

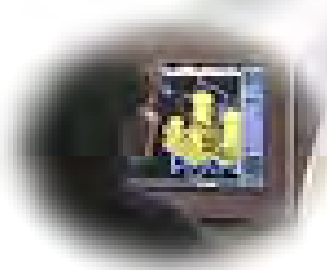
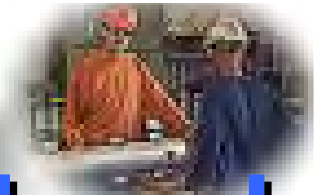


May 10, 2006
Mobile, AL

Crosscut Initiatives Panel

National Shipbuilding Research
Program

Skill Standards for Shipbuilding and Repair



Presentation Points

- Skill Standards Definition
- Benefits and Return on Investment
- Review of Past Crosscut Work
- Skill Standards Tools
- Continued Skill Standards Work
- Shipyard Use Survey

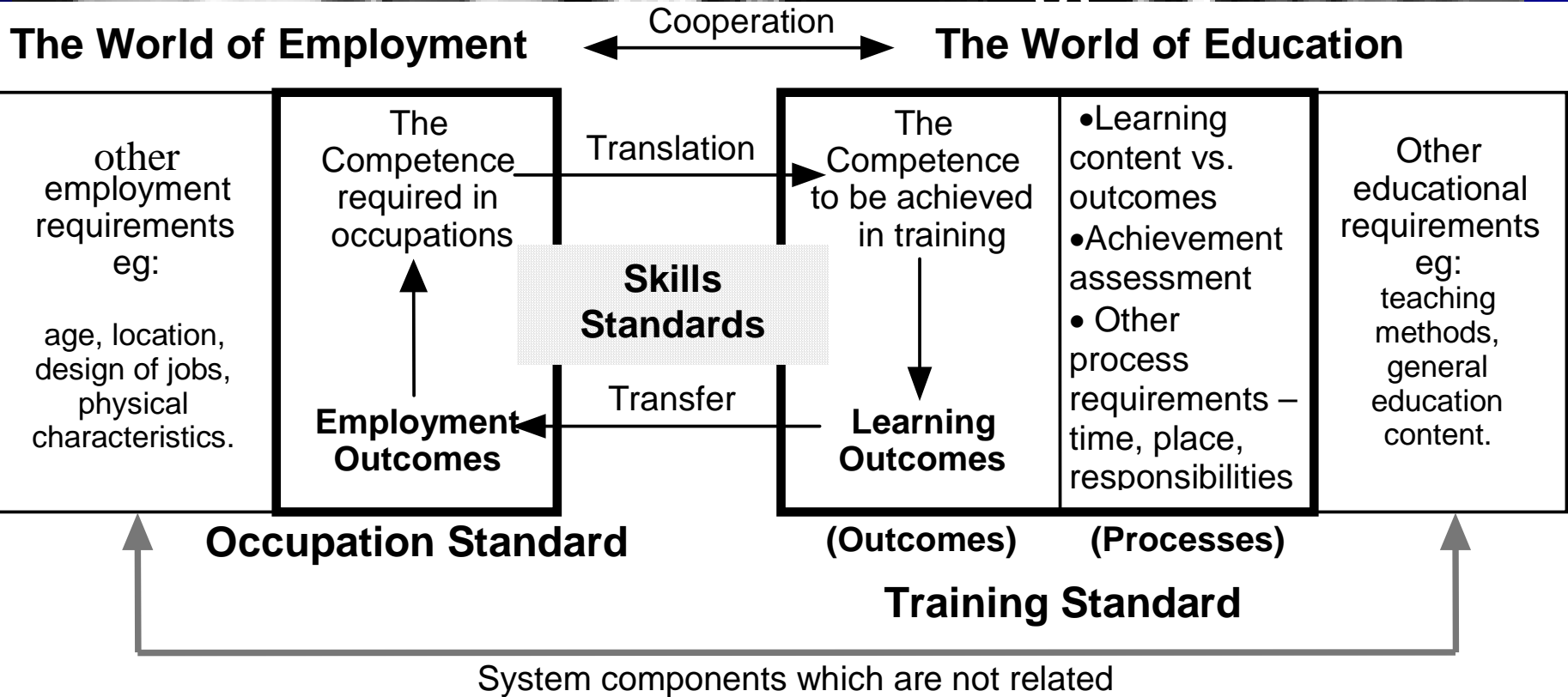


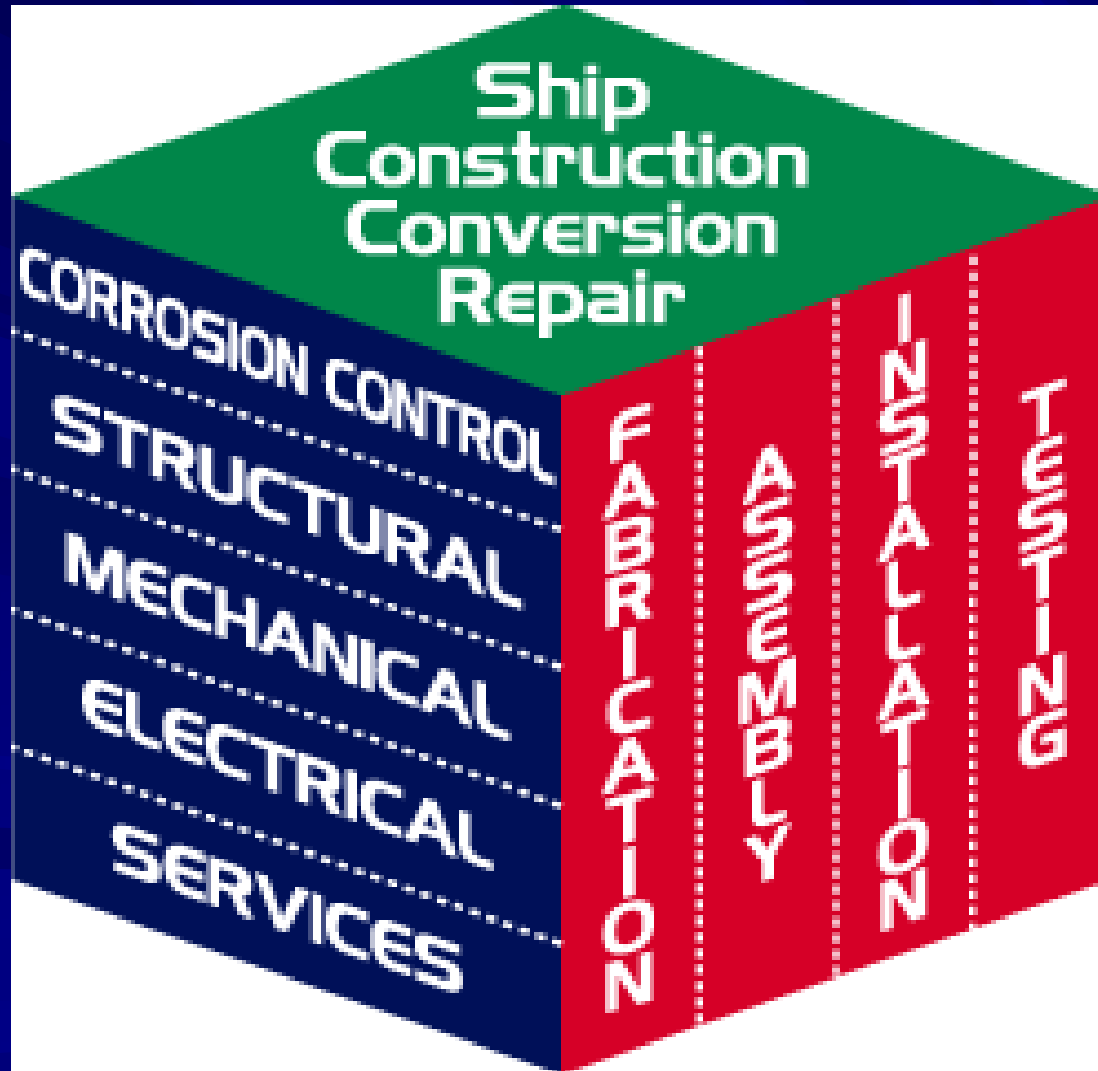
Figure 1: Skills Standards Conceptual Framework

Elements of Skill Standard Sets

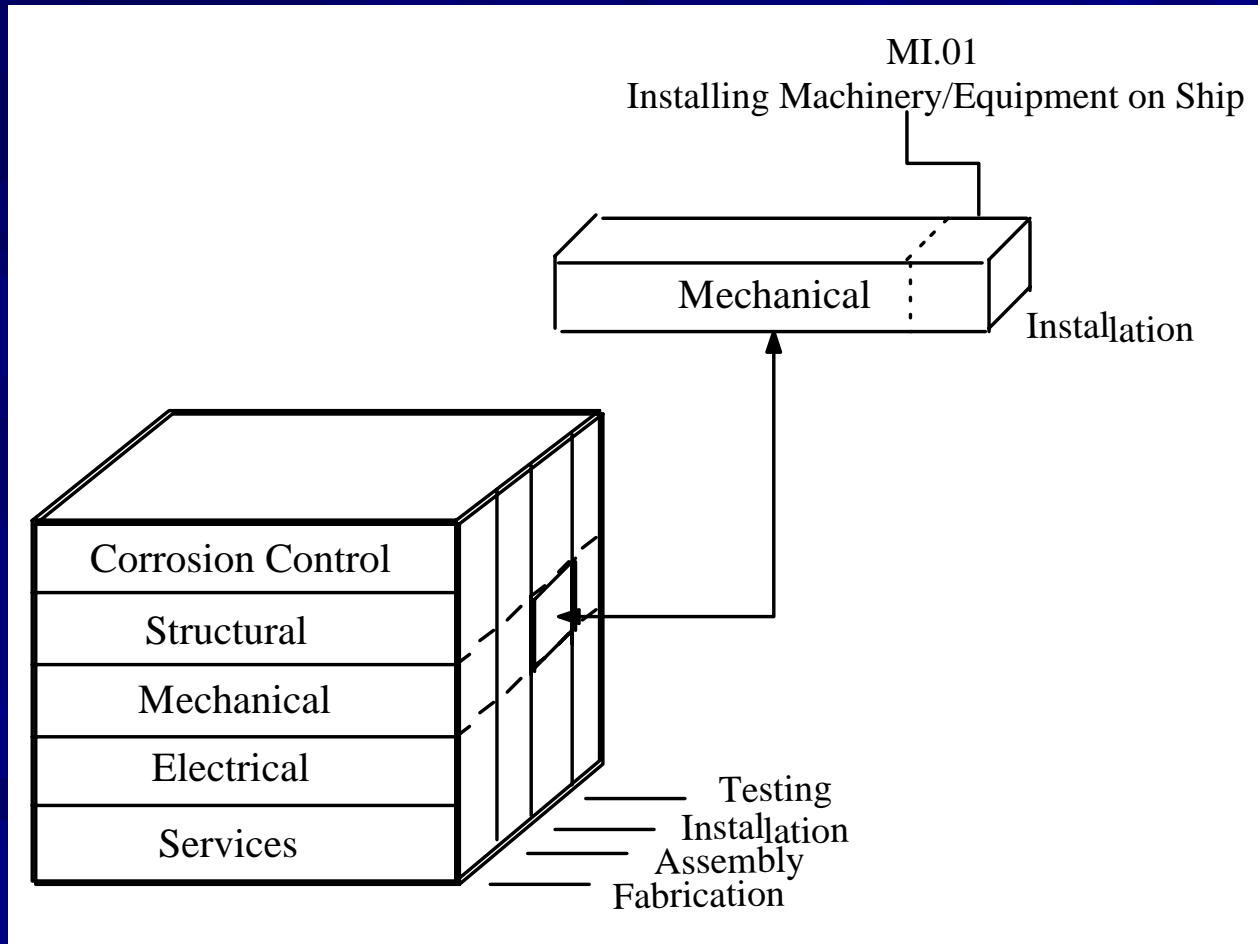
- The Standard: (1) a statement of work, and (2) criteria for determining if the work has been done properly.
- Assessment: means of measuring the worker's performance to the standard
- Certification: Formal documentation of knowledge, skill and ability

Within a framework of common terminology, language, symbols

The Cube



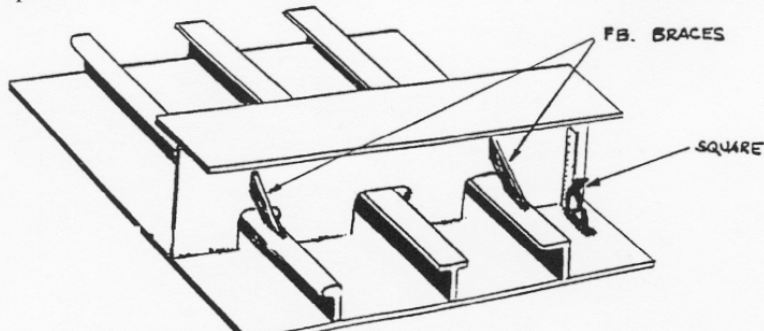
A Typical Cross Section



Shipfitting: Theory, Learning Lab, OJT Practice, Final Assessment, Real Work

10

After fitting web, tack weld flat bar braces on both ends of the web frame square.



Why Do Skill Standards?

Internal to a company:

- Formalize hiring/advancement at yards
- Establish commonality/equitability among trades/descriptions/apprenticeships
- Tool for a multi-skilled Workforce (Workforce flexibility, Cross training across positions)
- Shift labor based on need
- Meet customer requirement (such as welding standards)
- Correct quality performance and efficiency

Why Do Skill Standards?

External to a company

- Develop “common” language for teaming
- Easier for vocational/community college to support the industry
- Easier and faster to hire subcontractors or contract workers
- Use public training \$\$ efficiently – meet common needs
- Toolset for technology transfer (*Gap analysis*)
- Connect shipbuilding industry with other manufacturing organizations – political mass

History

- Crosscut Panel has been interested in skill standards for shipbuilding for the past ten years to address:
 - standardized training
 - worker certifications
- 5 projects funded since 1996
- Produced 23 deliverables (reports)

Project List

- 9-96-1 & 2: Assist U.S. Shipyards to Develop & Maintain Skilled Trade Workers; Structured OJT
 - '96 – '99; Produced 11 deliverables
- 9-98-1: Leading & Sustaining Multi-Skilled Work Groups
 - '99 – '00; 5 deliverables
- White Paper: Current State of Skill Standards and Certification
 - '00; 1 deliverable
- Develop Skill Standards for the Industry, Phase 1
 - '01 – '02; 3 deliverables
- Develop Skill Standards, Phase 2
 - '02 – '03; 3 deliverables

Crosscut Skill Standards Tools

- Integrated Database
- Shipbuilding scenarios
- Knowledge, skill and abilities tables
- Sample assessments – shipfitting and painting
- Overall design of a skill-standards based training program

Shipbuilding Skill Types

NSRP Standards address two skill types:

- Core skills: General KSA's that can apply to several different processes and can be taught in schools, such as:
 - blueprint reading; measurement; use of tools
- Specialty skills: Technical skills required to become competent in a particular process – typically learned via OJT – such as:
 - shipfitting; pipe bending; crane rigging

Where to Find Info

- NSRP.org
- Documentation Center is moving to National Technical Information Service (NTIS.org)
- NSRP skill standards have been included with other NSRP standards, such as Material Standards

Skill Standards Continuation

- **Current Crosscut Panel Project:**
Workforce Preparation Improvements
 - Identify skill inventory & management systems
 - Adapt selected NSRP skill standards to web-enabled system
 - Integrate general manufacturing standards from MSSC
 - Pilot demonstration at one shipyard and community college
 - Optimize implementation of integrated skill standards system

Skill Standards Use Survey

- An email survey with with 8 questions was conducted between 20 and 28 April
- Survey as sent to all participants of the Workforce Summit held in Alexandria VA in November 2005 and by ATI to their participant list
- Reponses from 12 shipyards and from 4 other interested parties

Shipyards Responding

Shipyard	Responder
Aker-Philadelphia	Jim Clark
Alaska Ship and Drydock	Doug Ward
Bender Marine	Jermyn, Dale
Government Shipyards (4)	Vern Rutter
GD Bath Iron Works	Patrick Conley
GD Electric Boat	Pat Bullard
GD NASSCO	Valerie Houlihan
Jeff Boat	Don Bewley
NGC - Avondale	David Cobb
NGC - Ingalls	Larry Crane
NGC - Newport News	Robert P. Leber
SENESCO	Larry Gebhardt

Question 1

Do you have a copy of the NSRP
production skills database?

Have NSRP Skills Database

Shipyard	Response	Comments
Aker_Phila	Yes	
AS&D	Yes	
Bender	No	We had one but not sure where it is.
GD BIW	Yes,	a hardcopy version
GD EB	Yes	
GD NASSCO	Yes	
Jeff Boat	Yes	
NGC Avondale	No	
NGC Ingalls	No	Gone with the flood!
NGC Newport News	Yes	
SENESCO	Yes	

Question 2

Have you used any part of the NSRP Skills database to describe the skills required in a position?

Describe Positions

Shipyard	Response	Comments
Aker_Phila	In trial	Reviewing the information to determine how best to apply it to various positions
AS&D	Yes	
Bender	No	
GD BIW	No	
GD EB	No	
GD NASSCO	No	
Jeff Boat	No	
NGC Avondale	No	
NGC Ingalls		
NGC Newport News	Yes	Used with several other sources to develop courses
SENESCO	Yes	Shipfitting

Question 3

Have you used any part of database to formulate any aspect of individual or trades training?

Plan and Prepare Training

Shipyard	Response	Comments
Aker_Phila	No	
AS&D	Yes	
Bender	No	Had our system for years
GD BIW	No	
GD EB	Yes,	I have used it as a criterion reference to bench mark new skills against.
GD NASSCO	Yes	We have used it as a baseline when developing new course content in our Outfit Training to ensure that we are meeting the criteria established
Jeff Boat	Yes	
NGC Avondale	No	
NGC Ingalls	No	
NGC Newport News	Yes	Used with educational support
SENESCO	Yes	

Question 4

Do you use a public training institution, such as a community college or vocational-technical school, to assist in production worker training?

Please name the school and a point of contact at the school.

Training Assistance

Shipyard	Response	Comments
Aker_Phila	Yes.	The Collegiate Consortium for Workforce and Economic Development
AS&D	Yes	University of Alaska, Ketchikan Campus
Bender	Yes	Enterprize Ozark Community College -
four govt shipyards	Yes	
GD Bath Iron Works	No	
GD Electric Boat	Yes	Ella T. Grasso Tech School; 3 Rivers Technical College; Maine Maritime Academy
GD NASSCO	Yes	San Diego Community Col College
Jeff Boat	Yes	
NGC Avondale	No	NGC works with the Community College systems in Mississippi and Louisiana.
NGC Ingalls	Yes	
NGC Newport News	Yes	Tidewater Community College; Nelson Community College; Camp Community College
SENESCO	Yes	Community College of Rhode Island

Question 5

Have you used the NSRP skill standards in connection with establishing or vetting the community college or vo-tech curriculum?

School Curriculum

Shipyard	Response	Comments
Aker_Phila	No	
AS&D	In process.	
Bender	No,	Used our own system.
GD BIW	No	
GD EB	No	
GD NASSCO	No	
Jeff Boat	No	
NGC Avondale	No	
NGC Ingalls		
NGC Newport News	Yes	Work with several colleges
SENESCO	Yes	shipfitting

Question 6

Are you using any other set of skill standards to assist in training or position definition?

Other Skill Standards

Shipyard	Response	Comment
Aker_Phila	Yes	
AS&D	Yes	MSSC and Construction Trades
Bender	Yes	Our own; We have career paths for each craft that lists skills required in detail specific to Bender
four govt shipyards	Yes	The Navy Shipyards use a skills based system called trade skills designators for position descriptions and training planning.
GD BIW	No	
GD EB	Yes	We have our own skills standards and we collaborate with the other five Nuclear Capable Shipyards (Newport News, PHNSY, PSNSY, NNSY, and PNSY)
GD NASSCO	No	
Jeff Boat	Yes	WorkKeys
NGC Avondale		
NGC Ingalls	Yes.	
NGC Newport News	Yes,	Work Keys to profile our crafts and to assess our employees who volunteer for the program
SENESCO	Yes	To design multi-skill work; assessment building

Question 7

How can we make the database more useful?

Improvements

Shipyard	Recommendations
Aker_Phila	Not sure. We will be getting more into the skill standards in future months.
AS&D	Make it accessible on the web so that it can be downloaded into widely used business software for easy and immediate use and customization. Ask users to share improvements and modifications to the public data base.
Bender	Training or On-line training that could dial into.
GD EB	Get the 4 Naval Shipyards to adopt one set of standards and publish those.
NGC Newport News	The database is not user-friendly on our computers; hence, anything that could be done to make it easier to load and use would be helpful.
Senesco	Convert to web-based system so that a) learning file-maker pro is not required; b) more managers/supervisors can easily access.

Inferences

- Skill standards are acceptable to shipyards and unions.
- The NSRP Standards have contributed to workforce development for those yards that have used them.
- Shipyards are not using skill standards to assist in formulating public educational support.

More Inferences

- There is no agreement on which set of standards to use.
- The private and public yards are not closely integrated with respect to standards and terminology.
- The NSRP standards are aging and their content and delivery methodology needs to be brought up to current technology.

Next Presentations

- Work Keys – Don Bewley
- MSSC Skill Standards – Tom Gannon
- Shipyard reports on skill initiatives –
 - Don Bewley; Jeffboat
 - Others