Control In The Motor Industry Essay, Research Paper

Control in the Motor Industry To: Browns Motor Company From: x (IT Consultant for Control Systems

Ltd) You can use control in

industry to quicken the process of designing and manufacturing products. You

can use a computer program to design products, and to send out instructions to

make a machine operate in a particular way. Computer Aided Design Engineers and designers to

help plan and construct things such as ships, bridges, roads, and in the case

of the motor industry, cars, use Computer Aided Design (CAD). CAD software contains many

features allowing you to: ¤ Calculate

dimensions ¤ Draw

objects in 2D, and display them as solid objects ¤ View

objects from different angles ¤ Rotate

drawings ¤ Simulate

and test the finished design Using CAD software, designers

can see any problems with the design before making is started. The following resources can be

used to carry out CAD: ¤ Database ?

Used to hold co-ordinates for detailed drawings ¤ Keyboard

& Mouse ? Used to input co-ordinates for lines into the system, the mouse

also allows you to move the cursor and click on things on the screen. ¤ Graphics

tablet ? A flat pad, which is drawn on with a special pen. The surface is touch

sensitive, movement is transferred to the monitor ¤ Scanner ?

Can be used to input text and designs into the computer ¤ Digitiser ?

Converts video signals into the computer from a video camera ¤ Joystick ?

A joystick can be used to input dimensions into the computer To display your design you

need to use the following devices: ¤ Screen ? A

monitor with a high resolution should be used to give a clear image ¤ Printer ?

Most suitable would be an ink jet or laser printer ¤ Plotter ? A

computer controlled arm moves the pen up and down, and plotters can also be

used to cut out shapes from material ¤ 3D-model

maker ? A machine that takes a 3D object, then makes a model using laser beams

on a material. The benefits of CAD are as

follows: ¤ Drawings

can be completed faster ¤ Changes can

be made quickly, without you having to begin the design again ¤ You can

zoom into the image to allow you to pay attention to fine detail However CAD does have it?s

downfalls, which are the following: ¤ All the

work could be lost if the system crashes ¤ Training

staff to use the software is expensive ¤ Purchasing

equipment and software needed is often costly ¤ Skilled

computer operators are needed Computer Aided Manufacture CAM, or Computer Aided

Manufacture is a process of helping stages of the process of production using

computers. This is useful because: ¤ It speeds

up the process of production ¤ Less workers

need to be employed ¤ People do

not need to be employed to complete tedious and boring tasks ¤ Less

mistakes are made, and a high quality product is manufactured ¤ Less

accidents are likely to happen, which makes the factory a safer place ¤ Machines

can work 24 hours a day, increasing output, which will in turn increase sales

and profit However there are some

negative points to using Computer Aided Manufacture: ¤ Machines

needed can be very expensive ¤ In the case

of machines breaking down, repair can be costly You can use Computer Aided

Design and Computer Aided Manufacture together to decrease manufacturing and

increase time, costs, and sales greatly. You can use CAD to design the

car and then pass the instructions to the CAM machines for the manufacture of the

cars. Fewer errors will be made,

money is saved, fewer people need to be employed, and the time take to design

and make the vehicle is cut drastically.