



YOUR CAREER IN WELDING

***Taking the First Step to a
Bright Future...***



American Welding Society





Overview

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- **About Welding**
- **Challenge**
- **Endless Opportunities**
- **Choosing A Career**
- **Getting Started**
- **Summary**



AWS

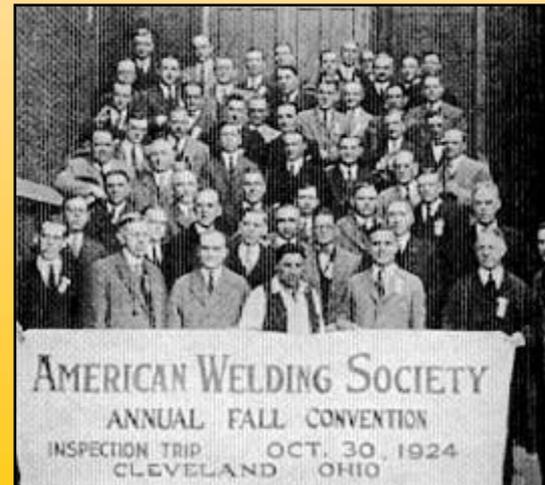


AWS Mission

“Our mission is to advance the science, technology and application of welding and allied joining and cutting processes, including brazing, soldering and thermal spraying.”

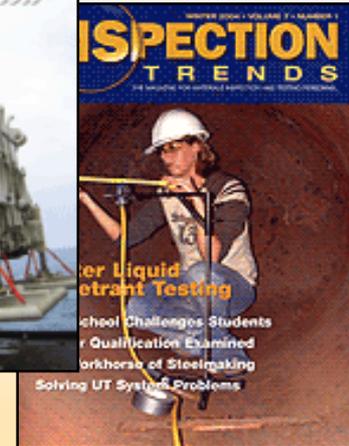
Who We Are

- Founded in 1919
- AWS is the largest organization in the world dedicated to the welding industry
- AWS serves nearly 53,000 members worldwide
- 200 Sections; 200+ technical committees; and an expert staff of about 100 at AWS headquarters.
- We are:
 - Business and Industry
 - Engineers
 - Welders
 - Educators



What We Do

- AWS' strategic goal is to support the manufacturing sector by providing:
 - Membership
 - Certification
 - 230+ Codes, Standards & Technical Docs

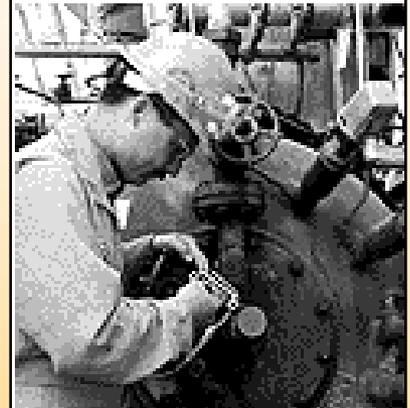


- *FABTECH International and AWS Welding Show*
- *Welding Journal & Inspection Trends*
- *Conference/Seminars*
- *Education*
- **\$\$\$** *Foundation and Scholarships* **\$\$\$**

What We Do

- Primary source for welding information
- Certifications - Brings value, and can mean better pay, job security, and recognition as an industry elite.
- AWS Certifications:
 - Certified Welding Inspector (CWI)
 - Certified Welder
 - Certified Radiographic Interpreter (RI)
 - Certified Welding Educator (CWE)
 - Certified Welding Engineer (CWEEng)
 - Certified Welding Supervisor (CWS)
 - Certified Robotic Arc Welder (*Late 2007*)

If every employee came with a stamp of approval...



AWS CERTIFICATION

*Improve quality,
increase production
and gain a unique
advantage.*



Certified

aws.org/certification



ABOUT WELDING

What is Welding?

- Most common way of joining metal parts.
- Heat is applied to metal pieces, melting and fusing them together.
- Used to build ships, automobiles, planes and space vehicles.
- Used to join beams when constructing buildings, bridges, and other structures
- Used to join pipes in pipelines, power plants, and oil refineries.
- Used in the manufacturing of small electronic devices, medical equipment, and nanotechnology – *the latest development to revolutionize the world of materials.*





History of Welding

- In 3500 B.C./Bronze Age
- Welders were in demand - they were artists and builders
- They forged metals to construct pillars and tools
- 1900s welding blends art with science
- Today, welding is a precise skill - and as much in demand as when it began!

Importance To Manufacturing

- Welding plays a key role in the manufacturing challenge
- Welding contributes to:
 - Heavy Manufacturing
 - Light Manufacturing
 - Construction
 - Transportation
 - Electronic/Medical
 - Maintenance & Repair
 - Energy





Where is welding used?

Everywhere!

- Automobiles
- Race Cars
- Buildings
- Bridges
- Ships
- Furniture
- Computers
- Motorcycles
- Medical Devices
- Tooth Paste Tubes
 - Oil Rigs
- Farm Equipment
 - Bicycles
 - Cell Phones
 - iPods
 - Scooters

Almost everything is welded!



Importance Acknowledged

“Companies are looking for skilled welders... It is known across the nation and in political circles that there is an increasing shortage of skilled labor. Our job placement rate has been running over 90% and was 100% last year.”
(Hobart Institute of Welding Technology)

“The ranks of skilled tradesmen who helped build the American dream are thinning steadily... with baby boomers now hitting retirement age.”
(Lockport Union Sun & Journal)

“40% of member companies are turning away business due to lack of welders.”
(National Tooling and Machining Association)

“While skill-strapped companies often blame schools for not providing skills, some executives say outsourcing jobs abroad and eliminating training programs to cut costs exacerbated the problem... companies ‘shot themselves in the foot,’ says Tony Raimondo, CEO, Behlen Manufacturing.”
(Wall Street Journal)



CHALLENGE



Manufacturing Challenge

“America’s future depends on a skilled, productive & tech. trained workforce.”

John Engler, President, NAM

“It's a great time to be a welder. Thanks to a global boom in industrial manufacturing, skilled welders are in greater demand than ever. Companies can't find enough of them.”

Wall Street Journal

“If we don’t address the skills issue, our economy will face a serious decline.”

Jerry Jasinowski, President, The Manufacturing Institute

“Manufacturers will need as many as 10 million new skilled workers by 2020 to replace aging boomers who make up a large part of manufacturing jobs.”

Wall Street Journal

“81% of manufacturers polled by NAM/Deloitte report they can’t find the skilled workers to keep their businesses competitive in a global 21st century economy.”

Phyllis Eisen, Vice President, The Manufacturing Institute

Welding Industry Challenge

- Manufacturing, Construction and Mining is a \$3 trill. industry -- That is 1/3 of the US GDP.
- Welding is a \$34 billion industry.
- Labor represented more than 70% of welding-related expenditures, \$22.4 billion in 2000.
- There are more than 500,000 welders working in US.
- The average age of welders in today's workforce is 54.



- It is estimated that there will be a shortage of more than 200,000 welders by 2010.
- This year, 50,000 welders will leave the industry while only 25,000 students begin their welding education.



The Need Grows

- **Advancing manufacturing technology** creates more uses for welding and is expanding opportunities.
- There is an increased emphasis on **certification to** ensure quality.
- **Computer skills** needed to program robots, lasers and systems.
- Welding new materials require a more educated and **innovative welder workforce**.
- Welding automation requires **skilled machine operators**.
- **Foreign competition** requires US companies to be more competitive and skilled in welding operations.
- Skilled welders needed to maintain/repair **aging infrastructure**.



ENDLESS OPPORTUNITIES



Welders Are Everywhere

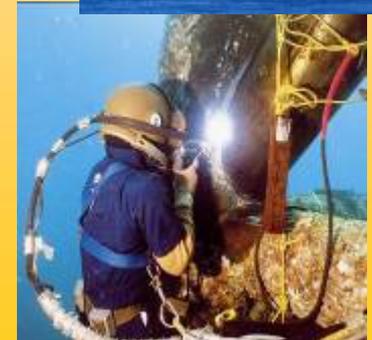
- Military
- Aircraft and Aerospace Industry
- Building Construction
- Automotive Industry
- Bridge/Highway Construction
- Shipbuilding Industry
- Universities and Schools
- Safety Products
- Boiler Industry
- Medical Industry
- Mining Industry
- Robotics and Computer Engineering
- Farming Equipment Manufacturers
- Job Shops
- Specialty Gases
- Consumer Electronics

Endless Opportunities



Welding Industry Careers

- Welder
- Materials Engineer
- Welding Engineer
- Robotics Technician
- Welding Technician
- Business Owner
- Salesperson
- Structural Iron Worker
- Sheet Metal Worker
- Underwater Welder
- Welding Educator
- Metallurgist
- Researcher
- Welding Inspector
- Machine Operators
- Pipefitter
- Boilermaker



And Many, Many More!



POTENTIAL INCOME



Potential Income

- Salaries for welders are on the rise due the shortage of skilled workers.
- Salaries for welding-related jobs vary depending on the type of employer, welding specialty, job duties, experience level and location.
- Pay and benefits vary widely between union and non-union employment.
- Some employers provide internships and paid apprenticeship programs for various levels of work, including beginners.

***Entry Level Welder → \$20,000 +**

***Advanced Welder → \$40,000 +**

***Welding Engineers → \$60 - \$100,000**

A Few Examples



- The typical salary for a Boilermaker in Los Angeles is **\$50,000**.
- The typical salary for a Pipe Fitter in New York City is **\$55,000**.
- The typical salary for a Senior Structural Assembler in Chicago is **\$60,000**.



How Can You Earn Even MORE \$\$?

- Get AWS certified!
- Continue your education through AWS coursework, seminars and advanced certifications
- Expand your knowledge of processes and keep updated on new and emerging technologies
- Earn a 2-year welding technician degree or a 4-year welding engineering degree from a Community College or University
- **PRACTICE! PRACTICE! PRACTICE!**



CHOOSING A CAREER

Is a Welding Career Right for You?



- Do you enjoy building things? *Try your hand at welding skyscrapers in the construction industry.*
- Are you a great diver? *Give underwater welding a try.*
- Enjoy working on cars? *Why not build them as a welder in the automotive manufacturing industry?*
- Good at math and science? *Welding engineering and technology may be right for you.*
- Want to travel the world? *Welding inspection can take you places.*
- Are you a passionate communicator who enjoys working with others? *A career in welding sales and service would get you talking.*
- Are you an artist at heart? *Get creative with metal sculpting.*
- Ever wonder how a plane takes flight? *Construct them in the aerospace industry.*
- Want to own your own business? *Open the doors to your own welding repair and job shop?*



Do You Have What it Takes?

***Welders require many skills over the long run,
but to start you only need these few:***

- Problem-solver
- Patient
- Detail-oriented
- Imaginative
- Reliable
- Dependent



Is Now A Good Time?

There has never been a better time to be a welder!

- Nearly half of our nation's welder workforce is due to retire.
- “[We] need welders like a starving person needs food.”
“Where Have All the Welders Gone As Manufacturing and Repair Boom?” - Wall Street Journal
- This has created an unprecedented demand for new skilled welders.
- Employers are increasing salaries and benefits to entice career-minded youth to the field.
- Planning to work after high school? Welding and joining technology offers immediate job prospects with a lot of growth potential.
- College-bound and looking for a major field of study? Consider welding engineering or metallurgy.



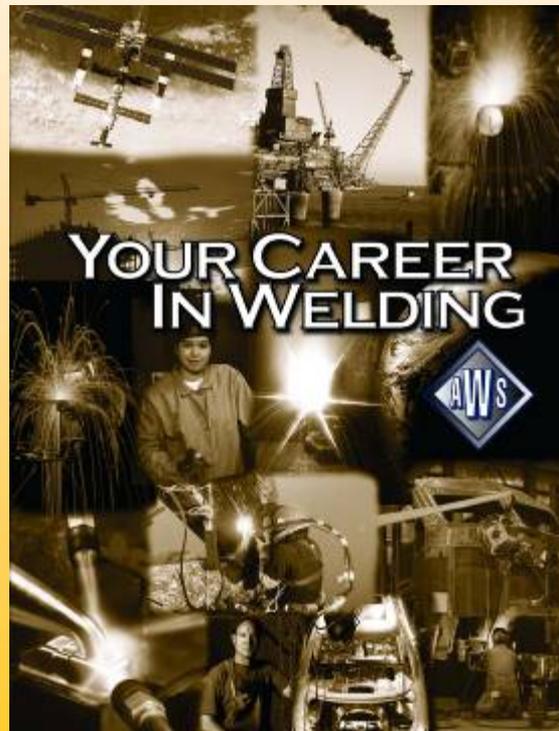
GETTING STARTED

How do you get started?

Visit online www.aws.org/career/

or call 800.443.9353, ext. 248

to order AWS' new *Your Career in Welding* Career Guide





How do you get started?

- **Visit AWS' website:** www.aws.org - Here you will find valuable information and resources, including local contacts in our Section and District directory, scholarships, and AWS' Online Forum.
- Research the variety of welding careers available and **choose your direction**
- Become a member of the **American Welding Society**
- **Use JobFind on the AWS website:** www.aws.org/jobfind.
- **Visit America's Career Info Net:** www.careerinfonet.org.
This website provides national, state and local career information and labor market data, including wages, occupational trends and schools in your area.



How do you get started?

- **Reach Out:**

Contact your local school board, vocational/technical institute, or community college to find out where welding courses are offered in your community. Ask your State Board of Education's Office of Career and Technical Education about your state's welding education and training resources.

- **Explore:**

Research welding programs at universities and technical schools. To start, take a look at these schools that offer welding coursework:

- Ferris State University in Big Rapids, Michigan
- Hobart Institute of Welding Technology in Troy, Ohio
- LeTourneau University in Longview, Texas
- Lincoln Welding School in Cleveland, Ohio
- The Ohio State University in Columbus, Ohio
- Pennsylvania College of Technology in Williamsport, Pennsylvania
- Florence-Darlington Technical College in Florence, South Carolina



How do you get started?

- **Earn While You Learn:**

Several trade unions – Sheetmetal Workers, Ironworkers, Carpenters, and United Associations (including the Pipefitters, Plumbers, Sprinklerfitters, and Steamfitters Unions) – have three-to five-year “earn while you learn” welding apprenticeships. Upon completion, participants may receive a two-year Associates Degree in a welding discipline, and help with employment through local halls in cities throughout the country.

- **Travel:**

Travel the world while learning welding in the armed services. The U.S. Army, Air Force, and Marines have state-of-the-art welder-training facilities and offer programs that teach welding and allow participants to pursue an associates or bachelor’s degree in welding technology or welding engineering during their term of service.

Get Noticed

IMAGE OF WELDING AWARDS

Every year during the FABTECH International and AWS Welding Show AWS honors individuals and companies that have made great efforts to raise the image of welding locally and/or nationally.

BE HONORED AMONGST YOUR PEERS!

Award categories:

- Individual
- Section
- Large Business
- Small Business
- Distributor
- Educator
- Educational Facility



Scholarships Available



- Graduate Fellowships
- National Scholarships
- Student Loan Program
- District Scholarships

Call → (800) 443-9353, ext.689

Online → www.aws.org/foundation

Where To Go For help!



- www.aws.org (American Welding Society)
- www.welding.org (Hobart Institute of Welding Technology)
- www.osu.edu (The Ohio State University)
- www.dol.gov (Department of Labor)
- Your welding instructor
- Your school career advisor/counselor
- Nearest vocational/technical school



SUMMARY



Summary

- Your Career in Welding - *Your First Step to A Bright Future*
- AWS – Professional Society for Welding
- Welding – Most common way to permanently bond metal and other materials
- Welding is used all around us and plays a primary role in the manufacturing sector
- The welder shortage can mean new career opportunities
- There are a multitude of welding career paths available
- AWS - Your first step to launching a welding career



JOIN WELDING!
INSPIRE, CREATE,
BUILD A BETTER WORLD!