SHAPING THE
AEROSPACE
WORKFORCE OF THE
FUTURE

Issued: January 2020
PRI QUALIFICATION

A collaborative, global system managed by aerospace industry experts creating aerospace manufacturing personnel qualifications.

PRI Qualification empowers industry to work together to shape the aerospace workforce of the future, today.
THE AEROSPACE INDUSTRY CHALLENGE

- Critical shortfall of qualified personnel due to:
  - An aging workforce
  - Falling behind in relevant academic achievement

- Globalization continues to increase variability in knowledge, skills and ability

- Pressure to shorten time for personnel to train and achieve adequate competency levels

“...A highly skilled and robust defense and aerospace workforce is essential…Yet today the industry faces impending retirements and a shortage of trained technical graduates while work and skills requirements become increasingly advanced – a challenging situation forecast to worsen in the next decade.”

Source: AIA 2016
PRI Qualification is administered by the Performance Review Institute (PRI), a not-for-profit trade association, on behalf of leaders in the Aerospace Industry.
INDUSTRY BENEFITS

• Increased personnel capability

• Validation of personnel competency

• Knowledge sharing between participating organizations
PROGRAM TIMELINE

2009
PRI administers Honeywell’s Source Certifying Agent exam program

2012
Aerospace industry leaders create an industry managed personnel qualification program

2013
First Bodies of Knowledge published

2014
First online theory assessments released

2015
Upgrade to Webassessor online assessment software complete
PROGRAM TIMELINE

2016
First training organizations approved to teach courses to BoK content

2017
5 Active Review Boards:
- Brazing
- Chemical Processing
- Composite Repair
- Heat Treating
- Welding

2018
Shaping the Aerospace Workforce of the Future events held in London and Pittsburgh

2019
35+ Bodies of Knowledge published
35+ Theory Assessments available

Abaris Training
PRI Training

Collins Aerospace

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An Industry Managed Program: Manufacturers & Suppliers

The Boeing Co.

Training Providers and Maintenance, Repair & Overhaul
**HOW DOES PRI QUALIFICATION WORK?**

**BODIES OF KNOWLEDGE**
Created by technical experts for:
- Operators/ Technicians
- Planners
- Owners

**ASSESSMENTS**
Written and practical assessments align with the Bodies of Knowledge

**TRAINING & PREPARATION**
- Candidates prepare for assessments
- Approved Training Providers: must align with BoK requirements
**PROGRAM STRUCTURE**

**PRI Qualification Management Council**

- **Senior Executives** (Members & Non-Members) - Oversee operations, strategy and scope of the program
- **Members Only** - Provides guidance on exam format, applicability, content and level
- **Members Only** - Compile, validate and establish exams based on the Bodies of Knowledge

**Members & Non-Members**
- Establish baseline requirements for Bodies of Knowledge and their development
- Identify methods and qualification levels and publish Bodies of Knowledge (BoKs)
- Review and approve Training Providers

**Bodies of Knowledge Panel**
- BoK Review Boards
  - Brazing
  - Chemical Processing
  - Composite Repair
  - Coatings Applicator
  - Heat Treating
  - Welding

**Examination Panel**
- Exam Review Boards
  - Brazing
  - Chemical Processing
  - Coatings Applicator
  - Composite Repair
  - Heat Treating
  - Welding
• Industry technical experts write manufacturing process Bodies of Knowledge

• Free industry resource available on PRI Website
  • Over 35 Bodies of Knowledge published

• Content includes:
  • Knowledge
  • Skills
  • Personal Attributes
  • Non-special process related requirements
  • Applicable international reference documents
A FREE INDUSTRY RESOURCE

All Bodies of Knowledge are available for free download on the PRI Qualification section of the PRI website.
BODY OF KNOWLEDGE LEVELS

**PROCESS OPERATOR/TECHNICIAN**

- Understands and perform the hands-on operations of the special process

**PROCESS PLANNER**

- Capable of creating manufacturing processes and interpreting process procedures to conform to customer specification and requirements.
- Capable of problem solving and resolving day-to-day issues.

**PROCESS OWNER**

- Capable of designing new processes and resolving issues among other levels.
CURRENT MANUFACTURING PROCESSES

CHEMICAL PROCESSING
- Anodizing
- Cleaning
- Conversion / Phosphate Coatings
- Etch & Etch Inspection
- Painting / Dry Film

HEAT TREATING
- Aluminum Alloys
- Carbon & Alloy Steel
- Heat Resisting Alloys
- Pyrometry (Calibration & Test)
- Pyrometry (Process)
- Stainless & PH Steel
- Titanium Alloys

BRAZING
- Vacuum Furnace
  *IN PROGRESS: Torch Brazing*

WELDING
- Electron Beam
- Laser / Fusion
- Resistance (Spot & Seam)

COMPOSITE REPAIR
- General Composite Repair Technician
- Aerospace Composite Bonded Repair Technician
  *IN PROGRESS: Metal Bond Repair*

COATINGS APPLICATOR
- In collaboration with SAE G8 Organic Coatings Committee
# Published Bodies of Knowledge

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**Chemical Processing**
- Anodizing
- Conversion/Phosphate Coatings
- Cleaning
- Etch and Etch Inspection
- Painting/Dry Film
- Plating

**Heat Treating**
- Aluminum
- Carbon & Alloy Steel
- Heat Resisting Alloys
- Pyrometry (Calibration)
- Pyrometry (Process)
- Stainless PH Steel
- Titanium

**Welding**
- Resistance (Spot & Seam)
- Electron Beam Fusion

**Brazing**
- Vacuum Furnace

**Composite Repair**
- General Repair
- Aerospace Bonded Repair

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FUTURE CRITICAL PROCESSES

- Additive Manufacturing
- Coatings
- Composites
  - Manufacturing
  - Bolted Repair
- Conventional Machining
- Electronics
- Materials Testing
- Measurement & Inspection
- Metallic Materials Manufacturing
- Nonconventional Machining
- Non-Metallic Materials Manufacturing
- Sealants / Elastomers
- Surface Enhancement
- Shot Peening
- Welding
  - Laser
DRIVING DEVELOPMENT OF ALIGNED TRAINING

**Industry Standards and Best Practices**
- Selected by industry technical committee for inclusion in Body of Knowledge
- Example: AMS 2750 for Pyrometry

**PRI Qualification Bodies of Knowledge**
- Collaboratively written and approved by industry technical committee
- Example: Heat Treating Body of Knowledge Pyrometry Process Planner

**Critical Process Training**
- Created based on the Body of Knowledge by Training Providers or individual companies
- Examples:
  - PRI Training: Introduction to Pyrometry
  - Company internal pyrometry training program

**Critical Process Assessments**
- Created based on the Body of Knowledge by Examination Review Boards
- Example: HT Process Planner Theory Assessment
Conducted by industry technical committees in a process which includes:

- Full review of written training materials to check alignment with the Body of Knowledge
- Facilities review
- Review of instructor knowledge and experience
- Feedback from past learners
- Practical training provisions

**Composite Repair**

**Company:** Abaris Training

**Approved PRI Qualification BoK(s):**
- General Composite Repair Technician
- Aerospace Composite Bonded Repair Technician

**Approved Locations:** Reno, NV, USA; Griffin, GA, USA; Sao Paulo, Brazil

There is no charge to become an Approved Training Provider
VERIFICATION OF KNOWLEDGE

• **Online:**
  - Multiple choice, open book theory assessments delivered via Webassessor
  - Assessments can be taken anytime, anywhere

• **Practical:**
  - Composite Repair Practical set for release in 2020
  - Plan to expand in other areas by end of 2020

**Successful candidates receive a Certificate of Qualification with 3-5 year validity.**
MEMBERSHIP (PAID)

• Members have the right to influence and shape the content of assessments.

• Safeguards the integrity of assessments:
  • Enables the program to limit access to assessment content to only those organizations who have signed agreements to safeguard content.

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Want to learn more about Membership? Email us at PRIQualification@p-r-i.org to for more information.

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PARTICIPATE:

Any Organization:

- Strategic development of PRI Qualification through Management Council
- Contribute to technical content of the Bodies of Knowledge through Review Boards

Members

- Review and approve content of assessments (practical & theory)

IMPLEMENT:

- Download the Bodies of Knowledge and utilize them free of charge:
  - Align training courses and assess operator capability
  - Support documentation of job functions and responsibilities
- Achieve Approved Training Provider status (free of charge)
- Utilize assessments
  - Validate competency of personnel
MORE INFORMATION / CONTACT US

• Bodies of Knowledge
  • All published BoKs can be found on the PRI Qualification [webpages](http://www.priqualification.org)

• Online Assessments
  • [www.PRIQualification.org](http://www.priqualification.org)

• Contact Us:
  • PRIQualification@p-r-i.org