is a fine metallic mesh inside the transparent door so the waves bounce around inside the cabinet and are eventually absorbed by the food. The food being cooked is often rotated on a turntable which gives it a more even exposure to the microwaves.

**Show you the door**

The mesh in the door is so fine that it allows the user to see the food without allowing any microwave energy to escape. A switch cuts off the power to the magnetron if the door is opened, avoiding the problem of cooked hands.

The magnetron in a typical microwave oven produces 600W (600 joules of microwave energy per second). This may be used continuously or pulsed on and off. By pulsing, the average amount of energy is reduced to provide different cooking powers. A low one will keep a meal hot, a higher will defrost frozen food and so on.

As with all cooking methods, it is necessary to control the period during which the food is heated. In a simple microwave oven this is done using a time switch. In more sophisticated models, the procedure is put under computer control. A probe inserted in the food senses the temperature inside. This feeds information to the computer which adjusts the cooking time.

Next time you warm up those baked beans, think of the magnetron and other parts of a microwave oven which make modern convenience cooking possible.

Terry Balbirnie taught science and electronics for a number of years at St Peters' School, Huntingdon. He is a member of numerous examination bodies responsible for setting-up electronics and is an examiner, advisor and moderator. Terry is a regular contributor to a number of magazines, and as a designer of constructional projects for the hobby market his work appears world-wide.

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**WRITES OF PASSAGE**

**Keeping up-to-date**

*This letter is regarding 'Physics 2000—a personal view' by Richard Field, printed in the Autumn ’96 issue.*

Richard Field’s assertion that Advanced Level Physics syllabuses should require the study of sub-atomic particles receives my wholehearted support. Whenever I talk of quarks, leptons, charm and strange my Advanced Physics students are almost invariably able to understand my excitement.

In discussions with a colleague we searched out the sources of her successes in teaching Advanced Level Sociology. She feels that one of the most important elements of her teaching is making sure that her students are aware of the latest ideas in her subject. I ascertained that this is helpful to them in answering questions in the examination. In order to prepare her lessons she needs to keep up to date with research and development in her subject. Therein, as Richard Field so accurately identifies, is one of the differences between current Advanced Physics syllabuses and those which attract today’s students.

Richard Field’s assertion, above, is of such percipience that I have not included full comment on the other parts of his article. However I must admit that I have reservations about some of the piece, for example, the concept of a ‘conductor’ of heat or even electricity being most suitably measured by its ‘resistance’. The latter I find a more significant historical hindrance than electronics and current being in opposite directions.

*Ian Bardrick*

*Bretton Woods Community School*

*Peterborough*