

ROWAN TECHNOLOGY GROUP
Linking Global Technologies with Markets

SERDP-ESTCP Metal Finishing Workshop – Chromate Alternatives for Metal Finishing and Sealing

**Keith Legg, Rowan Technology Group
Metal Finishing Workshop, Layton, UT
May 16, 2007**

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Purpose of the workshop

- **Share information on DoD needs and commercial products**
 - Specific non-Cr⁶⁺ COTS treatments available
 - What data and specifications suitable for making engineering decisions
 - DoD needs, gaps in data and how to fill them
 - What can we do where there are no potential COTS products
- **Chromates in**
 - Conversion coatings for Al and Mg
 - Wash primers for steels
 - Sealers for corrosion resistant coatings (Cd, Al, ZnNi, etc.)
 - Anodizing alternatives
 - Not primers, except in terms of need for full finishing and painting system

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Workshop output

- **Better understanding, closer collaboration between DoD and finishing industry**
 - What we need
 - What we got
 - Who to call
- **Report on available solutions and what to do where there are no good options**
- **Build up Engineering Database for finishing**

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Next steps from Metal Finishing side meeting held in December 2006 at SERDP ESTCP Symposium

- **That meeting and May 32006 workshop improved contact and collaboration between DoD and finishing industry**
- **Follow-on joint workshop between DoD, NASF to discuss specific commercial solutions to DoD chromate problems**
 - This workshop
- **Database of engineering data**
 - Engineers need ready access to engineering data on alternatives adequate for making engineering decisions
 - Under way and should take place over coming year.
- **Expand and rename HCAT to encompass metal finishing in general (or materials in general)**

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Surface Engineering Database

- Hard Chrome Alternatives
- Cd Alternatives
- Chromate Conversion Alternatives
- Anodizing Alternatives (Al, Mg, Ti)
- Chromated Primer Alternatives

TEST DATA

- Test Protocols
- Technical Reports
- Briefings
- Specifications
- Approvals
- Manufacturing Guidelines
- Other Documents

Item
Corrosion
Embrittlement
Fatigue
Wear/Friction
Impact
Adhesion
Integrity
Rig Tests
Flight Tests

• SERDP and ESTCP-generated data
• All other releasable DoD data we can get our hands on
• All commercial data companies are willing to give us
• Links to data held by others, e.g. NASF, NMFRC, etc.

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Long term vision

- Good DoD/industry collaboration
- Good, solid data to make it easier for DoD to adopt better materials and processes

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Workshop principles

- ❑ **This is a workshop, not a symposium!**
- ❑ **Everyone here is a participant**
 - We want to hear from everyone
 - Briefings are for background to provide info for discussion
- ❑ **Have a lot of briefings, panel discussions, breakouts**
 - Raise questions and comments during briefings
 - Note down complicated questions for discussion periods, breakouts – blank pages in book for that if you want them
 - Let's all get as much out of this as we can!
- ❑ **All info available beforehand is in book, all briefings and other docs will be available afterwards**
 - No need for furious scribbling!