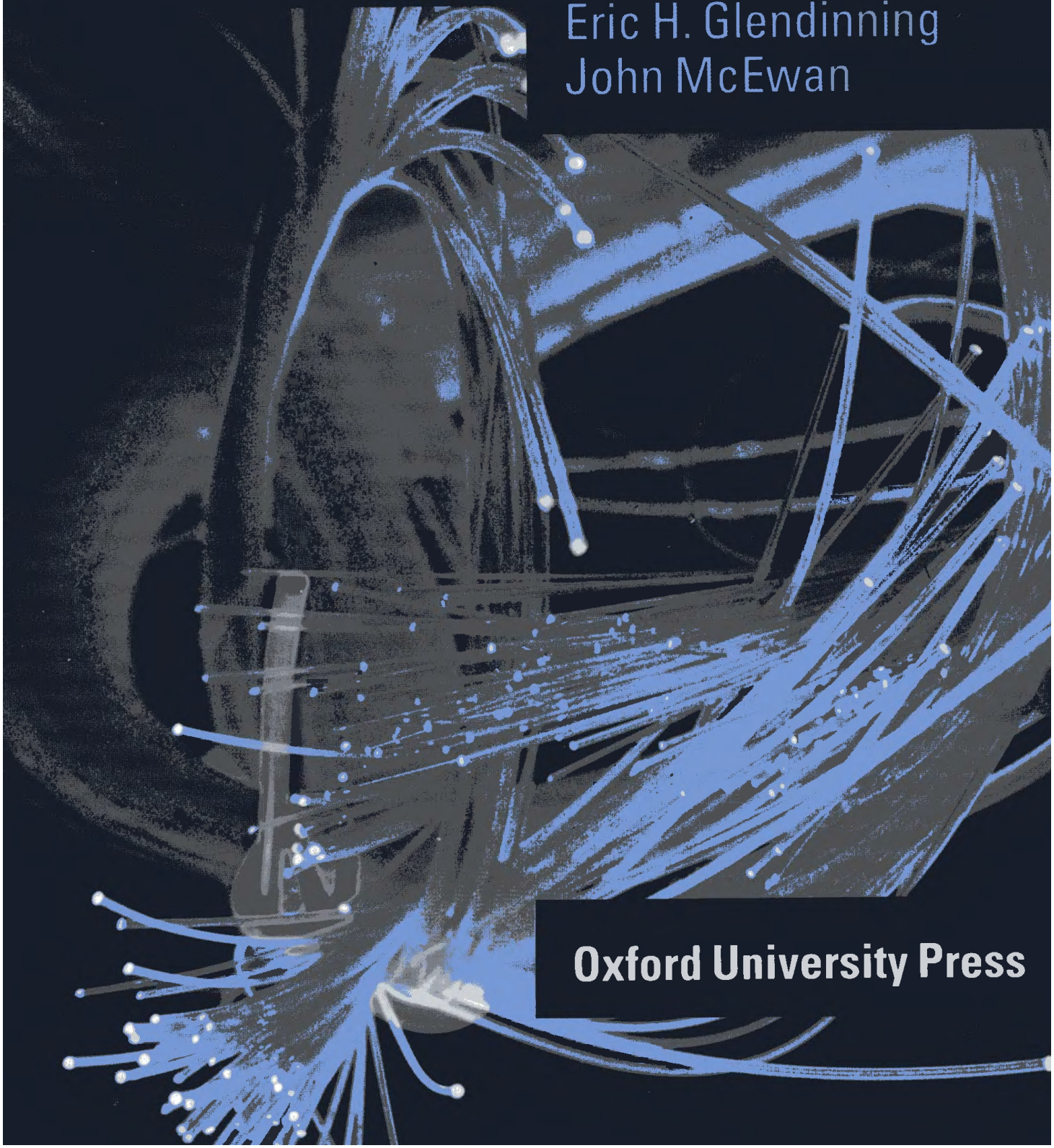
Oxford English for

Electronics

Eric H. Glendinning
John McEwan



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Tuning-in

Task 1

Make a list of things in your house which use electronics. Compare your list with that of another group.

Task 2

Find out the meaning of these abbreviations. You can use Appendix 1 on page 188 to help you.

1 IC **2** CD **3** hi-fi

Reading *Reading for a purpose*

In your study and work, it is important to have a clear purpose when you read. At the start of most units in this book, you will find tasks to give you that purpose.

Task 3

Read quickly through the text on the next page. Tick [✓] any items mentioned in the list you made in Task 1.

Electronics in the home

Electronics began at the start of the twentieth century with the invention of the vacuum tube. The first devices for everyday use were radios, followed by televisions, record players, and tape recorders. These devices were large and used a lot of power.

The invention of the transistor in 1947 meant that much smaller, low-powered devices could be developed. A wide variety of electronic devices such as hi-fi units and portable radios became common in the home.

It was not until 1958 that microelectronics began with the development of ICs (integrated circuits) on silicon chips. This led to a great increase in the use of electronics in everyday items. The introduction of the microprocessor allowed electronics to be used for the control of many common processes.

Microprocessors are now used to control many household items such as automatic washing-machines, dishwashers, central heating systems, sewing machines, and food processors. Electronic timers are found in digital alarm clocks, water heaters, electric cookers, and microwave ovens. Telephones use electronics to provide automatic dialling and answerphone facilities. New entertainment devices have been developed, such as video recorders and CD (compact disc) players.

In the future, electronics are likely to become even more common in the home as multimedia entertainment systems and computer-controlled robots are developed.

Task 4

Fill in the gaps in this table with the help of the text.

Date	Invention	Applications in the home
early 20th century	_____	_____
_____	transistor	_____
1958	_____	automatic washing-machines,
future	—	_____

Task 5

Use the space below to make a list of ways in which you think electronics may be used in the home in the future.

Reading *Understanding diagrams*

In electronics, you have to read not only texts, but also diagrams. You have to be able to combine information from both diagram and text. This text introduces two kinds of diagrams often used in electronics.

Task 6

Read the text below to find the answers to these questions:

1 What do we call the two types of diagrams shown in the text?
2 What do we call the approach to electronics which focuses on the function of units?

Understanding electronic diagrams

Although electronic devices may look complicated, they are made up of common basic units ('building blocks') connected together. The function of each of these units and the path of the signals between them can be shown in a block diagram. For example, the block diagram of a simple radio is shown in Fig. 1.

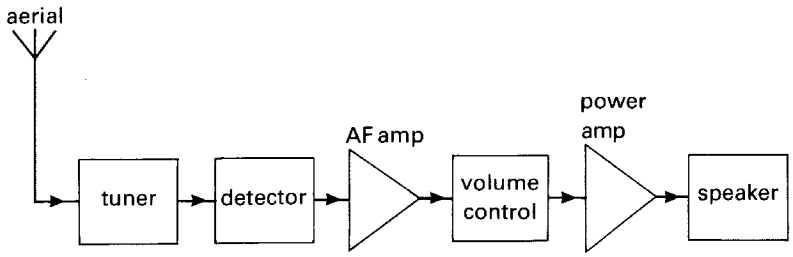

Fig. 1

To understand how the radio works, it is more important to understand the function of each unit than to know what components are used. This is known as a systems approach to electronics. For example, in Fig. 1 the tuner selects the required signal, the detector then separates off the audio part of the signal, and the AF amplifier (amp) amplifies it.

The connections and values of the components inside these basic units can be shown in a circuit diagram using standard electronic symbols. Fig. 2 shows the circuit diagram for the simple radio.

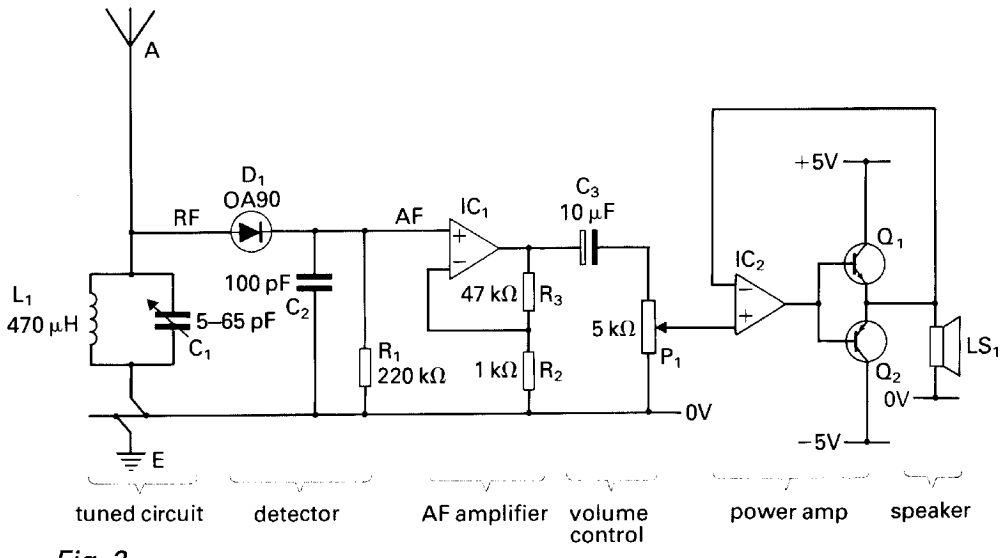

Fig. 2