



Hazard Prevention & Control

Region IX VPPPA Conference

Best Practices Workshop

Newport Beach, CA

April 2, 2010



Jeffrey Ho

Manager, Safety & Health

Lockheed Martin Aeronautics, Palmdale

HAZARD CONTROL?



LM Aeronautics - Palmdale



No. Employees: 3,200

VPP Certification: Since 1999

Unions: Int. Association of Machinists & Aerospace Workers, District Lodge 725; IBEW Local 2295; IUOE Local 501

Business/Operations: LM Aero-Palmdale develops specialized aircraft prototypes and technology, and conducts aircraft modifications and upgrades.

- A/C mods, upgrades and sustainment
- Prototypes
- Radomes, edges, antenna production for F-22 and F-35



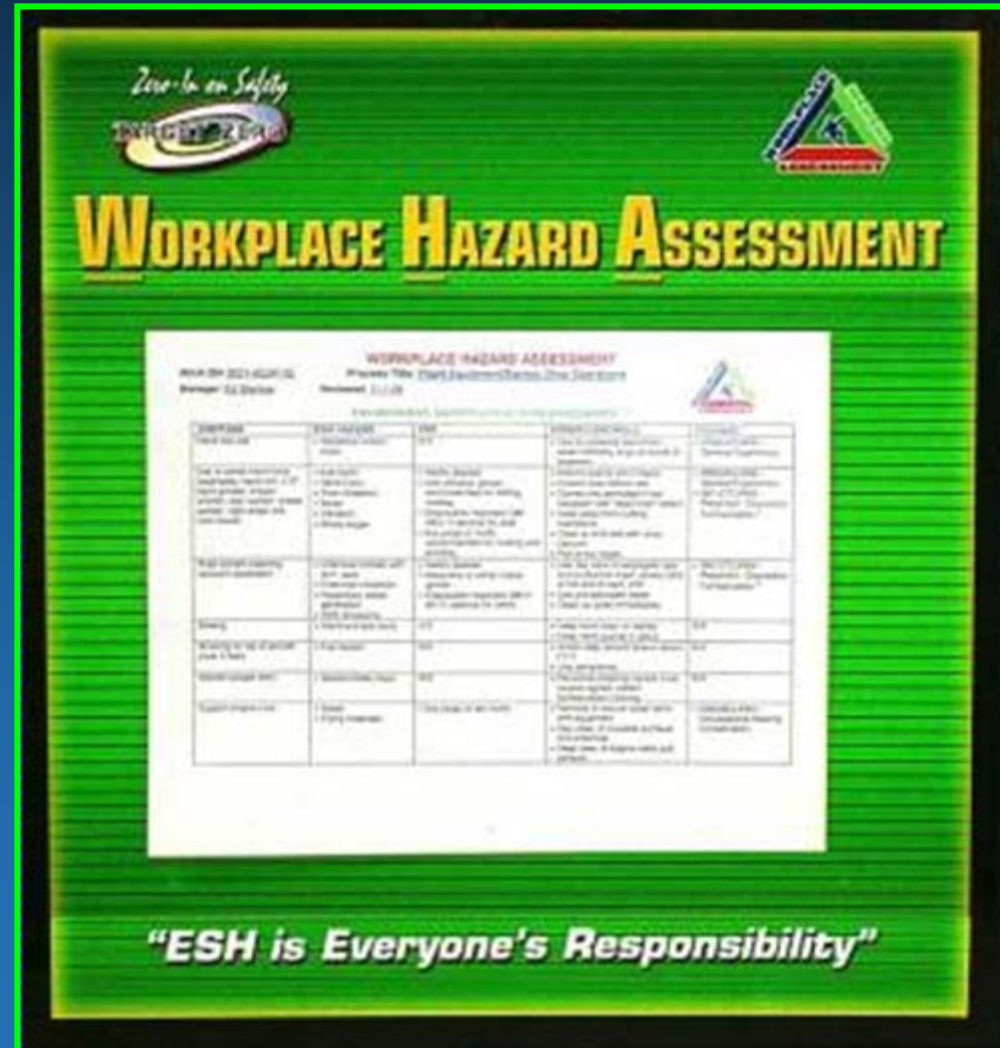
Quick Company Overview



Workplace Hazard Assessments



- Workplace Hazard Assessments (WHAs) act as a “roadmap to compliance” with ESH rules
- How do WHAs work?
 - ESH reviews processes and identify task-specific hazards & controls
 - ESH issues WHAs to managers
 - Managers review with workers and post WHAs in the work area
 - ESH updates WHAs annually, or when operations or equipment change



Workplace Hazard Assessments



WORKPLACE HAZARD ASSESSMENT

WHA ID# 0610-1455*-01

Process Title: Painting and Coating

Manager: Dan Doremus

Reviewed: 8-1-08

ENVIRONMENT, SAFETY & HEALTH REQUIREMENTS 1,2



JOB/TASK	ESH HAZARD	PPE	OTHER CONTROLS	TRAINING ⁴
Sanding aircraft surfaces containing chromated primer (REGULATED areas)	<ul style="list-style-type: none"> Dust inhalation including hex chrome Dust contact with skin, eyes 	<ul style="list-style-type: none"> Half or full-face respirator with P100 filter Safety glasses (for half-face respirator) Nitrile or neoprene rubber gloves Tyvek lab coat or coveralls 	<ul style="list-style-type: none"> Use sander with attached vacuum system Clean at shift end with portable HEPA vacuum system Periodically inspect and change vacuum bag as needed to maintain good vacuum suction; place trouble as needed Wear listed PPE if within 10 feet of sanding operations Set up hex chrome regulated area; min. distance 10 feet from task While still in PPE, clean up after task with portable HEPA vacuum Remove and dispose PPE before leaving regulated area; wash hands and face Break down regulated area set up as needed Contact HazMat for container to dispose of vacuum sanding dust 	<ul style="list-style-type: none"> 060189CUR00 - Half-face Respirator 060188CUR00 - Full-face Respirator 088374CUR00 - Hexavalent Chromium (VI) 088821ILT00 - Chromium VI Medical
Sanding aircraft surfaces that do NOT contain chromated primer	<ul style="list-style-type: none"> Dust inhalation (silver, carbon dust, quartz, iron) Dust contact with skin, eyes Repetitive motion injuries 	<ul style="list-style-type: none"> Half or full-face respirator with P100 filter Safety glasses (for half-face respirator) Utility or rubber gloves Tyvek lab coat or coveralls Disposable respirator (3M #8511) recommended when transferring sanding dust to waste drum Anti-vibration gloves 	<ul style="list-style-type: none"> Use vacuum sander with attached vacuum system Clean at shift end with portable HEPA vacuum system Periodically inspect and change vacuum bag as needed to maintain good vacuum suction; place trouble call as needed Wear listed PPE if within 10 feet of sanding operations Contact HazMat for container to dispose of vacuum sanding dust 	<ul style="list-style-type: none"> 060189CUR00 - Half-face Respirator 060188CUR00 - Full-face Respirator 060127CUR00 - Respirator: Disposable Familiarization ³ 026504CUR00 - General Ergonomics
Battery servicing (adding water or electrolyte, changing, or taking specific gravity readings)	<ul style="list-style-type: none"> Corrosive chemical contact with skin, eyes Chemical inhalation Acid spills 	<ul style="list-style-type: none"> Splash goggles Rubber gloves Rubber apron or Tyvek lab coat 	<ul style="list-style-type: none"> Service in designated battery servicing area When adding water, use special battery filler and follow posted instructions Contact HazMat for spill clean up Dispose of unserviceable batteries through Garage Follow posted instructions 	N/A

Workplace Hazard Assessments



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Workplace Hazard Assessments



WHA ID# 0610-1455*-01
Manager: Dan Doremus Reviewed: 8-1-08

WORKPLACE HAZARD ASSESSMENT
Process Title: Painting and Coating

ENVIRONMENT, SAFETY & HEALTH REQUIREMENTS 1,2

JOB/TASK	ESH HAZARD	PPE	OTHER CONTROLS	TRAINING 4
Sanding aircraft surfaces containing chromated primer (REGULATED areas)	• Dust inhalation including hex chrome • Dust contact with skin, eyes	• Half or full-face respirator with P100 filter • Safety glasses (for half-face respirator) • Nitrile or neoprene rubber gloves • Tyvek lab coat or coveralls	• Use sander with attached vacuum system • Clean at shift end with portable HEPA vacuum system • Periodically inspect and change vacuum bag as needed to maintain good vacuum suction, face trouble as needed • Wear listed PPE if within 10 feet of sanding operations • Set up hex chrome regulated area, min. distance 10 feet from task • While still in PPE, clean up after task with portable HEPA vacuum • Remove and dispose PPE before leaving regulated area, wash hands and face • Break down regulated area set up as needed • Contact HazMat for container to dispose of vacuum sanding dust	• 060189CUR00 - Half-face Respirator • 060189CUR00 - Full-face Respirator • 088374CUR00 - Hexavalent Chromium (VI) • 088821ILT00 - Chromium VI Medical

PPE

- Half or full-face respirator with P100 filter
- Safety glasses (for half-face respirator)
- Nitrile or neoprene rubber gloves
- Tyvek lab coat or coveralls

Workplace Hazard Assessments



WHA ID# 0610-1455*-01

Manager: Dan Doremus

Reviewed: 8-1-08

WORKPLACE HAZARD ASSESSMENT

Process Title: Painting and Coating



ENVIRONMENT, SAFETY & HEALTH REQUIREMENTS

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OTHER CONTROLS

- Use sander with attached vacuum system
- Clean at shift end with portable HEPA vacuum system
- Periodically inspect and change vacuum bag as needed to maintain good vacuum suction; place trouble as needed
- Wear listed PPE if within 10 feet of sanding operations
- Set up hex chrome regulated area; min. distance 10 feet from task
- While still in PPE, clean up after task with portable HEPA vacuum
- Remove and dispose PPE before leaving regulated area; wash hands and face
- Break down regulated area set up as needed
- Contact HazMat for container to dispose of vacuum sanding dust

Workplace Hazard Assessments



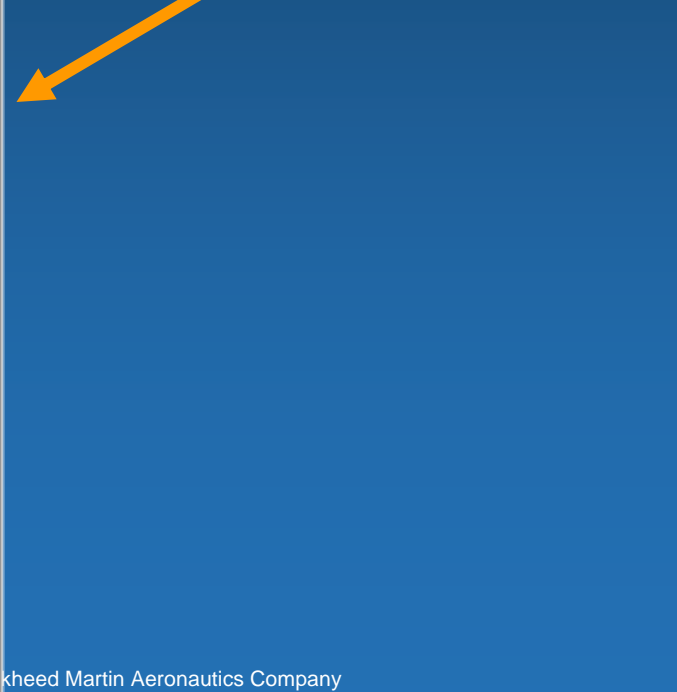
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TRAINING 4
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Hazard Controls





Ergonomic Hazard Controls



3-Tier Hazard Resolution Structure



LEVEL 1 *Working Group*



LEVEL 2 *Manager*



LEVEL 3 *Sr. Manager*

Level 1 - Working group level

- Includes: Supervisor, ESH Engineer, Employees
- Role: Identify ergo problems/solutions
- Meet regularly (monthly) to track status; if cannot resolve, elevate to next level

Level 2 – Manager Level

- Includes: Dept. manager, ESH, MEs
- Role: Resolve issues not resolvable by Level 1
- Meet regularly (bi-monthly) to track status

Level 3 – Sr. Manager Level

- Includes: Led by area's Prod. Ops sr. manager – also includes Facilities, ME, ESH Sr. Managers.
- Role: Resolve issues not resolvable by Level 1&2 – obtain funding, etc.
- Meet regularly (quarterly) to track status

EXAMPLE – “Wrist Rocket”



ErgoTEST Program

BACKGROUND: Sprains & strains among Palmdale's most frequent injuries. Palmdale's ErgoTest program was started 7 years ago – started with budget of \$60K, currently \$125K per year.

GOAL: ErgoTest provides “seed money” for testing ergonomics equipment.

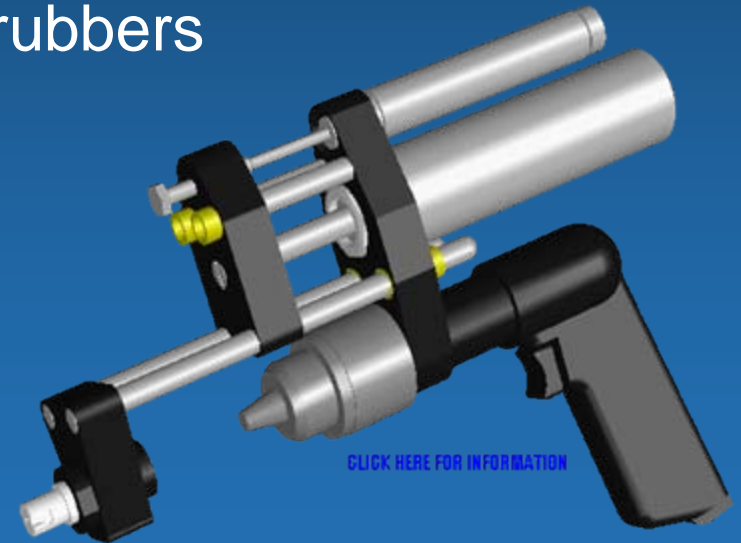
DESCRIPTION:

- Safety purchases a limited number of ergonomic tools and equipment for testing purposes, at no initial cost to the using organization.
- Once the tools and equipment are tested and found to perform, the using organization is responsible for subsequent purchases.
- Projects will be prioritized based on injury records and the results of ergonomic surveys.

ErgoTEST Program

Examples of Purchased ErgoTest items:

- **Ergonomic tools:** rivet guns, bucking bars, hand drill motors, powerfeed drill motors, powered screwdrivers, powered crimpers & luggers, die grinders, routers, sanders, tapping motors, self-feeding countersink motors, JMI installation kits, heat guns, power scrubbers



ErgoTEST Program

- **Manufacturing Aids:** grip wrap for tool handles, lift devices, hydraulic dollies, lift tables, powered cutting devices, ergonomic shop stools, specialized chairs for sanding, sweeps for composite fabrication, tugs for pulling tooling, floor mats, adjustable shop tables, non-powered hand tools, Lift-Mate box handles, compressed gas cylinder handling devices, creepers, rotary cutters, scissors, “ErgoKneel” mats



Hydraulic lift carts



ErgoTEST Program

Maintenance Items: unibody mopping systems, ribbed trash containers, roto scrubbers, wallpaper rollers, trash dumper (for metal chips)

• **Office Equipment:** computer keyboard trays, arm rests, wrist rests



Activeion sprayer



Further Group Discussion



- **Engineering Controls**
- **Administrative/Work Practice Controls**
- **PPE**

