



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
Cambridge International Level 3 Pre-U Certificate
Principal Subject

BUSINESS AND MANAGEMENT

9771/02

Paper 2 Strategic Decisions

May/June 2011

Additional Materials: Answer Booklet/Paper

3 hours

READ THESE INSTRUCTIONS FIRST



If you have been given an Answer Booklet, follow the instructions on the front cover of the Booklet.

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

You may use a soft pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [] at the end of each question or part question.

This document consists of **7** printed pages and **1** blank page.



Rolls-Royce Group plc (RR)

Introduction

Rolls-Royce is a world-leading provider of power generating systems and associated services for use on land, at sea and in the air. The company, once famous for its prestige motor cars, sold the car business and the rights to the brand name for automobiles to BMW in 1980. RR employs over 38 000 people in offices, manufacturing and service facilities in 50 countries. The current market capitalisation (September 2010) is £11.35 billion and RR has a price to earnings ratio of 5.08. The company's strategy is built around five key objectives, which are to: 5

- 1 meet the needs of its four core markets
- 2 invest in technology, infrastructure and capability
- 3 develop a competitive portfolio of products and services
- 4 grow market share 10
- 5 provide superior product-related services.

Rolls-Royce's major markets

RR has established a strong market position in its four core markets.

Civil Aerospace

RR engines power over 30 types of commercial aircraft and have a strong position in all sectors of the market. Over 13 000 engines are currently in service with 650 airlines and freight operators. RR provided the engines for the iconic Concorde. The key product is the Trent engine range, which recently won the contract for the new Boeing 787 Dreamliner aircraft. 15

Defence Aerospace

RR engines power aircraft in all of the major military aviation market sectors, including military transport aircraft, helicopters, trainer aircraft, combat aircraft, reconnaissance and unmanned aerial vehicles. There are currently 18 000 engines in service for 160 customers in 103 countries. The company has a long heritage in this market and produced the Spitfire Merlin engine, powered the Harrier Jump Jet and produces the engines for the new Eurofighter Typhoon combat aircraft. 20

Marine

RR is committed to the marine market and maintaining its world-leading position in the design, development, supply and support of products and systems for commercial and naval customers worldwide. RR provides power and propulsion systems to over 2 000 customers (including 70 navies) on 30 000 vessels worldwide. 25

Energy

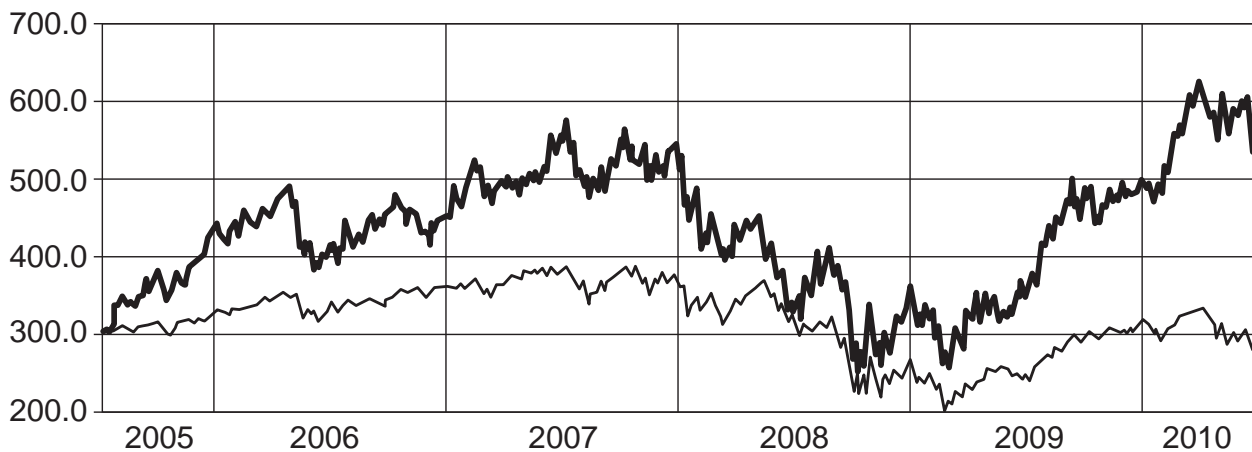
RR has supplied power systems (gas turbines and components for nuclear power stations) to customers in over 120 countries. These customers include onshore and offshore oil and gas companies and electric power generators. 30

Division	Current order book £million	Revenue £million (2009)
Civil aerospace	47 000	4481
Defence aerospace	6500	2010
Marine	3500	2589
Energy	1300	1028

Table 1: RR core markets

Clear skies ahead

RR seems to be negotiating the difficult economic environment better than many large multinationals and this has benefited its shareholders. The company has increased its dividend per share from 14.30p (2008) to 15.00p (2009) and the earnings per share for the year ended December 2009 was 120.38p. The upward trend in the share price and the company accounts are further evidence of the relative success of RR. 35



Key: dark graph line = RR, light graph line = FT100 index (relative performance)

Figure 1: RR share price performance over 5 years (in pence) v the FT100 index

New contracts have been flowing in for RR, with orders from Virgin Airlines and Turkish Airlines alone worth over £600m. The popular Trent 700 aero engine has 400 new units on order and RR must produce 4 a week to cater for demand. The success of the engine has raised serious logistical issues. The parts warehouse stocks 5 engines' worth of stock and each engine has around 35 000 parts. The order book continues to grow, especially in service contracts. The company has quickly grown service revenues over the past 10 years. Services now account for approximately 50% of revenue for the group. Customers such as major airlines can buy service packages lasting up to 20 years. These service packages can include monitoring, spare parts and maintenance. At any one time, RR's service support centre monitors roughly 9000 engines carrying 400 000 passengers. This monitoring of engines is done via a satellite link and is conducted 24 hours a day, 7 days a week and equates to approximately 1.5 million measurements per day. 40 45 50

The growth of the BRIC (Brazil, Russia, India and China) economies is transforming the strategic direction of marketing and operations management at RR. The company now outsources some of its manufacturing and service contracts to the BRIC economies and this has raised issues about quality control and the supply chain. RR now has production and service facilities operating across 5 continents. The rapid expansion of these countries is providing a relatively new, vast and potentially lucrative market for the diversified nature of RR's products. India and China are the 55

world's fastest growing aviation markets and their domestic infrastructure spending on various projects including power stations is unprecedented.

Singapore has also benefited from the overseas expansion of RR. The company recently relocated its Marine headquarters from London to this strategically located and pro business country. In addition the company has built a \$320m aero engine production facility in the same location. RR is acutely aware of the growing importance of the emerging economies in this region of the world. Singapore has an abundance of highly skilled engineers and a Government that is keen to attract new manufacturing multinationals. Low corporate tax rates and a new business park with state-of-the-art infrastructure have made the move to Singapore even more appealing. The workforce also has a worldwide reputation for excellent quality and productivity.

The uncertainty surrounding the perceived undervaluation of the Chinese Yuan (currency) has highlighted the growing threat of volatile exchange rates. The value of sterling has seen large fluctuations against many major currencies including the Euro and the US dollar. This has complicated international trade and the operations of multinationals such as RR. The growth of global trade provides many potential opportunities and threats.

RR is at the cutting edge of innovation. Its engines can perform for up to 50 million miles and the latest engines, such as the Trent 1000, are amongst the most fuel efficient in the world, saving airlines millions of pounds. RR is currently considering whether to invest in the development of a modified engine for trainer aircraft. The modifications will lead to a reduction in the fuel consumption of these particular aircraft. An independent analyst has predicted that this project will initially cost RR £21m (see Table 2). Innovations such as this can provide a major competitive edge as airlines seek to cut costs. RR is also at the forefront of developments in new components and its Materials Research Laboratory researches new alloys and construction methods. The company has been vocal in its concern that it cannot find enough skilled engineers in the UK and it is being forced to recruit overseas from countries with a surplus of engineering talent.

End of year	Net annual cash flow (£)
0	(21m)
1	2m
2	4m
3	9m
4	18m

Table 2: Estimated net annual cash flows for the modified engine in trainer aircraft

Turbulence awaits?

RR is exposed to a number of uncertainties. The company has a risk committee that uses a structured approach to identify, assess and manage risk. Currently RR assesses the uncertainty in its markets using four broad sub-groups.

1 Business environment risks

RR is currently exposed to the cyclical downturn in the worldwide economy. This has had an impact on the number of passengers travelling by air and thus on aircraft and engine demand. UK unemployment has risen to nearly 2 million and this trend could be replicated in many parts of the world.

Governments are increasingly trying to address the issue of climate change and RR is aware of the negative contribution of engine emissions. Accordingly, nearly two-thirds of the total research and development budget (£864m) was spent on improving fuel efficiency and cutting emissions.

2 *Strategic and competitive risks*

Increasing competitive pressure is a major issue for RR. The markets RR operates in are very competitive and include some large and successful multinationals, such as General Electric and Pratt & Whitney. 95

Government imposed export controls and regulations are very important to RR. This is especially true of the defence market as the UK Government limits the types of equipment that can be sold to certain countries. If RR does not comply with its obligations then this could present serious long-term problems to the company as well as endangering its ethical reputation. 100

3 *Financial risks*

The key risks in this area are foreign exchange rate fluctuations, interest rate changes, commodity prices, credit risks and regulatory developments.

4 *Operational risks*

105

RR is dependent on a reliable supply chain. Some of the key components for the product portfolio are procured overseas. The continued success of the company requires rigorous quality assurance and contingency planning in this operational area. IT security is another key issue. RR uses data that are transmitted globally and the security of the information flows is critical to the company. The company is acutely aware of its ethical obligations. This covers areas such as sourcing raw materials and the health and safety of its global workforce. 110

Selected financial data for Rolls-Royce are shown in Tables 3 and 4.

	2009	2008
	£m	£m
Revenue	10 414	9 082
Cost of sales	(8 303)	(7 278)
Gross profit	2 111	1 804
Other operating income	182	153
Commercial, administrative and R&D costs	(1 119)	(1 102)
Operating profit	1 174	855

Table 3: Consolidated income statement: year ended December 31, 2009 (extract)

	2009	2008
	£m	£m
ASSETS		
Non-current assets		
Intangible assets	2 472	2 286
Property, plant and equipment	2 009	1 995
Investments – joint ventures and associates	495	398
Other financial assets	1 072	1 623
	6 048	6 302
<hr/>		
Current assets		
Inventory (stock)	2 432	2 600
Trade and other receivables (debtors)	3 877	3 929
Other financial assets	103	46
Cash and cash equivalents	2 962	2 471
	9 374	9 046
<hr/>		
Total assets	15 422	15 348
<hr/>		
LIABILITIES		
Current liabilities		
Trade and other payables (creditors)	(5 628)	(5 735)
Other current liabilities	(684)	(704)
	(6 312)	(6 439)
<hr/>		
Non-current liabilities		
Borrowings	(1 787)	(1 325)
Other non-current liabilities	(3 541)	(5 359)
	(5 328)	(6 684)
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Total liabilities	(11 640)	(13 123)
<hr/>		
Net assets	3 782	2 225
<hr/>		
EQUITY		
Capital and reserves		
Called-up share capital	371	369
Share premium account	98	82
Other reserves	678	854
Retained earnings	2 635	920
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Total equity	3 782	2 225
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Table 4: Consolidated balance sheet at December 31, 2009 (extract)

Read all the case study material and then answer all the following questions.

Section 1

- 1 'RR is currently considering whether to invest in the development of a modified engine for trainer aircraft.' (lines 74–75)
- (a) (i) Using the data in Table 2, calculate the Accounting/Average Rate of Return (ARR). [3]
- (ii) Using the data in Table 2, calculate the Net Present Value (NPV) at a discount rate of 5%.
Discount factor: Year 0 = 1.00; Year 1 = 0.95; Year 2 = 0.91; Year 3 = 0.86; Year 4 = 0.82 [3]
- (b) With reference to part (a), comment on the usefulness of these investment appraisal results for Rolls-Royce. [6]
- (c) Apart from investment appraisal results, analyse **two** factors Rolls-Royce should consider before making a decision to develop a modified engine for trainer aircraft. [13]

Section 2

- 2 Discuss whether Rolls-Royce is meeting the objectives of its shareholders. [25]
- 3 Evaluate how volatile foreign currency exchange rates could impact upon Rolls-Royce's future operations management strategies. [25]
- 4 Recommend and justify a strategy which Rolls-Royce might adopt if there is a significant decline in demand from their existing military customers. [25]

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