

## *Expanding Skills Passport Canada Model*



### *Canadian Welding Certification - Comparison among Select Countries*

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## Introduction

Foreign-trained workers (FTW) are seen as an important potential source of labour within Canada where regional labour shortages have hindered growth in natural resource, agriculture, and constructions industries<sup>1,2</sup>. However, employing foreign trained skilled tradespeople through a permanent immigration stream has been difficult and inefficient for employers as well as those seeking to immigrate. Canadian jurisdictions have not achieved standardized methods or codified the criteria at a national level for assessing foreign credentials among Canadian provincial and territorial jurisdictions<sup>3</sup> and the Canadian Federal Skilled Worker Program (FSWP) points system, which favoured formalized education over practical training and work experience<sup>4</sup>, significantly limited skilled tradespeople from obtaining permanent residency and employment in Canada.

Citizenship and Immigration Canada (CIC) undertook to develop a program to reduce the difficulty of recruiting foreign trained tradespeople and, in 2013, introduced the Federal Skilled Trades Program (FSTP). The FSTP recognizes the demand for specific skilled trades in the Canadian labour market and aims to facilitate permanent residency of FTWs with practical training and experience in selected in-demand trades. In 2013, the program was open to recruit up to 3,000 applicants in 43 priority occupations (as described in the National Occupational Classification (NOC) system) from carpenter, electrician, and plumber to natural resource extraction supervisors and power engineers<sup>5</sup>. To be qualified through the FSTP, FTWs are required to i) satisfy the NOC for an FTSP occupation, ii) have at least two years of experience (within the last five years) in the occupation, iii) meet minimum language requirements in English or French, and iv) have a one-year qualifying job offer or a certificate of qualification from a Provincial or Territorial apprenticeship authority in that trade<sup>6</sup>.

In accepting applicants of the FSTP, CIC must ensure that the FTW is capable of doing the work offered and, if the occupation is regulated in Canada, that the applicant will qualify to be licensed once in Canada. Employers also seek methods to confidently hire FTW with the assurance that their skills and credentials meet the job requirements. However trade certification processes in other countries can be inaccurate and unreliable, and many countries use the completion of school-based vocational training as trade standard, which does not neatly align with the Provincial work-based apprenticeship models for eliciting credential equivalencies by apprenticeship authorities.

There is increasing interest in the development of efficient tools to facilitate the assessment and recognition of FTW qualifications and to promote a consistent approach across jurisdictions and trades<sup>7</sup>. In 2013, the *Skills Passport Feasibility Study*<sup>8</sup> identified the development of an in-country verification process, to ensure applicants meet Canadian labour force and FSTP requirements, as a key condition for progress within the FSTP. Over the long term, Skills Passport Canada envisions a verification program that will:

- Assess FTW qualifications, prior to applying for permanent residency via the FSTP.
- Populate a Qualified Applicant Pool (QAP) from which employers may recruit.
- Verify credentials and work experience of FTW that already have a job offer.

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<sup>1</sup> <http://www.cic.gc.ca/english/resources/publications/employers/federal-skilled-trades-program.asp>

<sup>2</sup> <http://www.cbc.ca/news/politics/skilled-trades-stream-targets-3-000-foreign-workers-in-2013-1.1300201>

<sup>3</sup> [http://www.saskapprenticeship.ca/wp-content/uploads/2012/05/FQR\\_Final\\_March2011.pdf](http://www.saskapprenticeship.ca/wp-content/uploads/2012/05/FQR_Final_March2011.pdf)

<sup>4</sup> <http://www.cbc.ca/news/politics/skilled-trades-stream-targets-3-000-foreign-workers-in-2013-1.1300201>

<sup>5</sup> <http://www.cic.gc.ca/english/immigrate/trades/applications.asp>

<sup>6</sup> <http://www.cic.gc.ca/english/resources/publications/employers/federal-skilled-trades-program.asp>

<sup>7</sup> [http://www.red-seal.ca/images/2012\\_AR\\_EN.pdf](http://www.red-seal.ca/images/2012_AR_EN.pdf)

<sup>8</sup> [SIAST source](#)

By collaborating with provincial and territorial apprenticeship and the Red Seal interprovincial certification authorities, it is anticipated that meaningful certification equivalencies can be developed to meet the standards of the Canadian labour force. An efficient and effective verification process includes:

- Tools to process applications in a timelier manner once clients enter the FST application phase.
- Confidence to employers selecting FTW candidates.
- Transparency and consistency to applicants paying for assessment.
- A process and result that is acceptable to the provinces and territories.

The proposed Skills Passport Canada program will flow via two routes, depending on how the trades training and credentialing process of the source country compares to Canada (Figure 1). Via either stream, the overall objective is to independently verify the job competency (as identified by NOA) and work experience requirements for FSTP candidacy.

The Experience and Competency Evaluation (ECE) Stream will be used for FST candidates from countries without comparable credentialing systems; such countries typically may not have work-based certification systems like Canada or there may little confidence in the country's training system standards or qualifications. The ECE stream will assess candidates on practical competencies using verified work experience and demonstration based assessments to determine if skills are equivalent to a Canadian trade standard.

The alternate route, the Foreign Qualification Assessment (FQA) Stream (Figure 1), will assess candidates based on a recognized framework of equivalency credentials, allowing credentials received in the country of training to provide partial or full credit towards the Canadian credential. The FQA will allow applicants to supply their proof of identification and their trade certification information in order to be assessed for the Qualified Applicant Pool, thus necessitates that specific countries be identified where credentialing processes are similar to Canada's (i.e., have a work-based system and where there is confidence in the training and certification program).

## **Background**

### ***Canadian Journeyman Certification System - Overview***

Before we can begin to determine equivalency of international trade certification systems, we must have a clear understanding of the Canadian trade certification system and how the key elements interact among each other. The standard for certification of tradespeople in Canada is the journeyman certificate, which can be achieved via two authorizing agents:

1. A province or territory issues the Provincial Journeyman certification in recognition of trades which have been officially designated only in those jurisdictions, or have not been designated Red Seal for a variety of reasons. For example, the trade is not designated anywhere else in the country, another designation has the same name but little else in common, or there is insufficient industry demand for certified workers and apprentices in a trade to sustain nationally developed products.
2. A province or territory issues the Interprovincial "Red Seal" Journeyman certification after the candidate has met eligibility requirements and passed the nationally set examinations. Most jurisdictions issue a provincial journeyman certificate with a Red Seal affixed to it, rather than a separate Red Seal certificate.

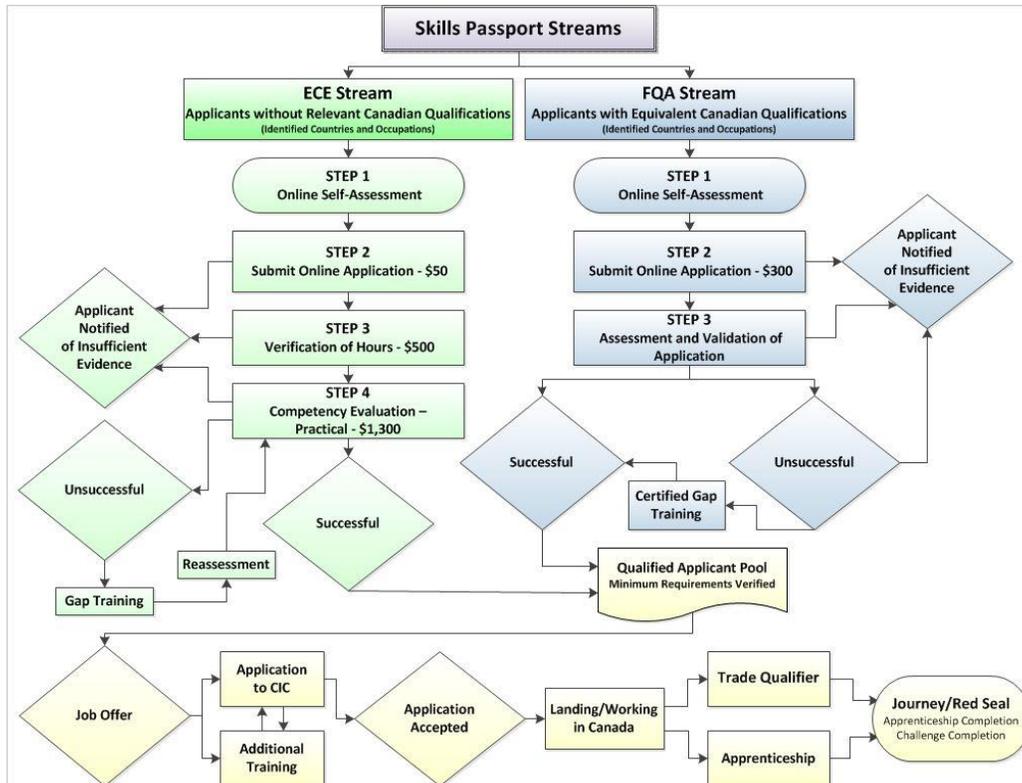


Figure 1: Skills Passport Streams to Foreign Skills Trades Program Qualified Applicant Pool<sup>9</sup>.

Those who hold Red Seal certificates are assured of national mobility in the trade in which they are certified. The requirements of Chapter 7 of the *Agreement on Internal Trade (Labour Mobility)*<sup>10</sup>, ensure that this certification must be accepted by government and by government agencies in which certification is required, and that no other requirements may be put in place.

Under the same provisions, holders of provincial certifications in a trade must be accepted by other jurisdictions as well, excepting any additional testing which may be required to prove competence in areas where the provincial certification process did not cover the same scope of trade as the Red Seal examination would have. In practice, jurisdictions have generally been recognizing provincial certificates due to the complexity and cost of conducting separate evaluations.

However, the provisions of the *Agreement on Internal Trade* do not apply to or bind employers. In general practice, employers do not recognize provincial certifications, instead requiring provincial certification holders to achieve Red Seal status if they wish to be recognized as journeypersons.

Because Canada's certification program relies on specific criteria, such as extensive work experience requirements and industry involvement, it does not have an equivalent in most other countries. For example, a Technical Education and Skills Development Authority (TESDA) certification is amongst the highest standard one can achieve in the Philippines; but in reality, it is only recognition that a school training program has been completed. This is the equivalent of someone in Canada completing a trade course at a community college, a necessary step toward finding a first job in a trade, but several steps

<sup>9</sup> SIAST source

<sup>10</sup> [http://www.ait-aci.ca/index\\_en/ait.htm](http://www.ait-aci.ca/index_en/ait.htm)

removed from being a legitimate trade certification. Thus the “Journeyman” credential from other countries often does not resemble a Canadian Red Seal journeyperson certificate in anything other than name.

### ***Government’s Role***

Under Canada’s constitution, the responsibility for adult education (of which journeyperson certification is included) lies with the provinces. The federal government has no role in the issuance, or the conditions which must be met prior to issuance, of journeyperson certificates, or trade certificates of any kind, even including the designation of trades, whether Red Seal or not. However, the provinces and territories (the “jurisdictions”) have long recognized the value of interprovincial mobility in trades and as such have included the federal government in a participant role with the program.

The Red Seal program had its genesis in the 1950s, decades before any other national mobility programs were ever contemplated. The first Red Seal journeyperson certificates were issued in 1959, to a graduating class of final level apprentices in New Brunswick. Initially, only graduating apprentices were permitted to challenge Red Seal examinations; by the mid-1960s, provincial journeyperson certificate holders were permitted to “upgrade” by challenging the examinations as well. After the late 1990s, most jurisdictions dropped provincial examinations entirely in trades where the Red Seal examination was available.

While the jurisdictions have long fulfilled their roles as developers and collaborators in this process, the federal government has also had significant input and participation. National mobility of its citizens is a major concern to the federal government, and efforts to promote and increase mobility tools and ease barriers have long been federal priorities. The Red Seal program has benefitted, particularly in terms of human resources provision and funding, from this focus.

### ***The Canadian Journeyperson Training System***

#### ***1) Work Experience Requirement***

All Canadian journeyperson certificates require extensive work experience as a basis for eligibility for examination. Typically, the number of years and hours that an apprentice must work in the trade are stipulated, but if the tradesperson is not an apprentice, or has not completed an apprenticeship, there is normally additional work experience requirements placed upon the applicant before he/she may challenge the examination. Each province and territory sets their own additional work experience requirements, thus they may vary by jurisdiction, although to participate in the Red Seal program for a given trade, a province’s or territory’s work experience requirements must be acceptable by the other jurisdictions and changes cannot be made without their approval. The “time and a half” rule is fairly commonly found, meaning a tradesperson must work at least one and a half (1.5) times longer than an apprentice would have had to work, to be eligible for examination. Alternatively, some jurisdictions use a formula that adds one more year and accompanying hours, to the experiential learning requirement.

Experiential learning in practice is the backbone of Canada’s qualification system. It is the process of learning and developing skills through direct experience in the workplace. It is learning through reflection on doing (in direct contrast to rote or didactic learning). For example, experiential learning is frequently characterized by a separation from the formal training institute or environment, to the environment where the skills will be ultimately applied. In Canadian trades, most formal apprenticeships require leaving the workplace to attend short periods of time in a technical training environment. A number of candidates rely entirely on the workplace with no formal in-school training component.

Because each of Canada's jurisdictions has responsibility for trade certification within their own borders, each has the right to determine which experiential learning is recognized, and there is inconsistency among provinces and territories. Some jurisdiction specific requirements may include:

- Placing a time limit (stale date) on what can be allowed.
- Accepting anything that fits within the overall scope of the trade in question even if it is a small component.
- Placing a maximum permitted credit for certain types of work, beyond which additional scope exposure must be provided before a candidate is deemed eligible.
- Requiring that the work experience of a candidate must demonstrate exposure to a certain amount of the scope of the trade, for instance, a minimum of 70%.

Some jurisdictions currently refuse to recognize the work experience obtained in other jurisdictions in certain circumstances, without explanation. As such, a jurisdiction may refuse credits, or work experience hours, that have already been granted by another jurisdiction.

One additional factor to consider is formal training. *Compulsory* apprenticeship trades require the completion of formal training to gain access to certification examinations and in many cases, even to work in the trade. *Voluntary* trades allow people to work in that trade with no training or certification requirements. In some jurisdictions, people in voluntary trades are free to work accordingly, but may not be allowed to challenge certification exams in some trades unless they have completed some form of prescribed training. Some jurisdictions recognize vocational training programs (i.e., applied certificate, certificate, pre-employment, work readiness programs) on a Prior Learning Assessment Recognition basis, granting both academic and work experience credit to graduates; others do not, or only recognize their own programs, or limit the credit accepted when the vocational training has occurred in a different jurisdiction. While the path taken to qualify to challenge the interprovincial Red Seal examinations is not consistent across jurisdictions and training facilities, the written certification tool is consistent.

## **2) *Employer and employee participation***

The basis of success in the Canadian Red Seal program is to engage those to whom it must serve. Primarily, this is the employers' of trade workers, and the trade workers themselves. At a secondary level are labour organizations, employer and industry organizations, government bodies, and regulators. Added to the mix are the consumers of the work of tradespersons.

The Red Seal program has been inclusive of a wide diversity of industry participation at all levels. Opportunities for participation ranges from being a Subject Matter Expert (SME) for Red Seal product development activities, to governance through direct engagement with identified bodies, and input from the chairs of jurisdictional governance boards. It is widely accepted by those knowledgeable about the program, that industry views the program as its own; and views government as the pointed custodian of the products needed to operate. To gain such buy-in means that industry has been successfully engaged and has seen positive outcomes that it understands and supports.

## **3) *Proven Methodology***

The processes around designation of trades within jurisdictions, and creation and maintenance of Red Seal trades, are quite complicated and are not included as part of this discussion; rather our focus is on the tool components of the Red Seal certification process.

An independent and peer reviewed evaluation of the Red Seal program was undertaken several years ago, at the request of the Canadian Council of Directors of Apprenticeship (CCDA). The evaluation found that the processes within the program were fundamentally sound and made over 50 recommendations, many of which were an “alternate approach for consideration” (led by Dr. Robert Crocker - Memorial University at the time)<sup>11</sup>. The Red Seal program adopted a number of these recommendations. Many other recommendations were not applicable to a trades certification program with a strong dependence on workplace experience, and could not be adopted. This is a reflection on the fact that almost no research had been done on tradesperson certification processes. Additionally, the research followed an academic path rather than a practical path, without regard to the pragmatic requirements of a national project, where no participant followed the same academic or experiential learning route to eligibility.

Having the process proven via academic evaluation reinforced the industry-approved process that was in place. Essentially, following a path of base document (National Occupational Analysis, or NOA), an exam plan and a properly developed testing instrument is a sound practice no matter what is being tested.

#### ***4) Industry endorsement and understanding***

The many opportunities for industry involvement in development and administering the Red Seal Program has been instrumental in engaging a great number of industry employers and employees, and has persisted the sense of ownership that industry has of the product. Industry plays a major part in the development teams and are the experts with final say in any Red Seal peer review processes; thus the examinations and other documents are fully endorsed by industry along with the certification journey persons achieve upon completion.

As noted above, the mobility requirements of *Agreement on Internal Trade* require governments to recognize all jurisdictionally issued trade certificates; but employers are under no such obligation. Employers generally choose the Red Seal as the certificate desired, as an assurance of the training and work experience of the employee. Industry itself, through its advocacy groups and associations, is a strong promoter of the Red Seal program; the extensive feeling of ownership through active developmental participation is a driving influence on these decisions.

Having a better understanding of the Canadian certification system will help CIC establish a methodology and practice that will support the Skills Passport Canada and the transitioning of FTW into FSTP’s Qualified Applicant Pool, and ultimately into employment.

#### ***The Qualified Applicant Pool (QAP)***

The proposed FQA Stream will enable the recruitment of potential workers through one of three alternate methods:

- Attracting immigrants who already have Red Seal status issued by a Canadian jurisdiction.
- Establishing qualifications for immigrants which are the equivalent to the Canadian Red Seal certifications and which will be accepted as such.
- Establishing criteria, which can provide some assurance that potential immigrants, who do not have recognized or recognizable certification, could reasonably be expected to pass the Red Seal examinations once they arrive in Canada.

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<sup>11</sup> Atlantic Evaluation and Research Consultants, “Operational Review of the Red Seal Development Process, Final (phase three) Report, March 12, 2007.

Attracting potential immigrants who already have Red Seal status from a Canadian jurisdiction is anticipated to happen very rarely. Essentially, this pool of potential immigrants would include people who had immigrated to Canada and successfully challenged the Red Seal examination for their trade, for example:

- Immigrants who left Canada after becoming certified.
- Immigrants with temporary foreign worker permits, who certified while in Canada.
- Immigrants who were subsequently deported.
- Travellers that made arrangements to challenge an exam while in Canada.
- People tested in their home countries by one of the jurisdictions.

Globally, there are very few likely candidates that fall into these categories and if one of the above status' was achieved, there may be alternative immigration routes to the FSTP, or little likelihood of immigration at all.

Identifying and establishing qualifications that are equal to the Red Seal and accepted at face value would be a challenge due to the variety of learning, work experience, industry involvement and standards obtained in other countries. As noted in the previous section, the Red Seal program is an industry led program that is only administered by the Federal and Provincial/Territorial governments. At the work site, an employer's primary concern is that their tradespersons have Red Seal certification. Employers are not held to accepting out-of-country certifications even if the Canadian government endorses the worker. Employers value and trust the Red Seal products and exams because they are developed by subject matter experts in the industry, jurisdictions practice a high degree of due diligence to ensure examination readiness, they provide a true national standard accepted equally by all regions, and eligibility for Red Seal certification is based on significant and verifiable experiential learning. Practices in other countries are not likely to equate to this Canadian standard.

It is more likely that a combination of experience and documentation could establish an "equivalent to eligible" status for out of country applicants to the QAP. The difficulty arises in verifying that credentials and work experience received abroad will ensure eligibility to write and succeed in the Red Seal exam once immigrants arrive in Canada. Individuals accepted into the pool must be able to challenge trade examinations in the jurisdiction in which they land; however, because the pool is a federal initiative, and it is uncertain where an immigrant may choose to land at the time of FST application, they must therefore meet the eligibility requirements in all jurisdictions; the only way to do this is to default to the highest requirement, or combination of requirements. Identification of out-of-country practical and written exams, and work experience credentials that jurisdictions would feel confident in are necessary to accept immigrants into the QAP using this method.

## **Research Purpose and Objectives**

Broadly, this research aims to support the progress of the FSTP and the Canadian Government's initiative to provide an efficient, effective, and flexible immigration system that focuses on the needs of the Canadian labour market. Over the long term our efforts will inform the development of the FSTP assessment tools to assist foreign trained workers in their pursuit of Canadian credentials, especially with respect to the assessment of their existing credentials and trade experience against provincial and territorial trade certification and the interprovincial Red Seal endorsement.

More specifically, this research is directed at informing development of the Foreign Qualification Assessment (FQA) Stream. Although 43 occupations are recognized under the FSTP, the scope of this project, as a pilot, is limited to identifying international credentials equivalent to the Red Seal Welding journeyman standard. Assessment against the Red Seal standard has the advantage of ensuring that

FTWs accepted into the QAP will have a reasonable opportunity to pass the Red Seal Trade Qualifier exam and become a nationally qualified FSTP applicant (as opposed to provincially or territorially qualified). As well, once implemented the FQA pilot for welding will inform the development of the FQA framework and processes for other Red Seal and provincially or territorially certified trades and identify options and best practices for enhancing the QAP with all trade occupations.

In the context of the three QAP recruitment methods identified above, our research objectives were to:

- Identify comparable international training and certification systems.
- Identify equivalency credentials in welding in each of the international certification systems explored.
- Develop an FQA framework that demonstrates the operational model for national and international credential equivalency in welding.

## Research Methodology

The purpose of this research is to develop an equivalency framework to establish a qualification assessment for the FQA Skills Passport Stream that recognizes equivalencies between similar training systems in select countries and the Canadian Red Seal Welding trade certification.

First, Subject Matter Experts (SME) identified countries to include in the FQA Framework for comparison to the Canadian credentials. Criteria used to identify countries included:

- Language (i.e., countries in which English is the first language, or where government and trades regulations materials could be accessed in English).
- Similarities in the training system (i.e., training is primarily work based, and testing and certification are Government regulated, and industry supported).
- Canadian jurisdictional experience.

Countries identified, as having the above attributes were Australia, Germany, Ireland, New Zealand, South Africa, United Kingdom, and the United States; however only four countries were chosen for comparative purposes, Australia, Germany, United Kingdom and United States.

In December 2013, correspondence was sent to industry and regulatory contacts within the countries' apprenticeship or trade certification authorities. The correspondence outlined the research objectives and approach, provided a short synopsis of the Canadian welding trade credentialing process and contained a questionnaire. The questionnaire posed several open-ended questions to illicit information regarding apprenticeship, trades training and certification processes, and credentials for the welding trade. The questionnaire asked the following:

- 1) Is your countries' welding training program similar to the Canada's, which requires significant work experience, possibly coupled with formal scholastic training, and successful completion of a written and practical examination?
- 2) What is the "status" of a welding journeyman or the name of the welding certification in your country? Who grants the certification? And what requirements must be met before certification is given?
- 3) In Canada, welding on pressurized vessels and piping requires additional certifications under provincial/territorial *Boiler and Pressure Vessel Regulations* or from the American Society of Mechanical Engineers (ASME). What are the work experience and practical testing requirements required for such certification in your country? Is the ASME code or an alternative employed for such certifications in your country?
- 4) In Canada, welding on structural steel or similar plate-based work also requires an additional

certification under the Canadian Welding Bureau (CWB) or the American Welding Society (AWS). What are the work experience and practical testing requirements required for such certification in your country? Is the AWS certification, or an alternative employed in your country?

Follow up research included a desktop review of material from each jurisdiction's apprenticeship authorities, as well as face-to-face interviews (in the case of Australia), telephone interviews, and email correspondence with each jurisdiction as required during the period of January and February 2014. Interviews and email correspondences were held with staff members from each country that worked directly with trade apprenticeship, training, and credential assessment processes.

The information was synthesized from the interviews, email correspondence, and literature reviews. Key practices from each country were summarized in regards to trade certification in general, and more specifically for the welding profession (*International Trades Training and Welding Certification*). International welding certification standards and requirements were been summarized to form the *Foreign Qualification Assessment Framework for Welding*. The analysis also aims to outline specific considerations for the Canadian-International comparison that could not be captured in the FQA framework.

## **Key Findings and Analysis**

### ***International Trades Training Systems and Welding Certification***

#### ***Australia - Trades & Apprenticeship Training***

Australian apprenticeships can be undertaken for over 500 occupations ranging from traditional trades, such as welding, to other emerging careers in a variety of business sectors<sup>12</sup>. Apprenticeships, which typically encompass training for the traditional trades (as opposed to traineeships, encompassing non-trade occupations such as hospitality, retail, and business administration), combine formal training conducted by an approved Technical and Further Education (TAFE) institution, or private but certified training facility, and on-the-job training. The apprenticeship is initiated through an employer creating a specific job vacancy for apprenticeship training. Depending on the trade and the jurisdiction, the apprenticeship will typically last three to four years and is competency-based, thus apprentices have the ability to complete training more quickly if they are able to reach required skills levels at a faster pace. A nationally recognized qualification culminates the completion of an Australian Apprenticeship<sup>13,14,15</sup>.

The Australian Government, State and Territory Governments, industry employers, and Registered Training Organizations (RTO) administer apprenticeships cooperatively. The national government develops support services or contracts organizations to provide support services to apprentices, policy for an apprenticeship incentive program, analyses apprenticeship outcomes, and contracts and monitors Australian Apprenticeship Centres (AAC) who provide free services to apprenticeship programs<sup>16</sup>.

As in Canada, the state and territory governments of Australia are responsible for the Vocational Education and Training (VET) system including apprenticeship policy, priorities, regulations, and administrative practices. Each jurisdiction develops the qualifications for a given trade and approves

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<sup>12</sup> <http://www.australianapprenticeships.gov.au/employers>

<sup>13</sup> <http://www.australianapprenticeships.gov.au/about-australian-apprenticeship>

<sup>14</sup> <http://www.australianapprenticeships.gov.au/australian-apprentices>

<sup>15</sup> <http://www.aapathways.com.au/Self-Help/What-is-an-Apprenticeship>

<sup>16</sup> <http://www.australianapprenticeships.gov.au/who-does-what>

RTOs to deliver curriculums and issue nationally recognized qualifications with oversight from the Australian Skills Quality Authority (ASQA), which regulates training requirements and content to ensure nationally approved standards are met<sup>17</sup>.

Also similar to Canada, the Australian Industry Skills Council (ISC) provides subject matter expertise to support the ongoing development of nationally recognized training products. The ISC also provides information to the VET regarding current skills needs and trends to identify future training requirements<sup>18</sup>.

### ***Australia - Welding Certification***

Welding in Australia is performed to the Australian/New Zealand Standard 1554. To become a certified welder one of three routes can be completed:

1. Completing an apprenticeship as a boilermaker (metal fabricator/welder) takes approximately four years and includes one day per week at a technical college for the first three years. Once completed, apprentices are considered Journeyman Boilermakers.
2. Alternatively, Australians can become certified welders with approximately 200 hours of training at a technical college (four hours per week for one year). The 200 hours of training qualifies trainees to challenge the structural steel code (AWS) and pressurized vessel and piping code (ASME) to be certified in those fields. Only if a welder leaves the industry for some time will he/she require competency testing and retraining if necessary.
3. Obtaining certification can also be accomplished through the Australian Institute of Welding Technology, which offers two extensive courses for examination under the Government Welding Certification Code (AS1796). These programs require experience in welding (three years) or a related trade, and the program also uses ASME standards for pressurized vessel and piping training.

### ***Germany - Trades & Apprenticeship Training***

In Germany, apprenticeships are undertaken via the dual vocational training system that also combines both formal education and vocational, on-the-job training. Approximately 340 recognized trades (*Ausbildungsberufe*) require some form of apprenticeship training in Germany. Apprenticeships are typically completed within two to three and a half (2 - 3.5) years with between 20-50 percent of the time being allocated to formal classroom training and the rest of the training occurring on the job. Students can take up apprenticeships once they have completed high school, typically between the ages of 16-19, depending on the type of school they were enrolled<sup>19,20,21</sup>.

Many employers in Germany offer apprenticeship opportunities that students must apply for in order to be eligible. Once in an apprenticeship position, students earn a small stipend and the employer will then enroll them in a local training program (*Berufsschule*). Employers must be recognized learning companies according to the national training regulations and overseen by Chambers of Skilled Crafts and Chambers of Industry and Commerce, the competent institutions for vocational education and training (VET) in Germany<sup>22</sup>. As well, federal legislation provides a framework for training and examination standards that the companies must employ<sup>23</sup>. Beyond employing

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<sup>17</sup> <http://www.australianapprenticeships.gov.au/who-does-what>

<sup>18</sup> <http://www.australianapprenticeships.gov.au/who-does-what>

<sup>19</sup> <http://www.euroapprenticeship.eu/en/germany1.html>

<sup>20</sup> <http://www.make-it-in-germany.com/en/working/prospects-in-germany/vocational-training-in-germany/>

<sup>21</sup> <http://www.bmbf.de/en/550.php>

<sup>22</sup> <http://www.euroapprenticeship.eu/en/germany1.html>

<sup>23</sup> <http://cges.umn.edu/docs/DualSystem.pdf>

apprentices, German industry is involved with the dual program through provision of subject matter experts for development of training regulations, negotiations in collective agreements, and creating or updating the dual program occupation list<sup>24</sup>.

Apprentices write two major exams, with written, oral, and practical components, during their apprenticeships. The first takes place mid way through the program to assess progress and identify gaps in knowledge. The second is a final exam to determine if the necessary qualifications have been achieved. Upon completion of the dual training, trades and crafts people are called *Journeyman*. An additional 3 - 4 years of part-time education, or one year of full time study can gain a craftsman the title of Master of his/her profession. Depending on the profession, the Master certification allows for the employment and training of apprentices and founding a company<sup>25,26</sup>.

### ***Germany - Welding Certification***

The dual program, without any distinction, applies for the welding trade. Having completed a welding apprenticeship a worker is considered a Journeyman Welder; or having completed the additional courses post apprenticeship, is considered a Master Welder.

A journeyman welder can also gain further qualifications regulated by the German Welding Society (*Germanischer Lloyd Aktiengesellschaft*) to be certified to structural standards (AWS) and/or to pressurized vessels and piping standards (ASME), which have a validity period of two years.

### ***United Kingdom -Trades & Apprenticeship Training***

Training in over 1,500 occupations in a wide variety of industries and professions can be achieved through the apprenticeship system in the United Kingdom. Apprenticeships are available to anyone older than 16 years who is not enrolled in full time education. Typically, an apprenticeship will be completed after one to four years of combined workplace and structured learning. The majority of the training occurs on-the-job; the remainder takes place through a training organization or learning provider such as a college or university<sup>27</sup>.

Apprenticeships in the UK culminate in several types of certifications depending on the program level pursued, the occupation of choice, and current skills or qualifications. Apprentices can choose to undertake an Intermediate, Advanced, or higher level Apprenticeship, in each case working towards different levels of competence, skills, and knowledge in a field. Apprenticeship certifications can include a level 2, 3, 4, or 5 National Vocational Qualification (NVQ); a Functional Skills Qualification; a Technical Certificate; and/or a Higher National Certificate (HNC), Higher National Diploma (NHD), or Foundation Degree, or some combination of these<sup>28</sup>.

The UK National Apprenticeship Service (NAS) administers the apprenticeship program. The NAS's role includes coordination, online tool development, funding, and recruitment. Depending on the age of the apprentice, the government will make a contribution to apprentices and employers to fund the classroom-training segment<sup>29</sup>. Industry is involved in development of the apprenticeship programs through employer-led Sector Skills Councils (SSC), or Modern Apprenticeship Groups

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<sup>24</sup> <http://cges.umn.edu/docs/DualSystem.pdf>

<sup>25</sup> <http://www.make-it-in-germany.com/en/working/prospects-in-germany/vocational-training-in-germany/>

<sup>26</sup> <http://www.young-germany.de/topic/study/courses-degrees/germanys-dual-vocational-education-system>

<sup>27</sup> <http://www.apprenticeships.org.uk/>

<sup>28</sup> <https://www.gov.uk/apprenticeships-guide>

<sup>29</sup> <http://www.apprenticeships.org.uk/about-us/national-apprenticeship-service.aspx>

(MAG) in Scotland, that contribute to apprenticeship frameworks, National Occupational Standards, and sector qualifications<sup>30,31</sup>.

### ***United Kingdom - Welding Certification***

In the UK welding apprenticeship training can be undertaken through a wide variety of training organizations, such as colleges, and private companies or institutions, coupled with employment in a company as an apprentice. The National Welding Training Standard defines the credentials provided by the training program. Often training organizations have the ability to test for AWS and ASME skills and provide these certifications as well.

The National Welder Training Standard is used to test welders in the UK for various skills and knowledge that apprentices should have at the point of final examination. For the purpose of this Code, a Craftsman Welder is defined as a person who has undergone a program of theoretical and practical training in arc welding; and has demonstrated theoretical knowledge and practical skills in accordance with recognized standards, in a range of welding positions.

For individuals having a minimum of two years of satisfactory industrial experience, authenticated evidence of having already completed training equivalent to that specified in the Code, and recognized approval qualifications, the NWTs Certification may be gained by successfully completing the course theory and examination at an Authorized Training Provider.

Certificates are valid for a period of five years. Renewal requires either evidence of satisfactory production records or retest. Any specific approval qualifications gained (i.e., ASME) are governed by the time limitations and prolongation rules of the particular standard. For ASME, the certification is valid for two years.

### ***United States of America - Trades & Apprenticeship Training***

In the United States individuals pursuing a career in a skilled trade must undertake a Registered Apprenticeship to become certified or licensed. The on-the-job learning of US apprenticeships is similar to the other countries, where the majority of skills are acquired in the workplace, but some portion of the apprenticeship is dedicated to structured, technical training in a classroom setting from a training center, technical school, community college, and/or distance/computer-based learning institution. The majority of apprenticeships average approximately four years, but programs can range from one to six years in length depending on the occupation<sup>32</sup>. Each year the student will receive approximately two thousand (2,000) hours of worksite training, and 244 hours of classroom instruction. Upon completion an apprentice obtains a “Completion of Registered Apprenticeship” certification that is nationally recognized<sup>33</sup>.

Businesses and employer associations, often partnered with labor organizations, are the sponsors of the Registered Apprenticeship program. Sponsors determine the minimum qualifications for entry into an apprenticeship program, which may include age, education, experience, and physical ability. Often students will opt to complete a pre-apprenticeship program that is partnered with a Registered Apprenticeship program to build literacy about the career and gain other skills required to meet the minimum standards<sup>34</sup>.

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<sup>30</sup> <http://www.apprenticeships.org.uk/employers/other-questions/faqdetails7.aspx>

<sup>31</sup> <http://www.skillsdevelopmentscotland.co.uk/our-services/modern-apprenticeships/modern-apprenticeship-group/>

<sup>32</sup> <http://www.doleta.gov/OA/apprenticeship.cfm>

<sup>33</sup> <http://www.doleta.gov/OA/apprenticeship.cfm>

<sup>34</sup> <http://www.doleta.gov/OA/preapprentice.cfm>

The U.S. Department of Labor regulates the apprenticeship program through the Office of Apprenticeship in collaboration with State Apprenticeship Agencies (SAA). SAAs confirm apprenticeship programs meet national and state standards, ensure consistent, high quality training is obtained, and issue nationally recognized certificates of completion. States must conform to minimum federal standards in developing training programs. At the local level, Joint Apprenticeship Committees (JAC) implement the training and apprenticeship programs. Typically, each trade has its own JAC<sup>35</sup>. The United States Department of Labour directly administers the apprenticeship programs in 25 States, which do not have their own SAA. Recent statistics indicate that the entire USA has a total of 370,085 apprentices as of March 31, 2013 according to the United States Department of Labor's "Workforce System Results" report for that period. By comparison, Statistics Canada reports (Table D.1.2, Registered Apprentices in Canada 2010) that there were already 430,452 three years earlier.

### ***United States of America - Welding Certification***

In the welding trade, a pre-employment welding course obtained from a technical college must be completed prior to applying for a welding apprenticeship. The welding pre-apprenticeship courses range in length, but average 48 weeks.

Welder apprenticeships are administered through the Boilermakers Union and individual companies or corporations provide workplace training. The apprenticeship through the Boilermakers Union is four years long with 144 hours per year spent in technical/classroom training, and the remainder spent in full-time employment. Often employers will arrange for apprentices to write the AWS and ASME examinations after approximately three years of training. However, an apprentice can challenge the examinations at any time by going through a registered testing centre. Generally speaking there is no national system of journeyman certification in the United States.

### **Analysis**

As indicated in the introduction, it is unlikely that immigrants that have obtained certification from a Canadian jurisdiction will produce meaningful numbers of candidates to the FSTP QAP and will not enhance access to the FSTP route to any great extent; however this is a viable route for foreign tradespersons who have legitimately obtained Red Seal status.

Very few out-of-country tradespersons have Red Seal or jurisdictional certification and jurisdictions are not enthusiastic about extending their testing and certification processes outside of Canada. Canadian jurisdictions have expressed legitimate concerns about the security and integrity of overseas trades training and standards<sup>36</sup>. Despite the concerns, industry has become familiar with immigration companies providing testing and identifying training gaps. As well, extending the Red Seal examination process to out-of-Canada locales poses a risk as the exams are expensive to develop, maintain and secure and the loss of an examination threatens the value the certificate. Pilot studies examining the viability of out-of-country certification have not been overwhelmingly successful<sup>37</sup>.

Candidates who make arrangements to certify while traveling in Canada, then returning to their home country, have found a work-around to gain a jurisdictional or Red Seal certification. However, the cost,

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<sup>35</sup> <http://www.apprenticeship-usa.com/>

<sup>36</sup> Rick Ewen in conversation, former Executive Director, Saskatchewan Apprenticeship and Trade Certification Commission (SATCC).

<sup>37</sup> SATCC - Jamaica pilot, June 2012; Rick Ewen in conversation (Former SATCC Director).

availability, and in the welding trade, the time required between the written and practical interprovincial assessments, make this method inconvenient.

The key findings indicate that because of the rigour of testing requirements, experiential learning requirements and processes, there are no directly matching certificates to Canada's Red Seal certification for welding, which could be proposed to the jurisdictions as direct equivalents. Therefore, jurisdictions could not be expected to issue a Red Seal certificate simply using another country's certification alone. Out of the FQA countries examined, the Australian and UK certification processes are most similar to Canada's in terms of consistency and process.

American certificates are difficult to equate, as they can be issued by a variety of organizations such as unions and employers, whereas others are state recognized. Often the "journeyman" name is assumed without having any credentials, simply in recognition of years of work. Additionally, the welder trade is often not recognized as a stand-alone trade, but is often attached to another trade, like *welder-boilermaker* in the United States.

Regardless of the equivalency of an international certificate in welding, it is highly unlikely that Canadian jurisdictions would issue a certificate without undertaking some assessment of the candidate; the only exception being, that some Canadian jurisdictions have a *compulsory* trade status for certain trades, which allows out of country certificates to be recognized as "permission to work" status. These out-of-country certification holders may work in the jurisdiction without the need for further assessment; but only satisfies local government requirements and does not result in Red Seal or *equivalent to Red Seal* status being granted.

### ***Foreign Qualification Assessment Framework for Welding***

Our research suggests that a mix of credentials and work experience acquired outside of Canada could be used as a standard to determine if a candidate's training and knowledge are equivalent to Red Seal exam eligibility – *exam ready* – and whether the candidate is likely to succeed to certification. A suggested qualification framework to assess out-of-country certifications for the welding trade is as follows:

#### ***Trade Time***

The proposed QAP pool will be populated for national purposes with candidates that will be eligible to settle anywhere in Canada; therefore, to be eligible for the QAP, candidates must meet the most rigorous requirements among the jurisdictions. Newfoundland and Labrador currently has the most stringent requirements for tradespersons in Canada with at least five years of work experience required, not including any time spent in technical training, to be eligible to challenge the welder examination as a non-apprentice. Therefore, the minimum requirement to be placed into the pool is five years of working as a welder.

#### ***Written examinations***

One the following measures could be accepted as a proxy to prove exam-ready status of FSTP candidates:

- Holder of a Journeyperson Welder certification from City and Guilds in the UK.
- Holder of an American Journeyperson Boilermaker-Welder certificate.
- Holder of a German Journeyman or Craftsman Welder certificate.
- Completion of a recognized apprenticeship-style training program with a minimum of 500 hours of technical training.
- Completion of an on-line, invigilated self-assessment with a minimum score of 80 percent.

### ***Practical Examinations***

Analysis of the Canadian jurisdictional examinations and the proposed national standard examination from Saskatchewan<sup>38</sup> suggests that the ASME certificate be recognized as a proxy for exam readiness. The ASME code is universal throughout the FQA countries examined and in all countries has a validity date, thus a current ASME certificate indicates the person is current in the trade. Also, the ASME standard for piping reflects a code that suits our needs for a Red Seal challenge by providing an *open root* test (as opposed to the AWS international standard, which provides a *closed root* test) giving the welder the best opportunity to pass the Red Seal challenge. Alternatively, the Australian First Class welder certificate 9a level 3 Australian Standard could also be accepted as proof of a candidates exam readiness due to the rigour of the testing requirement.

Table 1 compares international certifications in Australia, Germany, United Kingdom and the USA in relation to Canadian certification.

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<sup>38</sup> <http://www.saskapprenticeship.ca/designated-trades/welder/>

Table 1: International certification comparisons for Canada, Australia, Germany, UK, and USA.

Certifying Country	Certificate Issuing Body	Certificate Title	Comparable Certification Framework to Canada*	Work Experience Requirement**	Written Exam Requirement	Practical Exam Requirement	ASME Code or Equivalency
Canada Red Seal	P/T Jurisdictions	Journeyman Welder	----	5 years	✓	✓	✓
Australia	National Standard	Journeyman Boilermaker/Welder First Class welder	✓	4 years	✓	✓	✓
Germany	State Certificate	Journeyman or Craftsman Welder	✓	4 years	✓	✓	✓
United Kingdom	City and Guilds	Journeyman or Craftsman Welder	✓	4 years	✓	✓	✓
United States of America	Union/ Employer	Journeyman Welder (Not formal designation)	X	3 - 4 years	✓	✓	✓

\* Dependent on Provincial and Territorial jurisdictions.

\*\* Tradesperson hours for Canada shows the maximum non-apprentices would have to work (Newfoundland); an Ellis Chart<sup>39</sup> would find only apprentice term hours/years, which are all shorter than 5 years.

Note: BC Industry Training Authority's International Comparison of Training and Certification Systems for Red Seals Trades report (2009) benchmarked 15 countries against 46 key indicators of the Red Seal program and found: Australia met 89% of the criteria, Germany met 85% of the criteria, UK met 76% of the criteria and USA met 59% of the criteria (See Appendix A).

<sup>39</sup> <http://www.ellischart.ca/home.jsp?lang=en>

## **Restating FQA Assessment Framework Options**

We indicate again that trade certification is a constitutional right of the jurisdictions. Consequently, jurisdictions must agree to participate in any solution identified below:

### ***Option 1***

Proposed immigrants already have Red Seal status. As we indicated in the discussion above, this scenario is unlikely to produce meaningful numbers of candidates to the FST pool. Very few out-of-country tradesperson have Red Seal certification. Jurisdictions are not enthusiastic about extending their testing and certification process out of Canada, and pilots to examine the viability have not proven to be overwhelmingly successful<sup>40</sup>.

All jurisdictions have expressed legitimate concerns about the security and integrity of overseas work. They have become familiar with immigration companies who place their own, rather than the immigrants', interests first. Red Seal examinations are very expensive to develop, maintain and secure; the loss of one threatens the value of everyone's certificate. With stakes that high, it is little wonder that there is concern over extending the process to less familiar, out of Canada locales.

Candidates who make their own arrangements to "vacation certify" by coming to Canada, certifying and then returning to their home jurisdictions, have found a work-around; but cost, availability, and in the welding trade, the time required between the written and practical interprovincial assessments, are all indicators that this will never be a highly successful option.

Option 1 will not resolve access issues to any great extent; however it must remain an option as there are, as pointed out in the discussion earlier in this document, foreign tradespersons who legitimately can obtain Red Seal status.

### ***Option 2***

Matching certificates to the Canadian Red Seal – there are no directly matching certificates to Canada's Red Seal, which could be proposed to the jurisdictions as direct equivalents. We cannot expect the Canadian jurisdictions to issue a Red Seal certificate on the face value of another country's certification alone. The Australian and UK certification processes are likely the closest, in terms of consistency and process. American certificates are difficult to equate, as some are issued by unions, some by employers, there is some state recognition, and sometimes people just assume the moniker "journeyman" in recognition of years of work. Additionally, the welder trade is often not recognized as a "stand alone" trade everywhere, but is often attached to another trade – hence, "welder-boilermaker" and so forth.

It is our belief that even if the idealized "perfect fit" were to be found, it is highly unlikely any Canadian jurisdiction would issue a certificate without undertaking some sort of assessment of their own. We have noted that in some jurisdictions, certain trade certificates from other countries have already been recognized as meeting the eligible to write status. Welding is not currently known to be one of these, but that is a good opportunity worth exploring further.

### ***Option 3***

Eligibility Criteria, it is suggested that a mix of credentials and work experience out of Canada can be promoted as "equivalent to write" status. In saying this, we have chosen to adopt the "highest criteria" route.

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<sup>40</sup> SATCC - Jamaica pilot, June 2012; Rick Ewen (Former SATCC Director).

The proposed pool is a federal government, not a jurisdictional, pool. This means that anyone in the pool can be eligible to settle anywhere in Canada. It is not known where they will settle when they are placed into the pool, other than “Canada”. Therefore, the requirements to be placed in the pool must meet the strictest requirements amongst the jurisdictions. It would be wrong to say someone meets the requirements to be placed in the pool when there are circumstances that would prevent their settling in a certain jurisdiction.

- 1) Trade time - the most stringent requirement currently in Canada for tradespersons is found in Newfoundland and Labrador. Tradespersons must prove they have at least five years of work experience, not including any time spent in technical training, to be eligible to challenge the welder examinations. Therefore, the minimum requirement to be placed into the pool is five years of working as a welder.
- 2) Written examinations - we recommend that one of the following measures be accepted as a proxy to prove “exam ready” status:
  - a) Holder of a journeyman certification from City and Guilds (*United Kingdom - City and Guilds Level 3 NVQ Diploma in Fabrication and Welding Engineering (QCF) if issued as the result of apprenticeship training*).
  - b) Holder of a German journeyman certificate (*Holder of certificate indicating Deutsch Geselle Meister*).
  - c) Holder of an American Boilermaker, welder certificate (*A journeyman Boilermaker welder, as certified by the Boilermakers Union; A Journeyman Pipefitter - Welder, as certified by the United Association of Plumbers and Pipefitters*).
  - d) Holder of Australia certificate issued as the result of apprenticeship training (*AQF Certificate III or AQF Certificate IV in either: Metal Fabricator, Pressure Welder, Welder (First Class), Boilermaker-Welder and Special Class Welder*).
  - e) Successful completion of an on-line, invigilated self-assessment with a mark of at least 80% (Red Seal pass mark is 70% and experience has shown that approximately a 10% drop in mark occurs between a trade school/practice exam and the certification exam).
- 3) Practical examinations - after analyzing the current provincial examinations and the proposed national standard examination from Saskatchewan, we can offer several alternatives.
  - a) Recommend that holders of an ASME certificate be recognized as “exam ready”. This is because it is a standard commonly found in countries around the world; it is an “open root” test, (as opposed to another international standard the AWS, which is a closed root test); and, because it expires, a current ASME certificate indicates the person is current in the trade.
  - b) Alternately, we recommend acceptance of the Australian First Class welder certificate (a level 3 Australian standard) as proof of “exam ready” due to the rigour of the testing requirements (see above in 2 d).
  - c) We could use a partner such as VETASSESS to conduct the Red Seal practical examination at their locations around the world and thereby confirm the person’s abilities<sup>41</sup>.
  - d) An alternate assessment method could be used. CCDA recently use the Multiple Assessment Pathways pilot and as a result, journeyman certificates were issued to candidates in a couple of trades. While CCDA has evolved this process, a combination of

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<sup>41</sup> See Appendix B for Saskatchewan and Alberta practical assessment criteria.

these three items will confirm that the candidate is well placed to successfully challenge the Red Seal examination.

Within the last few years, considerable work was undertaken to evaluate the English language skill requirements for trade work in a variety of trades in Canada. Based on this information, which a contributor to this work was a participant in, candidates must have at least a CLB6 to pass the examinations. This should be a criterion of the FST path.

Similar to the recommendations from previous reports on this issue, we are recommending a centralized approach to processing potential candidates for the FST pool. No jurisdiction has the resources to process applicants on behalf of all jurisdictions. Additionally, all jurisdictions do not apply trade assessments in a manner equitable to each other. Consequently, a person's work experience might be entirely valid in one Canadian jurisdiction, and be discounted considerably, if not entirely, in another.

We recommend that, using the welder trade as a first effort, the jurisdictions be asked to approve a standardized credit for work experience so potential immigrants will be treated equally wherever they end up in Canada.

In consideration of the human resource effort to process applications, we recommend that a third party be recognized to process welder applications for the FST pool. The authority, under the governance of a national group such as the Interprovincial Standards and Examination Committee (ISEC) could be granted the authority to:

- Evaluate workplace experience and grant credit in the welder trade, following the agreed-upon table of credits provided by ISEC.
- Assess practical credentials from a table of acceptable documentation (provided elsewhere in this document and subject to ISEC approval), by verifying the credential is approved for credit and confirming the validity of the credential by affirming with the issuing country.
- Assess the written credentials from a table of approved documentation (as provided elsewhere in this document and subject to ISEC approval) by verifying the credential is approved for credit and confirming the validity of the credential by affirming with the issuing country.
- If acceptable to the jurisdictions as an alternative, administer the out-of-country practical exam equivalents through a partner organization.
- Similarly, administer CCDA's Multiple Assessment Pathways (MAP) program out of country, as a tool to prove readiness (See Appendix C for more information about MAP).
- Confirming that a proposed immigrant is "Red Seal exam ready" and informing those who need to know of this confirmation.

In practical terms, a person wishing to apply through this pool would contact CIC. They would be directed to send their documentation to the third party agent for assessment, along with the required fee. They, and CIC, would then be notified of the results. If all documentation was received and all jurisdictions agreed on the acceptable requirements, a turn-around time of "nearly immediate" could be offered.

## APPENDIX A

### International Comparisons of Training and Certification Systems for Red Seal Trades<sup>42</sup>

International Comparison of Training and Certification Systems for Red Seal Trades

Table 3: Fifteen source countries benchmarked against 46 key indicators of the Red Seal Program			Australia*	Chile	China	Germany*	Ghana	India	Mexico	New Zealand*	Philippines*	Poland	Romania*	United Kingdom*	Ukraine	United States	South Africa*	
Benchmark	Indicators																	
1. Structural measures	System-level information	National government participates in apprenticeship training and certification	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
		Provincial/territorial and state ministry of education participates in apprenticeship training and certification	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
		National body provides leadership and policy directions for apprenticeship training and certification	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
		Committee sets interprovincial/state standards for apprenticeship examination	•			•	•	•	•	•	•	•	•	•	•	•	•	•
		Trade advisory committees provide input into apprenticeship training and certification	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•
		Industry provides work-based learning experience to apprentices	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Policies	Apprenticeship training and certification are governed by appropriate legislations/regulations	•			•			•	•	•		•	•	•	•	•	•
		Training institutions are accredited by a governing body to deliver apprenticeship programs	•	•		•	•		•	•	•	•	•	•	•	•	•	•
		Apprenticeship training facilitates articulations between levels of achievement	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•
	2. Process measures	Trade status	Apprenticeship program prepares workers for compulsory trades that require a Certificate of Qualification	•	•	•	•		•		•	•	•	•	•	•	•	•
National Occupational Analysis (NOA)			Industry experts provide input for the development of occupational analysis	•	•		•				•	•	•	•	•	•	•	•
		Reliable methodology is used for developing occupational analysis	•			•					•	•						•
		Main duties performed by experienced workers are specified in the occupational analysis																
		Main tasks performed by experienced workers are specified in the occupational analysis	•			•					•	•	•	•	•	•	•	•
		Main sub-tasks performed by experienced workers are specified in the occupational analysis																
Supporting knowledge and abilities required by experienced workers to perform each sub-task are specified in the occupational analysis		•			•						•	•		•	•		•	•
Occupational analysis reflects competency requirements to accommodate areas of specialization (residential, industrial, commercial, institutional)	•	•				•				•	•	•	•	•				

<sup>42</sup> BC Industry Training Authority Report (2009): <http://www.buildforce.ca/en/products/international-comparison-training-and-certification-systems-red-seal-trades>

**Table 3: Fifteen source countries benchmarked against 46 key indicators of the Red Seal Program**

Benchmark	Indicators	Australia*	Chile	China	Germany*	Ghana	India	Mexico	New Zealand*	Philippines*	Poland	Romania*	United Kingdom*	Ukraine	United States	South Africa*
<b>National Occupational Analysis (NOA)</b>	Occupational analysis is validated using industry experts	•			•				•	•		•	•			
	Competencies are weighted according to their degree of importance									•						
	Occupational analysis is updated every five years	•			•				•	•						
<b>Curriculum and program development</b>	Curriculum is aligned with occupational analysis	•	•		•	•			•	•	•	•	•			•
	Curriculum is designed according to a modular structure	•	•						•	•	•	•	•	•	•	•
	Curriculum is designed to accommodate various apprenticeship levels	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Training program is evaluated on a regular basis	•			•	•			•	•	•		•		•	•
	Training program is updated on a regular basis to ensure continuous improvement	•		•	•	•	•	•	•	•		•	•	•	•	
<b>Entry requirements</b>	High school graduation is a prerequisite academic entry requirement	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Related work experience is a prerequisite entry requirement	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
<b>Apprenticeship training term</b>	Apprenticeship training period, in years, is specified															
	Total number of periods is specified	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Total number of weeks is specified															
	Total number of training hours in school is specified	•	•	•	•	•	•		•	•	•	•	•		•	•
	Total number of hours on the job is specified	•	•	•	•	•	•		•	•	•	•	•		•	•
	Records of apprenticeship achievement for each unit of theory instruction are kept	•	•		•				•			•			•	•
	Records of competencies learned on the job are kept in a logbook or portfolio	•			•				•			•	•		•	•
	In-school training is provided by qualified instructors having frequent opportunities to update their skills	•	•		•	•	•	•	•	•	•	•		•		•
	On-the-job training is facilitated by a qualified journeyperson				•	•	•		•	•		•	•		•	•

continued...

Benchmark	Indicators	Australia*	Chile	China	Germany*	Ghana	India	Mexico	New Zealand*	Philippines*	Poland	Romania*	United Kingdom*	Ukraine	United States	South Africa*
3. Outcomes measures	Assessment	A national quality assurance framework for apprenticeship training has been implemented														
		A system for developing national examinations for apprenticeship certification is present														
		Trade certification requirements include a national practical examination														
		Trade certification requirements include a national written examination														
		Trade certification requirements include the assessment of Essential Skills/key competencies														
		Certification examination is managed using an item bank														
		Reliability of certification examinations is statistically established														
		Validity of certification examination is ascertained using the National Occupational Analysis														
		National certification is competency-based														
		Appropriate security procedures are in place to ascertain the integrity of examination														
		Examination is administered under controlled conditions														
		Pass mark is established by a national governing body														
		Certification issued is recognized by relevant certification authorities and business industry														
		Certification issued is recognized nationally and internationally														
		Certification issued facilitates mobility between provinces/territories/states and countries														

Total points (46 benchmarks indicators)	41	27	14	39	28	23	22	41	37	31	38	35	22	27	39
Relative points by country (%)	<b>89</b>	59	30	<b>85</b>	61	50	48	<b>89</b>	<b>80</b>	67	<b>83</b>	<b>76</b>	48	59	<b>85</b>

Legend:

- Information is available to compare with the Canadian Red Seal Program
- \* Source countries selected for mapping exercise

## APPENDIX B

### Welding Red Seal Practical Assessment Criteria Saskatchewan - Alberta - Australia

Province	SK - AB Red Seal Welding Assessment Outcomes	Comparison	Assessment Outcome Australian First Class Welder <sup>43</sup>
<b>AB</b>	<ul style="list-style-type: none"> <li>• 3G-Vertical V-Butt Down-hand (root)</li> <li>• GMAW Up-hand (fill &amp; cap)</li> <li>• FCAW (bend test)</li> </ul>	Meets criteria but without FCAW	Butt weld to (3G) vertical positions using GMAW on carbon steel plate
<b>AB</b>	<ul style="list-style-type: none"> <li>• 4G-Overhead V-Butt 45°</li> <li>• SMAW (bend test)</li> </ul>	Meets criteria but not at 45° angle	Butt weld to (4G) Overhead position using SMAW on carbon steel plate.
<b>AB</b>	<ul style="list-style-type: none"> <li>• 4G-Overhead V-Butt</li> <li>• SMAW (bend test)</li> </ul>	Meets criteria	Butt weld to (4G) Overhead position using SMAW on carbon steel plate.
<b>AB</b>	<ul style="list-style-type: none"> <li>• 2G- Horizontal V-Butt GTAW (root)</li> <li>• SMAW (fill &amp; cap) and (bend test)</li> </ul>	Exceeds criteria	Butt welds to (5G) Horizontal position using GTAW on stainless steel tubing
<b>AB - SK</b>	<ul style="list-style-type: none"> <li>• Oxy-Fuel Cutting Project</li> </ul>	N/A	
<b>SK</b>	<ul style="list-style-type: none"> <li>• 3G-Vertical V-Butt</li> <li>• SMAW (bend test)</li> </ul>	Exceeds criteria	Butt welds to (6G) position using SMAW on carbon steel Pipe
<b>SK</b>	<ul style="list-style-type: none"> <li>• 2G-Horizontal V-Butt</li> <li>• SMAW (bend test)</li> </ul>	Exceeds criteria	Butt weld to (5G) Horizontal position using SMAW on carbon steel Pipe.
<b>SK</b>	<ul style="list-style-type: none"> <li>• 4G-Overhead with backing</li> <li>• SMAW (bend test)</li> </ul>	Meets criteria	Fillet welds to (6F) position using SMAW on carbon steel Plate
<b>SK</b>	<ul style="list-style-type: none"> <li>• 1G-Flat V-Butt (root)</li> <li>• GTAW</li> <li>• 3G-Uphand (fill &amp; cap)</li> <li>• FCAW (bend test)</li> </ul>	Exceeds criteria but lacks FCAW	Butt weld to (3G) Vertical positions using GTAW on carbon steel plate
<b>SK</b>	<ul style="list-style-type: none"> <li>• 1G-Flat V-Butt</li> <li>• GMAW (bend test)</li> </ul>	Exceeds criteria	Butt weld to (3G) vertical positions using GMAW on carbon steel plate

<sup>43</sup> Subject to industry review and adjustment.

## APPENDIX C

### CCDA MAP INITIATIVE<sup>44</sup>

In 2008 - 2009, CCDA undertook initiatives to examine alternate methods of evaluating the ability of tradespersons. This was done under the umbrella of an initiative called “Strengthening the Red Seal”, or “SRS”. In particular, a pilot referred to as the multiple Assessment Pathways, or MAP, was operationalized in 2009 – 2011. This pilot did not use the Red Seal examination as the basis for awarding journey person status, but rather used a combination of skills demonstrations, interviews, documentation and similar proxies to confirm a positive assessment. This pilot was undertaken to determine if other forms of assessment, apart from the industry-accepted multiple-choice examination currently in use, were as rigorous as the IP exam. The answer was in the affirmative. Given this, CCDA chose to continue working in that direction by running a series of consultations with industry, conducting research, and so forth.

Under the “Strengthening the Red Seal” initiative the CCDA is piloting an enhanced occupational standard model and exploring forms of assessment in addition to the multiple-choice exam.

The new standard will include new features, such as learning outcomes and industry performance expectations. The process to develop the standard will allow for greater industry input. As of February 2014, pilots are underway in two trades to test the development process and format of the new standard: Construction Electrician and Steamfitter/Pipefitter.

Although still being explored, if adopted, an assessment framework would be trade specific and could include practical tests, competency conversations, workplace observation, etc. the CCDA is also looking into optimizing the IP exam to take advantage of the standard's new features. For example, some critical components of the exam may be mandatory to be deemed competent or "pass". Currently, Red Seal examinations have a 70% pass mark as an overall pass requirement. Making certain portions of the exam “mandatory pass” could enhance this process. A good example of this option can be found in the load chart section of the crane operator examinations.

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<sup>44</sup> <http://www.rto.bc.com/AssetFactory.aspx?did=2300>