

## EXPLOSIVES MODELING FACILITY DIGITAL CAMERA



**Revision Date:** 09/02

**Usage:** Tri-Service applications

**Compliance Impact:** High

**Alternative for:** *Equipment Modification:*  
Wet processing photography

**Applicable EPCRA Targeted Constituents:** This equipment modification reduces hazardous materials use and disposal. These chemicals are required to be tracked and reported under Tier II of EPCRA.

---

<b>Overview:</b>	Operations performed at the Explosives Modeling Facility, an explosives processing pilot plant facility, include melting, casting, pressing, sawing, machining, x-raying and photographing energetic materials, primarily explosives, gun propellants and pyrotechnic formulations. Photos are taken of all tests conducted so as to study the reactive effects of the formulations.  The Explosives Modeling Facility uses approximately 120 rolls of 36 exposure 35mm film/year. Each shot is enlarged to an 8 x 10, is copied once and scanned into the computer. This is a very resource and time intensive process.
<b>Compliance Benefit:</b>	Digital photography will eliminate all wastes and costs associated with traditional photography and wet-processing.
<b>Materials Compatibility:</b>	The transition to digital photography from wet-processing photography will reduce labor time and improve productivity. Digital photography will eliminate the need to develop, enlarge, copy and scan photos.
<b>Safety and Health:</b>	Digital photography eliminates the handling and disposal of hazardous materials, creating a safer working environment. While there are hazardous materials in toner cartridges, they are contained such that worker exposure is minimal. Further, the cartridges are recycled and recyclable.
<b>Benefits:</b>	The benefits to digital photography include: <ul style="list-style-type: none"><li>• Reduced operational costs</li><li>• Elimination of waste water</li><li>• Increased worker and community health and safety</li><li>• Reduced labor time</li><li>• Increased productivity</li></ul>
<b>Disadvantages:</b>	None known.

**Economic  
Analysis:**

**Annual Operating Cost Comparison for Digital Camera and Traditional  
Film Camera**

	Digital	Film
<b>Operating Costs:</b>		
Film/disks	\$ 100.00	\$ 360.00
Scanning	0	\$ 3,600.00
Development, Enlargements, Copies	\$ 500.00	\$62,192.20
Toner Cartridges (Annual)	\$ 500.00	0
Paper	\$ 500.00	
<b>Total Annual Operational Costs</b>	\$ 1,600.00	\$66,152.40
<b>Net Annual Cost Savings with Digital Camera</b>	\$64,552.40	-
<b>Investment:</b>		
Digital Camera	\$ 538.95	-
Printer	\$ 2,432.00	
<b>Total Digital Investment</b>	\$ 2,981.95	
<b>Payback Period</b>	Approx. 2 months	

**Approving  
Authority:**

No major claimant has disapproved or endorsed this technology for use. This technology should be adopted only if the user has endorsed its performance for his/her particular application(s).

**Points of  
Contact:**

Brian Moyer, ARL Risk Management Office  
Building 4600  
Aberdeen Proving Ground, Maryland 21005  
[bmoyer@arl.army.mil](mailto:bmoyer@arl.army.mil)  
410-306-0967

**Vendors:**

Olympus Model C4000 Zoom  
HP LaserJet 4600 DN Printer

**Sources:**

*None listed*