Aerospace Systems 2019 v1.1

IA1 high-level annotated sample response March 2019

Project — folio (25%)

This sample has been compiled by the QCAA to assist and support teachers to match evidence in student responses to the characteristics described in the instrument-specific marking guide (ISMG).

Assessment objectives

This assessment instrument is used to determine student achievement in the following objectives:

- 1. recognise and describe the operational systems problem, aerospace technology knowledge, concepts and principles, and systems thinking habits and systems thinking strategies in relation to aerospace management, safety, airline and/or airport operations
- 2. symbolise and explain ideas, a solution and relationships in relation to aerospace management, safety, airline and/or airport operations
- 3. analyse the operational systems problem and information in relation to aerospace management, safety, airline and/or airport operations
- 4. determine solution success criteria for the operational systems problem
- 5. synthesise information and ideas to propose a possible aerospace management, safety, airline and/or airport operations solution
- 6. generate an aerospace management, safety, airline and/or airport operations solution to provide data to assess the feasibility of the proposal
- 7. evaluate and refine ideas and a solution to make justified recommendations
- 8. make decisions about and use mode-appropriate features, language and conventions to communicate development of the solution.



Instrument-specific marking guide (ISMG)

Criterion: Retrieving and comprehending

Assessment objectives

- 1. recognise and describe the operational systems problem, aerospace technology knowledge, concepts and principles, and systems thinking habits and systems thinking strategies in relation to aerospace management, safety, airline and/or airport operations
- 2. symbolise and explain ideas, a solution and relationships in relation to aerospace management, safety, airline and/or airport operations

The student work has the following characteristics:	Marks
 accurate and discriminating recognition and discerning description of the operational systems problem, aerospace technology knowledge, concepts and principles, and systems thinking habits and systems thinking strategies in relation to aerospace management, safety, airline and/or airport operations adept symbolisation and discerning explanation of ideas, a solution and relationships in relation to aerospace management, safety, airline and/or airport operations dept symbolisation and discerning explanation of ideas, a solution and relationships in relation to aerospace management, safety, airline and/or airport operations with visual frameworks, causal and feedback loops, flow charts, diagrams, sketches and/or pictures. 	4–5
 accurate recognition and appropriate description of the operational systems problem, aerospace technology knowledge, concepts and principles, and some systems thinking habits and systems thinking strategies in relation to aerospace management, safety, airline and/or airport operations competent symbolisation and appropriate explanation of some ideas, a solution and relationships in relation to aerospace management, safety, airline and/or airport operations with visual frameworks, causal and feedback loops, flow charts, diagrams, sketches and/or pictures. 	2–3
 variable recognition and superficial description of aspects of the operational systems problem, concepts or principles in relation to aerospace management, safety, airline and/or airport operations variable symbolisation or superficial explanation of aspects of ideas, a solution, or relationships in relation to aerospace management, safety, airline and/or airport operations. 	1
does not satisfy any of the descriptors above.	0

Criterion: Analysing

Assessment objectives

- 3. analyse the operational systems problem and information in relation to aerospace management, safety, airline and/or airport operations
- 4. determine solution success criteria for the operational systems problem

The student work has the following characteristics:

- insightful analysis of the operational systems problem, and relevant and research information in relation to aerospace management, s to identify the relevant elements, components and features, and the problem
- astute determination of essential solution success criteria for the
- · considered analysis of the operational systems problem, and rele and research information in relation to aerospace management, s to identify the relevant elements, components and features, and t the problem
- · logical determination of effective solution success criteria for the
- appropriate analysis of the operational systems problem and aero research information in relation to aerospace management, safety identify some of the elements, components and features of the pr
- · reasonable determination of some solution success criteria for the
- · statements about the operational systems problem, or information management, safety, airline and/or airport operations
- · vague determination of some success criteria for the operational
- · does not satisfy any of the descriptors above.

	Marks
ant aerospace systems, technology, safety, airline and/or airport operations their relationship to the structure of operational systems problem.	6– <mark>7</mark>
evant aerospace systems, technology, safety, airline and/or airport operations their relationship to the structure of operational systems problem.	4–5
ospace systems, technology, and y, airline and/or airport operations to roblem e operational systems problem.	2–3
n in relation to aerospace systems problem.	1
	0

Criterion: Synthesising and evaluating

Assessment objectives

- 5. synthesise information and ideas to propose a possible aerospace management, safety, airline and/or airport operations solution
- 6. generate an aerospace management, safety, airline and/or airport operations solution to provide data to assess the feasibility of the proposal
- 7. evaluate and refine ideas and a solution to make justified recommendations

The student work has the following characteristics:	Marks
 coherent and logical synthesis of relevant aerospace systems, technology and research information, and ideas to propose a possible aerospace management, safety, airline and/or airport operations solution purposeful generation of an aerospace management, safety, airline and/or airport operations solution to provide valid data to critically assess the feasibility of a proposal critical evaluation and discerning refinement of ideas and a solution using success criteria to make astute recommendations justified by data and research evidence. 	8– <mark>9</mark>
 logical synthesis of relevant aerospace systems, technology and research information, and ideas to propose a possible aerospace management, safety, airline and/or airport operations solution effective generation of an aerospace management, safety, airline and/or airport operations solution to provide valid data to effectively assess the feasibility of a proposal reasoned evaluation and effective refinement of ideas and a solution using success criteria to make considered recommendations justified by data and research evidence. 	6–7
 simple synthesis of aerospace systems, technology, and research information and ideas to propose a possible aerospace management, safety, airline and/or airport operations solution adequate generation of an aerospace management, safety, airline and/or airport operations solution to provide relevant data to assess the feasibility of a proposal feasible evaluation and adequate refinement of ideas and a solution using some success criteria to make fundamental recommendations justified by data and research evidence. 	4–5
 rudimentary synthesis of partial aerospace systems, technology, or research information and/or ideas to propose an aerospace management, safety, airline and/or airport operations solution partial generation of an aerospace management, safety, airline and/or airport operations solution to provide elements of data to partially assess the feasibility of a proposal superficial evaluation of ideas or a solution using some success criteria to make elementary recommendations. 	2–3
 unclear combinations of information or ideas generation of elements of an aerospace management, safety, airline and/or airport operations solution identification of a change about an idea or the solution. 	1
 does not satisfy any of the descriptors above. 	0

Criterion: Communicating

Assessment objective

8. make decisions about and use mode-appropriate features, language and conventions to communicate development of the solution

The student work has the following characteristics:

- discerning decision-making about, and fluent use of,
- written and visual features to communicate about a solution
- language for a technical audience
- grammatically accurate language structures
- folio and referencing conventions.
- variable decision-making about, and inconsistent use of,
- written and visual features
- suitable language
- grammar and language structures
- folio or referencing conventions.
- does not satisfy any of the descriptors above.

Marks
3– <u>4</u>
1–2
0

Context

A regional airline, Realway, is considering reducing its flights from a coastal town (CT) because of a 50 per cent drop to 62 300 passengers over the previous 12-month period. Realway found this route is not profitable, as many CT flights are well under capacity.

Use of a hub-and-spoke aviation transportation system at CT means that almost all of Realway's short-range jet aircraft (with single-class seating and a capacity for 100 passengers) fly on spokes between CT and a hub city airport, offering very few or no direct flights to other regional towns.

Regional airports near CT (flying distance)

- The closest regional airport is 235 kilometres away.
- There are six regional airports within 500 kilometres and another eight within 800 kilometres.
- The hub city airport is 875 kilometres away.

Realway currently operates two flights to and from CT every week day, with only one flight on Saturdays and Sundays.

Passengers are often required to spend many hours travelling to and from the hub city airport en route to their final destination. This has caused a lot of frustration and resulted in many customers choosing to find alternative transportation that is more convenient and cost effective.

Realway requires an equitable solution to this operational problem. One that will meet the needs of the CT travelling public and enable Realway to operate at a net profit of \$4 per passenger per 100-kilometre flying distance.

Task

There are two parts to this assessment: Part A

- Use a folio to document a solution to Realway's CT operational problem. In the folio, document the Aerospace Systems problem-solving process used to develop and propose a solution. Your folio should include
- aircraft types, range, passenger yield and load factor
- a recommendation regarding the minimum flight distance between towns to provide a revenue available seat kilometre (RASK) basis for making decisions about route viability, including cost of available seat kilometre (CASK)
- analysis of Realway's current and proposed future service to customer model
- consideration of an increase in profitability rather than a decrease in customer service.

Part B

• Provide Realway with a summary report of your recommended solution to its operational problem.

Sample response

Criterion

Retrieving and comprehending Assessment objectives 1, 2

Analysing Assessment objectives 3, 4

Synthesising and evaluating

Assessment objectives 5, 6, 7

Communicating

Assessment objective 8

Total

Allocated marks	Marks awarded
5	5
7	7
9	9
4	4
25	25

The annotations show the match to the instrument-specific marking guide (ISMG) performance-level descriptors.

Part A	
	Table of Contents
Communicating	Table of Contents
[3–4]	Drobler: Evaluation
discerning decision-	What is known about the problem
making about, and	Clarifying unknowns and system relationships
fluent use of, folio and	The hub-and-spoke, and point-to-point transportaion systems.
reterencing	Regional airline characteristics.
conventions	System relationships
The response	Similar problems
includes the folio	Course and effect system relationships
convention of a	Cause and effect system relationships.
contents page (not	
included in the page	Success criteria
count). Headings	Developing ideas
display thoughtful and	Historical information
organise and	
communicate the	Economic indicators
student's thinking	Economics of the current situation
during the problem-	Evaluating options
solving process in	Aircraft
Aerospace Systems.	Routes
	Additional factors
	Proposing a solution for generation
	Aircraft selection
	Route selection
	Increasing services and changing to the SAAB 2000
	Recommendations
	Future considerations
	Summary report
	Realway Ptv Ltd flight operations problem
	Introduction
	Background
	Project objectives
	Options considered
	Aircraft
	Routes
	Recommendations
	Future considerations
	Reference list
	1

Retrieving and comprehending [4–5]

accurate and discriminating recognition and discerning description of the operational systems problem, aerospace technology knowledge, concepts and principles, and systems thinking habits and systems thinking strategies in relation to aerospace management, safety, airline and/or airport operations

The response shows accurate and discriminating recognition and discerning description through the use of what the student knows about the context of the problem and the incorporated and interrelated systems.

adept symbolisation and discerning explanation of ideas, a solution and relationships in relation to aerospace management, safety, airline and/or airport operations with visual frameworks, causal and feedback loops, flow charts, diagrams, sketches and/or pictures

The response provides evidence of a very high level of skill and proficiency when producing a diagram that displays the relationships between the spatial components of Realway's CT transportation system.

2

Problem exploration

What is known about the problem

Realway Pty Ltd is a regional airline carrier that has experienced a 50% drop in passengers (from 124,600 down to 62,300) over the past 12 months on its Coastal Town (CT) to Hub City Airport (HCA) route. This route uses the hub-and-spoke transportation model between CT and HCA and is considered unprofitable as many CT flights are well under capacity.

Realway currently operate the 100 seat Boeing 717 jet aircraft in a single class configuration between CT and HCA. The airline provides two flights per week day and one flight per day on the weekend. Currently there are no direct flights between CT and the 14 regional airports in the local area (Figure 1).

The geographical location of the regional airports and HCA is represented in Figure 1. Passengers are often required to spend many hours travelling to and from HCA enroute to their final destination. This has caused a lot of frustration and resulted in many customers choosing to find alternative transportation that is more convenient and cost-effective.

Realway requires an equitable solution to this operational problem that will meet the needs of the CT travelling public and enable Realway to operate at a net profit of \$4 per passenger per 100-kilometre flying distance.

Clarifying unknowns and system relationships

The hub-and-spoke, and point-to-point transportation systems

The hub-and-spoke transportation system operates through connections to destinations around a single hub city, which is generally the largest or most economically viable location in the area. This transportation model requires the movement of passengers to a hub location before connecting them with another flight towards a final destination (Cook and Goodwin, 2008). The movement of passengers from the hub location forms the spokes of the system (McDermott, 2017). The point-to-point system operates on the basis that passengers travel directly between destination airports. The point-to-point system may require passengers to travel to a number of locations before reaching a final destination. Table 1 outlines the advantages and disadvantages of each system (Cook and Goodwin, 2008).

Table 1 – Transport system comparison

The "Hub and Spoke" Sy	stem		The "Point-to-Point" Sy	stem	
Advantages	Advantages Disadvantages		Advantages	Disadvantages	
Cost efficient for the airline through an increase in passenger density (PLF)	Costly infrastructure at the hub		y infrastructure at the hub Passenger travel time is often reduced		
Central maintenance base	Possible bottle-neck due to traffic		Each centre can process passengers and cargo	Lower demand routes get eliminated	
Staff can be based at one location	Weather or compu close the hub airpo network or delays can cause ongoing	ter outages can ort, paralysing the to incoming aircraft disruptions	Weather or computer outages don't affect the whole network	More passenger processing required	
Better use of specific fleet capacity	Passengers must tr hub to get to their	avel through the destination	Lower demand routes can be easily reduced or eliminated	Aircraft fleet difficult to change	

Figure 1 – Regional airports

8 Regional Airports between 500km and 800km away



20 AL



Analysing [6–7]

insightful analysis of the operational systems problem, and relevant aerospace systems, technology, and research information in relation to aerospace management, safety, airline and/or airport operations to identify the relevant elements, components and features, and their relationship to the structure of the problem

The response identifies the relevant elements. components and features, and their relationship to the structure of the airline operational problem.

The response analyses research information that has a direct bearing on understanding the airline operational problem.

Regional airline characteristics

A regional airline is defined as an airline that operates regional aircraft to provide passenger

air services to communities without sufficient demand to attract a mainline service. Regional

airlines operate smaller aircraft and service smaller regional communities (Ashville Regional

indicate that Realway Pty Ltd meets the definition of a regional airline or at least a regional

To understand Realway's operational problem, it is important to consider whether Realway

is a full service, low-cost or hybrid airline. According to the International Airport Review

operational costs by offering no in-flight luxuries, operate a single class, operate a single

provides passengers with luxuries, several classes of travel and has many aircraft types in

their fleet. These luxuries include entertainment, a paid meal service and sometimes, extra

(Manuell, 2017), the main characteristics of a low-cost airline is one that reduces its

aircraft type and usually pay their staff less than mainline airlines. A full-service airline

leg room. Full service airlines are usually legacy airlines - airlines that have been in

Airport, 2018). Operating 100-seat regional jet aircraft, such as the Boeing 717, would

subsidiary of a mainline airline, such as Qantas or Virgin Australia.





System relationships

Similar problems

the routes serviced by Qantas (Qantas airways Limited, 2018).

200 seat aircraft (Boeing 737) from Cairns and Townsville to Brisbane (Webjet, 2017). not others.

Analysing [6–7]

insightful analysis of the operational systems problem, and relevant aerospace systems, technology, and research information in relation to aerospace management, safety, airline and/or airport operations to identify the relevant elements, components and features, and their relationship to the structure of the problem

The response provides evidence that shows an understanding of the complex relationships between the factors associated with the airline operational problem.

The response analyses information that has a direct bearing on understanding the airline operational problem.

astute determination of essential solution success criteria for the operational systems problem

The response displays evidence of an accurate assessment of the airline operational problem to identify success criteria that are of critical importance.

4

Contributing factors

Table 2 provides the results of an analysis of the strengths, weaknesses, opportunities and threats (SWOT) of factors concerned with Realway's CT to HCA route.

Table 2 – SWOT analysis of contributing factors

Internal to F	Realway Pty Ltd	
Strengths Existing facilities at CT and HCA (landside and airside operations) Existing passengers utilising the single fare service A fleet of short-range jet aircraft	Weaknesses The use of the hub and spoke system between CT and HCA Declining passenger numbers Unsuitable fleet aircraft mix	
External to F	Realway Pty Ltd	
Opportunities	Threats	
Increase the number of flights	Competition with other airlines	

Competition with other transport providers (e.g. bus, train, boat, etc.) Economic constraints

Increase profits

Increase the number of routes

passenger demands and costs.

Change fleet aircraft to better meet

Identifying success criteria

Success criteria have been identified based on an understanding of Realway's operational problem. It would seem that operating the airline with a net profit within a hub-and-spoke system is dependent on passenger demand (Cook and Goodwin, 2008). The costs of operating the system are high because about 40% of passengers have the hub as their origin or destination with the remainder passing through the hub to other destinations. Therefore, both the landside and airside facilities provided are inefficiently utilised, because the system caters for only about 60% of travellers (Cook and Goodwin, 2008).

Developing ideas

+

+

Cause and effect system relationships The relationships that exist between airline industry factors have both positive and negative effects. One such relationship is that between the number of flights offered, customer demand and satisfaction, and therefore profits. Figure 4 shows this relationship as a positive reinforcing loop. The diagram indicates that as the number of flights increase, customer satisfaction increases leading to more passengers and therefore more flights. As both factors increase, the result is that profits increase, allowing the airline to provide more flights. These relationships will be investigated further to determine a possible solution to Realway's operational Figure 4 – Reinforcing loop diagram showing cause and effect relationships Number of Flights Passenger Satisfaction +Profits Success criteria The solution must: meet the needs of the CT travelling public increase passenger satisfaction with Realway's proposed service model increase patronage across routes serviced by Realway produce a net profit of \$4.00 per passenger per 100km flying distance across routes serviced by Realway.

Historical information

The belief that an increase in customer satisfaction leads to greater passenger numbers is based on historical data. Qantas is a primary example of an airline growing from humble beginnings to a major airline by continually offering customers with more destination options (Qantas, 2018). The number of flights to popular destinations was increased, which lead to an increase in passenger numbers on these routes. This is a common growth strategy for many commercial airlines. The commercial costs associated with passenger movements are reduced resulting in lower ticket prices. Therefore, air travel is becoming more accessible to a greater proportion of the travelling public. Whilst the hub system is a common transport model, one of the disadvantages is that regional areas are often neglected because of low demand. This appears to be one of the issues facing Realway. Ideas will be developed through investigation of the types of aircraft that reduce airline costs and increase profits. Additionally, the current economics of the route will be used to determine the changes required to reduce ticket prices and increase flight frequency to a greater number of regional destinations.

Retrieving and comprehending [4–5]

problem.

adept symbolisation and discerning explanation of ideas, a solution and relationships in relation to aerospace management, safety, airline and/or airport operations with visual frameworks, causal and feedback loops, flow charts, diagrams, sketches and/or pictures

The response provides evidence of a very high level of skill and proficiency when sketching or drawing feedback loops to display the causal relationships between the systems associated with the airline operational problem.

Analysing [6–7]

insightful analysis of the operational systems problem, and relevant aerospace systems, technology, and research information in relation to aerospace management, safety, airline and/or airport operations to identify the relevant elements, components and features, and their relationship to the structure of the problem

The response analyses research information that has a direct bearing on understanding the complexity of the airline operational problem.

Retrieving and comprehending [4–5]

accurate and discriminating recognition and discerning descript of the operational systems problem, aerospace technol knowledge, concep and principles in relation to aerospa management, safe airline and/or airpo operations

The response show intellectual percept when describing the relevant economic measures associat with the airline operational probler

5

Aircraft selection

An investigation into current regional Australian networks and airlines indicates an apparent trend. Regional Express Airlines (REX) operates routes between regional centres (See Figure 5) using a single aircraft type, the SAAB 340 turboprop (Regional Express Holdings Limited, 2005a). QantasLink, the regional arm of Qantas, operates 84 aircraft on its regional routes (See Figure 3). The predominant aircraft types operated are the Boeing 717 and the Bombardier Dash 8 Q400. According to Harasani (2006), aircraft selection is critical for route selection and it can be a very complex matter. Harasani argues that selecting just one type of aircraft has many benefits, including consistency for the pilots and maintenance personnel. Also, refuelling, baggage handling and similar equipment is of great benefit, especially for a low-cost regional airline like Realway. Therefore, it will be recommended that only one type of aircraft should be operated by Realway in this regional area.

The isolation of Australia lends itself to having a small number of different aircraft types (i.e. airlines in Australia tend to have similar fleets). The aerospace workforce is guite limited in Australia due to the relatively small population. Therefore, pilot, cabin crew and maintenance staff training is more efficient when there are fewer different types of aircraft. This provides benefits to the whole Australian aerospace industry (Canstar Blue Pty Ltd, 2018). For this reason the three most common regional airline aircraft in Australia will be evaluated as the possible aircraft solution for Realway's operational problem. These aircraft are, the Boeing 717 (currently used), the SAAB 2000, the larger version of the Saab 340, and the Bombardier Dash 8 Q400. See Table 3 for a comparison of the attributes of these aircraft.

Table 4 - Airline economic calculations and indicators

able 3 – Regiona	l aircraft compa	arison				Economic measure	Purpose
Boeing	g 717	SAAB 2	000	Bombardier D	ash 8 Q400	Passenger Yield (PY)	Yield per revenue passenger km represer
- PANTAALI	-	be. Street	Lun (I) Dei				fly one km. It is usually presented in cents km and is useful to assess changes in fare over time.
Source: Mitchul Hop	e, 2018 (Flickr)	Source: GWS-DELI, 2016	(Flickr)	Source: Simon_sees (Wikimedia common	s, 2011 s)	Passenger Load Factor (PLF)	Measures the capacity utilisation of airline is generally used to assess how efficiently airlines fill seats and generate fare revenu
Seats	100	Seats	50	Seats	75	Available Seat Kilometres (ASK)	ASK is the passenger carrying capacity. If the fundamental unit of production for a passenger-carrying airline
Range (km)	3700	Range (km)	2100	Range (km)	2500		
Speed (km/h)	825	Speed (km/h)	560	Speed (km/h)	670	Kilometres (RPK)	considered the basic amount of "production
Average Block Hour Operating Cost (\$)	\$4,898	Average Block Hour Operating Cost (\$)	\$983	Average Block Hour Operating Cost (\$)	\$2,212	Cost per Available Seat Kilometre (CASK)	This number is frequently used to allow a comparison between different airlines or fu
(The Travel Insider L	LC, 2010)	(Airlines inform, 2018; FAA Wyman, 2010)	A, 2018;	(Wyman, 2014)			A lower CASK means that it is easier for the airline to make a profit, as they have to charge less to break even
Economic In	dicators						
There are a nur with methods to economic indica solution propos	mber of useful o determine the ators and calcu al are outlined	economic indicators t e viability of routes in ulations used to justify in Table 4.	hat are availabl comparison to c and support id	e to provide airline other options. The ea development a	es nd	Revenue per Available Seat Kilometre (RASK)	RASK is a commonly used measure of un revenue for airlines. This number is freque used to allow a comparison between differ airlines or a comparison of the same airlin across periods. In theory, the higher the RASK the more profitable the airline shou be, assuming that the CASK remains constant
						(CAPA, 2018; Wikipedia,	2018)



Source: Regional Express, 2018



Synthesising and evaluating [8–9]

coherent and logical synthesis of relevant aerospace systems, technology, and research information and ideas to propose a possible aerospace management, safety, airline and/or airport operations solution

The response provides evidence of sound reasoning and an ordered, wellstructured synthesis of relevant aerospace and technology information to develop ideas.

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critical evaluation and

discerning refinement of ideas using success criteria to make astute recommendations justified by data and research evidence

The response provides evidence of a range of justifications that accurately evaluate ideas with reference to the success criteria.

Economics of the current situation

Realway has experienced a reduction in passenger numbers from 124,600 to 62,300 in the past 12 months. It is assumed that all flights currently fly between CT and HCA and there are two flights per weekday and one flight per weekend day using a 100-seat jet aircraft the Boeing 717.

Number of flights per year

$$= ((2 \times 5 \text{ days}) + (1 \times 2 \text{ days})) \times 2 \times 52$$

$$= 1248 \text{ flights}$$

$$\therefore \text{ Passengers per flight} = \frac{62,300}{1248} = 50$$
Current Load Factor = $\frac{\text{Seats Filled}}{\text{Seats Available}} = \frac{50}{100} \times 100 = 50\%$

Table 5 shows the economic calculations based on the current data. As the airline has stated that this route is no longer profitable, the ticket price was determined to be \$124. This is a reasonable assumption based on an analysis of QantasLink operations in Queensland.

 Table 6 – Economic comparison by aircraft type

DATA						
Aircraft Type Boeing 717 Dash 8 Q400 SAAB 2000				2000		
Aircraft Speed	825	km/h	670	km/h	560	km/h
Passenger seats available	100		75		50	
Revenue passengers	50		50		50	
Distance Travelled	875	km	875	km	875	km
Average Operating Cost per Block Hour	4898		2212		983	
Time for route (allow 20% taxi etc)	1.27	hours	1.57	hours	2.00	hours
Cost per ticket	124		124		124	
Flights per week (Single legs to HCA)	24		24		24	
Total Passengers carried	62400		62400		62400	
CALCULATIONS						
Available Seat Kilometres	87500		65625		43750	
Revenue Passenger Kilometres	43750		43750		43750	
Passenger Load Factor	50	%	67	%	100	%
Cost per Available Seat Kilometre	0.071		0.053		0.045	
Revenue per Available Seat Kilometre	0.071		0.094		0.142	
Passenger Yield	0.142		0.142		0.142	
Net Profit per 100km per seat	\$0.00		\$4.10		\$9.70	

Table 5 – Current Realway flight analysis

DATA		
Aircraft Type	Boeing 7	17
Aircraft Speed	825	km/h
Passenger seats available	100	
Revenue passengers	50	
Distance Travelled	875	km
Operating Cost per Block Hour	4898	
Time for route (allow 20% taxi etc)	1.27	hours
Cost per ticket	124	
Flights per week (Single legs to HCA)	24	
Total Passengers carried	62400	

CALCULATIONS

Available Seat Kilometres
Revenue Passenger Kilometres
Passenger Load Factor
Cost per Available Seat Kilometre
Revenue per Available Seat Kilom
Passenger Yield
Net Profit per 100km per seat

Evaluating options

Aircraft

To evaluate ideas, an economic analysis has been undertaken including the different aircraft types using the current approximate passenger numbers of 62,400 (i.e. $50 \times 24 \times 52 = 62,400$). Table 6 provides data replacing the currently used Boeing 717 with the Bombardier Dash 8 Q400 and the SAAB 2000. The number of flights, passenger numbers and ticket price are the same for each aircraft.

The data displayed in Table 6 indicates that the passenger load factor (PLF) increases to 67% for the Dash 8 and 100% for the SAAB 2000. The net profit per 100km increases to \$4.10 for the Dash 8 and \$9.70 for the SAAB 2000. This result suggests that a different aircraft type should be considered as a component of the solution to Realway's operational problem. While this data appears to meet the profitability success criteria, customer satisfaction may still be an issue that will continue to negatively impact on passenger numbers. Therefore, PLF may continue to decline if other systemic changes are not considered. A change of aircraft to the SAAB 2000 would allow the airline to reduce the ticket price by 20% to around \$100.00 which may create demand for seats, which would give Realway the scope to increase its fleet of SAAB 2000 aircraft to support additional services for CT.

Routes

At present, there are only flights between CT and HCA. It has been stated that Realway believes that passengers are frustrated with the time taken to travel to HCA enroute to their final destination. This suggests that the routes flown by Realway should be investigated. Currently passengers travel 875km to HCA then travel either to further destinations in the Realway network or back to a regional airport. If the passengers travel to destinations beyond the immediate CT region, it is assumed that customer dissatisfaction arises from poorly aligned flight connections. One way to address this type of customer dissatisfaction would be to increase the number of flights to HCA so that waiting times are reduced. To address this passenger satisfaction issue, Realway could double the number of flights using the smaller, more cost-effective SAAB 2000. All other factors remain constant. Table 7 shows the results of this analysis at the current ticket price of \$124.00.



Synthesising and evaluating [8–9]

coherent and logical synthesis of relevant aerospace systems, technology, and research information and ideas to propose a possible aerospace management, safety, airline and/or airport operations solution

The response provides evidence of sound reasoning and an ordered wellstructured synthesis of relevant aerospace and technology information to develop ideas.

critical evaluation and discerning refinement of ideas using success criteria

The response provides evidence of a range of justifications that accurately evaluate ideas with reference to the success criteria.

Retrieving and comprehending [4–5]

adept symbolisation and discerning explanation of ideas and relationships in relation to airline operations

The response provides evidence of use of a diagram and annotations (text) to provide discerning explanations that clarify decisionmaking about ideas and possible solutions.

7

Table 7 – Flights doubled SAAB 2000

DATA			
Aircraft Type	SAAB 2000		
Aircraft Speed	560	km/h	
Passenger seats available	50		
Revenue passengers	25		
Distance Travelled	875	km	
Operating Cost per Block Hour	983		
Time for route (allow 20% taxi etc)	2.00	hours	
Cost per ticket	124		
Flights per week (Single legs to HCA)	48		
Total Passengers carried	62400		
CALCULATIONS			
Available Seat Kilometres	43750		
Revenue Passenger Kilometres	21875		
Passenger Load Factor	50	%	
Cost per Available Seat Kilometre	0.045		
Revenue per Available Seat Kilometre	0.071		
Passenger Yield	0.142		
Net Profit per 100km per seat \$2.60			

Table 8 – Four route option

	DATA			
	Aircraft Type	SAAB 2000		
	Aircraft Speed	560	km/h	
	Passenger seats available	50		
	Revenue passengers	11		
	Distance Travelled	875	km	
	Operating Cost per Block Hour	983		
	Time for route (allow 20% taxi etc)	2.00	hours	
	Cost per ticket	124		
	Flights per week (Single legs to HCA)	28		
	Total Passengers carried	16016		
	CALCULATIONS			
	Available Seat Kilometres	43750		
	Revenue Passenger Kilometres	9625		
	Passenger Load Factor	22	%	
	Cost per Available Seat Kilometre	0.045		
	Revenue per Available Seat Kilometre	0.031		
	Passenger Yield	0.142		
	Net Profit per 100km per seat	-\$1.40		

The results provided in Table 7 indicate that a doubling of flights will decrease the net profit per 100km from \$9.70 to \$2.60, which is below the success criteria of \$4.00. Customer satisfaction may increase due to a better alignment with connecting flights from HCA, but Realway's profit margin will suffer. This analysis is based on the current passenger numbers of approximately 62,400. It is assumed that the greater level of customer satisfaction created through a more convenient service to customer model will increase passenger numbers. For example, a 20% increase in patronage (i.e. from 25 to 30 passengers per flight – Passenger load factor (PLF) of 60%) will result in a net profit of \$4.00 per passenger per 100 km for Realway. This is an interesting option to consider in the short term as it allows for increasing passenger numbers and meets the \$4.00 net profit target with only a 20% passenger increase.

Figure 6 – Point-to-point four route options



Another option to consider is to abandon the hub-andspoke system currently used and opt for a type of point-topoint system for each regional town in the CT regional area. To do this, there must be several assumptions made to make the calculations both possible and feasible. Figure 6 shows a possible route map that connects CT with all regional airports and HCA.

SAAB 2000.

Passengers per route per flight 62,300 $= \frac{1}{(2 \times 7 \times 2 \times 52)} \div 4 \text{ routes}$ = 11 passengers per flight

The data in Table 8 indicates that the four route option servicing all regional airports will operate at a loss of \$1.40 per 100km per passenger in the short-term. This does not satisfy the profit success criteria. It may, however, satisfy the customer satisfaction criteria. Assuming that customer satisfaction increases with this new route option and customer numbers increase to the 124,600 of 12 months previous, the economics will improve to a net profit of \$1.70 per passenger per 100 km. This is less than the required \$4.00 net profit. A possible solution would be to increase ticket prices, which may reduce passenger numbers through service dissatisfaction.

For simplicity and to reduce the number of system variables, it is assumed that all four route options are 875km in length and are treated as one flight, even though some routes have 5 legs. It is also assumed that, initially, only 62,300 customers use this option (short-term outcome). However, it is likely that customer satisfaction will increase passenger numbers back towards the original 124,600 customers, because of the new service to these regional airports .Additionally, it is assumed that each route has the same number of passengers. Table 8 shows the 62,300 passengers spread across all four route options, two return flights per day on each route using the

Synthesising and evaluating [8–9]

critical evaluation and discerning refinement of ideas and a solution using success criteria to make astute recommendations justified by data and research evidence

The response provides evidence of a range of justifications that accurately evaluate ideas with reference to the success criteria.

coherent and logical synthesis of relevant <u>aerospace systems,</u> technology and research information, and ideas to propose a possible aerospace management, safety, airline and/or airport operations solution

The response provides evidence of a well-structured. ordered and logical synthesis of relevant aerospace systems, technology and research information to propose a solution.

Table 9 – PMI chart analysing possible solution options

PLUS	MINUS	SINTERESTING		
	Current situation			
 No need to change aircraft Facilities remain unchanged 	Not profitableCustomer dissatisfaction	The decline of passengers is a clear indication of customer dissatisfaction		
Chang	e aircraft type to smaller, turbopro	p type		
 Increased profitability Operating costs are reduced Increased flexibility Smaller capital investment 	 Must change fleet Must retrain pilots and crew Must retrain support and maintenance staff 	 A large increase in profitability by changing aircraft fleet 		
Double the number of	of flights with SAAB 2000 (current)	bassenger numbers)		
 Reduction in customer waiting times for connecting flights Possible increase in customer satisfaction 	 Profitability down below the required \$4.00 per 100km per passenger Increase staffing 	 Short-term loss outcome could lead to a long-term profit outcome if passenger numbers increase 		
Double the number of	flights with SAAB 2000 (increased	passenger numbers)		
 Reduction in customer waiting times for connecting flights Possible increase in customer satisfaction Profitability improves 	 Must rely on increased number of passengers to be viable Increase staffing to accommodate increased flights 	 The possibility of achieving both customer satisfaction and meeting the profit success criteria Reducing ticket price may increase patronage 		
Four routes to service all re	egional airports with SAAB 2000 (c	urrent passenger numbers)		
 Increase in customer service to all regional airports May lead to an increase in customer satisfaction Decrease in waiting times associated with the "hub" system 	 Profitability down below the required \$4.00 per 100km per passenger Must provide facilities and staff at all regional airports General inefficiencies associated with "point-topoint" system 	Has the potential, through customer satisfaction, to grow the network and increase profitability		
Four routes to service all reg	jional airports with SAAB 2000 (inc	reased passenger numbers)		
 Increase in customer service to all regional airports May lead to an increase in customer satisfaction Decrease in waiting times associated with the "hub" system 	 Profitability still down below the required \$4.00 per 100km per passenger Must provide facilities and staff at all regional airports General inefficiencies associated with "point-to- point" system 	 Has the potential, through customer satisfaction, to grow the network and increase profitability 		
8				

Additional factors

There are many variables that influence customer satisfaction and profitability. The PMI (plus, minus, interesting) chart provided in Table 9 is used to facilitate decision-making for the most suitable solution to Realway's operational problem considering the factors analysed to generate ideas. The analysis of these factors is based on the evidence that an increase in customer service will lead to an increase in passenger numbers (Amadeus, 2013). An increase in customer numbers may be a long-term outcome for Realway; however, changing the fleet could possibly have a more immediate, short-term effect for the airline's profitability.

Other factors that have not been considered are the general economic circumstances such as fuel prices, ticket price sensitivity and socio-economics of the CT region. There is also the threat of competition in the long-term, especially if passenger numbers increase at a faster rate than Realway can provide services for. Regarding fleet choice, it has been established that with passenger numbers at their current rate, the larger 100-seat jet aircraft currently used by Realway are not economically viable to operate. In the long-term however, passenger numbers may dictate the use of this aircraft again. It is not clear whether Realway has a use for these aircraft elsewhere in their network in the short term.

Proposing a solution for generation

Aircraft selection

Based on the available data, a smaller turboprop aircraft of between 50 and 75 seats would be the most appropriately sized aircraft for the CT region. The two aircraft identified are the 75 seat Bombardier Dash 8 Q400 and the 50 seat SAAB 2000. These aircraft have the required number of seats and are economically viable over the short distances involved in the CT regional network. This proposed solution will require Realway to either sell their current fleet of Boeing 717 aircraft or reallocate them to another part of their network. Realway will also need to either relocate smaller turboprop aircraft to the CT region or purchase or lease new aircraft. The SAAB 2000 is the most economic aircraft considered and provides Realway with the option to reduce ticket pricing to stimulate passenger demand. The SAAB 2000 (Figure 7) is the aircraft selected because it provides Realway with the option to increase its flight services and adjust ticket pricing as a means for increasing customer satisfaction and achieving the required net profit target.

Figure 7 - SAAB 2000 aircraft

fivbe.

Vbe.

Source: GWS-DELI, 2016 (Flickr)

The SAAB 2000 also provides Realway with an option to operate some select point-to-point routes within the CT region. More popular routes can then be selected to be serviced in conjunction with the hub-and-spoke system operated through HCA. It may be useful to place importance on servicing the larger towns in the CT region furthest away from HCA (see Figure 6 circled towns). Customers may interpret any attempt to expand its service as responding to the needs of the travelling public in the CT region. Economic advantages exist for an airline when passengers know that airline services are provided (Cook and Goodwin, 2008).

Synthesising and evaluating [8–9]

purposeful generation of an aerospace management, safety, airline and/or airport operations solution to provide valid data to critically assess the feasibility of a proposal

The response provides evidence of the generation of a solution that has the intended and desired result.

The proposed solution provides legitimate and defensible virtual performance data to objectively analyse the solution's merits.

critical evaluation and discerning refinement of ideas and a solution using success criteria to make astute recommendations justified by data and research evidence

The response provides evidence that the situation is accurately assessed to make astute recommendations with reference to the performance data and research evidence.

The response provides evidence of skilful judgment and intellectual perception in the evaluation and accurate refinement of the proposed solution with reference to the success criteria.

9

Route selection

The evidence suggests that, whilst it would be very beneficial for customers to have daily flights available to any of the regional airports in the CT region, the costs of doing so are high. The current and projected number of passengers does not make direct flights to 14 different regional airports profitable using a point-to-point transportation system. Even considering that the numbers may double for each of these routes, the net profit per passenger per 100km is approximately \$2.00, well below the required profitability figure of the airline. The data suggests that adding more services to the existing hub-and-spoke system through HCA is the most economic and therefore most profitable route selection. By adding more services with more efficient aircraft, passengers should be able to experience better connections to on-going flights, and therefore it would be expected that customer satisfaction would improve.

Increasing services and changing to the SAAB 2000

Table 10 data indicates that a \$4.00 net profit per passenger per 100km can be achieved by reducing the ticket price to \$75.00 at the current passenger (pax) numbers providing the current flight service. Increasing flights to 4 flights weekdays and 2 flights weekend days allows Realway to reduce ticket prices to \$101.00 provided patronage increases by 48% on current numbers. Increasing flights to 6 flights weekdays and 3 flights weekend days requires the current ticket price of \$124.00 be retained provided patronage increases by 80% on current numbers. The option to increase service delivery provides route expansion opportunities.

Recommendations

For Realway Pty Ltd to achieve an equitable solution for the CT travelling public and enable them to operate at a net profit of \$4.00 per 100km per passenger, Realway should consider changing the aircraft fleet currently used between CT and HCA. Additionally, the airline should substantially increase the number of services between CT and HCA to 4 flights weekdays and 2 flights weekend days.

It is recommended that Realway change from the Boeing 717, 100-seat jet to the more economical SAAB 2000 50-seat turboprop. The operating costs and the current and projected number of passengers, best suits this type of aircraft.

Table 10 – Ticket price and pax variation by service increase SAAB 2000

DATA	2 flights weekdays, 1 flight weekend days by ticket price and current pax		4 flights wee flights weeker ticket price increase		
Aircraft Speed	52	25	km/h		52
Passenger seats available		50			5
Revenue passengers		50			З
Distance Travelled	8	75	km		87
Operating Cost per Block Hour	98	83			98
Time for route (allow 20% taxi etc.)	2.0	00	hours		2.0
Cost per ticket		75			10
Flights per week (Single legs to HCA)	:	24			4
Total Passengers carried	6240	00			9235
CALCULATIONS					
Available Seat Kilometres	437	50			4375
Revenue Passenger Kilometres	437	50			3237
Passenger Load Factor	10	00	%		7
Cost per Available Seat Kilometre	0.04	45			0.04
Revenue per Available Seat Kilometre	0.08	86			0.08
Passenger Yield	0.08	86			0.11
Net Profit per 100km per seat	\$ 4.3	10		\$	4.0

It was recognised by Realway Pty Ltd that customers were dissatisfied with the many hours travelling to and from HCA enroute to their final destinations. To help alleviate this dissatisfaction, it is recommended that Realway maintain the hub-and-spoke system, but initially increase by double the number of services to and from HCA so that passengers spend less time waiting for connecting flights to their final destinations.

Realway should consider the opportunities that may be made available through increased use of the SAAB 2000 on specific point-to-point routes between CT and larger towns within the region. Providing flights to and from CT will provide passengers from larger towns located furthest away from HCA with additional options for travel between CT and other locations within the region. It is recommended that these flights initially be offered using a less frequent schedule, because the routes may operate under the required \$4.00 net profit margin due to lower PLFs. However, this shortfall would be subsidised through a slight increase in the \$101.00 ticket price to a figure below the current price of \$124.00. This strategy would improve passenger satisfaction through a better service to customer model and a reduction in ticket pricing compared to current levels. Additionally, Realway would increase its public profile in the region with the expected result being that Realway would become the market leader and the preferred airline for travel in the region. As a result of this strategy, Realway could expand its service to customers as demand dictates and as mediated by the company's net profit across the various routes offered within the region.



Synthesising and evaluating [8–9]

critical evaluation and discerning refinement of ideas and a solution using success criteria <u>to make astute</u> recommendations justified by data and research evidence

The response provides evidence of intellectual perception in the refinement of the predicted solution to recommend future developments or considerations.

Future considerations

The use of the smaller turboprop aircraft SAAB 2000 will improve profitability and flexibility for Realway in the CT region. However, they should be aware that passenger demand is subject to many external forces such as convenience, fuel prices, tourism, business travel, ticket prices and competition. These factors, as well as others vary from time to time, which requires the airline to become agile and contemporary in its decision-making. In other words, in the future Real way must become a proactive leader within the CT region airline transportation system. They should continually look to improve their service to customer model through increasing the number of flights offered at a more affordable ticket price.

Competition from other airlines, as well as other modes of transport is a concern for Realway. It is important that the airline continues to use the economic indicators to determine ongoing economic viability of its services and fleet. While the SAAB 2000 aircraft is recommended due to its efficiency and familiarity to the Australian aerospace workforce, there are other aircraft types or configurations that may become suitable for Realway's operations in the CT region given changes that may arise to future and relevant economic conditions. For example, Realway currently offers a single class service within the region. Opportunities may be available to expand passenger numbers by offering a business-class travel service on all its flights to and from HCA. This service would provide business people with a more comfortable and convenient flight experience. Business customers would be provided with a business-class lounge while waiting at the airport and a premium inflight refreshment and meal service. Additionally, Realway may consider modifying the interior of its SAAB 2000 fleet to accommodate a small number of business-class seats that provide customers with more legroom and space for business related work activities, such as laptop and document access. Figure 8 displays a similar interior to the SAAB 2000 aircraft. A single economy class cabin configuration includes 50 passenger-seats organised in 16 rows of 3 and 1 front row of 2 seats (seatmaestro, 2018).

Figure 8 - Similar SAAB 2000 passenger cabin interior



Source: Notjake13, 2008 (Wikimedia)

The interior of the SAAB aircraft could be retrofitted to accommodate a small business class section at the front of the aircraft. This section would require a reduction of passenger numbers by approximately four to allow for the extra business class space (i.e. 42 economy and four business-class seats). The costs associated with this change would be offset by the additional income available to the airline through business class ticket pricing. Initially, Realway should consider offering four business class seats (two rows of two) on a small number of its flights to and from HCA via CT. These seats would be more luxurious and comfortable, and offer the business customer with a range of addition conveniences for the two hour flight between CT and HCA (see Figure 9). If demand is sufficient, this strategy may be one method, through which Realway can continue to improve its CT regional network's financial position.

Figure 9 – Business-class seat example



Source: Pixabay, 2018

10

Part B

Communicating [3–4]

discerning decisionmaking about, and fluent use of,

- written and visual features to communicate about a solution
- language for a technical audience
- grammatically accurate language structures

The response includes written and visual features selected for value and relevance to communicate about a solution.

The response includes good judgment concerning the use of grammatically accurate language structures.

Summary report

Realway Pty Ltd flight operations problem

Introduction

This document summarises the findings and outcomes of an investigation into the factors affecting the economic viability of Realway Pty Ltd.'s flight operations in the Coastal Town (CT) region.

Background

The project team was commissioned by Realway Pty Ltd to develop a solution to their CT region's operational problem. Realway is a regional airline carrier that has experienced a 50% drop in passengers (from 124,600 down to 62,300) over the past 12 months on its Coastal Town (CT) to Hub City Airport (HCA) route. This route currently uses the 100 seat Boeing 717 jet aircraft in a single class configuration. This route is considered to be unprofitable because many CT flights are well under capacity. Passengers using this service are often required to spend many hours travelling to and from HCA enroute to their final destination. This has caused much frustration and resulted in many customers choosing to find alternative transportation that is more convenient and cost-effective.

Project objectives

The project objectives were to document the development and generation of a folio that includes a detailed analysis and evaluation of

aircraft including:

11

- types, range, passenger yield and load factor
- · the minimum flight distance between towns to provide a revenue available seat kilometre (RASK) basis for making decisions about route viability, including cost of available seat kilometre (CASK)
- Realway's current and proposed future service to customer model
- consideration of an increase in profitability rather than a decrease in customer service.

The success criteria for the project were determined to be that the solution to Realway's CT region operational problem must:

- meet the needs of the CT travelling public
- improve customer satisfaction with Realway's proposed service model
- increase patronage across routes serviced by Realway
- enable Realway to operate at a net profit of \$4 per passenger per 100-kilometre flying distance.

Options considered

The project team conducted research to understand the nature of the problem and the relationships between the various systems incorporated in Realway's flight operations in the CT region.

Aircraft

The Boeing 717, SAAB 2000 and Bombardier Dash 8 Q400 were investigated to evaluate each aircraft's appropriateness in relation to the determined success criteria. The decision was made to select the SAAB 2000 (see Figure 1) because it provides Realway with the option to increase its flight services and adjust ticket pricing as a means for increasing customer satisfaction and achieving the required net profit target. The operating costs and the current and projected passenger numbers best suit this type of aircraft. The data analysis using the SAAB aircraft indicates that a \$4.00 net profit per passenger per 100km can be achieved by reducing the ticket price to \$75.00 at the current passenger (pax) number with the current flight services. Increasing flights to 4 flights weekdays and 2 flights weekend. days allows Realway to reduce ticket prices to \$101.00 provided patronage increases by 48% on current numbers. Increasing flights to 6 flights weekdays and 3 flights weekend days requires the current ticket price of \$124.00 be retained provided patronage increases by 80% on current numbers. The option to increase service delivery provides Realway with route expansion opportunities.

Figure 1 – SAAB 2000 50 seat turboprop aircraft



Source: GWS-DELI (Flickr)

Routes

Options were considered based on the distance travelled on each route. It was recognised by Realway Pty Ltd that customers were dissatisfied with the many hours travelling to and from HCA enroute to their final destinations. It is recommended that Realway maintain the hub-and-spoke system currently in use. However, it would be advisable to initially increase the number of services to and from HCA to twice the number currently offered. This will allow passengers to spend less time waiting for connecting flights to their final destinations.

Realway should consider the opportunities that may be made available through increased use of the SAAB 2000 on specific point-to-point routes between CT and larger towns within the region. Providing flights to and from CT will provide passengers from larger towns located furthest away from both HCA and CT with additional options for travel between CT and other locations within the region. It is recommended that these flights initially be offered using a less frequent schedule, because the routes may operate under the required \$4.00 net profit margin due to 12

Communicating [3–4]

discerning decisionmaking about, and fluent use of,

- written and visual features to communicate about a solution
- language for a
 technical audience
- grammatically accurate language structures

The response demonstrates the thoughtful and astute choice of written and visual information to eloquently communicate about the solution to a technical audience. lower passenger load factors (PLFs). However, this shortfall would be subsidised through a slight increase in the \$101.00 ticket price to a figure of Realway's choice below the current price of \$124.00. This strategy would improve passenger satisfaction through a better service to customer model and a reduction in ticket pricing compared to current levels. Additionally, Realway would increase its public profile in the region with the expected result being that the airline would become the market leader and the preferred airline for travel in the region. As a result of this strategy, Realway could expand its service to customers as demand dictates and as mediated by the company's net profit across the various routes offered within the region

Recommendations

Based on the findings of this investigation, the project team recommends that Realway change from the current 100 seat jet aircraft to the cost-effective and versatile SAAB 50 seat turboprop aircraft. The economics provided under the current economic circumstances support this decision. The use of the SAAB 2000 allows Realway to maintain the current hub-and-spoke system between CT and HCA with services offered being 4 flights weekdays and 2 flights weekend days. The airline would also offer point-to-point routes for larger towns furthest from HCA. This will provide Realway with a solution that meets with the success criteria for the project.

Future considerations

Realway may consider offering a business-class travel service on all its flights to and from HCA. This service would provide business people with a more comfortable and convenient flight experience. Business customers would be provided with a business-class airport lounge experience and a premium inflight refreshment and meal service. Additionally, Realway may consider modifying the interior of its SAAB 2000 fleet to accommodate a small number of business-class seats (four initially) to provide customers with more legroom and space for business related work activities, such as laptop and document access. See Figure 2 for an example of the level of comfort and space that would be appropriate.

Figure 2 – Business-class seating

The extra space required for a business-class section would reduce aircraft passenger numbers by four. However, the revenue losses would be offset by the additional income available to the airline through business-class ticket pricing. These seats would be more luxurious and comfortable, and offer the business customer with a range of addition conveniences for the two hour flight between CT and HCA. If demand is sufficient, this strategy may be one method, through which Realway can continue to improve its CT regional network's financial position. This will also increase passenger satisfaction by providing a service model that fulfils the evolving needs of the travelling public in the CT region.



Source: Pixabay, 2018

Queensland Curriculum & Assessment Authority March 2019

Communicating [3-4]

discerning decisionmaking about, and fluent use, of folio and referencing conventions

The response includes the folio convention of a reference list and a recognised system of in-text referencing used in a way that shows intellectual perception and good judgment.

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