



## Aims 09/10:

### Overall Aims

- Win the competition
- Qualify for the World Championships in Singapore

### Mobility Robot Aims

- Reduce overall robot weight by 10 kg
- Provide stabilized, gimbal mounted LIDAR
- Design and build a highly capable composite arm
- Improve control and image feedback lag
- Win the mobility award

### Autonomous Robot Aims

- Design and build a new robot
- Provide stabilized, gimbal mounted LIDAR
- Win in the autonomous/mapping section of competition

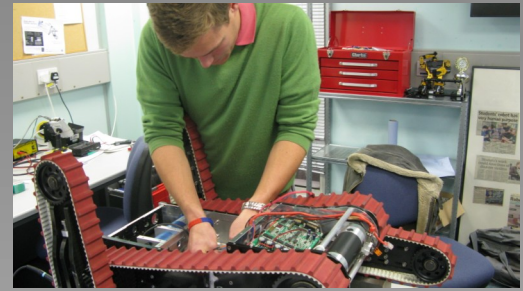
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Warwick Mobile Robotics, an MEng fourth year group project, is tasked with designing and building a search and rescue robot to compete in the RoboCup Rescue Competition 2010.



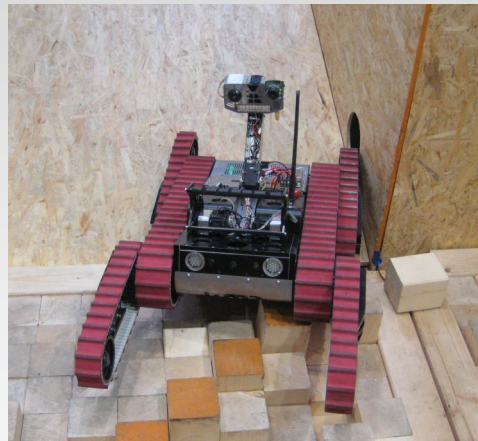
Work starts on the mobility robot



Right: Concept carbon fibre arm design

The robot this year will build on the success of last year's team who came third at the European competition and winning a special commendation for manoeuvrability.

This year will see the introduction of a second robot to the WMR arsenal—a robot devoted to the automated section of the competition. For the first time in the history of WMR an interdisciplinary team has been formed. Seven MEng Engineering students from various disciplines are working to provide the hardware for both the mobility and autonomous robots. Four MSc Computer Science students are providing the autonomous software that will provide automated victim location and arena mapping in the autonomous sections of the competition. Both robots will be used simultaneously at the competition with just one person driving the mobility robot using the video feeds and other sensor data coming back from the robot.



08/09 Robot at the RoboCup (Euro) 2009

One major problem with last year's robot was endurance, especially when traversing the most challenging terrain; 45 degree slopes for example. To help solve this problem a massive weight reduction is planned. A prototype, laser-cut sheet steel chassis is currently being made and if successful could lead to the mobility robot having a similar composition. Investigations into composite materials are looking very promising for the robot arm and could also contribute to weight reduction.

## Warwick Mobile Robotics

Innovating Mobile Robotics through Research and International Competition

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