

## PROCEDURE FOR REPAIRING PUBLIC TRANSPORT BUSES

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### ABSTRACT

The increase in demand for public transport means that it needs to be continuously operated. This article points out the importance of keeping public transport buses in working condition and provides ideas on maintenance.

**Keywords:** public transport, passengers, bus repair, preventive maintenance, timely checks.

### АННОТАЦИЯ

Увеличение спроса на общественный транспорт означает, что его необходимо постоянно эксплуатировать. В данной статье указывается на важность поддержания автобусов общественного транспорта в рабочем состоянии и приводятся идеи по их техническому обслуживанию.

**Ключевые слова:** общественный транспорт, пассажиры, ремонт автобусов, профилактика, своевременные проверки.

### ANNOTATSIYA

Jamoat transportiga talab oshishi, uning uzluksiz ishlashini ta'minlash kerakligini anglatadi. Ushbu maqolada jamoat transporti avtobuslarini ish holatida saqlash muhim ekanligi ko'rsatib, ta'mirlash yuzasidan fikrlar berilgan.

**Kalit so'zlar:** jamoat transporti, avtobuslarni ta'mirlash, profilaktika, o'z vaqtida tekshirish.

When it comes to keeping public transport buses in top working condition, the effective repair and maintenance procedure plays a pivotal role. Whether it's a routine check-up or a complete overhaul, understanding the fundamentals of bus repair can make all the difference. We focus on providing guidance on the ins and outs of public transport bus maintenance, practical advice and insights from industry experts.

“The repairability of transport buses greatly relies on regular maintenance schedules, well-trained mechanics, and the availability of high-quality spare parts”[1].

Now, let’s delve into the key elements affecting the repairability of public buses:

- **Preventive Maintenance:** This includes performing timely checks to identify and fix minor issues before they become major problems.

- **Skilled Mechanics:** A competent and experienced mechanic is crucial to correctly diagnose and rectify complex bus issues.

- **Spare Parts Quality:** The availability of flawless and compatible spare parts can significantly impact the success of any repair job.

Furthermore, the nature of repairs may differ based on whether the buses are considered to be “within walking distance.” Stay tuned as we elaborate on this concept and how it affects the whole repair process.

**Understanding repairability of public transport buses.** Let’s get a better understanding of what the repairability of public transport buses essentially relies on. Repairability is a crucial aspect to consider, and it depends mainly on two significant parameters:

1. **Component’s Condition:** The present state of the vehicle’s components directly influences the repairability of the bus. Damaged and worn-out parts often need replacement, while, at times, minor issues could be easily fixed with a spot of maintenance.

2. **Availability of Resources:** The availability of replacement parts, skilled labour, and necessary machinery & equipment has a substantial impact on the repairability of a bus.

Now, let’s shift our focus on a significant aspect leading to diverse opinions regarding bus repairs - the location of the bus and its relation to “walking distance.”

**The “walking distance” factor in bus repairs.** Often, the distance at which the bus is located from the repair center influences the nature of repairs. We often refer to a bus that is located within reach of engineers and technicians without vehicle-aid as being “within walking distance”.

An interesting perspective is that buses “within walking distance” can sometimes undergo faster and simpler repair processes because of easy accessibility for the technicians. On the other hand, remote buses might either need towing or the dispatch of a mobile repair team, both of which add time and cost.

To illustrate further, let’s take a look at the following table that outlines the differences in repair strategies depending on location.

Table 1. Type of Repair

Distance	Type of Repair	Time & Cost Implication
Within walking distance	On-site repairs or quick transport to repair center	Lower repair time and costs due to easy accessibility
Remote location	Towing or mobile repair team dispatch	Higher repair time and costs due to complex logistics

Public transport buses play a crucial role in our daily lives, and their constant functioning is vital. But like any other machine, they require regular maintenance and occasional repairs. However, the process isn't as straightforward as it would appear at first. Bus repair processes carry **several variables**.

**Condition of the Bus.** It's a pretty straightforward idea: The more wear and tear, the more extensive the repair. As a general rule of thumb, older buses require more attention and work than newer ones. They have more worn-out parts and may have underlying issues that only become apparent during the repair process.

**Availability of Resources.** "Also significant to mention is the availability of resources. These resources include not just parts and tools, but also knowledgeable repair personnel. Locations with easy access to these resources tend to have quicker and more efficient repair processes."

**Proximity to the repair center.** A major part of the repair process depends on how close or far the bus is to the repair center. Buses that are located very close to repair centers will be repaired and returned to service faster.

**Breakdown of repair suitability.** When assessing the repair suitability for public transport buses, there are several key factors to consider. Decision pivot on the extent of the damage, the specific make and model of the bus, the availability of replacement parts, and the proximity to repair facilities.

**Extent of damage.** The extent of the damage will often dictate what kind of repair is suitable. For minor issues, such as a broken mirror or minor mechanical failure, quick on-site repair could be the most suitable option. However, for severe engine or structural problems, a complete overhaul in a specialized garage may be necessary.

**Specific make and model.** The specific make and model of the bus can also influence repair suitability. Some buses have unique, manufacturer-specific parts that may require specialist attention, while others can be serviced using generic parts by any proficient mechanic.

**Availability of replacement parts.** The availability of replacement parts could make a significant difference. If the necessary parts are readily available, a quick repair might be feasible. However, if parts have to be imported or manufactured, the repair process could be more complex and time-consuming.

**Proximity to repair facilities.** Proximity to repair facilities is another strong factor. If the breakdown occurs close to a repair shop stocked with the right tools and skilled mechanics, getting the bus back on the road will be faster and easier. But if the breakdown happens far from a well-equipped garage, it may make more sense to arrange for a replacement bus rather than waiting for repairs.

**Spare parts replacement.** Quick-change spare parts play a crucial role in ensuring the smooth operation of passenger buses. These spare parts are essential for replacing failed components in a timely manner, reducing downtime in the manufacturing system. Spare parts management is a critical aspect of industrial manufacturing systems, particularly those that involve highly complex manufacturing processes[2]. It is important to consider spare parts management and maintenance costs early in the design and operation phases to minimize overall manufacturing costs.

**Importance of Spare Parts Management** Spare parts management is of paramount importance in the manufacturing industry, especially in systems that rely on a large stock of spare parts.

These spare parts are essential for replacing failed components in a timely manner and minimizing downtime. Effective spare parts management can significantly reduce maintenance costs and increase the efficiency of manufacturing systems. Source: Spare parts management is one of the most important aspects of industrial manufacturing systems, especially for highly complex manufacturing processes that require a large stock of spare parts to replace failed components in a timely manner. Furthermore, spare parts management plays a crucial role in determining the optimal number of spare parts, suppliers, and the quality of spare parts based on historical data to minimize the total cost of the system.

According to Inderfurth and Mukherjee, successful spare parts management depends on the availability of the right type of spare parts in the right quality and quantity, at the right time[3].

Kleber et al further emphasize the need for original equipment manufacturers to maintain an inventory of spare parts throughout the entire product lifecycle and even during the post-product lifecycle.

Moreover, spare parts management becomes particularly challenging for manufacturing industries during the transitional period between the end of production and the end of service. During this time span, industries often face difficulties in managing the demand for spare parts.

Spare parts and inventory management are crucial indicators of maintenance performance. Proper inventory management ensures timely ordering, storing, and issuing of maintenance supplies necessary for efficient operations. Delays or improper maintenance due to poor inventory management can negatively impact maintenance

performance. Additionally, implementing a comprehensive maintenance program can add value to the spare parts management process. The efficient management of spare parts inventory is essential for the smooth operation of manufacturing facilities. Accurate weather forecasts are particularly important in systems that rely on a large stock of spare parts.

When it comes to replacement of quick-change spare parts for passenger buses, efficient and effective spare parts management is of utmost importance. In order to ensure the timely replacement of quick-change spare parts for passenger buses, it is essential to establish appropriate servicing schedules.

To address these challenges, spare part modification has emerged as an important aspect of business in the manufacturing and automotive industries. Spare part modification involves categorizing spare parts based on their usage, distinguishing between long life and short life parts. This classification allows companies to focus on important items and facilitates the decision-making process in spare part management. By identifying different classes of spare parts based on their criticality, companies can adopt tailored management strategies for understanding passenger bus maintenance.

The effective management of spare parts inventory in the passenger bus industry. Managing spare parts in this industry is crucial, as it directly impacts the reliability and availability of buses for transportation services.

In order to address the challenges faced in the maintenance of passenger buses, it is imperative to adopt a systematic and strategic approach to spare parts management. This involves not only accurately forecasting the demand for spare parts, but also implementing efficient inventory control measures to minimize costs and ensure timely availability of the required parts.

Identifying key spare parts in passenger buses. Identify the key spare parts in the passenger bus industry. Through their research, they were able to determine which spare parts had the highest demand and criticality in the maintenance process. This information allowed them to prioritize the management and procurement of these key spare parts, reducing costs and minimizing downtime in the bus maintenance process.

Another important aspect of effective spare parts management is the consideration of maintenance strategy. As mentioned by Smith and Jones (source 3), the implementation of optimal spare parts inventories is critical to the success of maintenance strategies.

In conclusion, repair suitability is highly situational and should be considered on a case-by-case basis. Good judgment, a thorough understanding of the bus in question, and access to resources will drive the most effective repair approach. The repairability of public transport buses and repair processes indeed vary depending on various factors, including the condition of the bus, availability of resources, and the bus's

proximity to the repair center.

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