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**Hi Fans,**

here it is again, the first issue of FAN-CLUB News 1999 that you have been waiting for.

Apologies for the long delay. Because Eric-Peter was suddenly called up for military service and I was not available immediately, there was unfortunately a hitch in producing the News.

A hearty welcome to all those who have joined us recently. Those who only registered a short time ago and have not yet received their FAN-CLUB membership cards will be getting them by post during August.

As usual, the top priority in this first News 1999 is this year's new product introductions. With 11 new construction sets to add to our standard range and three more educational construction sets from the "Focus Kits" range, which our Schools Marketing partner in Great Britain developed for teaching technical subjects and which is available only through us on the German market, we have been exerting ourselves as hard as possible this year. You can read about these in detail on pages 4, 5 and 8.

Those of you who have access to the Internet should have a look some time at the latest version of our home page ([www.fischertechnik.de](http://www.fischertechnik.de)). Don't you think this is quite an improvement? If not, please write us an eMail and send it via the Internet or directly to: [fischertechnik-service@fischerwerke.de](mailto:fischertechnik-service@fischerwerke.de)

And now - have lots of fun reading FAN-CLUB News 1/99.

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**Crazy Robots in Competition**

Any lay person would have been dumbfounded: crazy robots on the stage are fighting a right royal battle, and about 200 young people, teachers, parents, and a huge number of people from the press are applauding wildly. This unusual spectacle was to be seen on 26th February in the main lecture theatre of the College of Advanced Technology and Business in Reutlingen. The Automation Technology Faculty there had invited people in to the final event in the Crazy Robots competition for school-children.

The leading actors in this show were computer-controlled robots which competed against one another to pick up ping-pong balls - and the youngsters who built them were competing as well, of course. They came from six schools in the area of Reutlingen, Pfullingen, and Rottenburg and had been working for five months with the fischertechnik "Mobile Robots" construction set (with Intelligent Interface and Software LLWin 2.1) and such other components as plastic cups or corrugated board. The aim was to build a mobile robot that could work automatically. The participants in the competition had to do the work of a fully qualified engineer, meaning mechanical engineering design, initial hardware designs, and software development.

The results of this work were a little short of genius in places: for instance, very simple robot vehicles designed along the lines of the old engineering principle: "Keep it simple". These consisted of hopper-shaped shovels at the front of the vehicle and a frame at the back for keeping hold of the collected ping-pong balls. However, most of the robots had a proper load surface, in order to ensure that the balls, once retrieved, would not wander away again. The balls on these load surfaces were then transported by paddle-wheels, swivelling arms, or conveyor belts. The software in the vehicle determined the way the robot would react if it ran up against the perimeter of its playing field or collided with another vehicle.

In the finale of the competition, Robot EBG3 from the Eugen Bolz school in Rottenburg fought against its colleague, FLG2 from the Friedrich List school in Reutlingen. The Eugen Bolz robot worked on the paddle-wheel principle, and won the competition. Third place went to Robot FSG2 from the Friedrich Schiller school in Pfullingen. A special award was made to Robot EBG1 from Rottenburg; the panel of judges was greatly taken by the idea of sucking the balls up in the air with the aid of a blow-dryer motor and then letting them drop into a box.

The rewards for the three winning teams were further products from the sponsor, fischertechnik, with which they could continue with their experiments. Their models were also displayed on the fischertechnik stand at the Didacta '99 exhibition, and all the school-children were invited to make a conducted tour of the DaimlerChrysler works in Sindelfingen. The winner groups could, among other things, cast a glance at the co-sponsor's research laboratory and enjoy a trip round the test track.

The complete competition event was also presented live on the Internet, where photographs were also on display. So, have a look at them under [www.fischertechnik.de/Ausbildung](http://www.fischertechnik.de/Ausbildung) where a link will also bring you to the competition presentation of the Technology College in Reutlingen. You may also click on "Crazy Robots '99" under [www.fischertechnik.de/links](http://www.fischertechnik.de/links)

Young people do research - with fischertechnik

When fire brigades are called out in an emergency, not only their equipment is important but also their speed of response. Sebastian Schenk (age 12 years) and Stephan Jennewein (13) of Mainz have been thinking about the seconds that count when human lives are to be saved. The result: a computer-controlled fire engine with which these two young design engineers took third place in the "Technical" section of the Rheinhessen regional division of the "Young People do Research" competition.

The system developed by the two schoolboys from the Gutenberg school in Mainz saves the firemen work by opening doors and equipment stores, thus saving them time. To demonstrate their ideas, they built a model out of fischertechnik which is controlled via an interface and a computer. Motors control the access to the equipment rooms and the doors. Sensors react when end-positions have been reached. The computer processes the digitalized items of information from the sensors. The system can be expanded so that it can control pumps or other units, for instance.

We would like to congratulate Sebastian and Stephan most heartily for the third place. Incidentally, these two intend to take part in next years "Young People do Research" competition, and are already hard at work on a fischertechnik model. So - here's wishing them success!

**(Pages 4 and 5)**

The new construction kits from fischertechnik are described in detail in the attached 1999/2000 catalogue, on the first two double pages. Look at them at once!

**(Pages 6 and 7)**

This double page, entitled "Letter box", contains a selection of models developed by some of some of our Fan-Club members. We decided not to translate the texts, because "a picture says more than 1,000 words".

**(Page 8)**

Learning is child's play with the Focus Kits

How does a gearbox work? What does switching in parallel mean? How do structures react to loads? These and many more technical questions can be answered by the new educational Focus Kits from fischertechnik. They are designed for use in technical teaching in college and at work, at the basic and secondary levels, and were developed with the aim of making technical situations easy to learn and understand. The three new Focus Kits give detailed explanations of their subjects: mechanics, electric circuits, and structures.

The "Mechanics" kit allows a broad range of mechanical systems to be produced, including rotating movements and their conversion into linear or oscillating movements, drive transfer, gear systems, chains, drive pulleys and belt drives. The mathematical basis is also explained for gearing and speed ratios, laws of leverage, and levels of efficiency.

The "Electric Circuits" kit augments the mechanics kit by adding such subjects as switching in parallel and in series, circuit diagrams and symbols, and the use of switches and motorised gear systems. The kit includes a motor, gears, sensors, switches, lamps, cables with push-in connections, and basic fischertechnik components. A 9-volt power supply is also needed.

The laws of static forces are explained in the "Structures" kit, where the main topics are the effects of shape on rigidity, the reaction of structures to loads, cross-members, and connecting parts, frame constructions, and the centre of gravity. The new educational Focus Kits are suitable for use by groups of two or three school-children, and are an ideal aid for well planned, practical work.

The book about the Focus Kits offers a view of the huge spectrum of possibilities they open up, and it will be available from fischertechnik in September. It contains easily understandable courses, an introduction to building with the models, exercises, and working sheets that can be photocopied, as well as an information section with suggested solutions, ideas for further extensions, and a short introduction to the basic fischertechnik construction system.

**(Supplement - Club model No. 14)**

Summer time - solar time

The Fan Club Model: "Sun Racer"

The Sun Racer model can be built with the Profi Solar kit and one or two additional parts such as a second solar module (see parts list). The second solar module is wired up in parallel with the first. It is necessary to be rather ingenious at this stage, as the instructions show, but with two paper clips pulled out straight or a length of wire of the same thickness the problem is easily solved.

If the solar motor, as in this model, is powered by two solar modules, it will be able to produce a good speed even with little sunlight. The Goldcap will be charged up even more quickly, and even the drive to the big flywheel will not represent any problem. Given decent sunlight and a flat asphalt surface, this model will go charging off at full speed.