

Workforce Development Panel Presentation

Forest City Gear

*2.1.1 Job Skills & Cross-
Training Certification Process*

Process Overview

- ✈ 2.1.1 Job Skills and Cross-Training Certification Process
 - ✈ Step One: Identify and track existing skills and responsibilities
 - ✈ Step Two: Identify and track
 - ✈ Step Three: Prioritizing Training
 - ✈ Step Four: Accomplish Training/Cross-training & Reviewing Training

STEP ONE:

- ✈ **Identify and track existing skills and responsibilities**
 - ✈ Skills are tracked through the HR training grid (*FCG uses an electronic filing system “KwikTag” searchable by employee name, date, training type, and department*)
 - ✈ The Qualified Operator Matrix doubles as an inspection stamp control list and lists skills by employee for each different department with every single piece of equipment listed (*non-machining, hobbing, shaping, gear-grinding, secondary, deburring, process-control, inspection, and non-conformance tracking*)

HR Training Grid

TRAINING MATRIX

	Process Control							Inspection			Non-conforming		Corrective Action		Contract Review			Purchasing			Machinery & Equipment					Gear School			Shop Functions													
T Required Training	Operating Procedures	Process Instructions	Blueprint Reading	Material Handling	Material Identification	Document Control	Quality Records	Procedures	Equipment	Documentation	Identification	Material Review Records	Documentation	Documentation/Implementation/Verification	Documentation	Verification	Order Entry	Documentation	Verification of Specs	Approved Vendors	Approval Authorities	Gear Hobbing	Gear Shaping	Secondary	Gear Grind	Blanking	Gleason	Koepfer	AGMA	Deburring Methods	Measurements Over Pins	Hob Sharpen	Shaper Cutter Sharpen	Calibrations	UTS Software	Shipping	Receiving					
O Optional Training																																										
A Acceptable																																										
P Proficient																																										
X Not Applicable																																										
Employee Name																																										
Bagwell, Andrea	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A	A	A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brace, Vickie	A	A	A	A	A	A	A	T	T	A	A	A	O	O	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	X	A	X	X	X	X	X	X	X	X	X	X
Blatchford, Kent	A	A	A	A	A	A	A	A	P	P	A	A	T	O	X	X	X	X	X	X	X	X	A	O	O	O	O	A	A	A	O	P	O	O	O	X	X	X	X			
Brick, Matt	A	A	A	A	A	A	A	A	A	A	A	A	O	O	X	X	X	X	X	X	X	A	X	X	X	X	A	A	O	O	A	A	X	X	X	X	X	X	X			
Cagle, Jim	X	X	A	X	X	X	X	X	X	X	X	X	X	X	A	A	A	A	A	A	A	X	X	X	X	X	O	A	O	X	X	X	X	X	X	X	X	X	X	X		
Cass, Larry	A	A	O	A	A	A	O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	A	O	O	X	X	X	X	X	X	A	A		
Chatfield, Kevin	A	A	A	A	A	A	A	A	A	A	A	A	X	X	X	X	X	X	X	X	X	A	O	A	A	X	O	O	A	A	A	O	O	X	O	X	X	X				
Christenson, Tom	A	A	P	A	P	A	A	X	X	X	A	A	X	X	P	P	P	P	P	P	P	X	X	X	X	O	O	O	X	O	X	X	X	X	X	X	X	X				
Cochran, John	A	A	A	A	A	A	A	A	A	A	A	A	X	X	X	X	X	X	X	X	X	O	O	O	A	X	A	O	A	A	O	O	X	T	X	X	X	X				
Cunningham, Mark	A	A	A	A	A	A	A	A	X	A	A	A	X	X	X	X	X	X	X	X	T	A	O	O	X	O	O	O	O	A	A	O	O	X	T	X	X	X				
Cychosz, Cathy	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A	A	A	A	X	X	A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Daugherty, Sean	A	A	A	A	A	A	A	A	A	A	A	A	X	X	X	X	X	X	X	X	O	O	A	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X				
Davis, Don	A	A	A	A	A	A	A	A	P	A	A	A	A	X	X	X	X	X	X	X	O	O	O	O	O	X	X	X	X	P	X	X	X	X	X	X	X	X				
Ewald, Tim	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A	X	X		
Fann, Eugene	A	A	P	P	P	P	P	A	A	A	A	A	X	X	X	X	X	X	X	X	P	P	A	P	O	A	A	A	X	A	X	X	X	X	X	X	X	X				

✈ *Example of the HR Training grid—in corresponding software, KwikTag, you can pull supporting documentation for each training event*

Qualified Operator Matrix

Operator Qualifications and Cross-Training Matrix					Non-Machining					
Last Name	FirstName	Primary Dept	Stamp#	Level	Receiving	Shipping/Packaging	Receiving Inspection	In-Process Inspection	Magnetic Particle Insp	Final Inspection
ALEWINE	BARNEY	Quality	BA1					X		
BLATCHFORD	KENT	Quality	KB1				X	X		X
DAVIS	DON	Quality								
KURPESKI	GARY	Quality	GK1				X	X		
LENTZ	CHUCK	Quality	CL1					X		
RICKELMAN	KIM	Quality	KR1				X		X	X
SHERMAN	DAVE	Quality	DS1							
SOVINA	AMY	Quality	AS1				X	X		X
STEWART	SHARYL	Quality	SS1				X			
TRAUM	ED	Quality	ET1					X		
WRIGHT	CURTIS	Quality	CW1							

✈ Example of a portion of the Qualified Operator Matrix for inspection employees of Non-machining skills—there is a tab for each department with corresponding employee list

STEP TWO:

- ✈ **Identify and track responsibilities and authorities of trainers of all levels**
 - ✈ Responsibilities and Authorities are tracked through a matrix which defines who has what responsibility & authority at FCG
 - ✈ *This matrix doubles as our AS/ISO Owner Matrix*
- ✈ We look at each and every machine in the building as a training opportunity as we have masters and users listed for each (as each requires a slightly different skill set and knowledge base), our matrices show who the most cross-trained operators and masters are

Responsibilities & Authorities Matrix



Procedure	Chairman & Chief Executive Officer	President & Chief Operating Officer	Vice President of Manufacturing	Management Representative	Quality Manager	Gear Technology Manager	Production Manager	Human Resource Director	Purchasing Director	Gear Process Engineer	Information Technology Manager	Supervisors	Inspectors	Operators
All Ensure that requirements of all procedures are maintained				X										
SOP-6 Maintain document revision / change control records					X									
SOP-6 Review & approval of new documents / procedures	X	X	X	X	X		X	X	X					
SOP-6 Review of new / revised technical standards														
SOP-6 Maintain master files of controlled documents and data				X	X	X	X	X	X					
SOP-7 Maintain master files of quality records			X	X	X		X	X	X					
SOP-7 Maintain quality record master index					X									
SOP-10 Management review committee personnel	X	X	X	X	X		X	X						
SOP-10 Maintain records of management review					X									
SOP-12 Assess personnel training, qualification, and competence requirements	X	X	X		X		X	X					X	
SOP-12 Maintain records of training provided employees								X						
SOP-13 Maintain preventive maintenance program requirements							X							
SOP-13 Maintain preventive maintenance documentation and records							X						X	
SOP-13 Maintain workplace safety and ensure compliance with government regulations			X				X							
SOP-15 Evaluate customer requirements and perform contract review	X		X			X				X				
SOP-15 Develop, generate, and approve customer quotations	X		X			X					X			
SOP-15 Review, approve, and process customer purchase orders			X			X				X				
SOP-17 Generate, review, and approve supplier and subcontractor purchase orders	X		X		X	X	X			X				
SOP-18 Evaluate supplier qualifications and approval status	X	X	X		X		X			X				
SOP-18 Maintain master index of approved suppliers					X									
SOP-20 Verify and approve for use purchased products and subcontracted operations					X									X
SOP-20 Maintain records of product or process certifications (as applicable)					X									
SOP-21 Maintain compliance with customer, statutory and regulatory requirements	X	X	X		X		X	X						
SOP-21 Initiate and approve manufacturing work orders			X				X			X				
SOP-21 Ensure that special processes, verifications, and validations are maintained					X									
SOP-22-23 Maintain product identification, traceability, and preservation			X		X	X						X	X	X
SOP-24 Maintain control of monitoring and measurement equipment					X		X						X	X
SOP-24 Maintain the master index of monitoring and measurement equipment					X									
SOP-24 Plan and schedule and supervise internal audits					X									
SOP-24 Assign trained auditors to conduct, record, and report the results of internal audits					X									
SOP-24 Maintain master file of internal audit reports					X									
SOP-24 Establish inspection and products acceptance criteria					X									
SOP-29 Verify product conformance and approve for further processing					X		X					X	X	X
SOP-29 Verify product conformance and approve for dispatch to customers					X								X	
SOP-30 Maintain control and identification of nonconforming product					X		X					X	X	X
SOP-30 Document nonconforming material review records					X		X					X	X	X
SOP-30 Evaluate and approve disposition of nonconforming materials			X		X		X							
SOP-31 Maintain requirements of the corrective action system					X									

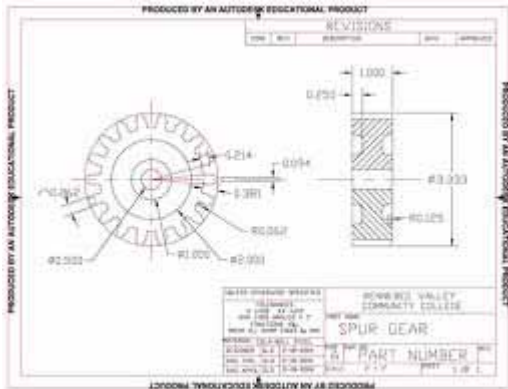
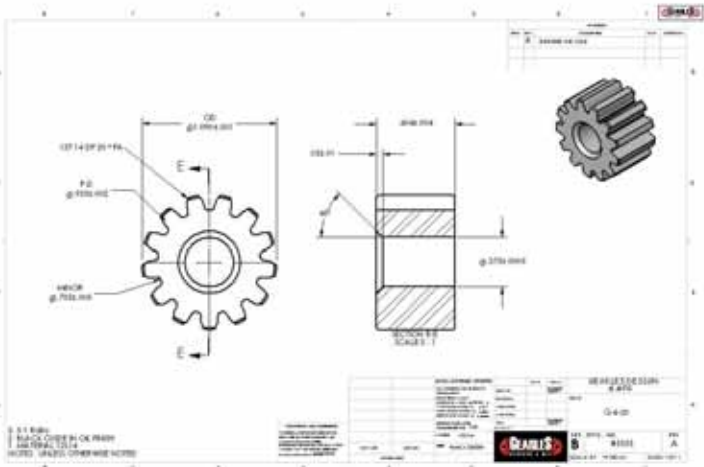
✈ This matrix outlines the responsibilities and areas of authority for the CEO, President, VP, QM, Engineering Staff, Purchasing, IT, Supervisors, & Operators

STEP THREE:

✈️ **Prioritizing Training**

- ✈️ Conformity to customer prints and requirements is the underlying goal for all training purposes
 - ✈️ We measure competency based on machine-specific skill-level (*judged by set-up/operation capabilities by machine*), training, & education
 - ✈️ Needed competencies are outlined in job descriptions and are also demonstrated by evidence such as training certificates held in positions
 - ✈️ Where applicable, we provide missing training needed to complete the competence for a position
 - ✈️ We measure training effectiveness through supervisor review and uniPoint software which tells us the number and type of nonconformance issues by operator

Customer Prints Determine Needed Competencies



Competencies Outlined in Job Descriptions

Forest City Gear

Job Title: Hobbing Set-up Technician

Department: Hobbing

Position Overview:

Set-up and operate gear hobbing machines to meet production and quality requirements.

Essential Job Functions:

- Set-up hobbing machines
- Use Vari-Roll, pin measurement, and visual checks for part inspection
- Expedite parts to the following operation
- Determine when hob cutter needs replacement or resharpener
- Assist in determining tooling & fixturing needs
- Take parts to inspection when necessary
- Use inspection methods to determine size changes
- Analyze blueprints & travelers
- Complete all necessary paperwork as required in a timely & accurate manner

Non-Essential Job Functions:

- Machine maintenance (oil levels) & Machine maintenance logs

Skills/Requirements:

- Knowledge of all departmental machine capabilities
- Basic gear inspection equipment knowledge and skills
- Basic materials knowledge
- Ability to set-up SPC Gage Talker
- Communication skills to train others as needed

STEP FOUR:

✈️ **Accomplishing Training/Cross-training & Review**

- ✈️ New Employee Orientation (*includes safety training, quality training, lean/5S, machines and terminology*)
- ✈️ Regularly send machinists & operators to: *Gleason Gear School, AGMA hands-on gear school & training programs, KAPP finishing, & Rock Valley College apprenticeship machining/tooling program*
- ✈️ In house cross-training/mentor program and equipment rotation (eventually department rotation) based on skills and aptitude
- ✈️ Reviewing training with internal audits (volunteer committee headed by Quality Manager) and external customer audits

Questions?

Thank you

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