operation
- Hand brake operation
- Windshield wiper operation
- Rear view mirrors
- Headlights, dimmer
- All interior lights
- Turn signal, flasher operations
- All door operation & lock
- Heater/defroster operation
- Driver seat adjustment
- Windows, latches operation
- Seats, frames & covering
- General interior condition
- Fire extinguisher
- Engine cover for leaks, etc.
- Floor coverings loose/repair
- Radio mount & operation

### Exterior Inspection

- Check operation all ext. lts.
- Spare tire mount
- All exterior trim
- Outside mirrors
- Step operation & mount
- Lift operation & mount
- Lift control/loose wires/etc.
- Windshield wipers/blade oper.
- Tighten wheel/axle flange nuts
- Check tires for tread, air pressure, uneven wear, etc.
- General body & paint condition

### Remarks:

- [Blank lines for remarks]

### Signature of Field Supervisor
**VEHICLE DEFECT REPORT**

<table>
<thead>
<tr>
<th>DEFECTS</th>
<th>Check</th>
<th>VEHICLE IS IN SATISFACTORY CONDITION EXCEPT AS CHECKED V or NOTED BELOW</th>
<th>Check</th>
<th>DEFECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEER</td>
<td></td>
<td>HARD</td>
<td></td>
<td>SACK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PULLS</td>
<td></td>
<td>Unequal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SHIMMY</td>
<td></td>
<td>SENSITIVE</td>
</tr>
<tr>
<td>DOORS</td>
<td></td>
<td>SLOW</td>
<td></td>
<td>TIGHT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HANG</td>
<td></td>
<td>NOISY</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LOOSE</td>
<td></td>
<td>No Power</td>
</tr>
<tr>
<td>BODY</td>
<td></td>
<td>BUZZER</td>
<td></td>
<td>HEATS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>W.S. Wiper</td>
<td></td>
<td>DIES</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HEAT</td>
<td></td>
<td>Cut Out</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HORN</td>
<td></td>
<td>RACES</td>
</tr>
<tr>
<td>WINDOWS</td>
<td></td>
<td>LIGHTS</td>
<td></td>
<td>KNOCKS</td>
</tr>
<tr>
<td>SEATS</td>
<td></td>
<td>WINDOWS</td>
<td></td>
<td>FUMES</td>
</tr>
<tr>
<td>STEPS</td>
<td></td>
<td>WATER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIRRORS</td>
<td></td>
<td>GRABS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIRES</td>
<td></td>
<td>SLIPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEN</td>
<td></td>
<td>Shifting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STARTER</td>
<td></td>
<td>NO.D.C.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPRINGS</td>
<td></td>
<td>ST.in D.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. Brake</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DEFECT REPORTED BY: ________________________________
SIGNATURE

DEFECT REPORTED BY: ________________________________
SIGNATURE

DEFECT REPORTED BY: ________________________________
SIGNATURE

FOR MAINTENANCE DEPT. USE ONLY

DESCRIPTION OF WORK TO BE DONE

---

B-11-6
<table>
<thead>
<tr>
<th>DATE</th>
<th>MILEAGE</th>
<th>2000 MI.</th>
<th>8,000 MI</th>
<th>12,000 MI</th>
<th>15,000 MI</th>
<th>WHERE SERVICED</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Benton/Franklin Red Cross

## AUTOMOBILE INSPECTION REPORT

**Please indicate by check (✓) appropriate condition.**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>GOOD TREAD</th>
<th>FAIR TREAD</th>
<th>POOR TREAD</th>
<th>UNEVEN WEAR</th>
<th>SIDEWALL DAMAGE</th>
<th>OTHER DAMAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left Front</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right Front</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right Rear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Left Rear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spare</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**GLASS**

- NO DAMAGE ON WINDSHIELD
- OTHER GLASS DAMAGE - LOCATION & TYPE
  - Use these symbols to describe damage
    - CRACK
    - CHIP
    - BREAK
    - SAND
    - BLAST

**MECHANICAL**

- ENGINE
  - SMOOTH
  - ROUGH
  - BURNS
  - OTHER
- TRANSMISSION
  - SMOOTH
  - SLIPS
  - LEAKS
  - OIL
  - OTHER
- BRAKES
  - QUIET
  - NOISY
  - PULL
  - TO SIDE
- FRONT END AND STEERING
  - OK
  - NEEDS ALIGNING/
  - TIGHTENING
  - PULL
  - OTHER

**METAL & PAINT**

- TOP OF CAR
- ENGINE HOOD
- GRILLE
- FRONT BUMPER
- LEFT FRONT FENDER
- LF DOOR & ROCKER PANEL
- LR DOOR & ROCKER PANEL
- LEFT REAR FENDER
- TRUNK DECK
- REAR BUMPER
- RIGHT REAR FENDER
- RR DOOR & ROCKER PANEL
- RF DOOR & ROCKER PANEL
- RIGHT FRONT FENDER

**INTERIOR**

- FRONT SEAT
- REAR SEAT
- HEADLINER
- FRONT MATT/RUG
- BACK MATT/RUG

**MISC.**

- LIGHTS
  - WORKING ORDER
  - YES
  - NO
  - W/ WIPER
  - YES
  - NO
- HORN
  - WORKING ORDER
  - YES
  - NO
  - SPEEDOMETER
  - YES
  - NO

**SEAT BELTS**

- Does condition and/or location indicate belts are being used?
  - YES
  - NO

**DATE AND MILEAGE OF LAST OIL CHANGE**

---

1. Use back of form for remarks and recommendations.
2. Send to fleet manager - Home Office.

**INSPECTED BY**

**DATE (Mo, - Yr.)**

---

**B-11-8**
1. Remove and inspect spark plugs

2. Take compression readings and record
   - 1 Dry
   - 1 Wet
   - 2
   - 2
   - 3
   - 3
   - 4
   - 4
   - 5
   - 5
   - 6
   - 6
   - 7
   - 7
   - 8
   - 8

3. Replace points and condenser

4. Check air gap (Electronic)

5. Check distributor shaft play

6. Check distributor cap and rotor

7. Check and test spark plug wires with ohm-meter

8. Check coil

9. Check control box (Electronic)

10. Check primary ignition wiring

11. Check and lube heat riser valve

12. Set dwell __________ Degrees

13. Set timing __________ Degrees _______ TDC

14. Check air cleaner

15. Check PCV valve and clean engine breather

16. Check choke operation

17. Adjust carburetor idle mixture

18. Adjust low idle to manufacturer's specifications

19. Record vacuum reading at 1,000 RPM
   - _______ In. Hg. Acceptable?

20. Check accelerator pump

21. Check throttle operation

22. Road test

B-11-9
Date: __________________ Date of last brake repair: __________________

Lic. No. __________ Facility __________ P.O. No. __________ Mileage __________

1. Road Test - Report any unusual conditions:

2. Remove wheels and drums (do NOT blow out brake components with air)

3. Check wheel seals for leakage - report condition

4. Inspect brake drums - report condition
   a. Cracks/heat checks
   b. Pitting/grooves
   c. Bell mouthed condition
   d. Other

5. Mike all drums and record readings:
   L.F. __________ R.F. __________ L.R. __________ R.R. __________

6. Inspect brake lining - report condition:
   a. Unequal wear
   b. Excessive wear
   c. Cracking
   d. Looseness to shoe

7. Record lining thickness (Measure to the rivet, using a tread depth gauge). Record depth in 32nds of an inch:
   L.F. ________/32nd R.F. ________/32nd L.R. ________/32nd R.R. ________/32nd

8. Replace lining when required to meet factory specifications

9. Inspect brake components - report condition:
   a. Wheel cylinders for leakage
   b. Springs
   c. Backing plates
   d. Adjusting mechanisms
   e. Hydraulic hoses and lines to wheel cylinder

10. Lubricate shoe contact surface on backing plates and wheel bearings to meet factory specifications

11. Before installing drums, work must be inspected and approved:

   Shop Foreman - Signature of Approval

12. Reinstall drums and wheels

13. Bleed and adjust brakes

14. Road Test

Completed by: ____________________________

Certified by: _____________________________

(Supervisor Signature)

B-II-10
NORTHWEST CENTER FOR THE RETARDED

INSPECTION (HI-MINDY)

Date of last inspection: ___________________________

Lic. No. __________________ Facility: __________________ P.O. No. __________ Mileage: ________

Check ("✓") EACH item that meets inspection standards.
Mark ("X") EACH item that NEEDS ATTENTION, and provide an explanation at the end of the section.
Sign at the end of EACH completed section.

(This form may be used for pre-delivery inspection)

<table>
<thead>
<tr>
<th>PRE-ROAD TEST</th>
<th>✓</th>
<th>Needs Att'n</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Start Engine</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>2. Test horn - check gauges (engine &quot;cold&quot;)</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>3. Check engine protection or alarm system</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>4. Does choke operate properly?</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>5. Check pedal travel (brakes)</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>6. Test parking and emergency braking system</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>7. Does throttle operate properly?</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>8. Check heater, defroster and fan operation</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>9. Inspect windshield condition</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>10. Check wiper and washer operation</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ROAD TEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Test gear shift operation</td>
</tr>
<tr>
<td>12. Check steering control</td>
</tr>
<tr>
<td>13. Check speedometer operation</td>
</tr>
<tr>
<td>14. Check odometer operation</td>
</tr>
<tr>
<td>15. Check gauges (engine &quot;hot&quot;)</td>
</tr>
<tr>
<td>17. Test headlights - high beam/low beam</td>
</tr>
<tr>
<td>18. Test turn signals</td>
</tr>
<tr>
<td>19. Test emergency 4-way flasher</td>
</tr>
<tr>
<td>20. Test brake lights</td>
</tr>
<tr>
<td>21. Test tail, clearance and back-up lights</td>
</tr>
<tr>
<td>22. Test interior lights</td>
</tr>
<tr>
<td>23. Check first-aid kit - is it sealed?</td>
</tr>
<tr>
<td>24. Check for 3 flares or 3 reflectors - Secured?</td>
</tr>
<tr>
<td>25. Check fire extinguisher-Charged? Certified? Secured?</td>
</tr>
<tr>
<td>26. Check window mechanisms and operation</td>
</tr>
<tr>
<td>27. Inspect interior cleanliness</td>
</tr>
</tbody>
</table>

Signature: ___________________________

AROUND BUS INSPECTION (KEY OFF)

| 1. Inspect mirrors - glass condition and mounting | ( ) | ( ) |
| 2. Inspect body condition - paint, lettering | ( ) | ( ) |
| 3. Check all doors | ( ) | ( ) |

Signature: ___________________________

B-II-11
### UNDER HOOD INSPECTION - ENGINE OFF

("COLD") FLUID LEVEL - ADD AS REQUIRED

1. Check engine oil level
2. Check coolant level and anti-freeze protection
3. Inspect brake master cylinder
4. Check power steering
   A. Fluid level
   B. Mounting
   C. Belt deterioration
   D. Hoses
5. Check Battery
   A. Fluid level - terminals
   B. Hold-downs secure? Battery box
6. What fluids were added: Circle above

<table>
<thead>
<tr>
<th>Needs</th>
<th>O.K.</th>
<th>Att'n</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### REMOVE AIR CLEANER HOUSING

1. Check carburetor and choke controls and linkage
2. Check fuel inlet for leakage
3. Check all vacuum hoses and connections
4. Check crankcase ventilation system - PCV valve
5. Check temperature and oil sending units and wires
6. Inspect ignition wire condition
7. Inspect distributor cap and check coil connections
8. Check alternator - mounting, terminals, etc.
9. Check all drive belts - deterioration
   - Adjustment
   - Alignment
10. Check heater hoses and clamps
11. Check upper radiator hoses and clamps
12. Check water pump bypass hose
13. Check water pump shaft - for end or side play
14. Check emission pump and hoses
15. Check exhaust system - visible from topside

### LIFT FRONT AXLE OFF GROUND

1. Check kingpin play
2. Check front wheel bearing play

### UNDERSIDE INSPECTION (BUS LIFTED)

1. Check steering system - thorough check for leaks
   A. Test torque one steering box mounting bolt and record (ft./lbs.)
   B. Check flex coupling bolts
2. Check steering linkage for looseness
   A. Tie rods and idler arm
   B. Power assist linkage and cylinder
3. Check steering stop adjustment
4. Test torque one (of 4) FRONT spring U-bolt and
   (record ft./lbs.)
5. Check shock absorbers for leakage and proper mounting

<table>
<thead>
<tr>
<th>Needs</th>
<th>O.K.</th>
<th>Att'n</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signature: ______________________

---

B-II-12
UNIVERSAL INSPECTION (BUS LIFTED) (continued)

6. Check FRONT spring leaves for breakage

7. Check FRONT spring, front and rear mounting cond.

8. Check Stemo seal level for leakage

9. Test torque one (of 4) REAR spring U-bolt and record (ft./lbs.)

10. Check REAR shock absorbers for leakage and mounting

11. Check REAR spring leaves for breakage

12. Check REAR spring, front and rear mounting condition

Signature:

UNDER ENGINE INSPECTION

1. Check lower radiator hose and clamps

2. Check auto. trans. cooler lines at radiator for leaks

3. Check freeze plugs

4. Check exhaust manifold
   A. Leakage and cracks
   B. Looseness, other

5. Check exhaust heat riser operation

6. Check valve cover gaskets for leaks

7. Check for other engine leakage - Specify:

8. Check fuel pump and connections for leaks

9. Check starting motor mounting bolts

10. Check starting motor electrical connections

11. Check automatic transmission cooler lines [at trans.]

12. Check automatic transmission for leakage

13. Check condition of transmission - mounted parking brake, lining thickness - linkage

14. Check U-Joints for looseness - specify/location:

15. Check slip yoke for looseness

16. Check drive shaft condition

17. Check all yokes for proper alignment

18. Check drive shaft center bearings

19. Check for leakage at carrier assembly

20. Check differential fluid level

21. Check open vent

22. Check exhaust pipes and hangers

23. Check mufflers and clamps

24. Check tail pipes and hangers

25. Check fuel lines - FROM PUMP TO TANK  
   -- Leakage, Routing and hose cracking

26. Check fuel tanks for leaks

27. Check fuel tank mounting and straps

28. Check condition of wiring along frame rails -  
   -- Properly fastened?

Signature: ____________________________

B-II-13
HYDRAULIC BRAKE INSPECTION

1. Check all hydraulic lines for routing, leakage and cracking
2. Check all backing plates and wheel cylinders for leakage
3. **PERFORM COMPLETE BRAKE ADJUSTMENT**

BODY TO CHASSIS MOUNTING INSPECTION

1. Inspect all body hold down bolts

TIRE INSPECTION

**FRONT**

1. Check condition - cuts, sidewalls, etc.
2. Measure and record tread depth:
   - L. ________/32 R. ________/32

**REAR**

1. Check condition - cuts, sidewalls, etc.
2. Measure and record tread depth:
   - L. ________/32 R. ________/32

AIR PRESSURE

1. Inflate all tires to specifications
2. Install valve caps
3. Check axle flange and lug nuts

LOWER BUS

1. Load Test battery
2. Perform starter draw voltage test - record:
   - Drop ________ Test ________ Volts ________

START ENGINE

1. Perform charging system output - record:
   - Amps: ________ Volts: ________
2. Check automatic transmission fluid level - add as required
3. Recheck choke and throttle linkage operation
4. Recheck PCV valve and all vacuum lines
5. Reinstall air cleaner and remove test equipment
6. Close hood and ROAD TEST

DEFECTS NOTED IN ROAD TEST

---

Signature: ______________________________

INSPECTION COMPLETED BY: ______________________________

CERTIFIED BY: ______________________________ (Supervisor Signature)
VAN MAINTENANCE RECORD

License No: ___________________________  3,000 MILE

Model: ________________________________

Driver: ________________________________

Mechanic: _____________________________  Date: ____________

1) Change Oil

2) Check Transmission Fluid

3) Check Coolant

4) Check Brake Fluid

5) Check Air Filter

6) Check Steering Fluid

7) Check Transmission for proper operation

8) Check Brakes

9) Check Tires

10) Check Wheel Chair Lift
    Grease & oil parts as needed

11) Check Belts, tighten if needed

12) Check Steering Mount

13) Check U-joints

14) Check Suspension

15) Check Underbody for leaks

REMARKS:

Transportation Coordinator to receive this form immediately after service work.

Repairs involving major expenditures to be reviewed with Transportation Coordinator for approval.

Legend:

✓ = Completed

X = Needs attention later. (See remarks)
NORTHSHORE MULTI SERVICE CENTER

VAN MAINTENANCE RECORD

License No: ________________
Model: ________________ 6,000 Miles
Driver: ________________ 3,000 Inspection Miles
Mechanic: ________________

1) Rotate Tires
2) Check Shocks
3) Check Exhaust System
4) Check Timing
5) Check Choke
6) Check Windshield Wipers
7) Check Windshield Washer
8) Check All Doors for proper operation
9) Check Spark Plugs
10) Check Battery Voltage
    Clean Corrosion
11) Replace Air Filter
12) Replace Oil Filter
13) Lube Job

Date: ____________

Transportation Coordinator to receive this form immediately after service work.

Repairs involving major expenditures to be reviewed with Transportation Coordinator for approval.

Legend:

✓ = Completed
X = Necessary but not
    completed. (Comment)
NORTHSHORE MULTI SERVICE CENTER

VAN MAINTENANCE RECORD

License No: ________________  12,000 Mile
Model: ________________  3,000 + 6,000 Plus
Driver: ________________  ________________
Mechanic: ________________  Date: ________________

1) Change Spark Plugs
2) Check Wheel Bearings - Repack
3) Tune-Up
4) Check Instruments (Gauges)
5) Check Heater, Defroster
6) Road Test for all systems
7) Check EGR and ECS System

Transportation Coordinator to receive this form immediately after service work.

Repairs involving major expenditures to be reviewed with Transportation Coordinator for approval.

Legend:

✓ = Completed
X = Requires further work later. (See remarks)

B-II-17
III. VEHICLE MAINTENANCE LOG FORMS
# UNITED CEREBRAL PALSY OF KING-SNOHOMISH COUNTIES

## BUS MAINTENANCE RECORDS

### W.U.T.C. REQUIREMENTS

### LUBRICATION

<table>
<thead>
<tr>
<th>YEAR:</th>
<th>Date/Mileage</th>
<th>3,000</th>
<th>6,000</th>
<th>9,000</th>
<th>12,000</th>
<th>15,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus II</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus III</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus IV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus VI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus VII</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus VIII</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TUNE-UP

<table>
<thead>
<tr>
<th>YEAR:</th>
<th>Date/Mileage</th>
<th>3,000</th>
<th>6,000</th>
<th>9,000</th>
<th>12,000</th>
<th>15,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus II</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus III</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus IV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus VI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus VII</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus VIII</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WHEEL BEARINGS</td>
<td>Mileage</td>
<td>Mileage</td>
<td>Mileage</td>
<td>Mileage</td>
<td>TRANSMISSION</td>
<td>Mileage</td>
</tr>
<tr>
<td>----------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>--------------</td>
<td>---------</td>
</tr>
<tr>
<td>Bus I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bus I</td>
<td></td>
</tr>
<tr>
<td>Bus II</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bus II</td>
<td></td>
</tr>
<tr>
<td>Bus III</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bus III</td>
<td></td>
</tr>
<tr>
<td>Bus IV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bus IV</td>
<td></td>
</tr>
<tr>
<td>Bus V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bus V</td>
<td></td>
</tr>
<tr>
<td>Bus VI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bus VI</td>
<td></td>
</tr>
<tr>
<td>Bus VII</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bus VII</td>
<td></td>
</tr>
<tr>
<td>Bus VIII</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bus VIII</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POWER STEERING FLUID</th>
<th>Mileage</th>
<th>Mileage</th>
<th>Mileage</th>
<th>Mileage</th>
<th>U-JOINTS</th>
<th>Mileage</th>
<th>Mileage</th>
<th>Mileage</th>
<th>Mileage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bus I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus II</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bus II</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus III</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bus III</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus IV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bus IV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bus V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus VI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bus VI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus VII</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bus VII</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus VIII</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bus VIII</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3/81
UNITED CEREBRAL PALSY OF KING-SNOHOMISH COUNTIES

TIRE REPLACEMENT RECORD

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus II</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus III</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus IV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus VI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus VII</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus VIII</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DATE</td>
<td>MILEAGE</td>
<td>REPAIR DESCRIPTION</td>
<td>ITEMIZED COST</td>
<td>TOTAL COST</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
<td>--------------------</td>
<td>---------------</td>
<td>------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Maintenance Record

Vehicle Identification No.
License No.

<table>
<thead>
<tr>
<th>Maintenance Performed</th>
<th>Date</th>
<th>Mileage</th>
<th>Serviced by: Name &amp; Address</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pierce Co. Red Cross

9-11-8
# Benton/Franklin Red Cross

## VEHICLE MAINTENANCE RECORD

<table>
<thead>
<tr>
<th>VEHICLE MAKE AND YEAR</th>
<th>MODEL</th>
<th>CO. NO.</th>
</tr>
</thead>
</table>

### LUBRICATION RECORD

<table>
<thead>
<tr>
<th>Date</th>
<th>Odometer Mileage</th>
<th>Please Check</th>
<th>Oil Change</th>
</tr>
</thead>
</table>

### REPAIR RECORD

<table>
<thead>
<tr>
<th>Date</th>
<th>Odometer Mileage</th>
<th>Description of Work Done</th>
</tr>
</thead>
</table>

---

C-15568 NEW 2-72 PRINTED IN U.S.A.  
B-III-7
<table>
<thead>
<tr>
<th>DATE</th>
<th>EQUIP. No.</th>
<th>FUEL</th>
<th>MOTOR OIL</th>
<th>GEAR LUBE</th>
<th>MILEAGE</th>
<th>FUEL</th>
<th>MOTOR OIL</th>
<th>GEAR LUBE</th>
<th>MILEAGE</th>
<th>FUEL</th>
<th>MOTOR OIL</th>
<th>GEAR LUBE</th>
<th>MILEAGE</th>
<th>FUEL</th>
<th>MOTOR OIL</th>
<th>GEAR LUBE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL**

**MILEAGE END OF MO.**

**MILEAGE FIRST OF MO.**

**MILEAGE FOR MONTH**
**VEHICLE MAINTENANCE LOG**

<table>
<thead>
<tr>
<th>PRICE</th>
<th>MILEAGE</th>
<th>DATE</th>
<th>WORK PERFORMED</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>$908.54</td>
<td>97984</td>
<td>5-29-81</td>
<td>overhaul (see invoice)</td>
<td>Floyd G</td>
</tr>
<tr>
<td>$560.81</td>
<td>98179</td>
<td>6-4-81</td>
<td>Tires 4</td>
<td>Sams Tires</td>
</tr>
<tr>
<td>$120.27</td>
<td></td>
<td>6-9-81</td>
<td>1500 mile check resistor ign. box door seal rubber</td>
<td>Floyd G</td>
</tr>
<tr>
<td>$26.34</td>
<td></td>
<td>6-29-81</td>
<td>Thermostate gasket replaced</td>
<td>Sams Tires</td>
</tr>
<tr>
<td>$97.98</td>
<td>99669</td>
<td>7-1-81</td>
<td>Radiator overhauled (see invoice)</td>
<td>Floyd G</td>
</tr>
<tr>
<td>$63.04</td>
<td></td>
<td>7-15-81</td>
<td>PREVENTATIVE MAINTENANCE</td>
<td>Floyd G</td>
</tr>
<tr>
<td>$59.58</td>
<td></td>
<td>7-15-81</td>
<td>OIL</td>
<td>Floyd G</td>
</tr>
</tbody>
</table>

**INVENTORY OF MAINTENANCE COSTS 1981**

<table>
<thead>
<tr>
<th>VEHICLES</th>
<th>MILEAGE</th>
<th>DESCRIPTION</th>
<th>NAME</th>
<th>COST</th>
<th>INV E #</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRG 488</td>
<td>97728</td>
<td>6,000 mile check over haul</td>
<td>Bob L</td>
<td>$16.24</td>
<td></td>
</tr>
<tr>
<td>5-14-81</td>
<td>97984</td>
<td>4 tires, stems, balanced</td>
<td>Floyd G</td>
<td>$908.54</td>
<td></td>
</tr>
<tr>
<td>5-29-81</td>
<td>98179</td>
<td>1,500 mile check repair</td>
<td>Floyd G</td>
<td>$560.81</td>
<td></td>
</tr>
<tr>
<td>6-4-81</td>
<td>98448</td>
<td>1,500 mile check repair</td>
<td>Floyd G</td>
<td>$120.27</td>
<td>1181</td>
</tr>
<tr>
<td>6-9-81</td>
<td>99669</td>
<td>Thermostat, gasket replaced</td>
<td>Floyd G</td>
<td>$26.34</td>
<td>393328</td>
</tr>
<tr>
<td>6-30-81</td>
<td></td>
<td>PREVENTATIVE MAINTENANCE</td>
<td>Floyd G</td>
<td>$59.58</td>
<td></td>
</tr>
<tr>
<td>7-15-81</td>
<td></td>
<td>OIL</td>
<td>Floyd G</td>
<td>$63.64</td>
<td></td>
</tr>
<tr>
<td>DATE</td>
<td>MILEAGE</td>
<td>2000 MI</td>
<td>8,000 MI</td>
<td>12000 MI</td>
<td>15000 MI</td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
<td>---------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>5/31</td>
<td>7995</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6/30</td>
<td>11532</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11/8</td>
<td>12,058</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/4/1</td>
<td>12527</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>1/17/1</td>
<td>14,084</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>DATE</td>
<td>MILEAGE</td>
<td>DESCRIPTION</td>
<td>WHERE PURCHASED</td>
<td>PRICE</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>---------</td>
<td>------------------------</td>
<td>-----------------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>1/4/81</td>
<td>07980</td>
<td>2 quarts 15/40 oil</td>
<td>QUICKS AUTO TOY</td>
<td>4.50</td>
<td></td>
</tr>
<tr>
<td>1/9/81</td>
<td>08039</td>
<td>Repair drive shaft</td>
<td>BENSON SHELL</td>
<td>86.84</td>
<td></td>
</tr>
<tr>
<td>10/81</td>
<td>08096</td>
<td>Blower repaired</td>
<td>BENSON SHELL</td>
<td>2.11</td>
<td></td>
</tr>
<tr>
<td>1/7/82</td>
<td>08782</td>
<td>1 quart 15w oil</td>
<td>BENSON SHELL</td>
<td>1.68</td>
<td></td>
</tr>
<tr>
<td>1/2/82</td>
<td>09994</td>
<td>1 quart oil</td>
<td>BENSON SHELL</td>
<td>1.65</td>
<td></td>
</tr>
<tr>
<td>1/8/82</td>
<td>10588</td>
<td>1 quart oil&lt;br&gt;</td>
<td>BENSON SHELL</td>
<td>1.69</td>
<td></td>
</tr>
<tr>
<td>1/27/82</td>
<td>11400</td>
<td>1 quart oil&lt;br&gt;</td>
<td>BENSON SHELL</td>
<td>1.69</td>
<td></td>
</tr>
<tr>
<td>1/30/82</td>
<td>11557</td>
<td>Repaired valve; quick scoop</td>
<td>BBC Dodge 🚗 Warranty</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
IV. DRIVER TRAINING MATERIALS
A. Moving into Traffic from Curb

1. Use of Rear-View Mirror
2. Turn Signals to Enter Traffic
3. Check of Rear Clearance
4. Steady Acceleration

Comments

B. On the Road Driving Ability

1. Acceptable Speed for Road Conditions
2. Both Hands on Steering Wheel
3. Use of Turn Signals Adequate Distance of Turn
4. Use of Rear-View Mirror in Lane Changes
5. Even Driving Speed, smoothness in Operation
6. Even Pressure in Braking for Normal Stops
7. Compliance of Yield Laws
8. Turns from Proper Lanes; Turns into Proper Lanes
10. Approaches Curbs in Parking without Contacting Tires
11. Safe Parking, Location Selected, use of Signaling properly in Parking
12. Obeys Traffic Laws
13. Cautious Approach for Pick of Curb, standing Passengers
14. Secures VAN properly when exiting Drivers Seat
15. Removes the Keys from VAN when Leaving

Comments

B-IV-1
C. Knowledge of Vehicles Controls and Safety Equipment  YES  NO  Sometimes
1. Checks Oil, Coolant, Tires, and Signal Lights Prior to Days Work
2. Uses Cold Start and Warm Up Procedure
3. Checks Location of Fire Extinguisher, First Aid Kit, and Emergency Warning Devices
4. Uses Hand-Brake when Securing Vehicle
5. Understand all Dashboard Instruments
6. Understands Process for Reporting Equipment Malfunction
7. Keeps Windows Clear and Debris Clear from Passengers
8. Understands Procedures for Installation of Chains

D. Demonstrated Knowledge of Operation of Special Equipment  YES  NO  Sometimes
1. Can Operate Hydraulic Lift, Wheelchair
2. Understand Boarding Procedures for Wheelchair
3. Understand Wheelchair Tie-Downs Procedure X
4. Routinely Examine Safety Factors of all Specialized Equipment
5. Assist Passengers Boarding and Disembarking

E. Demonstrate Knowledge of Communications and System  YES  NO  Sometimes
1. Able to properly use the Radio Equipment
2. Understand F.C.C. and other Regulations Governing the Use of the Radio
3. Demonstrate Competent Use in Dispatching System
4. Understand Safety Precaution of Equipment
5. Understand Maintenance Procedure of Equipment
F. Personality and Client Relationship

1. Able to Efficiently Communicate with all Passengers
2. Understand Mental/Physical Limits of each Client
3. Relays Information Pertinent to Client Well-Being
4. Displays Courteous Behavior Toward Clients
5. Understand Principles of Client Confidentiality
6. Controls on-the-job Discussions Involving Clients

COMMENTS

Driver Tested
Date Tested
Interviewer
LOSS CONTROL PROGRAM

For improved program service delivery, Yakima Valley Transportation-Elderly and Handicapped has a Loss Control Program, which will monitor vans and drivers according to rules as follows:

1. Vehicle Loss Control Coordinator and Committee
   - Flora Gossett, Operational Manager, Chairman
   - Jack Riggs, Maintenance Person, Member
   - George Bentley, Office Staff, Member
   - Gini Heintzman, Director (if needed)

DRIVERS

a. Drivers shall have a valid Washington State drivers' license, which will be photographed and one (1) copy be in drivers' file. Second copy goes to Insurance Company, who will receive thorough State report on driving record in State or out.

b. Driver will within (45) forty-five days obtain Intermediate Endorsement on drivers' license.

c. Driver will have medical exam at doctor of his choice (within forty-five (45) days) or will have had a thorough exam by a doctor within ninety (90) days prior to employment with medical okay in writing by the physician. This report will be placed in the employee's file.

d. A yearly physical is desired and suggested.

e. Former mini-van driving experience desired, but not compulsory.

DRIVER TRAINING

a. Training in P.A.T. (Passenger Assistance Techniques), by a Certified Washington State trained official in P.A.T. - as soon as next class is available. These drivers will then be Certified Passenger Assistance...
Technicians, which insures Yakima Valley Transportation-Elderly & Handicapped safe, reliable and best trained drivers with Certificates and patches, Washington State approved.

b. Each driver shall receive Policy and Procedure manual and employment kit from Travelers Insurance Company when hired.

c. Drivers shall obtain training and certificate in First Aid and C.P.R. (within forty-five (45) days/as soon as class available.

d. All drivers will be trained in small oxygen tanks and use of same for passenger who needs it to travel. (Although this is not a State requirement, because we are not a Cabulance or Ambulance service, and this type of Handicapped should be transported by Cabulance or Ambulance).

e. Drivers will receive thorough training on Drivers' sheets (proper recording of time and figures) by L.C.P. Committee. Chairman reports to Director.

f. Defensive Driving Classes will be put on for all drivers and L.C.P. Committee at least three (3) times a year, basis by Washington State Patrol - this will be ongoing.

g. Drivers will be monitored on a semi-weekly basis on driving ability and safety procedures on safe use of all equipment and checked on drivers' record sheets by L.C.P. Committee. Chairman reports to Director.

h. Drivers shall attend Drivers' Meetings at least once a quarter.

i. Long-term drivers will be completely evaluated on a six-month basis. New drivers on a three (3) month basis done by L.C.P. Committee and Director.

B-IV-5
All drivers will be road tested and will be fully informed on their particular schedules and route. The driver will receive route for the following day the afternoon prior to scheduled run.

Regulatory Power Maintained by Washington Utilities Transportation Commission.

SAFETY AND VAN MAINTENANCE

Each Vehicle is equipped with:

1. First Aid Kit.
2. Required Coast Guard Fire Extinguisher
3. Van Vehicle Accident Reporting Kit.
4. At least three (3) flares in each van.
5. Flashlights (if and when evening runs are in force).
6. Snow tires and chains as required by L.C.P. Committee.
7. L.C.P. Committee will check and maintain above six (6) requirements.
8. Preventative Maintenance supervised and controlled by L.C.P. Committee at contracted service center.

VEHICLE RECORDS

Under supervision and controlled by L.C.P. Committee will have the following in order and in files:

1. I.D. numbers.
2. History of vehicle.
3. Down time due to incident (including all pertinent information, such as driver, cause, etc.).
4. Vehicle equipment check list.
5. Safety check records as deemed necessary by L.C.P. Committee.
6. Our W.U.T.C. Certificate #869 is our annual certification that vehicles and equipment comply with all federal, state, and local laws and regulations. (Spot checks are done throughout the year by a W.U.T.C team without prior notice.)
The Loss Control Program Committee is doing an on-job monitoring, both vans and drivers for continual safety requirements on both.

Reports to Director on weekly basis orally, and a full written report on a monthly basis.

Unforeseen challenges shall be reported immediately to Director.

Yakima Valley Transportation - Elderly & Handicapped's Loss Control Program is the finest and most thorough in the State of Washington. The L.C.P. Committee is a group of dedicated, sincere professional people with safety for drivers and passengers plus complete maintenance preventative program their main objective.
YAKIMA VALLEY TRANSPORTATION - ELDERLY & HANDICAPPED
INTER-AGENCY MOTOR POOL FOR THE ELDERLY & HANDICAPPED
2009 SOUTH 64th AVENUE, YAKIMA, WASHINGTON 98903 PHONE (509) 965-0440

DRIVER RESPONSIBILITY STATEMENT

As an assigned driver of the Yakima Valley Transportation - Elderly & Handicapped, I, ____________________________, hereby agree to the following conditions and responsibilities of my employment:

1) To observe and obey the traffic laws and ordinances of Washington State and the City of Yakima and to operate my vehicle in accordance with these and other program guidelines.

2) To conduct a daily inspection of my vehicle (as indicated by checklist) to insure its proper maintenance and the safety of its passengers. All mechanical defects will be reported immediately to obtain clearance for continued operation of vehicle or to arrange for its delivery to a maintenance area. I will maintain an adequate supply of all required forms in my log book and guarantee their proper and timely submission.

3) To consider the safety and well being of my clients at all times by providing careful assistance during all phases of the loading procedure to include escort to and from the van as deemed necessary under prevailing conditions. I will not allow clients to travel without the proper safety restraints, nor may they smoke in the presence of other clients. All loose packages and/or equipment will be stored beneath/behind seats to prevent movement amongst passengers during an emergency.

4) To conduct myself in a manner which encourages the client to participate in, support, and promote continual use of the program. I will endeavor to provide informative answers/directions on request. I am aware of the continual need for client assessment in the field and will discreetly monitor my passengers and their environment to aid in directing assistance where needed.
5) As an employee of a Federally funded program, I am aware that I cannot receive monetary tips in any amount, nor may I solicit contributions. I may encourage donations which I will accept gratefully and turn in daily according to standard procedures.

MAY COMMON SENSE PREVAIL: 

---------------------------
Prerequisites: Participant must -
1) have a valid Washington State Vehicle Operator's Permit,
2) have an insurance check and clearance,
3) have qualified for an intermediate endorsement,
4) be willing to commit himself to the 4-hr. instruction course as scheduled.

Objectives:
1) to make the participant aware of his/her area of responsibility as a driver,
2) establish a framework for qualification criteria,
3) establish basic areas of evaluation and instruction,
4) insure conformity and compliance with necessary guidelines and expectations of this program.

The following is a list of fundamental areas of concern to this instruction course:

Operation: Be capable of operating vehicle under normal work load and driving conditions to include -
1) Basic Driving Skills
   a) movement through city traffic
   b) parking
   c) backing of vehicle
   d) highway driving

2) Use of Hydraulic Lift
   a) loading and unloading of wheelchair client
   b) proper safety precautions
   c) use of wheelchair tie downs

3) Use of side door and step
   a) loading and unloading of ambulatory clients
4) Radio Technique

Maintenance: Be knowledgeable of requirements for 1st Echelon Driver Maintenance and capable of performing same to include:

1) Monitoring of these fluid levels
   a) oil
   b) transmission
   c) radiator
   d) windshield wiper
   e) fuel

2) Check for leaking systems
   a) front and rear axle
   b) oil pan
   c) brakes

3) Evaluation of roadworthiness
   a) tire condition and pressure
   b) loose or broken fixtures, i.e. mirrors, bumpers, spare tire, etc.
   c) missing equipment

Reporting: Be knowledgeable of report procedures and demonstrate ability to make correct entries to include:

1) see required log entries
2) reporting of need for repair of vehicle
3) proper handling of donation box and monies collected
4) location and use of accident report forms
Ground Rules: Be knowledgeable of Yakima Valley Transportation - Elderly & Handicapped and program guidelines as regards -

1) driver conduct
2) van use restrictions and limitations
3) emergency procedures
APPENDIX C

INTERVIEW QUESTIONNAIRE
WSDOT
Section 16(b)(2) Operators
Maintenance Survey

Agency: ____________________________  Contact: ____________________________

Phone: __________  Interviewer: ____________________________  Date: __________

1. a. How many vehicles are currently being used (and maintained) for client transportation by your program?

   Buses ____  Vans ____  Cars ____

   b. How many of these are reserve vehicles.

2. Please estimate the portion of time your vehicles usually spend in service on the following types of roads:

   a. Congested urban ____ %  d. Suburban (paved) ____ %
   b. Uncongested urban ____ %  e. Rural (paved) ____ %
   c. Small urban (under 5,000 pop) ____ %  f. Rural (gravel or dirt) ____ %
   g. Freeway or major highway ____ %

   Do you have any comments that would help explain unusual wear and tear on your vehicles?

3. Please describe how often (on the average) the following maintenance functions are performed in your program: (Use time or mileage, whichever better describes your maintenance schedule.)

   Time Period  Mileage
              (Daily, weekly, monthly, etc.)  (Every 2000, 4000, or so miles)

   a. Safety Checks
      1/ Lights and signals
      2/ Brakes
      3/ Tires
      4/ Fluid levels
      5/ Lifts
      6/ Mirrors and windshield wipes
      6/ Other (specify) __________

   b. Preventative Maintenance
      1/ Oil change and lube
      2/ Change filters
      3/ Change belts
      4/ Tire rotation
      5/ Other (specify) __________

C-1
4. Who usually performs the maintenance functions listed above?

<table>
<thead>
<tr>
<th>Drivers</th>
<th>Program's Service Station</th>
<th>Local Dealer</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Major Maintenance

1/ Tire changes
2/ Transmission service
3/ Wheel alignments
4/ Change break linings
5/ Engine tune ups
6/ Total engine overhaul
7/ Other (specify) __________

Time Period (Daily, weekly, monthly, etc.)

Mileage (Every 2000, 4000, or so miles)

5. Why did you select these individuals (or companies) to perform these functions?

a. Safety checks: ____________________________
b. Preventative maintenance: ____________________________
c. Major maintenance: ____________________________

6. Have these individuals or companies satisfactorily performed these functions? Please explain your experience:

7. Who in your agency supervises the maintenance program? ____________________________

8. Why was that individual chosen? (Check as many as apply)

___ a. Prior experience with maintenance program administration
___ b. Experienced supervisor
___ c. Experienced mechanic
___ d. No other option available
___ e. Other: ____________________________ (Please explain)

9. Do you have a separate maintenance budget? ___ Yes ___ No
10. If yes (to question 9):
   a. How much is that budget for the current year? $________
   b. Has that budget been sufficient to cover your regular maintenance costs?
      ____ Yes  ____ No  If No, please explain:

11. If you provide any sort of training or orientation program for drivers to teach them to recognize maintenance problems, please describe the program and indicate how useful you have found it to be.

12. What, if any, major problems have you encountered related to maintaining your vehicles, particularly in the last year or so? Have you come up with any solutions for the problems? Please explain.

13. How satisfied are you with your agency's maintenance program? Are there elements that you would recommend (or not recommend) to other operators? Please explain:

14. Could the WSDOT do anything to assist your agency with its maintenance program?
15. Does your agency have any of the following types of forms? If yet, please attach a copy.

<table>
<thead>
<tr>
<th>Forms</th>
<th>Yes</th>
<th>No</th>
<th>Forms attached/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Maintenance Checklists</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety Checks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preventative Maintenance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major Maintenance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Instructions, training materials for drivers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Maintenance budget</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Maintenance expense forms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Other (explain)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thank you for your help

S/PT5