

ON A HISTORY AND A PRESENT CIRCUMSTANCES OF WALKING AID FOR PERSONS WITH VISUAL IMPAIRMENT IN JAPAN

H. SEKIGUCHI & H. NAKAYAMA

Department of Transportation Engineering and Socio-Technology
College of Science and Technology, Nihon University, Chiba, Japan
nakayama@trpt.cst.nihon-u.ac.jp

ABSTRACT

This paper describes a history and a present circumstances about walking aid for persons with visual impairment in Japan. There are approximately 305,000 people with visual impairment include legal blindness in Japan. However, Seeing Eye Dogs are only 875 on duty in 1996. The first Japanese training facility was established in 1967. In the same year, the unique walking guide system, *Tenji-Block (Tactile Tiles or Textured Paving Block)*, has been developed in Japan. It is a tile or a paving block that has many small round bumps on the surface. A pedestrian can be walking with feeling bumps at their sole. This system has come into general use in 1970s in Japan. However, it has some problems, for instance, standard or guidelines for design and construction, how to manage the facilities. Recently, Japanese government approved and enacted a “Law to Promote Ease of Movement for Older and Disabled Persons Using Public Transportation Facilities (Barrier-free Transportation Law)” in 2000. And the new guiding systems *ITS for pedestrian* are developing in Japan. Such movement verifies whether it becomes good news for visually impaired persons.

Key Words

Visual Impaired Persons Seeing Eye Dog Tactile tiles Walking guide

1 INTRODUCTION

The Seeing Eye Dog was born in Austria in 1819. The first training facility for Seeing Eye Dog was established in Germany after World War I. In USA, “The Seeing Eye Inc”, the largest training facility in the world was established in 1926. After 41 years, the first Japanese training facility was established in 1967. In the same year, the unique walking guide system, *Ten-ji Block (Tactile Tiles or Textured paving Block)*, has been developed in Japan and the walking technique using stick was also established.

In Western countries, the support systems which were guide using dogs, walking technique and circumstance of people support for visual impaired person were already established. It is called *Normalization* that is new wave for concept of human way was born in the 1950s in Denmark. This was the new movement of human rights and offering the persons with disabilities was given the opportunity for lives with normal people. The concept of barrier-free was born in the 1960s in the Western countries. It has been used in the construction field first. Barrier-free, it meant removing the physical barrier in a building or housing space and environment. This new movements were removing barriers little by little and became new concepts "Barrier-Free" and "Universal Design".

2 THE HISTORY AND THE PRESENT CONDITION OF SUPPORT SYSTEM

2.1 The Circumstances for visually impaired person in Japan

The foundation of the modern education of Japan was established in the Meiji era that was about 120 years ago. The visually impaired school was also established in the same time at various places in

Japan to educate special occupation such as acupuncturist or massager for them. However, there were few visually impaired persons who could receive the education. They have received discrimination and their work was only the restricted special things. Even the person who could go to the visually impaired school, the separate education of the educational plan for a visually impaired person was educated. The visually impaired person was isolated from normal persons by the visually impaired school. There were psychological and institutional barriers to disabled person. After World War II, the educational system in Japan has been changed dramatically. The education policy for visually impaired person is changing little by little until now.

The estimated number of visually impaired person shows in Table 1. The changes from 1987 to 1996 indicate difference due to the modification of statistical standard. The ratio of 65 and more people reached to 17% in 2002. Projections based on Statistics Bureau & Statistics Center in Japan, estimates indicate that the population composition of people ages 65 and more will 22% in 2010 and 27% in 2020. This is the serious problems for Japanese people. Due to the prediction of elderly people in Japan, the movement of barrier-free campaign was changed on the right track.

Table 1. Estimated number of visually impaired person in Japan

Year	Visually impaired person	Total disabled person
1955	179000	785000
1960	202000	829000
1965	234000	1048000
1970	250000	1314000
1980	336000	1997000
1987	307000	2413000
1991	353000	2722000
1996	305000	2933000

2.2 Comparison with the circumstances of other countries and Japan

Table 2 shows the history and the circumstances of a visually impaired person. The principle of normalization has spread throughout the world from Denmark in the 1950s which was associated by Niels Eric Bank-Mikkelsen. All persons must be equal. It is the keynote of normalization. This idea is still a fundamental idea about social welfare.

Table 2 The history and the circumstances of a visually impaired person

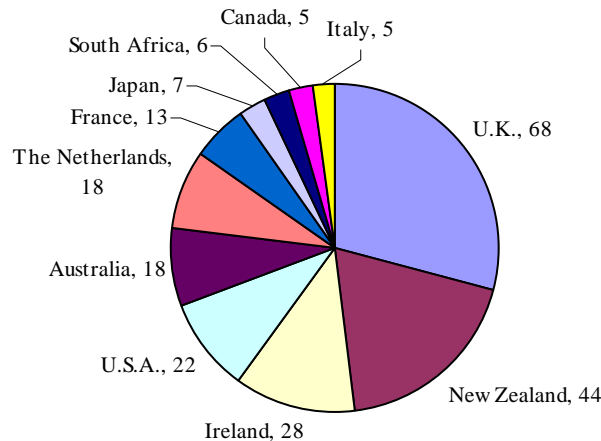
Year	Event
1923	The school for Seeing Eye Dog was established in Potsdam, Germany
1929	The Seeing Eye Inc was established in USA
1947	Established Fundamental Law of Education and School Education Law in Japan
1947	The law about a visually impaired person's occupation was enacted.
1959	Published the Law of 1959 (Normalization) in Denmark
1961	The American Standards Association published the first accessibility standard titled, "Making Buildings Accessible to and Usable by the Physically Handicapped."
1967	The first Tactile Tile (<i>Tenji-Block</i>) in the world was developed.
1967	Japan Seeing Eye Dog Association was established
1968	The Architectural Barriers Act of 1968 mandated
1974	The expert meeting for disabilities held at United Nation discussed about barrier free
1985	The guideline for Tactile Tile installation for visually impair person was established
1989	The Americans with Disabilities Act of 1990 (ADA) was established.
1994	The Heart Building Law (The standard for buildings in consideration of use for elderly people and a physically disable person) was published in Japan
2000	Law to Promote Ease of Movement for Older and Disabled Persons Using Public Transportation Facilities (Barrier-free Transportation Law) was published in Japan

The term "barrier-free" was born in the 1960s. Barrier-free used in the construction field first. The architectural barrier removal was enacted in the United States in 1968. This is a world's first trial. This motion spreads in every country in the world after that. This trend became new movement which aims at structural barrier-free not only including a disabled person but a healthy person and an old age person. It has shifted to the universal design from barrier-free recently.

3 GUIDING SYSTEM FOR VISUALLY IMPAIRED PERSONS

3.1 Seeing Eye Dog

Seeing Eye Dog assists a walking of a user efficiently with safety. In Japan, 875 Seeing Eye Dogs are on duty in 1996. Fig. 1 shows the number of Seeing Eye Dogs per one million people in each country. The top country is U.K. that has 68 dogs on duty per one million people. Japan has 7 dogs. Although it is difficult to compare since there is a situation of each country, the results of Japan is a result of volunteer's effort of various difficulties. The training expense of Seeing Eye Dog requires 1 million to 3 million yen per one dog. However, user does not need to spend for that due to bounty system of each local government. The circumstance of Seeing Eye Dog is towards an improvement little by little.



The number of Seeing Eye Dogs per one million people (1996)

3.2 Tactile tiles for visually impaired person

The tactile tiles were invented by Japanese inventor Mr. Seiichi Miyake in 1967. There was nothing like this kind of tiles in those days in the world. The tactile tiles spread rapidly by having been adopted at Japan National Railways (later known as Japan Railway). It was established "The guideline for Tactile Tile installation for visually impaired person" in 1985. It can be classified into two types right now. Those types of tactile tiles with which function is different were shown in Fig. 2. Figure on a left-hand side is a tile to which cautions are urged. The round small bumps are arranged on the surface of the block, and attention is called through a sole. A right-hand side figure is a block which shows a direction. Long and slender bumps are installed in the surface.

However, many types have been manufactured as an experiment and installed. This situation produced not only a visually impaired person but the situation it was hard for elderly people to use. Furthermore, since the form with the various construction method appeared, a user's confusion was accelerated further. For instance, the photo 1 showed the construction situation of the tactile tiles. In the case of the person who has weak eyes walks, the color of a tile is using for check to the proper direction. In the example on the right of a photo 1, since the color is not clear, there is a problem that a tile is unclear. From such a problem having occurred mostly, the tendency anew improved about a Tactile Tile increases and examination of standardization in Japan is performed.

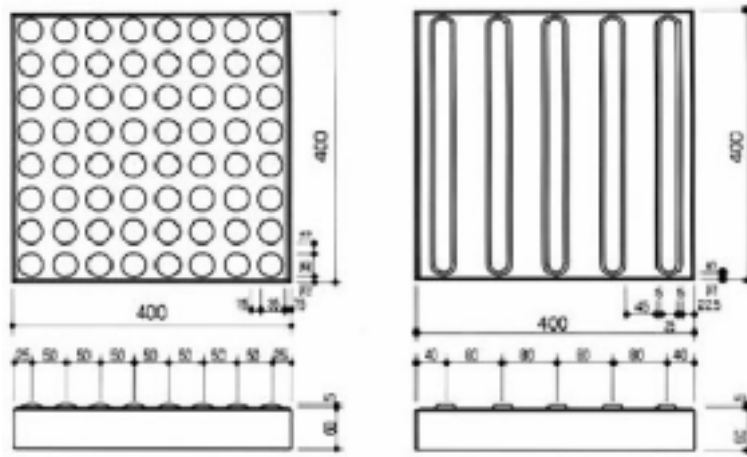


Fig. 2 Tactile Tile (Japanese Type)



Photo 1 Tactile tiles with different color (Japan)



Photo 2 Tactile tiles (Seoul, The Republic of Korea)

Photo 3 Tactile tiles (Sydney, Australia)

Now, these tiles are spreading in the world. Photo 2 showed the example of the Tactile Tiles installed in The Republic of Korea and Australia. There are many Tactile Tiles installed at subway stations and sidewalk in Seoul city. The installation situation in Seoul city has various problems more than Japan. Since the surface of a sidewalk is not flat, there are many places which do not have the meaning of a Tactile Tile. However, it can note that many such cares is carried out to a visually impaired person in Seoul.

The Tactile Tiles were adopted as each facility of the Sydney Olympic Games in Australia. And now, the tile installed to the public transportation facilities as 'Tactile Surface Indicator', and the design policy has also been considered by each local government. Such a trend has started also in UK and the US. Although the tile construction for visually impaired persons which started in Japan has many problems, it is spreading in the world. Japan should take the leadership in this field.

3.3 The pedestrian ITS

As a new trend of the pedestrian walking aid technique, the new system using the information technology is developing at National Institute for Land and Infrastructure Management (NILIM) in Japan. Many electrical equipment manufacturers in Japan are participating in this project named Pedestrian Intelligent Transport Systems. The aim of this project is offering more exact position information and guidance information than present condition to the pedestrian of a disabled person, elderly people, and an ordinarily person using information technology. Photo 4 showed the demonstration of pedestrian ITS at NILIM. The result is expected as a new system by which this research combined each component engineering. However, in order to spread this system, it is clear that great expense is required, and if an individual does not purchase the apparatus, it cannot use.



Photo 4 Demonstration of pedestrian ITS at NILIM

4 CONCLUSIONS

It is thought that a policy on the visually impaired person in Japan from the Meiji era till recent time was isolated from the society. Although the trend of the normalization which began from Europe affected a disabled person policy of Japan, it was not decisive impact. In the recent years, an aging

problem in Japan is getting a serious problem every year. The anxiety over an aging problem took a new policy "Barrier-Free" to the government. It was decided upon the embodiment of this policy as a Law to Promote Ease of Movement for Older and Disabled Persons Using Public Transportation Facilities (Barrier-free Transportation Law). The problem which stemmed from aging became the trend which pushes barrier-free or a universal design as a result. Whatever the starting point, it is thought that this tendency will improve the accessibility of a means of transportation of Japan by leaps and bounds from now on. It will be necessary to change the concept of barrier-free into a social barrier such as discrimination from a structural barrier such as steps.

Now, the Tactile Tile invented in Japan tends to spread all over the world. Although it is necessary to solve many problems to use the Tactile Tiles effectively, since structure is simple, it may spread in the world further from now. Japan needs to take the initiative in the world to this simple system.

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