

# Environmental Problems in Logistics Engineering from the Perspective of Engineering Ethics

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## Abstract:

*At present, our country is facing a new round of scientific and technological revolution and a new situation of industrial transformation. With the emergence of modern major projects, its impact on the environment and the future of mankind is very significant. Engineering ethics is the professional ethics of engineering and technical personnel. Engineering ethics can guide, regulate, and develop the professional ethics of engineers and the construction of engineering projects. Therefore, the study of engineering ethics has long-term and important significance. Logistics activities run through the four major fields of production, circulation, consumption and national defense, and are the blood of my country's economy. Engineering ethics is a discipline that studies these problems in depth and seeks for their emergence and solutions. This article will analyze the engineering ethics dilemma of each link of logistics activities from warehousing, transportation, packaging, circulation processing, and loading and unloading, and conduct practical thinking on these issues, and put forward insights and improvement methods.*

## Keywords:

*Logistics engineering; Engineering ethics; Reasonable and orderly*

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## 1. Research on the significance and methods of engineering ethics

Engineering is a practical activity that transforms nature for the benefit of mankind. For a long time, due to the lack of understanding of its importance, it did not mention its due height. The development of science has also raised new engineering ethics issues that need to be answered and resolved, such as energy crisis, environmental pollution, etc. [1]. As my country's economy shifts from a stage of high-speed growth to a stage of high-quality development, the economic structure is in a critical period of transforming development mode, optimizing economic structure, and transforming growth momentum. As a researcher in the field of logistics engineering, ethics must have a core competency [2]. In terms of engineering ethical issues, it is necessary to think at multiple levels and from multiple angles, combine individual issues, and deeply analyze the ethical reasons for the healthy development of logistics engineering [3].

## 2. The dilemma of engineering ethics in the field of logistics engineering

### 2.1 Lack of rationality of storage control equipment

Many companies have many problems in inventory control and warehouse management, such as unscientific equipment and unreasonable configuration, leading to frequent problems in warehouse management and inventory control. First, the storage management equipment and model are relatively traditional, and there is a lack of equipment update and model reform. Product sorting, classification, etc. cannot be scientifically divided and reasonably configured, which leads to confusion at the warehouse management site and difficult to find product goods [4].

### 2.2 Transportation safety risks are highlighted

Noise from transportation, waste emissions, and dust emission have caused certain damage to the environment, among which waste emissions are one of the main sources of air pollutants. In addition, due to the variable traffic surrounding environment and many uncontrollable factors [5], transportation safety risks have become increasingly prominent. Along with the emergence of new business formats, some new contradictions and conflicts have been brought about, such as how to ensure

that the application of unmanned transportation equipment can not affect each other with pedestrians and traditional vehicles, how to implement the management of new business formats, the regulatory legal regulations, Both the technical level and the management ability of law enforcement personnel are facing great challenges [6].

### **2.3 Difficult to recycle excessive packaging**

At present, for the processing of express boxes, existing methods include incineration for power generation, landfill treatment, and recycling and reprocessing. Among them, incineration power generation reduces water pollution, energy and raw material loss, but the gas produced is harmful to the atmosphere. Landfill treatment is to deep bury the express box.

### **2.4 Circulation processing links**

Circulation processing is the extension of production and processing in the production field, and it can also be seen as the intelligent expansion of the circulation field for better services [7]. Exhaust gas, waste water, and waste residues generated during the circulation process will pollute the environment; during the process, excessive and unreasonable packaging of products not only wastes resources, but also causes environmental pollution when these packaging wastes enter the environment; the circulation and processing locations are set up Unreasonable, such as being close to the production area, increasing the transportation distance and correspondingly increasing the logistics activities such as loading, unloading, handling, and storage [8].

## **3. Specific measures to solve environmental problems from the perspective of engineering ethics**

### **3.1 Vigorously develop green warehousing**

Green warehousing refers to the application and promotion of green warehousing technology, and warehousing characterized by low environmental pollution and low loss of goods. Green storage is also the need for the country's ecological green development. The traditional warehouse construction method not only caused a waste of resources, but also caused many companies to invest too much cost in the construction of the warehouse. For example, the prefabricated warehouses [9] that have emerged in recent years are consistent with the concept of green storage, energy saving and environmental protection. To change this situation, the construction of intelligent warehouses is the inevitable development of warehousing logistics in the future.

### **3.2 Development of shared logistics**

Many companies have their own vehicles and other transportation equipment, and these vehicles are currently limited to satisfying the needs of their own company's logistics services. In the case of insufficient business volume, resources are left unused. In this case, companies can use third-party platforms with other companies. Only a certain amount of rent is required, and fixed assets are less occupied. No matter what kind of sharing, it can achieve the purpose of mutual benefit and win-win for both parties. It has achieved the harmony and unity of corporate benefits, social benefits and environmental benefits, and is in line with the requirements of the era of sustainable development.

### **3.3 Use environmentally friendly packaging materials and pack reasonably**

How to reduce packaging waste and realize environmentally friendly packaging is a question that must be considered to realize green logistics. Green packaging must achieve packaging reduction. That is to say, under the condition of satisfying the functions of protection, convenience, sales, etc., appropriate packaging with the least amount should be used to avoid excessive packaging. Try to reuse the packaging as many times as possible to save resources [10]. For example, the green packaging product "Feng•BOX" independently developed by SF Technology. Compared with the disposable packaging, the packaging has made many innovations in terms of replacing the sealing tape with zippers, foldable, easy to open, and anti-theft.

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