

Context – B & R Engineering Ltd

James Broadfield founded Broadfield Engineering, just outside Birmingham, in 1946. In 1962, Paul Rose joined the flourishing business as a partner and it was renamed B & R Engineering. It is near to its main customers, the Midland car industry and its raw material suppliers, the steel industry, making this an ideal location.

In 1984, Paul's son, Andrew, joined the business straight from school at 16. Today, following the retirement of both James and Paul, Andrew is the Managing Director and sole shareholder of B & R Engineering Ltd at its new bigger factory also just outside Birmingham.

B & R Engineering Ltd specialises in the manufacture of machine press tools and prototype parts. Its main customers are component companies that produce components, such as gear boxes, clutches and brake assemblies, for the motor car industry nationally and internationally (see chart).

The company has increased its turnover by 40% in the last 18 months and is now planning further investment in new technology to ensure it stays competitive. It has also invested heavily in CAD/CAM, using American software which has been specially developed for its needs.

The workforce consists of

Andrew Rose – Managing Director and owner

Peter Daniels – Works Manager

Shefali Mir – Accountant/Office Manager

5 Machine Tool Makers

3 CNC Operators*

Joe Jopling – Workshop Support Technician

Mary Boyd – Receptionist/WP Operator

Andrea Kitchen – part-time Wages Clerk

Many of the machines are on an automated 24-hour cycle, so staff work shifts to oversee the machines. Early shift 6 am – 2 pm, afternoon shift 2 pm – 10 pm, night shift 10 pm – 6 am.

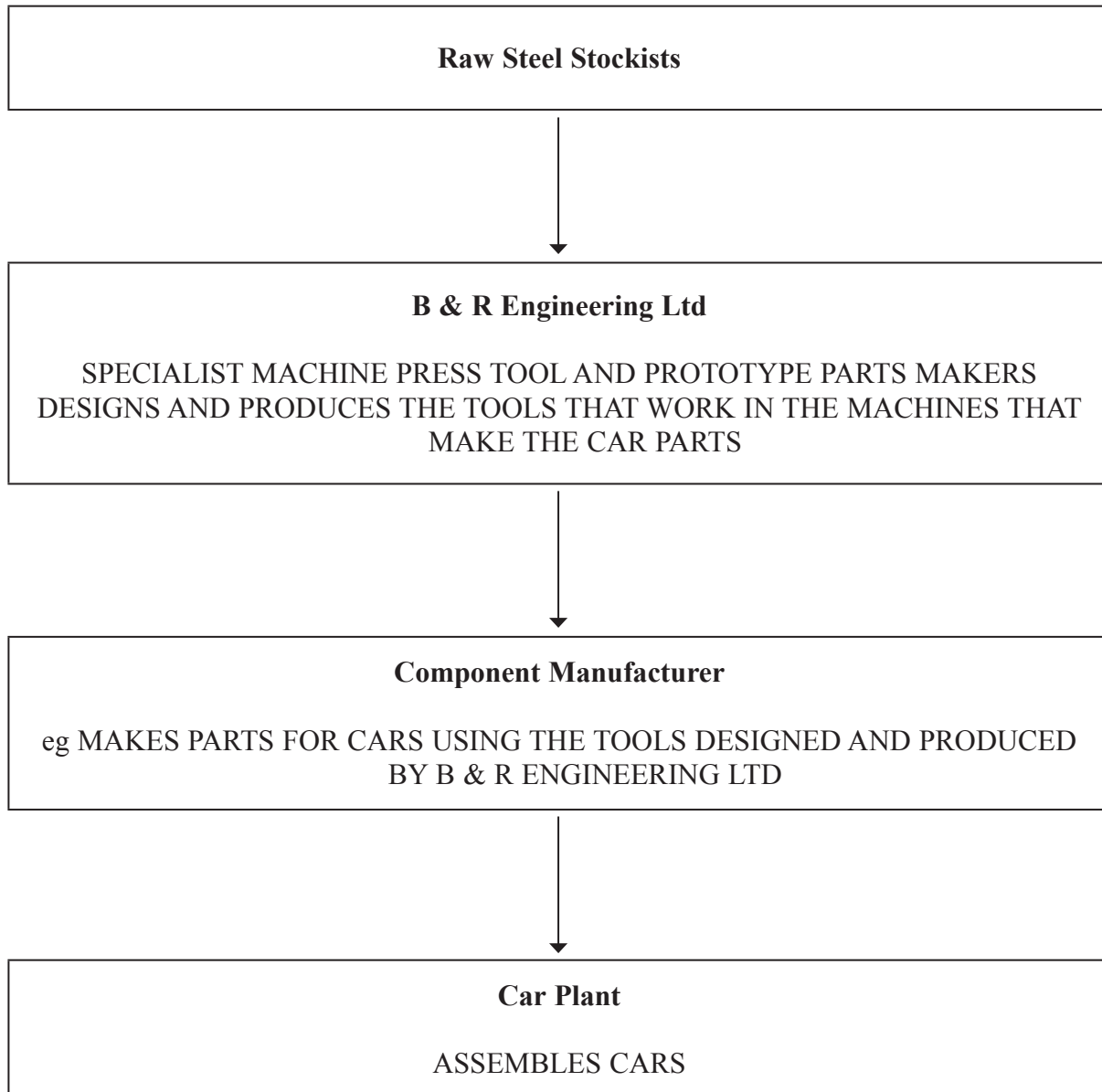
The machine tool makers and CNC operators are very highly skilled and, along with Joe Jopling, trained to use the machinery.

B & R Engineering Ltd relies heavily on electronic communication and, because the factory is potentially a dangerous environment, there are many health and safety notices around the factory.

* CNC stands for computer numerical control and refers to a computer that drives a machine tool – candidates only need to know that a CNC operator operates the computer which drives the machine tool.



The following chart shows where the business fits into the chain of production for the car manufacturing industry.



Answer ALL questions.

1. B & R Engineering Ltd has invested in CAD/CAM using American software which has been especially designed for its needs. Both the machine tool makers and CNC operators are given on-the-job training to use this new software.

(a) (i) Explain **TWO** reasons why B & R Engineering Ltd's employees receive this training.

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(ii) Do you think employees would be happy to receive this training?

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Many of the CAD/CAM machines are on an automated 24-hour cycle. This means some employees have to work shifts: 6 am – 2 pm, 2 pm – 10 pm and 10 pm – 6 am.

(b) Assess the importance of a shift system to B & R Engineering Ltd.

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Q1

(Total 20 marks)

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2. The environment at B & R Engineering Ltd is potentially very dangerous because of the machinery, fork lift trucks and other moving equipment. Health and Safety notices are therefore placed all over the factory. These are prepared in-house by Mary Boyd, the WP operator, using DTP.

(a) (i) Discuss the reasons Mary might have had for using DTP to prepare the Health and Safety notices.

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(ii) Why do you think B & R Engineering Ltd uses notices in its factory?

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The machine tool makers and CNC operators are paid high salaries.

(b) (i) What is the difference between a wage and a salary?

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(2)

Andrea Kitchen, the part-time wages clerk, uses a computer payroll program to calculate salaries. Employees are paid by BACS.

(ii) How does paying employees by BACS benefit B & R Engineering Ltd?

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(4)

(Total 20 marks)

Q2



3. B & R Engineering Ltd relies heavily on electronic communication. It communicates with some customers and suppliers through:

- email
- video conferencing.

(a) Justify the reasons B & R Engineering Ltd has for using either email OR video conferencing.

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Q3

(Total 20 marks)

Quality of Written Communication: 3 marks

TOTAL FOR PAPER: 63 MARKS

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