



Manston Airport Air Freight Hub

*Reviving strategic transport infrastructure to
maximise Global Britain's trading potential*

Applicant's commissioned Manston Airport Skills Need Forecasting Report

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Manston Skills Needs Forecasting

1. Introduction

This report sets out further detail on the overall anticipated scale and nature of demand for skills among the businesses that are expected to be based at Manston Airport as part of the proposed re-development by RiverOak Operations Ltd. It builds on employment modelling undertaken as part of the development consent order and aims to give a more specific sense of the kinds of jobs that will be created on site and the kind of skills that people will need to access them. While it is, of course, not possible to provide precise forecasts at this stage, the aim of the report is to inform the future plans of local education and skills providers and other partners in order to make Manston jobs accessible to local people.

The report is based on a workshop held with RiverOak and its aviation consultants to build a 'bottom up' model of employment on site, setting out the type of employers that are expected and the type and number of jobs that go with them; analysis of a range of employment and skills quantitative data sets to model occupations and skills associated with the types of employer identified; and depth interviews with experts and specialists in the field and desk research to build a more detailed picture of skills demand.

It should be stressed that it is not possible to give a precise and accurate forecast of the jobs and skills that will be required at Manston at this early stage. This will, of course, depend on exactly which businesses locate to the site. Similarly, the timing and phasing of job creation and skills demand is dependent on multiple factors. So, in this report we have constructed and analysed an illustrative model of employment demand 10 years into the redevelopment project, with the aim of providing an indicative sense of the kind of skills that will be required and an order of magnitude for the scale of demand. This should be seen as a guide, not the definitive picture.

The report is structured as follows:

Section 2 presents and explains the Manston employment model of employers and jobs that was developed as part of the research.

Section 3 probes the scale and nature of employment demand, considering the likely occupational profile and the nature of skills demand in the main employer groups in the model.

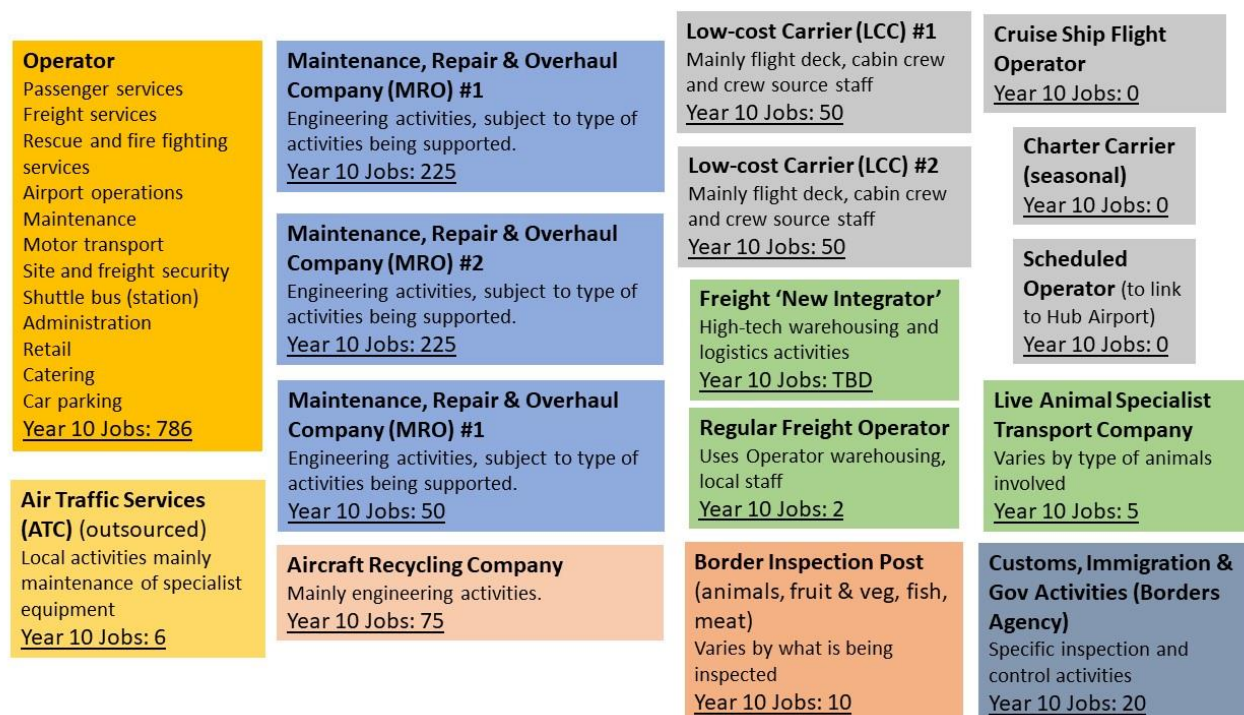
Section 4 sets out the key conclusions from the foregoing analysis to inform next steps by RiverOak and partners.

The Annexes provide more detailed information on some of the likely key occupations and details of who took part in interviews.

2. Manston Employment Model

Figure 2.1 (below) sets out the Manston employment model used in this report. It is based on a workshop with RiverOak and its consultants to map out the likely kinds of employers that are expected to be on site after 10 years, and the kind and number of jobs that each employer would have. The model was tested and refined further in the depth interviews. It refers only to jobs likely to be created on the airport site itself, and does not include jobs that might be ‘induced’ in the wider economy or activities that might be stimulated more directly by the airport redevelopment, such as new hotels opened nearby.

Figure 2.1: Manston Employment Model



Source: workshop with RiverOak consultants and depth interviews

The key employer elements of the model are as follows:

- **Operator activities:** RiverOak will keep all of these activities ‘in house’, rather than outsourcing them, as is often the case. The company itself will therefore be the main employer on site by volume of jobs, expected to be approaching 800 by year 10. This includes all the airside and landside¹ activities involved in working with passengers and in the ‘airside’ handling of freight (which account for a significant proportion of operator staff given the emphasis on freight in the airport business model).
- **Maintenance, repair and overhaul (MRO):** the exact nature of these services will depend on whose aircraft are being maintained and repaired. The working assumption is that MRO #1 and MRO #2 will be supporting each of the two low-cost carriers, and that a third company, perhaps with a specialism like engines will also be on site.
- **Low-cost carriers:** it is assumed that two low-cost carriers will be based at Manston, with approximately 24 staff per based aircraft, plus a standby engineer, two aircraft per carrier.

¹ Airports are divided into landside and airside areas. The landside area is open to the public, while access to the airside area is tightly controlled. The airside area includes all parts of the airport around the aircraft, and the parts of the buildings that are only accessible to passengers and staff.

Alongside these high-volume employers, there are a number of more niche and specialist employers. It is believed there is scope for a aircraft recycling company to be located on site. The model estimates that this could involve as many as 75 jobs, although an expert interview suggested that the actual job total may be nearer to 50. The other main niche employers are border inspection (of animals, fruit, vegetables, fish or meat, for example), customs and immigration (employed by the Borders Agency) and a live animals specialist transport company.

There are also two freight companies: a traditional one, with just two local staff, but using the freight handling capabilities of the operator, and a much more modern freight 'new integrator'. The latter would be a state-of-the-art warehousing / e-commerce operation run by a major online retailer. It is not possible to estimate the number of jobs in this company at this stage, but Azimuth Consulting is planning a visit to Rockford Airport, Chicago, where Amazon has a major freight hub of this type², to research this further.

There are also three types of companies that are expected to be present, but not to employ any people locally: a cruise ship flight operator (bringing in holidaymakers to join cruises at Dover, for example), a charter carrier (that would operate seasonally) and a scheduled operator with shuttle service to a major European hub airport.

3. Employment and Skills Demand

This section explores the likely scale and nature of skills demand at Manston, considering the likely occupational profile and level of ongoing demand for skills (based on trends in the wider aviation sector) and the detailed picture for each of the main types of employer in the Manston Employment Model.

Anticipated on-site business employment activities

Figure 3.1 below summarises the different areas of economic activity and expected on-site employment for each activity at Manston after 10 years of development. These figures are based on a combination of planning application employment modelling by RiverOak, a workshop run with RiverOak and its aviation consultants and subsequent depth interviews with relevant businesses and organisations with experience at other airports.

We have translated these areas of economic activity into Standard Industrial Classifications (SIC 2007 codes) and looked at national statistics (the ONS Annual Population Survey and the Working Futures employment forecasting model) to estimate the likely occupational profile and employment dynamics in each area.

The majority of employment opportunities are expected to be in three broad employment areas: operator specific activities, passenger operations and maintenance, repair and overhaul (MRO). Together these three areas account for 1,400 of the 1,500 on-site job opportunities expected by year 10.

Figure 3.1: On-site economic activities and employment estimates, Year 10

Broad Employment Area	Employment Area	Workshop estimate	Standard Industrial Classification for modelling
Operator specific	Passenger services	100	52.23 Service activities incidental to air transportation
	Freight services	400	
	Air Traffic Services (adjusted down)	6	
	Airport ops	20	
	Maintenance	44	
	Motor transport	16	
	Site & freight security	50	
	Administration	16	
	Rescue & Fire	53	84.25 Fireservice activities
Passenger operators	Low cost carrier (LCC) 1	50	51.10 passenger air transport
	Low cost carrier (LCC) 2	50	
MRO	Maintenance, Repair Overhaul (MRO)	225	33.16 Overhaul of aircraft or aircraft engines
	MRO 2	225	
	Av Man Engineering (engine overhaul)	50	
	Aircraft recycling	75	
Other operator run	Shuttle bus	5	49.39 Other passenger land transport nec
	Retail	25	47.19 Other retail in non-specialized stores
	Catering	25	56.10 restaurants & mobile food services
Freight operators	New integrated freight (e.g. Amazon)	TBC	47.91 Retail sale via internet
	Regular Freight	2	51.21 Freight air transport
	Live animal specialist importer	5	
Regulation officials	Border Agency	20	84.24 Public order & safety activities
	Border inspection post (live animals etc)	10	
Other aviation	Polar helicopters	5	51.10 passenger air transport
	TG Aviation (flying school)	21	
TOTAL		1498	

Estimated Occupational Profile

Looking at the likely occupational profile, defined using top-level Standard Occupational Classification scheme (2010) enables us to assess the likely pattern of skills demand, in broad terms, across the airport. Figure 3.2a (below) provides an estimate of the broad occupational profile for the three main employment areas based on national statistics.

Figure 3.2a: Broad occupational profile, Year 10

Broad Occupational Group (SOC 2010)	Airport Operator	Passenger operators	MRO	Other	Total
1. Managers and Senior Officials	60	10	50	10	130
2. Professionals	50	-	80	-	130
3. Associate Professional and Technical	100	30	150	20	310
4. Administrative and secretarial	40	-	50	10	100
5. Skilled trades	60	10	180	10	250
6. Caring, leisure and other service occupations	120	50	-	-	180
7. Sales and customer service	40	10	-	20	60
8. Process, plant and machine operatives	110	10	40	10	170
9. Elementary occupations	130	-	10	20	160
Total	710	120	570	100	1,500

Notes: Estimates have been rounded to the nearest 10. Blank cells represent an estimate of fewer than 10. Airport operations includes rescue and firefighting services.

It highlights that:

- Associate Professional and Technical occupations and Skilled trades are likely be the largest broad occupational groups;
- There is a substantial proportion of low-skilled jobs;
- There is significant demand for managerial and professional jobs;
- Airport operator and passenger jobs are predominantly low skilled; and
- MROs will have the highest volumes of Associate Professional and Technical occupations and Skilled Trades jobs.

Figure 3.2b (below) gives further detail of the likely nature of qualifications, training and experience that might be expected in these broad occupational roles. This underlines the likelihood that:

- Manston's workforce will be predominantly made up of people with low or intermediate levels of skills and qualifications;
- Graduates are likely to account for of the order of 10-15% of the workforce; and
- Most roles will probably require a good general level of education on entry and then require significant 'on the job' training.

Figure 3.2b: General nature of qualifications, training and experience by broad occupation

Managers, directors and senior officials	A significant amount of knowledge and experience of the production processes and service requirements associated with the efficient functioning of organisations and businesses.
Professional occupations	A degree or equivalent qualification, with some occupations requiring postgraduate qualifications and/or a formal period of experience-related training.
Associate professional and technical occupations	An associated high-level vocational qualification, often involving a substantial period of full-time training or further study. Some additional task-related training is usually provided through a formal period of induction.
Administrative and secretarial occupations	A good standard of general education. Certain occupations will require further additional vocational training to a well-defined standard (e.g. office skills).
Skilled trades occupations	A substantial period of training, often provided by means of a work based training programme.
Caring, leisure and other service occupations	A good standard of general education. Certain occupations will require further additional vocational training, often provided by means of a work-based training programme.
Sales and customer service occupations	A general education and a programme of work-based training related to Sales procedures. Some occupations require additional specific technical knowledge but are included in this major group because the primary task involves selling.
Process, plant and machine operatives	The knowledge and experience necessary to operate vehicles and other mobile and stationary machinery, to operate and monitor industrial plant and equipment, to assemble products from component parts according to strict rules and procedures and subject assembled parts to routine tests. Most occupations in this major group will specify a minimum standard of competence for associated tasks and will have a related period of formal training.
Elementary occupations	Occupations classified at this level will usually require a minimum general level of education (that is, that which is acquired by the end of the period of compulsory education). Some occupations at this level will also have short periods of work-related training in areas such as health and safety, food hygiene, and customer service requirements.

Source: [REDACTED] (accessed 14th September 2019).

Figure 3.3 (below) shows the 10 specific occupations with the largest employment estimates at the most detailed level of Standard Occupational Classification. Just over half of the anticipated employment at year 10 will be in these occupations. Descriptions of these occupations, their entry requirements, typical tasks and salary levels are included in Annex 1. These are drawn from the SOC code manual and the National Careers database.

Figure 3.3: Employment in key occupations (largest employment areas), Year 10

Key Occupations (incl SOC code)	Airport Operator	Passenger operators	AMO	Total
1121 Production mngrs and directors in manufacturing	10	-	20	30
2124 Electronics engineers	-	-	20	20
3112 Electrical and electronics technicians	-	-	20	20
3113 Engineering technicians	10	-	90	100
3512 Aircraft pilots and flight engineers	10	20	-	40
5235 Aircraft maintenance and related trades	10	10	140	160
6214 Air travel assistants	110	50	-	160
8133 Routine inspectors and testers	-	-	20	20
8233 Air transport operatives	100	-	-	110
9241 Security guards and related occupations	100	-	-	100
Total	360	90	330	780

Notes: Estimates have been rounded to the nearest 10. Blank cells represent an estimate of fewer than 10.

Figure 3.4 (below) outlines year 10 on-site employment estimates for all the various occupations that are engineering related. This highlights that over a third of estimated employment (540 jobs) can broadly be classed as engineering, although the numbers required in specific roles will often be small (fewer than 10).

Figure 3.4: Engineering related employment, Year 10

Engineering related occupations (incl SOC code)	All sectors	Total
1121 Production mngrs and directors in manufacturing	30	30
2121 Civil engineers	10	
2122 Mechanical engineers	20	
2123 Electrical engineers	-	
2124 Electronics engineers	20	
2126 Design and development engineers	10	
2129 Engineering professionals not elsewhere classified	10	
2461 Quality control and planning engineers	10	
		80
3112 Electrical and electronics technicians	20	180
3113 Engineering technicians	100	
3114 Building and civil engineering technicians	-	
3116 Planning, process and production technicians	10	
3512 Aircraft pilots and flight engineers	40	
5213 Sheet metal workers	-	210
5215 Welding trades	-	
5221 Metal machining setters and setter-operators	-	
5223 Metal working production and maintenance fitters	10	
5225 Air-conditioning and refrigeration engineers	-	
5232 Vehicle body builders and repairers	-	
5235 Aircraft maintenance and related trades	160	
5241 Electricians and electrical fitters	10	
5249 Electrical and electronic trades not elsewhere classified	-	
8116 Plastics process operatives	-	

8117 Metal making and treating process operatives	-	
8125 Metal working machine operatives	-	
8132 Assemblers (vehicles and metal goods)	-	
8133 Routine inspectors and testers	20	
Total		40
		540

Notes: Estimates have been rounded to the nearest 10. Blank cells represent an estimate of fewer than 10.

Employment and skills demand at Manston will arise from two sources:

- 'Growth demand' relating to new jobs that are created as companies establish themselves on site. By year 10, the earlier analysis suggests that around 1,500 jobs will have been created on site.
- 'Replacement demand', which refers to demand created by staff retiring or leaving the sector each year. This is the net additional requirement for staff and does not include job openings created when staff are promoted or move between employers or airports.

The government's Working Futures employment model estimates this replacement demand to be between 3% and 5% per annum depending on the sector and occupational group. Figure 3.5 (below) estimates this replacement demand by broad occupational group and shows that in total **around 60 net additional posts will be created on-site each year as a result of retirements and people moving out of the sector.**

Figure 3.5: Replacement demand by broad occupational group, Year 10

Broad Occupational Group (SOC 2010)	Replacement demand (per annum)	Replacement 1 year	Replacement 5 years
1. Managers and Senior Officials	4%	10	30
2. Professionals	3%	-	20
3. Associate Professional and Technical	3%	10	50
4. Administrative and secretarial	4%	-	20
5. Skilled trades	3%	10	40
6. Caring, leisure and other service occupations	5%	10	40
7. Sales and customer service	4%	-	10
8. Process, plant and machine operatives	5%	10	40
9. Elementary occupations	5%	10	40
Total		60	290

Notes: Estimates have been rounded to the nearest 10. Blank cells represent an estimate of fewer than 10.

Most engineering related occupations have a replacement demand closer to 3% per annum. Working from the employment estimate of 540 engineering related jobs in total, this would be the equivalent of **15-20 new engineering-related jobs each year.**

Demand for Skills by Type of Employer

A closer look at the nature of demand for each type of employer in the employment model, based on depth interviews and desk research, confirms the picture set out in Figure 3.2 above in terms of the spread of occupations. It also gives valuable insight into how the various roles are likely to be filled. Significantly, a high proportion of the jobs created (and those that will need to be replaced each year) do not require high levels of skills or qualifications upon entry. Instead, skills are often trained 'on the job', including for some technical and engineering roles at lower and intermediate levels.

Operator Jobs

Figure 3.6 below summarises what the research has identified through depth interviews in terms of the skills required for jobs in the operator category in the model. The picture that emerges aligns with the earlier analysis of likely skills needs based on national statistics: very few jobs have specific entry requirements in terms of qualifications, but instead will tend to require general employability / good character and the ability to develop once recruited both on the job and through more structured training.

Figure 3.6: Operator Jobs and Associated Skills Requirements

Job Role	No.	Role Detail and Associated Skills Requirements
Passenger services	100	Includes check-in, inf desk, etc. No specific qualifications needed on entry. Recruited with a basic education and trained up.
Freight services	400	Ground handling involves re-palleting and loading / unloading goods. Careful monitoring of weight and stowing to numbered and specified locations in the hull. Export cargo has to be x-rayed or manually searched by site and freight security. Two main job roles: <ul style="list-style-type: none"> • Load Masters (50), responsible for supervision of tasks • Ground handling operatives (350), do operational tasks No specific qualifications needed on entry to ground handling roles: people become skilled but tend not to be highly educated. Everyone is trained on the job, including Load Masters. There is a big emphasis on Health and Safety, as well as good character and lifestyle factors (eg drug free).
Rescue and fire fighting	53	Multi-skilled and would do some basic handling too. No specific qualification required on entry but can be existing fire service people. Lots of in-service training.
Airport operations	20	People in 4x4s patrolling the site continuously and driving 'follow me' vehicles to get planes to the stand. No specific entry qualifications required, but staff receive specialist training on things like grounds management and handling wildlife risks.
Maintenance	44	Undertake routine maintenance tasks related to buildings and facilities (not aeroplanes or specialist equipment). Likely to have some practical / craft skills on entry.
Motor transport	16	Refers to routine maintenance of fire appliances, pallet dollies, forklift trucks, etc in an on-site workshop as prescribed by the manufacturer. People with vehicle mechanics qualifications recruited, then trained up in specifics by vehicle vendors and specialist training companies.
Site and freight security	50	Recruited with a basic education and trained up. Need SITO level 1 or 2 qualifications, done in house.
Shuttle bus (station)	5	Drivers. Relevant driving qualification.

Administration	16	Range of office-based roles. Recruited with good basic education and / or some administration-specific skills.
Retail	25	Customer service and supervisor roles. Most not requiring a specific qualification upon recruitment.
Catering	25	Customer service and supervisor roles. Plus catering and hospitality craft skills. Entry requirements vary by role. Qualifications typically lower / intermediate level.
Car parking	3	Car parking attendants. No specific entry requirements.

Source: workshop, depth interviews and desk research.

Figure 3.6 suggests that:

- The operator itself will have a significant in-house training and development function, with scope for partnerships locally to augment and complement this.
- There is significant potential to recruit local people with low and intermediate-level qualifications, as long as they have good basic skills, the right employability skills and personal attributes.
- There could be a need for an operator induction course to ensure that staff understand how the different elements of the airport operation connect with each other. This would also make new recruits aware of the wider range of opportunities for career progression and strengthen the Manston operator 'employer brand'. Brand-specific elements could also be included in induction, if, for example, RiverOak opted for a particular approach and standards of customer care and the delivery of brand values.

Maintenance, Repair and Overhaul (MRO) Jobs

The employment model, based on input from RiverOak's aviation consultants assumes that the two main MRO operations at the airport would be activities run by the two low-cost passenger carriers, rather than a third party MRO company like Lufthansa Technik setting up there. Such companies tend to opt for more central locations.

People working in MRO activities require both generic engineering skills (primarily mechanical engineering) and qualifications and those relevant to the specific make of equipment they work on. Specific licensed training and formal Civil Aviation Authority (CAA) approval is needed for MROs and their staff to maintain and service specific aeroplane manufacturer systems, and all activity is quality audited.

A more general point to note is that MRO skills are in short supply: the CAA has identified the lack of such skills as a major barrier to the growth of the aviation sector.

Figure 3.7 (below) looks at Ryanair's engineering operations and gives a sense of the range of activities and job roles that might be expected in an MRO company.

Figure 3.7: Ryanair Broad Categories of Engineering Activities and Roles

Role Category	Description
Engineering graduates	Range of graduate roles and programmes in the different teams of the engineering department.
Engineering quality assurance	Maintaining an oversight of the airworthiness of our fleet on a daily basis, the Engineering Quality Assurance team liaise with National authorities regularly regarding airworthiness and safety and conduct reviews and audits across our engineering operation to ensure a high standard of compliance with the applicable regulations and procedures.
Heavy maintenance	Conduct extensive checks on individual aircraft systems, structure and components all of Ryanair's Boeing 737-800 aircraft to ensure they continue to operate with the utmost efficiency and serviceability. These checks are carried out at our heavy maintenance facilities in Prestwick, Scotland, Kaunas, Lithuania, Wroclaw, Poland and Seville, Spain.
Line maintenance	The Line Maintenance team are responsible for all aircraft maintenance tasks from routine turnarounds and overnight checks to troubleshooting and rectification of defects, AOG recovery, Ramp Checks and A Checks at our 70+ line stations throughout Europe ensuring that all aircraft depart and take customers to their destinations on time.
Materials	The materials team is responsible for sourcing and purchasing of all Ryanair's aircraft parts to ensure that all maintenance can be completed as necessary on their fleet of aircraft across their European network.
Planning	With over 450 aircraft in our fleet, maintenance planners ensure that all maintenance is scheduled and completed as required. The team is responsible for planning of both long and short term maintenance across Ryanair's network.
Technical services	Providing technical support to the Ryanair fleet for Structures, Aircraft systems, Avionics, Powerplant, Reliability.
Training.	Ryanair's trainers ensure that their engineers across Europe are trained to a high technical standard allowing them to continue to deliver maintenance and maintain Ryanair's safety record.

Source: [REDACTED] (accessed 14th September 2019).

Engineering-specific jobs are likely to account for the majority of roles (of the order of two thirds or higher) in MRO companies, alongside other jobs in more general business functions. There also tends to be a 'pyramid' structure³ to MRO company engineering operations involving:

- Graduate engineers and those with a higher-level qualification, whether degree, HNC/D or degree apprenticeship, usually in aerospace engineering (30% of engineering staff);
- Engineers who have completed a Level 2 or 3 apprenticeship in subjects such as mechanical or electrical engineering (30%);
- Trainees (on apprenticeship programmes in larger companies, possibly more informally trained in smaller companies), not qualified on entry but with good practical application (40%).

As regards the precise nature of engineering skills required, depth interviews suggest that graduate engineers will tend to be aerospace mechanical engineers, but with a strong electronic / electrical base too. Well regarded, modern degree programmes would tend to include a focus on air worthiness and aircraft maintenance. At intermediate levels of skills, the Level 3 Air Worthiness Apprenticeship Standard is delivered by British Airways at Heathrow, Cardiff and Glasgow. Any development of engineering at Manston should link to the work that BA has been doing in this area.

³ The larger the company, the 'steeper' the pyramid may be, with a lower proportion of graduates and a higher proportion of low / intermediate-skilled staff.

The 'pyramid' structure of MRO companies suggests that, as an order of magnitude, across a Manston MRO workforce of 500 people, the Year 10 workforce might consist of:

- 105 engineers with higher / degree level qualifications mainly in aviation engineering;
- 105 engineers with a Level 2 or 3 apprenticeship completed in Mechanical or Electrical Engineering; and
- 140 trainees, many of whom would be on a Level 2 or 3 apprenticeship programme in Mechanical or Electrical Engineering.

These orders of magnitude might suggest that by Year 10 **demand for new Level 2 or 3 apprentices each year would be in the low- to mid-tens** and there may be scope for **low tens of qualified apprentices or new recruits to progress on to higher and degree-level learning**. Whether this demand would need to be addressed by a local provider would depend on the approach taken by the MRO companies themselves and any existing relationships they have with training providers and universities.

The relatively small scale of ongoing demand for aviation-related engineering skills at Manston and the need for specialist training and licensing specific to individual aeroplane manufacturers could suggest that a regional approach is needed for training to be delivered at a viable scale and for staff to be 'rotated' around airports to gain experience of specific equipment makes, for example.

It is interesting to note in this respect that the new aviation skills centre that London South East Colleges Group are establishing at Biggin Hill is based on a business case that assumes support not only the skills needs of Bombardier's on-site MRO centre for executive jets, but also the wider engineering skills needs of London and the Southeast in specialism like composites, advanced manufacturing and hand skills.

Low-cost Carrier Jobs

Assuming that low-cost carriers based at Manston do not have head office or other central activities like sales and marketing based at the airport, the bulk of jobs in this category will relate to cabin crew and flight deck staff.

For the level of passenger activities envisaged for Manston, it is assumed that there are 4 aircraft based at Manston overnight at Year 10 (as at comparative airports like Prestwick), and each would have 2 flight deck, 4 cabin crew and 4 crew source staff per aircraft. Taking into account other roles, there would be a total of 24 staff per based aircraft. The overall total would approach 100 for the four aircraft, including a stand-by engineer, with each low-cost carrier employing 50 staff.

As regards the skills needs of low-cost carrier jobs, there is a major distinction between flight deck and other roles. Flight deck staff will join as qualified pilots or be part of a structured training scheme. Ryanair⁴, for example, employs people in cadet, captain and first officer roles and has pilot training partners to train and develop this employee group. The company recruits to other roles, such as cabin crew, without any formal entry qualifications being required, instead focusing more on general education and attitudinal and behavioural factors.

This suggests that at Manston low-cost carrier flight deck recruitment and training needs are very small are likely to be handled centrally, rather than locally. Other roles, though, such as cabin crew positions are likely to be accessible to local people with the right basic education and attitudinal and behavioural characteristics. This is similar to the position for the anticipated operator jobs and could similarly lend itself to a recruitment and training partnership with local education and skills providers.

⁴ [REDACTED]

Other Jobs

Figure 3.8 summarises the key employment and skills requirements of the other main employers included in the employment model.

Figure 3.8: Other Main Manston Employers and Associated Skills Needs

Employer	Skills Needs
Aircraft Recycling Company	<p>Essentially an engineering operation, with skilled staff with graduate, higher level intermediate-level aviation or mechanical engineering qualifications engaged in the key task of stripping down aircraft and warehousing the parts. As an order of magnitude, if the company employed 45 people, approximately:</p> <ul style="list-style-type: none"> • 10 would be graduate engineers • 10 would have general business / administration roles • 25 would be in low / intermediate-skilled engineering operative roles <p>Comparator company: Air Salvage International⁵, near Bristol.</p> <p>In terms of skills demand in Year 10, an aircraft recycling company would marginally increase the need for skills above that already identified for MRO and involve similar skills sets and qualifications.</p>
Air Traffic Services (ATS)	<p>ATS will be outsourced to a remote location, so this activity at Manston refers to locally based staff responsible for routine monitoring, checking and maintenance of equipment such as radios (emitters and receivers), navigation aids (systems that aircraft use to navigate and land) and (especially) the Instrument Landing System (ILS), which is radar based and has two separate systems: primary and secondary (made by companies like Thales).</p> <p>Although the employment model assumes 6 staff here, as many as 12 staff could be eventually required, comprising an overall manager, a supervisor and 2 or 3 engineer-technicians per shift.</p> <p>Equipment manufacturers would do in-depth maintenance of this equipment and handle all the initial installation, while the ATS engineer-technicians would:</p> <ul style="list-style-type: none"> • Monitor the equipment: by inspecting or receiving and assessing routine monitoring information; • Undertake initial rectification of any issues (by, for example, putting the equipment into maintenance mode and taking basic corrective actions (such as switching off and on again) • Refer the issue to the equipment manufacturer for resolution. <p>Engineer-technicians would need basic technical skills (including practical 'hands on' and 'fixing' skills – more abstract, academic knowledge alone will not suffice) and then specific, certified training by the relevant equipment manufacturers. The 'base' technical skills could be in mechanical, electrical and / or electronic engineering, with radio technologies being especially relevant.</p> <p>The manager and supervisor would be much more experienced in a wide range of systems, probably educated to degree level and chartered engineer status, although a degree by itself would not be enough – extensive industry experience is essential.</p> <p>The 'gold standard' benchmark for engineer-technician training is the RAD's apprenticeship scheme, which recruits people with GCSEs and maybe an A Level or two and takes them through a very structured training process. This is the kind of model that any FE provider should be looking to emulate.</p> <p>There is a major shortage of ATS engineers, so there could be a wider opportunity for any local providers or regional / national initiatives like the new Biggin Hill facility.</p>

Regular Freight Operator	Only two staff required to represent the company on the ground, given that freight handling <i>per se</i> would be handled by the airport operator.
Freight 'New Integrator'	A state-of-the-art warehousing / e-commerce operation run by a major online retailer. Azimuth Consulting will be researching the scale and nature of employment and skills demand in October 2019 on a visit to Rockford Airport, Chicago, where Amazon has a major freight hub of this type ⁶ .
Cruise Ship Flight Operator	No additional local jobs beyond services provided by the airport operator.
Chater Carrier (seasonal)	No additional local jobs beyond services provided by the airport operator.
Scheduled Operator	No additional local jobs beyond services provided by the airport operator.
Live Animal Specialist Transport Company	Difficult to predict at this stage, as the requirement varies significantly according to the kind of animals involved.
Border Inspection Post	Numbers could be higher, perhaps reaching 50, if the operation were 24 x 7. Nature of demand varies by the items being inspected and ongoing changes to legislation.
Customs, Immigration and Government Agencies (Borders Agency)	Staff would be recruited by the Borders Agency through their usual recruitment and selection procedures and staff assigned to Manston.

In addition to these roles in the employment model, the site already contains a **helicopter company** (Polar Helicopters) which offers helicopter passenger transport and classes. This company employs a very small number of staff and also has contractor pilots and instructors. If activities expanded with the growth of the airport and increased opportunities for local business, the company might need additional pilots and bringing more of its maintenance in house, but the employment impact of this would be very small.

Adjacent to the airport itself, an area called **The Northern Grass** is expected to bring a range of activities in areas like serviced offices, car hire, taxi companies, offices for companies on the main site and logistics. It is not possible at this stage to make indicative forecast of employment and skills needs for this site. The Freight New Integrator (see Figure 3.8 above) is also likely to be located here and could occupy the largest individual company plot.

⁶ [REDACTED]

4. Key Conclusions

The analysis in this report points to three key conclusions that should inform next steps by RiverOak and partners:

- 1. A significant proportion of the job opportunities created at Manston will have relatively low entry requirements and be open to local people.** This may lend itself to a coordinated partnership approach with local Further Education and schools to raise awareness of the employment opportunities at Manston generally and support people to have basic readiness for entry level roles. This might take the form of candidate screening, basic employability training and even a Manston preparatory training programme to build candidates' understanding of key generic requirements in terms of, for example, the overall airport operation and how the different elements fit together, attitudes, behaviours, customer care and brand values.
- 2. Because most job opportunities will not require specific qualifications but will require some sector specific knowledge and understanding, a significant on the job training and development operation will be required by the airport operator.** Given this high volume of activity, this may create an opportunity for partnership working with local Further Education and training provider partners and dovetail with any collaboration that takes place under point 1 above.
- 3. While engineering activities at Manston are expected to create significant demand for specialist technical and professional skills, more detailed discussions by education and skills providers are needed to assess whether there is a case for significant additional FE or HE capital investment in new facilities.** It is possible that existing facilities, such as those of EKC Group at surrounding campuses or CCCU at its new engineering, technology and design facility in Canterbury, may be the most efficient way of providers meeting Manston-related engineering skills demand. The scale of the requirement also suggests that there could be scope to explore partnerships with other providers in the wider London / South East region or nationally. The new Aviation Training Centre at Biggin Hill, for example, may be able to work with local FE and HE partners to meet Manston engineering skills needs on a partnership basis.
- 4. The pace and extent of the skills response will be highly dependent upon the actual timing and phasing of Manston's redevelopment.** In particular, exactly which employers set up on site and when will be critical in shaping local provider's response to the skills and employment opportunities created. The response on the ground will need to be developed collaboratively, as the detail RiverOak's commercial strategy and the detailed plans of incoming companies' are known.

This report provides a reasonable estimate of the eventual employment and skills requirements of Manston under RiverOak's ambitious redevelopment plans - it provides a sense of the 'end in mind' or what kind of response will eventually be required to make Manston a success *per se* and to maximise its local employment impact. The immediate task is probably to start working towards that aim through a more pragmatic skills response to the detailed implementation of the project, as the details of incoming employers are firmed up in the coming years.

Steve Matthews & Dr Jonathan Pratt
1st October 2019

Annex: Ten Key Occupations

1. Production Manager (1121 Production managers and directors in manufacturing)

Job description: Production managers and directors in manufacturing plan, organise, direct and co-ordinate the activities and resources necessary for production in manufacturing industries including the maintenance of engineering items, equipment and machinery.

Entry requirements of this job: There are no pre-set entry standards. Entry is possible with either a degree or equivalent qualification, and/or relevant experience. On-the-job training is provided and professional qualifications are available, as are NVQs in Management at levels 3 to 5.

Tasks required by this job include:

- Liaises with other managers to plan overall production activity and daily manufacturing activity, sets quality standards and estimates timescales and costs;
- manages production to ensure that orders are completed to an agreed date and conform to customer and other requirements;
- monitors production and production costs and undertakes or arranges for the preparation of reports and records;
- oversees supervision of the production line and its staff, ensures targets are met.

Jobs related to this code:

- Engineering manager
- Managing director (engineering)
- Operations manager (manufacturing)
- Production manager

Further info

Average salary £20k starter to £40k experienced

2. Electronics Engineer (2124 Electronics Engineers)

Job description: Electronics engineers undertake research and design, direct construction and manage the operation and maintenance of electronic motors, communications systems, microwave systems, and other electronic equipment.

Entry requirements of this job: Electronics engineers usually possess an accredited university degree or equivalent qualification. After qualifying, periods of appropriate training and experience are required before membership of a chartered engineering institution is attainable. Incorporated engineers possess an accredited university degree, BTEC award or an apprenticeship at Level 4. All routes are followed by periods of appropriate training and relevant experience.

Tasks required by this job include:

- Undertakes research and advises on all aspects of telecommunications equipment, radar, telemetry and remote-control systems, data processing equipment, microwaves and other electronic equipment;
- determines and specifies appropriate production and/or installation methods and quality and safety standards;
- organises and establishes control systems to monitor performance and evaluate designs;
- tests, diagnoses faults and undertakes repair of electronic equipment.

Jobs related to this code:

- Electronics engineer
- Field engineer
- Service engineer

Further info: [REDACTED]

Average salary £21k starter to £65k experienced

3. Electrical Engineering Technician (3112 Electrical and electronics technicians)

Job description: Electrical and electronics technicians perform a variety of miscellaneous technical support functions to assist with the design, development, installation, operation and maintenance of electrical and electronic systems.

Entry requirements of this job: Entrants usually possess GCSEs/S grades, an Intermediate GNVQ/GSVQ Level II or a BTEC/ SQA award. NVQs/SVQs in Servicing Electronic Systems are available at Levels 2 and 3.

Tasks required by this job include:

- plans and prepares work and test schedules based on specifications and drawings
- sets up equipment, undertakes tests, takes readings, performs calculations and records and interprets data;
- plans installation methods, checks completed installation for safety and controls or undertakes the initial running of the new electrical or electronic equipment or system;
- diagnoses and detects faults and implements procedures to maintain efficient operation of systems and equipment;
- visits and advises clients on the use and servicing of electrical and electronic systems and equipment.

Jobs related to this code:

- Avionics technician
- Electrical technician
- Electronics technician

Further info: [REDACTED]

Average salary £20k starter to £38k experienced

4. Aircraft technician (3113 Engineering technicians)

Job description: Engineering technicians perform a variety of technical support functions to assist engineers with the design, development, operation, installation and maintenance of engineering systems and constructions.

Entry requirements of this job: Entrants to training usually possess GCSEs/S grades. Vocational training consists either of full-time study for a BTEC award followed by two years on-the-job training, or an apprenticeship leading to an NVQ at Level 3 or 4. An NVQ in Aircraft Engineering Maintenance at Level 3 plus further professional qualifications are required to become a licensed aircraft engineer.

Tasks required by this job include:

- plans and prepares work and test schedules based on specifications and drawings;
- sets up equipment, undertakes tests, takes readings, performs calculations and records and interprets data;
- prepares estimates of materials, equipment and labour required for engineering projects;
- diagnoses and detects faults and implements procedures to maintain efficient operation of systems and equipment;
- inspects completed aircraft maintenance work to certify that it meets standards and the aircraft is ready for operation;
- visits and advises clients on the use and servicing of mechanical and chemical engineering products and services.

Jobs related to this code:

- Aircraft technician
- Commissioning engineer
- Engineering technician
- Manufacturing engineer
- Mechanical technician

Further info: [REDACTED]

Average salary £18k starter to £40k experienced

5. Pilots, first officers and flight engineers (3512 Aircraft pilots and flight engineers)

Job description: Aircraft flight deck officers check, regulate, adjust and test engines and other equipment prior to take-off, navigate and pilot aircraft and give flying lessons.

Entry requirements of this job: Entrants with GCSEs/S grades and A levels/H grades, an Advanced GNVQ/GSVQ Level III or a BTEC/ SQA award can apply for an airline sponsorship. Private residential training is available to candidates with GCSEs/S grades or appropriate BTEC/SQA or GNVQ/GSVQ awards or to holders of Private Pilots Licences who have 700 hours flying experience. Normal colour vision is required and candidates undergo a medical examination. Training lasts up to 15 months and consists of courses of study and flying instruction. Airlines may have additional age and height requirements.

Tasks required by this job include:

- studies flight plan, discusses it with flight deck crew and makes any necessary adjustments
- directs or undertakes routine checks on engines, instruments, control panels, cargo distribution and fuel supplies;
- directs or undertakes the operation of controls to fly aeroplanes and helicopters, complying with air traffic control and aircraft operating procedures;
- monitors fuel consumption, air pressure, engine performance and other indicators during flight and advises pilot of any factors that affect the navigation or performance of the aircraft;
- maintains radio contact and discusses weather conditions with air traffic controllers;
- performs specified tests to determine aircraft's stability, response to controls and overall performance;
- accompanies pupil on training flights and demonstrates flying techniques.

Jobs related to this code:

- Airline pilot
- First officer (airlines)

- Flight engineer
- Flying instructor
- Helicopter pilot

Further info [REDACTED]

Salary £20k starter to £140k experienced

6. Aircraft mechanic (5235 Aircraft maintenance and related trades)

Job description: Jobholders in this unit group fit, service, repair and overhaul aircraft engines and assemblies. (Licensed aircraft engineers are coded to 3113, key occupation no.4).

Entry requirements of this job: Entrants usually possess GCSEs/S grades, a GNVQ/ GSVQ or a BTEC/SQA award. Apprenticeships in Engineering Maintenance at NVQ/SVQ Level 3 are available. NVQs/SVQs in Aircraft Engineering Maintenance are available at Level 3.

Tasks required by this job include:

- examines drawings, manuals and specifications to determine appropriate methods and sequence of operations;
- fits and assembles parts and/or metal sub-assemblies to fine tolerances to make aircraft engines;
- replaces engine components or complete engines, installs and tests electrical and electronic components and systems in aircraft;
- examines and inspects airframes and aircraft components, including landing gear, hydraulic systems, and de-icers to detect wear, cracks, breaks, leaks, or other problems;
- maintains, repairs and rebuilds aircraft structures, functional components, and parts;
- maintains comprehensive repair logs.

Jobs related to this code:

- Aeronautical engineer
- Aircraft electrician
- Aircraft engineer
- Aircraft fitter
- Aircraft mechanic
- Maintenance engineer (aircraft)

Further info: [REDACTED]

Average salary £20k starter to £35k experienced.

7. Cabin crew and passenger service assistants (6214 Air travel assistants)

Job description: Air travel assistants issue travel tickets and boarding passes, examine other documentation, provide information and assistance at airport terminals and look after the welfare, comfort and safety of passengers travelling in aircraft.

Entry requirements of this job: Entrants usually possess GCSEs/S grades. Fluency in a foreign language may also be required in some posts. Training typically lasts between 3 to 6 weeks followed by a 6 to 12 month probationary period of on-the-job training.

Tasks required by this job include:

- receives passengers at airport terminal, examines tickets and other documentation, checks in luggage and distributes boarding passes;
- checks emergency equipment, distributes reading material, blankets and other items, and ensures that the aircraft is ready for the receipt of passengers;
- welcomes passengers on board the aircraft, guides them to their seats and assists with any hand luggage;
- ensures that sufficient stocks of meals and beverages are on board the aircraft prior to take off and serves passengers during the flight;
- sells duty-free goods during the flight;
- makes announcements on behalf of the pilot, demonstrates the use of emergency equipment and checks that safety belts are fastened;
- directs and instructs passengers in the event of an emergency, ensures safety procedures are followed.

Jobs related to this code:

- Air hostess
- Cabin crew
- Customer service agent (travel)
- Flight attendant
- Passenger service agent

Further info:

[REDACTED]

Average salary £12-30k

8. Test engineer/quality inspector (8133 Routine inspectors and testers)

Job description: Jobholders in this unit group inspect and/or test metal stock, parts and products, electrical plant, machinery and electronic components, systems and sub-assemblies, parts and materials to detect processing, manufacturing and other defects.

Entry requirements of this job: There are no formal academic entry requirements, although some employers require candidates to possess GCSEs/S grades. Training is typically received on-the-job, supplemented by training courses where instruction in specific techniques is required. Various NVQs/SVQs encompass aspects of quality control.

Tasks required by this job include:

- examines articles for surface flaws such as cracks, dents, defective sealing or broken wires by visual inspection or using aids such as microscopes or magnifying glasses;
- checks sequence of assembly operations and checks assemblies and sub-assemblies against parts lists to detect missing items;
- sets up test equipment, connects items/system to power source/pressure outlet, etc. and operates controls to check performance and operation of electrical plant and machinery and electronics systems;
- examines materials, checks specifications, marks any repairable defects and rejects faulty items;
- reports any recurrent or major defects and recommends improvements to production methods.

Jobs related to this code:

- Quality assurance inspector
- Quality controller
- Quality inspector

- Test engineer

Further info: [REDACTED]

Average salary (Quality control assistant) £12k starter to £25k experienced

9. Ground crew and baggage handlers (8233 Air transport operatives)

Job description: Air transport operatives refuel, load and unload aircraft, direct the movement of aircraft at airports, and position gangways or staircases to allow passengers to board and disembark aircraft.

Entry requirements of this job: There are no formal academic entry requirements, though employers may require entrants to possess GCSEs/S grades for some posts. Training is provided off- and on-the-job. NVQs/SVQs in Providing Airside Ramp Operations are available at Level 2.

Tasks required by this job include:

- refuels aircraft from mobile tankers;
- directs the ground movement of aircraft at airports;
- loads and unloads conveyor belts to transport luggage between terminal buildings and aircraft, monitors conveyor belts and clears any blockages;
- loads aircraft with luggage, in-flight meals, refreshments and other items;
- operates retractable gangway or positions mobile staircases to enable passengers and crew to board and disembark aircraft.

Jobs related to this code:

- Aircraft dispatcher
- Baggage handler
- Cargo handler (airport)
- Ramp agent
- Refueller (airport)

Further info: [REDACTED]

Average salary (baggage handler) £15k starter to £20k experienced

10. Airport security officers (9241 Security guards and related occupations)

Job description: Workers in this unit group protect merchandise, individuals, hotels, offices, factories, public grounds and private estates from injury, theft or damage, and investigate fraud and crime on a non-statutory basis.

Entry requirements of this job: There are no formal academic entry requirements. For some vacancies a current and clean driving licence is required and entrants may have to pass a medical examination. Training is typically provided on-the-job. NVQs/SVQs covering various aspects of security guarding are available at Level 2.

Tasks required by this job include:

- investigates crimes, trading practices and the private affairs of individuals;
- walks or rides near person requiring protection, watches for suspicious occurrences and defends guarded person from attack;
- monitors and patrols hotels, factories, offices and other premises, forests, parks, and public or private estates to prevent theft and unauthorised entry;

- checks persons and vehicles entering and leaving premises, establishes their credentials and arranges for escorts for visitors;
- receives duty sheet, time-clock and keys for premises to be visited, checks locks, doors, windows, etc. and reports any suspicious circumstances to security headquarters;
- calls in civil police and gives evidence in court where necessary.

Jobs related to this code:

- CCTV operator
- Security guard
- Security officer

Further info:



Average salary £16k starter to £26k experienced.

Annex 2: People who Participated in the Research (Interviews and Workshop)

Rich Connelly, Osprey Consulting Services Ltd

Sally Dixon, Azimuth Consulting Ltd

Tony Freudmann, Director RiverOak Operations Ltd

Sheila Garrioch, Polar Helicopters

Thorir Kristinsson, SmartLynx Airlines

Anne Nortcliffe, Founding Head of the School of Engineering, Technology and Design, Canterbury Christ Church University.

Chris Wilson, Managing Director, Avman Engineering Ltd

Tom Wilson, Managing Director, Viscount Aviation

Louise Wolsey, Group Executive Director, London South East Colleges