

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.

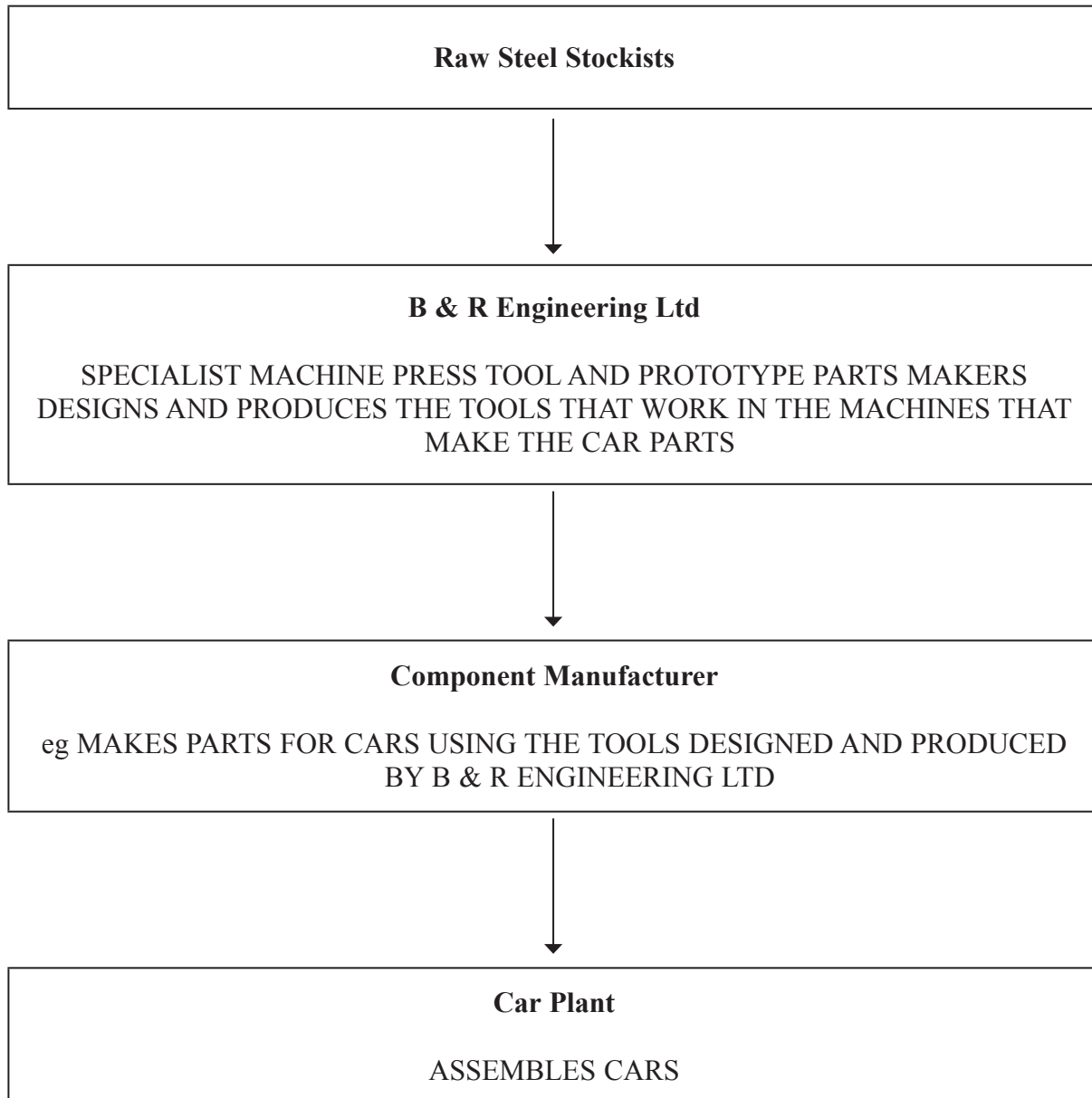
The machine tool makers and CNC operators are very highly skilled and, along with Joe Jopling, trained to use the machinery.

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. (a) Complete each of the sentences below. Circle the **ONE** word or phrase which gives the best answer.

(i) To obtain steel from a supplier, B & R Engineering Ltd would use

- an invoice an order a cheque a delivery note

(ii) If a letter was signed 'Yours faithfully', it would begin

- Dear Sir Dear Mrs Boynton Dear Mr Brown Dear Ted

(iii) An alphabetical print out of B & R Engineering Ltd's employees is

- a calculation a search an edit a sort

(iv) A list of items to be discussed at a meeting is

- an action plan an agenda an itinerary a flowchart

(v) A is used for calculations in a spreadsheet

- font field file formula

(vi) Employees working hours to suit them is

- flexitime overtime part-time full-time

(6)



(b) For each of the questions (i)–(iv), write the letter A, B, C or D to show the correct answer. Use the box provided.

(i) Reading postcodes on letters is

- A OCR (optical character reader)
- B MICR (magnetic ink character recognition)
- C EPOS (electronic point of sale)
- D EDI (electronic data interchange)

Answer

(ii) An input device is a

- A computer monitor
- B plotter
- C printer
- D digital camera

Answer

(iii) The chain of command is

- A the authority to perform a task
- B the levels of authority in a business
- C the path along which decisions and orders pass
- D the number of workers directly controlled by one person

Answer

(iv) A might be used in a presentation.

- A questionnaire
- B style sheet
- C transparency
- D schedule

Answer

(4)



B & R Engineering Ltd contacts its customers and suppliers through email and video conferencing.

(c) (i) What is an electronic mailbox?

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(2)

(ii) Why might B & R Engineering Ltd use email?

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(iii) Explain the benefits of using video conferencing might bring to B & R Engineering Ltd.

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(5)

(Total 20 marks)

Q1

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2. Health and safety is important at B & R Engineering Ltd because of the machinery used. Health and Safety notices are placed in all of the workshops. These notices are prepared using desktop publishing (DTP).

(a) (i) Explain how the facilities in DTP will help in preparing these Health and Safety notices.

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(6)



As well as the notices, employees also have regular presentations on health and safety.

(ii) Why do you think it might be a good idea to have presentations?

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The machine tool makers and CNC operators are paid a salary.

(b) (i) What is meant by a salary?

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(2)

Income tax is deducted from all employees' salaries.

(ii) Name something else which is deducted from an employee's salary.

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(1)



All employees at B & R Engineering Ltd are paid by BACS instead of by cheque.

(iii) Explain why being paid by BACS instead of by cheque benefits employees.

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(3)

Some employees who work shifts are paid an extra allowance.

(iv) Why do you think these shift workers get paid an extra allowance?

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(2)

(Total 20 marks)

Q2

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3. 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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(8)

Q3

(Total 20 marks)

Quality of Written Communication: 3 marks

TOTAL FOR PAPER: 63 MARKS

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