www.jobmarkets.com.au

Job Markets Australia
2018-2019

Information Paper

This information paper
was prepared by Rodney Stinson,
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Yorkcross Pty Ltd
GPO Box 2171, Sydney NSW 2001
Phone   02 4332 6910
www.jobmarkets.com.au   www.whatjobspay.com.au
webmaster@jobmarkets.com.au

Part 1

Introduction

The *Job Markets Australia* online database at www.jobmarkets.com.au was formerly called *Archangel® Job Markets Australia.* The website is operated by Yorkcross Pty Ltd.

Privacy Policy and Monitoring

The www.jobmarkets.com.au website is hosted on an external commercial organization's server. The proprietary software running on the server automatically collects specific information about visitors to the website. This will be used to monitor website usage, including browsing patterns, and to improve layout, accessibility and performance.

Those who choose pay-as-you-go for the Report/s from the online database are directed to the secure PayPal™ website, whose stipulated privacy policies are followed by Yorkcross Pty Ltd. No personal or identifying details about the PayPal™ payee or payment are known to www.jobmarkets.com.au, except when a tax invoice is requested. In that case relevant details sourced from the PayPal™ website are included in the PDF file of the tax invoice, but these are not retained on the www.jobmarkets.com.au website.

The identity of those using PrePaid credits is not sought when a Report is obtained; such credits may be used so long as a valid PrePaid code is supplied.

Online Availability

Yorkcross Pty Ltd cannot guarantee 100% availability of the website and the *Job Markets Australia* online database because the website is hosted by an external commercial organization's server. In the event of less than 100% availability, Yorkcross Pty Ltd cannot be held responsible for any unavailability.

Information Fields

Each occupation in the online database has the following information fields. Those with an asterisk are part of the Query function, and you can nominate search criteria to identify occupations that meet your criteria.

ANZSCO title and code
Skill Level
National, State and Capital City – Current Number of Jobs
[Regional/Local Number of Jobs when selected#]
Qualification Level Usual Minimum*
Actual Post-school Qualification Levels by Age-group
Employment Outlook* and Brief Reasons
Industries with Jobs
Self-employment
Older Workers' Job Shares*
Single Year of Age Job Shares 50 to 70 plus
Young Workers' Job Shares*
Gender Job Shares*
Incidence of Part-time Work*
Average Weekly Full-time Earnings by Age-group
Digital Literacy
English Competency – Speaking,* Listening,* Reading,* Writing*
Physical Demand Rating*
Career Interests*
Job Orientation*
O*NET™ skills, abilities and knowledge – importance and level

*searchable fields in the Query function

Find, Query, Sort and Filter

The <u>Find</u> function entails typing the full or part title of the occupation in which you are interested. If the full title does not locate the occupation, this could mean the occupation has a different title in the online database or is part of another occupation in the *ANZSCO Dictionary*. To establish the title used in the *ANZSCO Dictionary*, and thus in the online database, you can open one of the PDF files on Job Resources in the toolbar. One PDF file is the entire dictionary and the other has extracts.

To include an occupation in a Report, it needs first to be selected into the Report Manager. You do that by ticking the box next to the occupation in a list generated by the Find or Query functions, and then clicking Add Job/s.

The <u>Query</u> function gives you a powerful tool to identify occupations that meet your specified criteria. When you go to run a new Query, remember that, to begin with, everything about all occupations is included. You only *deselect* what you don't want included in your Query.

For instance, if you're interested in older workers and nothing else at this stage, then simply go to the older workers field and deselect the responses you do not want to include and leave the other fields unchanged. Then run the Query. There is one exception. With the Job Orientation field you <u>do</u> select Data, People, or Things.

The <u>Filter</u> option lets you exclude any otherwise suitable occupations in the Query results when they have a Regional/Local job count of 3 or fewer or no Regional/Local jobs.

The <u>Rank</u> option lets you sort from highest to lowest the earnings within one age-group among the list of occupations meeting your search criteria in the Query function. This entails selecting one age-group in the earnings ranking display.

Jobs by ANZSCO Groups

The *ANZSCO* structure with major groups, minor groups and over 1,000 occupations is not displayed in the Report Manager of the new online database. Instead, you can see the structure when you open a PDF file of the complete *ANZSCO Dictionary* on the Job Resources page on the toolbar on www.jobmarkets.com.au's homepage.

Reports and Invoices Supplied as PDF Files

The Reports and Invoices generated on www.jobmarkets.com.au are supplied as PDF files. To open and print the PDF files, you will need to have installed the AdobeAcrobat® Reader® software, which can be downloaded free from the www.adobe.com website.

Part 2

Description

The *Job Markets Australia* online database provides essential statistics and other data and information for use by professionals preparing reports for litigated cases, workers compensation matters, and other contested issues where earnings and labour market considerations are of crucial importance. The contents of the online database have been cited and relied on in those arenas since the late 1990s.The well-researched online database also assists informed decision-making by professionals and others who help and provide advice and direction to job seekers in general, people in rehabilitation or outplacement programs, school leavers, university and college students, and anyone looking to change or plan their career.

The online database's comprehensive information is set out in a concise, systematic way, and it has the capacity to sort and analyze all occupations according to key factors, such as the physical demand rating, English competency, availability of accessible regional/local jobs, and the incidence of older workers.

Job Markets Australia is accepted as the standard (and authoritative) reference on the labour market and earnings for 1,016 detailed occupations in the 1st edition of the *Australian and New Zealand Standard Classification of Occupations* (*ANZSCO*) *Dictionar*y, as revised.

In summary, the *Job Markets Australia* online database has been designed to assist individuals, organizations and others to understand and to make informed decisions with respect to preparing for, and participating in, the labour market. Before they finalize their reports and recommendations, and certainly before decisions are made and acted on, Yorkcross Pty Ltd and Rodney Stinson would advise individuals, organizations and others accessing the online database or with access to database Reports (or extracts from database Reports) to confirm from other sources and authorities the relevance and accuracy of the assessments, analysis and ratings contained in *Job Markets Australia*.

Recommended Use of Job Markets Australia

The assessments and ratings in *Job Markets Australia* give a reliable indication of important labour market variables and characteristics for each occupation. These have a national focus and can be applied as a type of benchmark against which State/Territory and regional/local labour markets may be measured. The national focus provides an overview, which may or may not apply at the State/Territory or regional/local levels. If users believe that the regional or local situation is, or may be, different from the national assessments and rating regarding the employment outlook, usual qualification level and so on, the best approach is to identify the reason or reasons for the difference and to conclude which assessment or rating is to be preferred.

Some regions and localities have unemployment rates that are either well above or well below the national averages. The regional economy, for instance, may be doing better or worse than the national economy or key regional industries may be performing at high or depressed levels. Where these general considerations are documented or where special regional and local factors are known to exist, then they would constitute sufficient reasons for concluding that the regional or local situation would be brighter or worse than the national assessment or rating given in *Job Markets Australia* for an occupation, though the magnitude of the difference might not always be great.

This questioning approach, joined with knowledge of regional and local factors and an appreciation of the distinctive characteristics of individual job seekers, is a good way to apply the assessments and ratings in *Job Markets Australia*. First and foremost, however, the database provides a sound framework at the national level, and it is only against such a framework that the regional and local situation and the relative potential of specific applicants can be fairly and reliably determined. Additional statistics to help in determining the regional job situation are now included in the database, including the State and Territory current number and share of jobs within each occupation and job numbers to the local government area.

Part 3

Occupations and their Job Duties

The occupations in the database are coded to the 1st edition (revision 1.2) of the *Australian and New Zealand Standard Classification of Occupations* (*ANZSCO*) *Dictionary*. Each is given its title and code in the *ANZSCO Dictionary*, and each has a brief statement of job duties, almost all of which are quoted exactly from the *ANZSCO Dictionary*.

Current Number of Jobs Nationally and by State and Capital City

Every occupation has an estimate of its current number of jobs nationally, by State/Territory and by capital city. The statistics reflect the latest 2018 data from the *Labour Force* survey and the locational job shares sourced from the *2016 Population Census*, both conducted by the Australian Bureau of Statistics. Nationally, about 6% of all workers hold more than one job, and

the job total for some occupations is thus understated, most of these being sub-professional occupations. Any job number well below 1,000 should be taken as an indicative figure and certainly not as a definitive statement of the actual number of jobs.

Establishing the number of accessible jobs is of crucial importance to understanding the employment opportunities in a locality. Regarding occupations, a rule of thumb is that the larger the occupation the more likely it is to be found in big and small labour markets. Examples are truck drivers, secretaries, school teachers and accountants. Examples of occupations whose jobs would not be found in all labour markets include actuaries, botanists and tram drivers, which have relatively few jobs nationally. Even so, there are medium-sized occupational fields that have their jobs solely or mainly in industries that are not spread evenly across State/Territory and regional/local labour markets. Instances of this are power generation, commercial fishing, and advertising.

Regional/Local Jobs

The number of regional/local jobs for each detailed *ANZSCO* occupation can be established through the Regional/Local Jobs setting in the online database. This lets you nominate, using the drop-down menus, a region or one or more local government areas (in the same region). You can change the specific locality during you work session, increasing or decreasing it in size, to suit your assumptions about the accessible labour market for the client at hand. The specific locality will apply for all occupations that have been selected in the Report Manager box in that work session. The 2018-2019 issue now provides job numbers for individual suburbs within a local government area and, in some cases, within regions that do not list local government areas.

If you want a different Regional/Local Jobs setting for, say, two occupations, then you will need to obtain the Report for one occupation, and then re-set the Regional/Local Jobs setting for the other, before obtaining its Report.

The local professional may want to comment on the job-count in some instances. If the number is thought to be too low or too high, it is recommended that this be noted. A useful rule of thumb is that the smaller the number, the more caution is required in its application in the decision-making process. Conversely, the larger the estimate, the greater can be the confidence about its use.

There is understatement in most of the regional/local job numbers owing to the lack of occupational detail provided by many respondents to the last *Census*. The regional/local job numbers also do not reflect job growth or job loss since 2016. In addition, jobs that are second jobs and not primary jobs are not included in the numbers. Second (and even third) jobs amount to about 6% of all jobs nationally.

Physical Demands

A strength rating is given for each occupation in the online database. There are five such ratings: sedentary, light, medium, heavy, and very heavy, and the definitions for these are based on lifting of weights and frequency, standing, walking and sustaining other physical postures or movements in a work situation. The definitions are included in the attachment to this *Information Paper*, and they are sourced, with adaptation to metric weights, from the U.S. *Dictionary of Occupational Titles*.

Yorkcross Pty Ltd commissioned a senior physiotherapist to establish the physical demand ratings for occupations in the Australian labour market context. The results of that study have been augmented by the ratings published for occupations in the *Dictionary of Occupational Titles.*

English Competency

For each occupation the database provides a rating of minimum competency for four different aspects of communication in the English language: speaking, listening, reading and writing.

Ratings were established through analyst assessment of the English competency required for workers carrying out the core duties of a given occupation in workplaces where English is the language of communication and supervision.

Consideration was given to both the usual competency levels accepted by employers and the competency demands relative to other occupations of similar, greater or lesser skill. The ratings are put forward as a guide to English language requirements. See the attachment to this Information Paper for a more detailed explanation.

Job Orientation

The Online database has information on the job orientations of each occupation, showing which of data, ideas, people and things is "most important" or "important". The attachment of this Information Paper has a short description of these job orientations.

Yorkcross Pty Ltd commissioned an experienced vocational psychologist to provide the job orientation ratings for occupations in the Australian labour market context.

Career Interests

All occupations are coded to the three highest scoring Career Interests reflecting the Holland inventory. The Interest categories are: Realistic, Investigative, Artistic, Social, Enterprising and Conventional. The first ranked Career Interest/s can be searched through the Query function. There is an explanation of each Interest category in the Attachments section of this Paper.

Yorkcross Pty Ltd commissioned a local research study to provide the career interests for occupations in the Australian labour market context. The results of that study were augmented by the interest codes published in the O*NET™ database on www.onetcenter.org and desk-research by an occupational researcher. Copies of the Archangel® Interest Profiler, in which individuals complete 180 questions to establish what their main work interests, are available from Yorkcross Pty Ltd. Enquiries to webmaster@jobmarkets.com.au.

Digital Literacy

An experienced occupational researcher determined the usual competency levels required for four key digital areas: Windows/other operating systems and smart devices; email/Internet use; Office suite; and industry/workplace systems. Each digital area was assigned to one of five competency levels, 1 being the highest and 5 the lowest.

After the scores were totaled, each occupation was assessed as requiring Extensive, Considerable, Medium, Some, or Little or No digital literacy. An explanation of Digital Literacy is given in the Attachments section of this paper.

Qualification Level

This field gives the minimum educational qualifications that are usually required by employers. It applies to those who intend to work as employees, and it might not apply to self-employed persons in a given occupation unless there are licensing or registration requirements that stipulate all workers in that occupation must have the stated qualification level.

The formal qualification level required in many occupational fields has increased dramatically over the past two decades, and that process is continuing in many occupational streams. Called credentialism, the process has come about partly because of changes in the make-up and choices of the sources of labour supply and partly because more employers are using educational qualifications to screen and choose among applicants. Regarding labour supply, the apparent retention rate of year 7 students to year 12/senior secondary is now 85%, compared with less than 50% in the mid-1980s – see the Bureau's *Schools Australia 2017* (catalogue no. 4221.0). The same source found the female rate remains somewhat higher than the male rate. The cumulative effect of this higher educational attainment grows with each passing year, causing an expansion in the stock of job seekers who have completed secondary schooling and seek to enter occupations that previously did not require that level of schooling.

Likewise, the proportion of all persons aged 20 to 64 years with a post-school qualification has been climbing steadily. It was below 46% in 1990 but is now 66%, while the proportion of people aged 25 to 39 years with a non-school qualification is almost 75%. [Source: *Education and Work* 2017 survey, catalogue no. 6227.0]

The implications are not wholly positive. In some professional fields, there are clear oversupplies of new graduates, notwithstanding the gloss put on employment destinations by the tertiary education industry. The destinations of new university graduates unable to obtain work at a professional level are mainly the sales, associate professional and service groups, though the clerical group, which once provided ready openings for out-of-work university graduates, still provides many jobs for them. The absorption of graduates from TAFE and other College courses varies on the sub-professional fields for which they were preparing. Almost all who complete traditional apprenticeships continue in their trade. Many of those undertaking part-time TAFE studies in non-trade streams are already employed, though not always in the occupational field to which their studies are linked, and others drop their studies when they obtain the job they want or another job to their liking. The employment destinations of those completing full-time pre-employment courses have, at least until recent years, been the most variable, ranging from excellent outcomes to less favourable ones.

Another development that has been affecting the entry paths is government-sanctioned traineeships for so many semi-skilled and lesser-skilled occupations. The extension of traineeships under the Australian Apprenticeship system to more of these occupations is, in my view, effectively cementing longer periods of formal education for some of them, in contrast to their previous entry modes of either short pre-employment training or mainly/solely on-the-job training. That development is likely to disadvantage job seekers with little interest in, or aptitude for, formal education as a major way of acquiring job skills.

A related policy issue is that the level of AQF certification assigned to traineeships in certain industries – for example, the hospitality, security, transport and cleaning industries – does not always appear warranted by the skill level of the *ANZSCO* groups to which the destination occupations are classified or by their inherent skill relative to occupations for which traineeships are less common or unknown. The disjuncture between the Australian Apprenticeship training arrangements and the AQF certification, on the one hand, and the skill levels of the relevant *ANZSCO* occupational groups, on the other hand, has not been satisfactorily addressed by the funding and administrative departments.

Skill Level

The *ANZSCO Dictionary*'s skill level rating for each occupation is shown next to the six-digit code. These ratings are particularly relevant for those occupations that are placed in more skilled groups in the *ANZSCO* classification than their skill alone would warrant. The hospitality managers in Major Group 1 Managers are an example. Their Skill Level 2 is below that of most other Managers in Major Group 1, who have Skill Level 1. The *ANZSCO Dictionary* is no longer based solely on assessed skill as the classification also takes some account, too, of related industry and field of work considerations.

Employment Outlook

This field gives the expected job future for each occupation, ranging from poor to excellent. Three determinants of the employment outlook are the prospects for vacancies due to the creation of new jobs, the potential for vacancies due to staff turnover in existing positions, and the stability of labour demand in the occupation in question. Although they continue to capture the attention of some commentators, new jobs generate far fewer vacancies than staff turnover, included in which is occupational wastage (due to movement to another occupation, age-related retirement, full-time study, or home/family responsibilities etc).

When labour demand for an occupation is stable or very stable, then its rating may be better than the frequency of vacancies might suggest. Although prospects for new jobs may be uncertain, some vacancies usually result from staff turnover. Occupations in the construction and mining industries generally have unstable labour demand, for example. That is, it can rise

and fall very quickly, depending on the economic conditions prevailing for their respective employing industries. For many occupations, however, the employment impact of fluctuations in economic or industry activity, whether favourable or adverse, is generally felt at the margin and universal disruption in labour demand does not occur. Some of those same occupations might still be subject to significant and quite sudden variations in labour demand due to unforeseen/unknown factors, such as changes in government policy and regulations.

Sharp alterations in the employment outlook often cannot be anticipated, because they are so unexpected and thus cannot be forecast. Examples include the September 11 event in the United States of America or heightened fears about epidemics. These began to impact almost immediately on the demand for airline travel. The employment outlook for Airline Pilot, Airline Stewards and so on altered within weeks, with flow-on effects following for tourism-related occupations. Another example of the unavoidable imprecision of forecasting is labour demand in the building/construction industry. The existence of cycles in the industry's activity and the importance of approvals and commencements data are well known, but the timing of the industry's peaks and troughs, their duration and their precise effects on labour demand cannot be forecast accurately.

Accurate forecasting of the timing, intensity and real effects of general economic downturns or recessions (and their positive counterparts, upturns and booms) is seldom achieved. When an earlier issue of the database was finalized in June, 2009, the likely seriousness of the impact on Australia's economy from the global financial crisis that emerged in mid-2008 was still being debated. The labour market ratings were therefore not altered in anticipation of possible deterioration in demand for specific occupations. The boom in the resources sector picked up, again linked to expansion in the Chinese economy, and it has since peaked and then declined. For some years industries in the services and manufacturing sectors have been performing poorly because of the prevailing conditions in the global economy (particularly in the Eurozone) and adverse structural change such as import competition. The entries for the employment outlook by occupation took account of these factors and an occupation's relative sensitivity to economic downturns and recessions. The same conservative approach has been adopted for the issue.

Industries with Jobs

This information fields lists the industries providing the biggest share of jobs in each occupation and the percentage of jobs they have.

Worker Characteristics

These five fields contain key characteristics of the workers already working in each occupation, as explained below.

Self-employment: the figures and commentary indicate the incidence of self-employment, and the proportion within an occupation of those who, or do not, employ others.

Older workers' share of jobs: the percentages of jobs held by workers over 45, workers over 55 and workers over 65 are given for each occupation, and so are the overall workforce averages. Single Year of Age job shares for those aged 50 to 70 plus are provided when you select that field in the Contents Options section of the online database.

Young Workers: this field shows by occupation the share of jobs held by young workers (that is, those under 25). It gives separate percentages for the jobs held by teenagers and all young workers, as well as the workforce averages.

Gender: many occupations continue to have unequal proportions of male and female workers. The current percentages for females by age-group are shown for each occupation.

Part-time work: the prevalence of part-time work has, of course, been increasing. Because this field is based on hours of work in the *Census* week, rather then full-time or part-time status, it tends to overstate the proportion of part-time jobs.

Full-time working hours: the distribution of full-time working hours is now included for each occupation, showing the proportions that are working 35 to 40 hours a week, 41 to 48 hours, and 49 hours or more.

Average Weekly Full-time Income

Estimates of what the average full-time worker could expect to earn are provided in the *Job Markets Australia* online database for each occupation by age-group. Full-time employment is defined as 35 hours a week or more. The earnings in the issue are derived from the Bureau's *Characteristics of Employment* survey in August, 2017, with the Bureau supplying unpublished tables in early 2018). This survey replaced the *Employee Earnings, Benefits and Trade Union Membership* survey in 2014, and its updating statistics satisfy the same definitions of "employees", "full-time", "average" and occupation.

Regarding the average earnings in the issue, the Bureau supplied Yorkcross Pty Ltd with unpublished tables from the *2016 Population Census* and the *Characteristics of Employment* surveys in 2016 and 2017. The *Census* table contained cross-tabulations for the employed labour force according to occupation, income, age, and hours of work, as well as gender and State. The highest Census income ranges were extended in 2016, thereby permitting a truer average in higher earnings occupations. 1,016 occupations in the revised First Edition of the *ANZSCO Dictionary* were utilized, and so were all income ranges. In the *Census* tables, the Bureau supplied income averages for all occupations and their selected components. It did this by (i) taking the median income points for each income range established in the *2015-16 Household Income and Expenditure* survey and applying them to the same income ranges in the *2016 Population Census* and (ii) calculating them against the number of workers in each income range, to arrive at occupation and group averages and averages for age, hours of work and other components within each occupation and group.

Yorkcross Pty Ltd took the averages of weekly income generated by these steps and then calculated them against average weekly total earnings for full-time workers within the same unit group occupation in the *Characteristics of Employment* survey in 2016 to obtain sets of relativities. Where the 2016 issue – or, when updating was undertaken, the 2017 issue – did not provide reliable statistics on earnings for matching at the unit group occupation level, relativities were established at a higher level of aggregation. The final sets of relativities achieved through this process were next applied to the results of the Bureau's *Characteristics of Employment* survey in 2017, giving rise to the average earnings in the database's 2018-2019 issue.

The average weekly full-time earnings published in the database include the wage/salary, as well as overtime and allowances, but not the compulsory superannuation levy. The Bureau advises that its originating figures equate to the overall value of the salary package. Estimates of earnings have been suppressed whenever the number of workers counted in the *2016 Population Census* was considered too small to permit calculation of reliable income data. In practice this usually meant excluding *Census* cells having fewer than 20 respondents.

Adult new entrants with little or no experience in the same occupational area are likely to have incomes close to those shown for younger workers. A handy pointer to likely starting earnings in their case is the figure for the 20 to 24 age-group. Experienced workers in the same occupation have an earnings premium which usually ensures they earn higher income in older age-groups, the major exception being many, but by no means all, lesser-skilled occupations.

*O*NET™ Data*

A statement of the skills, abilities and knowledge for each occupation has been compiled from the original O*NET™ data on www.onetcenter.org. The statement lists all of the variables for these three factors and gives the percentage analysis for their importance and level in each occupation. The percentages were calculated using the O*NET™ formulae provided for that purpose. The difference between importance and level is explained in the *Utilizing O*NET™ data* paper, which is located at the lower right-hand corner of the website's homepage.

Part 4

Sources and Methodology

Job Markets Australia was researched and written by Rodney Stinson. He has spent 40 years researching occupations and analyzing employment, earnings and labour market trends, and for 31 years he has worked in his own labour market consultancy. The *Job Markets Australia* database is a development of his books and computer databases in the Job Prospects Australia and What Jobs Pay series.

The *Job Markets Australia* online database could not have been produced without recourse to the statistical resources of the Australian Bureau of Statistics. Time-series and tabular data are sourced from its *Labour Force* survey up to February, 2018, as well as supplementary surveys and other collection series and a large number of unpublished cross-tabulated tables from the *2016 Population Census*. Wherever possible, cross-tabulated tables were commissioned at the most detailed level for occupation, industry, age, hours and related data sets. The most up-to-date and reliable statistics are sourced for every annual update.

As outlined on the Sources page of the www.jobmarkets.com.au website, and in the *Free seldom means good* paper, the quarterly estimates from the *Labour Force* survey are unable to deliver statistically reliable data for many details and cross-tabulations in small and medium-sized occupations. It is not designed to do so. To overcome the lack of such reliable data, the responsible occupational researcher must utilize the counts of the most recent *Census*. That has been done with *Job Markets Australia*.

The Bureau's original statistics are seldom quoted in *Job Markets Australia*, as they have generally been heavily analyzed and transformed. The overriding goal for the research and analysis work was to establish for each occupation what it had in common with other occupations and the characteristics that were unique or shared with only some occupations. More than half of the information fields in *Job Markets Australia* do not reveal any direct reliance on the Bureau's data, and those fields are based on Rodney Stinson's understanding and judgements regarding labour market realities.

The approach and the principles underlying Rodney Stinson's work for *Job Markets Australia* are essentially the same as those he utilizes when he prepares standard and special reports in his consultancy, Yorkcross Pty Ltd. These reports are requested by law firms, insurance companies, rehabilitation providers, and functional capacity centres, among others, to determine the employment opportunities for a worker, specific occupations, or this or that region. The findings help to document what past or future economic loss, if any, may have resulted from an individual's inability to work due to an accident or similar mishap, either in their former occupation or other occupations, as well as the fields having the best potential for re-training and possible future employment. To ensure these reports are soundly based, fair and defendable in litigated matters in the Court system, Rodney Stinson originally devised in-house databases, some of which, in time, had their contents revealed in the *Job Prospects* series. In view of his labour market expertise, Rodney Stinson is called on to give expert testimony on the labour market and earnings in Court proceedings.

Attachments

Explanation of Physical Demand — Strength Rating

In the *Dictionary of Occupational Titles* (revised 4th edition, 1991), compiled by the U.S. Department of Labor, each occupation is assigned a strength rating which reflects the overall physical demands of average, successful performance of its occupational duties. There are five strength ratings: Sedentary, Light, Medium, Heavy, and Very Heavy. The strength ratings for each occupation in the *Dictionary of Occupational Titles* are based on an evaluation of three sets of physical activities against the criteria set out below.

Yorkcross Pty Ltd commissioned a senior physiotherapist to establish the physical demand ratings for occupations in the Australian labour market context, using the same sets of physical activities and the same criteria. The results of that study were augmented by reference to the ratings published for particular occupations in the *Dictionary of Occupational Titles.*

The strength ratings for occupations in the *ANZSCO Dictionary* are included in the *Job Markets Australia* online database to assist professionals in the medical, rehabilitation, training and other fields to identify occupations that are or could be within the physical capabilities of specific individuals. The strength ratings relate to the selected physical activities of occupations. While the strength ratings are a reliable guide concerning those activities, they do not consider the physical demands of such occupational duties as keyboarding or working with small hand tools or the scope for psychological stress.

Other more specific physical requirements in occupations may be ascertained from the O*NET™ data on physical abilities that can be included in a Report.

Acknowledgement is made that the following sections on physical activities and evaluation criteria are essentially identical to similar sections on pages 1012 and 1013 of the *Dictionary of Occupational Titles* (revised 4th edition, 1991). The material is in the public domain, but one major addition is the provision of metric equivalents to the imperial weights.

Physical Activities

1. Standing, Walking, Sitting

-    Standing - Remaining on one's feet in an upright position at a workstation without moving about.
-    Walking - Moving about on foot.
-    Sitting - Remaining in a seated position.

2. Lifting, Carrying, Pushing, Pulling

-    Lifting - Raising or lowering an object from one level to another (includes upward pulling).
-    Carrying - Transporting an object, usually holding it in the hands or arms, or on the shoulder.
-    Pushing - Exerting force upon an object so that the object moves away from the force (includes slapping, striking, kicking, and treadle actions).
-    Pulling - Exerting force upon an object so that the object moves toward the force (includes jerking).

Lifting, pushing, and pulling are evaluated in terms of both intensity and duration. Consideration is given to the weight handled, position of the worker's body, and the aid given by helpers or mechanical equipment. Carrying most often is evaluated in terms of duration, weight carried, and distance carried.

Determining the strength rating for an occupation requires careful attention to evaluating the force and physical effort the average worker must exert. For instance, if the worker is in a crouching position, it may be much more difficult to push an object than if pushed at waist height. Also, if the worker is required to lift and carry continuously or push and pull objects over long distances, the worker may exert as much physical effort as is required to similarly move objects twice as heavy, but less frequently and/or over shorter distances.

3. Controls

Controls entail the use of one or both arms or hands (hand/arm) and/or one or both feet or legs (foot/leg) to move controls on machinery or equipment. Controls include but are not limited to buttons, knobs, pedals, levers, and cranks.

Criteria for Strength Ratings

Sedentary Work

Criteria
(i) exerting up to 10 pounds (4.54 kilograms) of force occasionally [*occasionally is defined as* any activity or condition that exists up to 1/3 of the time]
and/or (ii) exerting a negligible amount of force frequently [*frequently is defined as* any activity or condition that exists from 1/3 to 2/3 of the time] to lift, carry, push, pull or otherwise move objects, including the human body.
Description
Sedentary work involves sitting most of the time but may involve walking or standing for brief periods of time. Jobs are sedentary if walking and standing are required only occasionally and the other sedentary criteria are met.

Light Work

Criteria
(i) exerting up to 20 pounds (9.07 kilograms) of force occasionally
and/or (ii) exerting up to 10 pounds (4.54 kilograms) of force frequently
and/or (iii) exerting a negligible amount of force constantly [*constantly is defined as* any activity or condition that exists 2/3 or more of the time] to move objects

Additional Criteria
In instances where the weight lifted may itself be negligible, an occupation should still be rated light work if the duties require:
(a) walking or standing to a significant degree
or (b) sitting most of the time but also pushing and/or pulling of arm or leg controls
and/or (c) working at a production rate pace entailing the constant pushing and/or pulling of materials even though the weight of those materials is negligible. Maintaining a production rate pace, especially in an industrial setting, can be and is physically demanding for the average worker; hence, the additional criteria.

Medium Work

Criteria
(i) exerting 20 to 50 pounds (9.07 to 22.68 kilograms) of force occasionally
and/or (ii) exerting 10 to 25 pounds (4.54 to 11.34 kilograms) of force frequently
and/or (iii) exerting greater than negligible up to 10 pounds (4.54 kilograms) of force constantly to move objects

Heavy Work

Criteria
(i) exerting 50 to 100 pounds (22.68 to 45.36 kilograms) of force occasionally
and/or (ii) exerting 25 to 50 pounds (11.34 to 22.68 kilograms) of force frequently
and/or (iii) exerting 10 to 20 pounds (4.54 to 9.07 kilograms) of force constantly to move objects

Very Heavy Work

Criteria
(i) exerting more than 100 pounds (45.36 kilograms) of force occasionally
and/or (ii) exerting more than of 50 pounds (22.68 kilograms) of force frequently
and/or (iii) exerting more than 20 pounds (9.07 kilograms) of force constantly to move objects

Explanation of English Competency

Each of the *ANZSCO* occupations in the *Job Markets Australia* online database has been given a rating of minimum competency for four different aspects of communication in the English language: speaking, listening, reading and writing.

Ratings were established for each occupation after an experienced occupational analyst assessed the English competency required for workers carrying out the core duties of a given occupation in workplaces where English is the language of communication and supervision. Consideration was given to both the usual competency levels accepted by employers and the competency demands relative to other occupations of similar, greater or lesser skill. The resulting ratings are put forward as a guide to English language requirements. There is no similar set of ratings data for such a big number of occupations in the Australian labour market. For skilled occupations, the ratings represent not only the minimum competency levels but also the usual and, in most instances, necessary requirements of employers looking to recruit new staff or promote existing employees. There would be few jobs in skilled occupations for which the exact level of competency implied in the component scores is not mandatory. For lesser-skilled occupations, the ratings are put forward as the minimum requirements in relation to the English language, but they might not always prevail across the occupations in question. For some forms of self-employment, the ratings would have to be adjusted upwards, to show the level of competency that would be needed to conduct one's own business in English with clients, customers or patients.

The English competency study found that a small number of occupations require the highest competency in all aspects of the English language, two examples being Judges and Barristers, and that a bigger number call for considerable competency in all or most aspects. The study also found there continues to be a significant stock of occupations in the Australian workforce in which workers with minimal or no competency in one or all aspects of English work may work successfully. Most occupations, however, now have English language requirements that are in, or close to, the mid-ranges of competency. Entry to the last-mentioned occupations or to the most skilled occupations by job seekers with minimal or no competency in English would, in most instances, be unlikely or very unlikely.

Because Australia's cultural and social diversity extends to many workplaces, reasonable scope exists for languages other than English to be the primary or sole language of communication and supervision in the workplace. Instances of this include kitchen workers in ethnic restaurants (for example, Cantonese-style restaurants in Chinatown locations) and domestic cleaners working in the homes of others in the same immigrant group or being supervised by someone in their own language group. The crucial factor in such arrangements is probably the presence of supervisors (or owner/managers) who understand and use the language other than English in the workplace and who also have sufficient competency in English to ensure that business operations run smoothly and that the work is performed satisfactorily and meets occupational health/safety requirements.

Explanation of JOB ORIENTATION: Working with Data, Ideas, People or Things

There are four fundamental types of job orientation identified for the *ANZSCO* occupations and specializations in the *Job Markets Australia* online database. Yorkcross Pty Ltd commissioned an experienced vocational psychologist to provide the job orientation types applying to the local occupations.

A short description of each type is given below. The descriptors "most important" or "important" may be selected for one or more types when searching the database in the Query function.

Working with DATA involves files, accounts, business procedures, numbers and facts in general, and it entails planning, organizing or processing information in an ordered way and/or in new and improved ways.

Working with IDEAS involves thinking creatively, developing expertise in selected subjects and communicating the results, in writing, through design, art or music, or scientific or other formulae.

Working with PEOPLE involves caring for, helping, teaching, serving or selling to others, and it may entail organizing, motivating, and entertaining them or discussing issues and procedures to solve problems and achieve goals.

Working with THINGS involves the use of materials, tools, machinery and equipment, and includes working with animals and plants.

Explanation of CAREER INTERESTS

Career Interests show a person's preferences for work environments and outcomes. These Career Interests, which originate from the Holland Codes, are based on local research and O*NET™ data. The explanations are sourced from O*NET™.

REALISTIC — Realistic occupations frequently involve work activities that include practical, hands-on problems and solutions. They often deal with plants, animals, and real-world materials like wood, tools, and machinery. Many of the occupations require working outdoors, and do not involve a lot of paperwork or working closely with others.

INVESTIGATIVE — Investigative occupations frequently involve working with ideas and require an extensive amount of thinking. These occupations can involve searching for facts and figuring out problems mentally.

ARTISTIC — Artistic occupations frequently involve working with forms, designs and patterns. They often self-expression and the work can be done without following a clear set of rules.

SOCIAL — Social occupations frequently involve working with, communicating with, and teaching people. These occupations often involve helping or providing service to others.

ENTERPRISING — Enterprising occupations frequently involve starting up and carrying out projects. These occupations can involve leading people and making many decisions. Sometimes they require risk taking and other real with business.

CONVENTIONAL — Conventional occupations frequently involve following set procedures and routines. These occupations can include working with data and details more than with ideas. Usually there is a clear line of authority to follow.

Explanation of DIGITAL LITERACY

Digital literacy levels are ranged from (1) to (5) – (1) being the highest assessed level and (5) the lowest. These have been assigned to occupations by an experienced occupational analyst. They are described in terms of the specific vocational preparation (or its substitutes) usually undertaken by those employed in them, in relation to Windows/Mac operating system and smart devices; Internet/email use; Office suite; and industry/workplace software.

Level 1   Extensive Digital Literacy
The knowledge, skills and competencies for extensive digital literacy are equal to an IT degree for IT professionals, but an IT diploma may suffice in some instances (eg support desk work) when joined with practical skills gained through experience. Those without an IT qualification would obtain an extensive level of digital literacy through a combination of short courses, on-the-job training, and/or self-tuition and purposeful experience, all of which are generally oriented to their areas of professional expertise.

Level 2   Considerable Digital Literacy
The understanding, skills and competencies required for a considerable level of digital literacy are acquired, for the most part, through a combination of short IT courses, on-the-job training, self-tuition and purposeful experience. All but a handful of entries at this level are professions or technical occupations. Digital literacy here is focused on achieving and sustaining areas of employment expertise, especially in the mastery of industry/workplace software.

Level 3   Medium Level of Digital Literacy
A medium level of digital literacy may be achieved through a variety of paths. Staff employed in support and administrative occupations may complete certificate courses incorporating digital competencies. Most occupations at this level usually have short forms of specific, generalized or informal vocational preparation. This could be undertaken in the workplace or off the job perhaps at a TAFE college or organized by professional/industry bodies. At this level there is a strong merging of work-oriented digital literacy with that acquired through home computer use, school or post-school study, smart devices and other integrated technology.

Level 4   Basic Digital Literacy
A basic level of digital literacy may result from computer use at home, school or elsewhere, as well as from experience in everyday integrated technology such as smart devices and ITMs. In any event, employers, workmates or equipment suppliers would provide the required competencies through brief episodes of informal training, demonstration and/or supervision. When imputing data workers here frequently use touch screens or keypads.

Level 5   Little or No Digital Literacy
Occupations for which little or no digital literacy is necessary may have a short workplace demonstration in elementary competencies that focus on the interface with particular industry/workplace digital applications. This would be done by a fellow worker as part of an initial induction session or when undertaking different job duties. In that regard, previous use of a home computer or integrated technology such as smart phones would assist learning.

Explanation of SKILLS . . . sourced from O*NET™ data

There are 35 fields for the various kinds of workplace skills, which are grouped into basic skills, social skills, complex problem-solving skills, technical skills, systems skills and resource management skills. The importance of each skill factor and the level at which it is exercised are specified in O*NET™ data available for each *ANZSCO* occupation in the online database. The difference between importance and level is explained in the *Utilizing O*NET™ data* paper, located at the lower right-hand corner of the www.jobmarkets.com.au homepage

Basic Skills: These are developed capacities that facilitate learning or the more rapid acquisition of knowledge.

Reading Comprehension
Understanding written sentences and paragraphs in work related documents.

Active Listening
Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Writing
Communicating effectively in writing as appropriate for the needs of the audience.

Speaking
Talking to others to convey information effectively.

Mathematics
Using mathematics to solve problems.

Science
Using scientific rules and methods to solve problems.

Critical Thinking
Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Active Learning
Understanding the implications of new information for both current and future problem-solving and decision-making.

Learning Strategies
Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

Monitoring
Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Social Skills: These are developed capacities that are used in working with people to achieve goals.

Social Perceptiveness
Being aware of others' reactions and understanding why they react as they do.

Coordination
Adjusting actions in relation to others' actions.

Persuasion
Persuading others to change their minds or behavior.

Negotiation
Bringing others together and trying to reconcile differences.

Instructing
Teaching others how to do something.

Service Orientation
Actively looking for ways to help people.

Complex Problem Solving Skills: These are developed capacities that are used to solve novel, ill-defined problems in complex, real-world settings.

Complex Problem Solving
Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

Technical Skills: Technical skills are developed capacities that are used to design, set-up, operate, and correct malfunctions involving application of machines or technological systems

Operation Analysis
Analyzing needs and product requirements to create a design.

Technology Design
Generating or adapting equipment and technology to serve user needs.

Equipment Selection
Determining the kind of tools and equipment needed to do a job.

Installation
Installing equipment, machines, wiring, or programs to meet specifications.

Programming
Writing computer programs for various purposes.

Operation Monitoring
Watching gauges, dials, or other indicators to make sure a machine is working properly.

Operation and Control
Controlling operations of equipment or systems.

Equipment Maintenance
Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.

Troubleshooting
Determining causes of operating errors and deciding what to do about it.

Repairing
Repairing machines or systems using the needed tools.

Quality Control Analysis
Conducting tests and inspections of products, services, or processes to evaluate quality or performance.

System Skills: These are developed capacities that are used to understand, monitor, and improve socio-technical systems.

Judgement and Decision Making
Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Systems Analysis
Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.

Systems Evaluation
Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.

Resource Management Skills: These are developed capacities that are used to allocate resources efficiently.

Time Management
Managing one's own time and the time of others.

Management of Financial Resources
Determining how money will be spent to get the work done, and accounting for these expenditures.

Management of Material Resources
Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.

Management of Personnel Resources
Motivating, developing, and directing people as they work, identifying the best people for the job.

Explanation of ABILITIES . . . sourced from O*NET™ data

The 52 fields for the main abilities required to perform different occupational duties are grouped under the headings of cognitive abilities, psychomotor abilities, physical abilities and sensory abilities. A listing and short definition of the occupational skills are set out below.

Cognitive Abilities

Oral Comprehension	The ability to listen to and understand information and ideas presented though spoken words and sentences.
Written Comprehension	The ability to read and understand information and ideas presented in writing.

Oral Expression	The ability to communicate information and ideas in speaking so others will understand.
Written Expression	The ability to communicate information and ideas in writing so others will understand.
Fluency of Ideas	The ability to come up with a number of ideas about a topic (the number of ideas is important, not their quality, correctness, or creativity).
Originality	The ability to come up with unusual or clever ideas about a topic or given situation, or to develop creative ways to solve a problem.
Problem Sensitivity	The ability to tell when something is wrong or is likely to go wrong. It does not include solving the problem, only recognizing there is a problem.
Deductive Reasoning	The ability to apply general rules to specific problems to produce answers that make sense.
Inductive Reasoning	The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship between seemingly unrelated events).
Information Ordering	The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules) e.g., patterns of numbers, letters, words, pictures, mathematical operations).
Category Flexibility	The ability to generate or use different sets of rules for combining or grouping things in different ways.
Mathematical Reasoning	The ability to choose the right mathematical methods or formulas to solve a problem.
Number Facility	The ability to add, subtract, multiply, or divide quickly and correctly.
Memorisation	The ability to remember information such as words, numbers, pictures, and procedures.
Speed of Closure	The ability to quickly make sense of, combine, and organize information into meaningful patterns.
Flexibility of Closure	The ability to identify or detect a known pattern (a figure, object, word, or sound) that is hidden in other distracting material.
Perceptual Speed	The ability to quickly and accurately compare similarities and differences among sets of letters, numbers, objects, pictures, or patterns. The things to be compared may be presented at the same time or one after the other. This ability also includes comparing a presented object with a remembered object.
Spatial Orientation	The ability to know your location in relation to the environment or to know where other objects are in relation to you.
Visualisation	The ability to imagine how something will look after it is moves around or when its parts are moved or rearranged.
Selective Attention	The ability to concentrate on a task over a period of time without being distracted.
Time Sharing	The ability to shift back and forth between two or more activities or sources of information (such as speech, sounds, touch, or other sources).

Psychomotor Abilities

Arm-Hand Steadiness   The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.

Manual Dexterity   The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.

Finger Dexterity   The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.

Control Precision   The ability to quickly and repeatedly adjust the controls of a machine or vehicle to exact position.

Multilimb Coordination   The ability to coordinate two or more limbs (for example) two arms, two legs, or one leg and one arm) while sitting, standing, or lying down. It does not involve performing the activities while the whole body is in motion.

Response Orientation   The ability to choose quickly between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response if started with the hand, foot, or other body part.

Rate Control   The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene.

Reaction Time   The ability to quickly respond (with the hand, finger, or foot) to a signal (sound, light, picture) when it appears.

Wrist-Finger Speed   The ability to make fast, simple, repeated movements of the fingers, hands, and wrists.

Speed of Limb Movement   The ability to quickly move the arms and legs.

Physical Abilities

Static Strength   The ability to exert maximum muscle force to lift, push, pull, or carry objects.

Explosive Strength   The ability to use short burst of muscle force to propel oneself (as in jumping or sprinting), or to throw an object.

Dynamic Strength   The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.

Trunk Strength   The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing.

Stamina   The ability to exert yourself physically over long periods of time without getting winded or out of breath.

Extent Flexibility   The ability to bend, stretch, twist, or reach with your body, arms, and/or legs.

Dynamic Flexibility   The ability to quickly and repeatedly bend, stretch, twist, or reach out with your body, arms, and/or legs.

Gross Body Coordination	The ability to coordinate the movement of your arms, legs, and torso together when the whole body is in motion.
Gross Body Equilibrium	The ability to keep or regain your body balance or stay upright when in an unstable position.

Sensory Abilities

Near Vision	The ability to see details at close range (within a few feet of the observer).
Far Vision	The ability to see details at a distance.
Visual Color Discrimination	The ability to match or detect differences between colors, including shades of color and brightness.
Night Vision	The ability to see under low light conditions.
Peripheral Vision	The ability to see objects or movement of objects to one's side when the eyes are looking ahead.
Depth Perception	The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object.
Glare Sensitivity	The ability to see bright objects in the presence of glare or bright lighting.
Hearing Sensitivity	The ability to detect or tell the difference between sounds that vary in pitch and loudness.
Auditory Attention	The ability to focus on a single source of sound in the presence of other distracting sounds.
Sound Localisation	The ability to tell the direction from which a sound originated.
Speech Recognition	The ability to identify and understand the speech of another.
Speech Clarity	The ability to speak clearly so others can understand.

Explanation of KNOWLEDGE . . . sourced from O*NET™ information

There are 33 fields for the knowledge required to perform different occupational duties; a selection is shown below

Customer and Personal Service	Therapy and Counselling	Sales and Marketing
Computers and Electronic	Communications and Media	Design
Administration and Management	Building and Construction	Transportation
Engineering and Technology	Telecommunications	Mechanical
Education and Training	Public Safety and Security	Clerical
Production and Processing	Personnel and Human Resources	