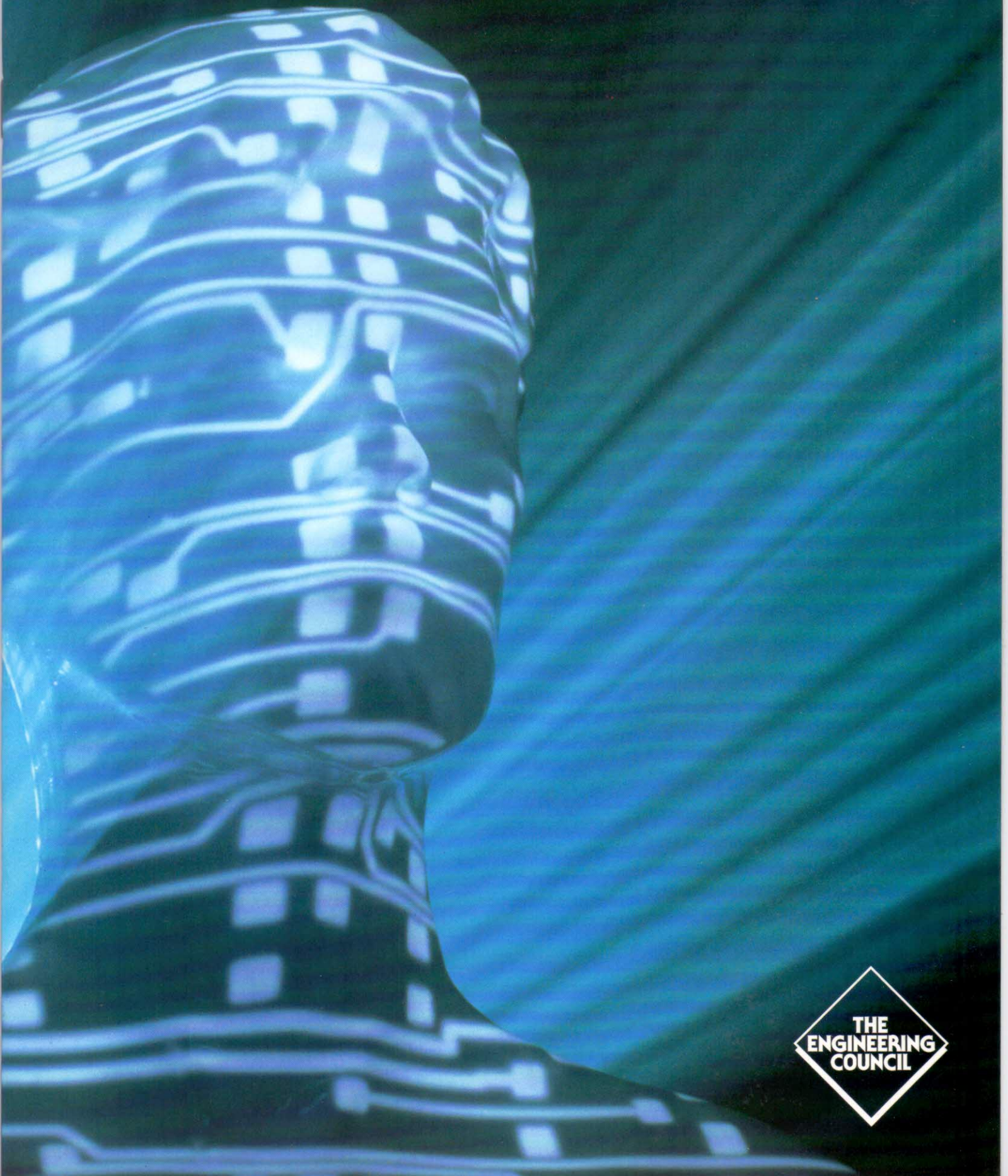


A VISION OF TECHNOLOGICAL RESEARCH for visually disabled people

John Gill
Royal National Institute for the Blind



An example of Standard English Braille

1st LINE	{	A	B	C	D	E	F	G	H	I	J
2nd LINE	{	K	L	M	N	O	P	Q	R	S	T
3rd LINE	{	U	V	X	Y	Z	and	for	of	the	with
4th LINE	{	ch	gh	sh	th	wh	ed	er	ou	ow	W
5th LINE	{	ea Decimal point	; be bb	: con cc Ratio sign	. dis dd	en	l ff	() gg	" ? in	"	"
6th LINE	{	Oblique stroke st	ing	Numeral sign ble	Poetry sign ar	Apostrophe Mathematical comma	Hyphen com				

Braille characters consist of one to six embossed dots. The 'W' is out of sequence since it is not in the French alphabet.

Preface

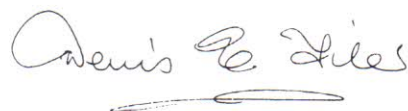
Engineers create artefacts and systems to improve the quality of life for mankind and to sustain and improve the manufacturing and economic base of nations. But never are the skills of engineers better utilised than when directed towards helping disabled people.

Such engineering skill and commitment are exemplified by the work of Eur Ing Dr John Gill and his team of engineers at the Royal National Institute for the Blind (RNIB).

Good design for visually disabled persons is often good design for everyone. Many of the innovative products developed for disabled people eventually find their way into common use for all. This is why engineers should be encouraged to consider careers in such interesting and challenging fields of technology which call upon multi-disciplinary knowledge and skills.

It has been predicted that the number of visually disabled persons in the world will double during the next 15 years and double again in the following 15 years. Advances in health care and increases in life expectancy will result in an aging population which will require additional resources for their well-being. Engineering will play a central part in developing these resources.

I would also like to take this opportunity to thank Lloyd's Bank for its generosity in supporting this publication which is based on a lecture organised by RNIB and The Engineering Council in 1993.

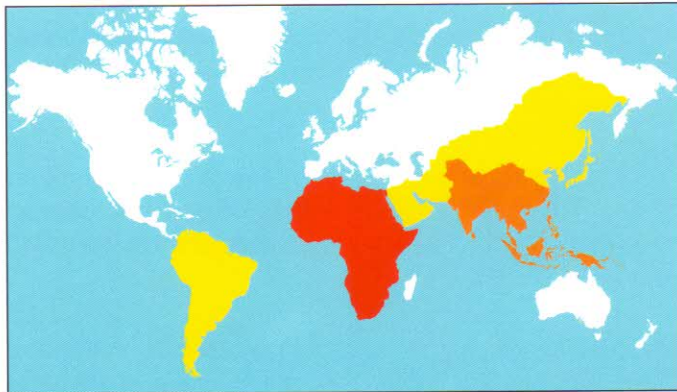


*Denis E Filer CBE TD FEng
Director General
The Engineering Council*



Louis Braille, born 1809 in France, was blind from the age of three. He developed the system of writing and reading using raised dots. He died in 1852.

Who is Visually Disabled



The prevalence of blindness in the world.

An **impairment** is any reduction of normal function. A **disability** is when that impairment makes any task difficult to perform. Which means that the people who have had to put on reading glasses have a disability - without your reading glasses you are unable to read. That might not matter, but it would if it is a task that you are precluded from doing should you wish to do it. But a **handicap** is when you are actually prevented from performing a desired task (such as reading this document) by the impairment.

There are about 1 million people in the UK who could be registered as blind or partially sighted, and the number is growing every year.

The total is far greater if we include those who cannot see fine print without spectacles - and this includes most people over 50.

The popular image of a blind person is someone in their 20s or 30s carrying a white stick, who reads braille, is musical and is always happy. Most visual disability is acquired late in life. About 2% of the visually disabled population are under 16, 10% are between 16 and 59, and 88% are over 60 years old.

This association between age and loss of vision has a number of consequences. Less than 2% of visually disabled people can read braille, but 75% have sufficient residual vision to read a newspaper headline. Also, a significant proportion have at least one other handicap; 35% of those with a visual disability also have a hearing deficit.

Since 55% of the visually disabled population live alone, there is a need for devices and services which can assist in getting about, access to information, and daily living. However these basic needs have been largely neglected. The emphasis tending to be towards the more glamorous high technology employment-related services.

This booklet describes some of the problems facing visually disabled people and ways in which their needs can be better met by the appropriate use of technology.

