

**TERM PAPER**  
**POLITICAL AND LEGAL FOUNDATIONS OF FIRE PROTECTION**  
**32-FST-385**

*Fire Department Officer Interviewed: Rick Crowe, Fire Chief of the Eaton Fire Division, Ohio from 1995 to 2006. Assistant Chief of Fire in the combined Fire and EMS Division from 2006 to 2007. Served with the Division as a Firefighter, Engineer, Captain, Assistant Chief, and Fire Chief over a 32-year career.*

**Topic: Use of Contacts for Corrective Vision by Firefighters.**

In Chapter 9 of the textbook for this course (*Fire Service Law* by Lawrence T. Bennett), the subject of Americans with Disabilities Act (ADA) is presented covering the reasonable accommodation of firefighters who have a disability. Case Study 9-3 is in relation to an applicant for recruit firefighter with 20/100 Vision (reference Ohio Supreme Court Case: *Columbus Civil Service Commission v. McGlone*, 82 Ohio St. 3d 569, 697 N.E.2d 204 (1998))

Historically, the Eaton Fire Division (EFD) has been a volunteer organization with a full-time Fire Chief. One of the issues that a volunteer fire department deals with on a regular basis is the recruitment of firefighters. EFD would typically start a drive for new volunteer firefighters and we would receive five to seven applicants for the position of firefighter. Usually one or two of these applicants would withdraw prior to the physical agility test or shortly thereafter. The remaining five or six would join the volunteer class. In Ohio, this is a 36-hour course and was taught by myself as the Division Training Officer (post held since 1996) being certificated by the State of Ohio as

a Public Safety Service (PSS) Fire Instructor. Within a two to three year time frame and after completion of the class and the additional required trainings (HAZMAT Operations Level, ICS, etc.), three to four would decide to leave the department for various reasons. So out of the original five to seven volunteers we would typically end up with two volunteer firefighters.

Given these circumstances, the City of Eaton and the EFD cannot be particularly picky nor can most volunteer fire departments, when selecting firefighters. For our Division to base hiring upon certain physical requirements, such as using visual acuity standards of 20/40 vision in both eyes (based upon the City of Columbus, Ohio standard in 1998), would be prohibitive given that the vast majority of the population does not have “perfect” vision.

Looking at the *NFPA 1582* (2007 edition)<sup>1</sup>, it has a requirement for far visual acuity less than 20/100 binocular for wearers of hard contacts or spectacles, uncorrected. This requirement was based upon a study (July 1988) conducted by Med-Tox<sup>2</sup>, a Health Services company that specializes in several areas of job medical and physical standards development. This study performed an analysis of occupational vision screening for police officers and firefighters. Based upon Med-Tox’s findings and information located in PubMed ([www.pubmed.gov](http://www.pubmed.gov)), the College of Optometry, Ohio State University, performed a study on uncorrected visual acuity (UVA) of police officers. As a result, the City of Columbus changed its UVA from 20/40 to 20/125.<sup>3</sup>

The summary from PubMed states: “The report includes a description of a survey of incumbents, acuity testing of a sample of incumbents, collection of essential task information, and experimentation based on the essential tasks. A series of focus group

meetings resulted in agreement that 2 essential tasks police officers must be able to perform when visually incapacitated are identifying a weapon in a typical room and finding spectacles that have been dislodged. The experimentation showed that a noticeable performance decrement begins to appear at 20/125 level of acuity. As a result of the research, the City of Columbus, Ohio, changed the UVA standard from 20/40 to 20/125.”

In General Industry, the same types of issues have arisen in regards to contact corrective lens use and the performance of job duties. Leonardo da Vinci is generally credited with the concept of using contact lenses. In the 1950s, the "corneal" lenses were developed and became a fairly common form of optical correction in the 1960s. The “soft” lens began to be sold commercial in 1971 after approval by the FDA.<sup>4,5</sup>

Industry has generally discouraged the use of contact lenses because of the fear of a potential for chemical splash or exposure to chemical fumes or dust. Arguments such as the following have been used:

1. Chemicals and/or dusts can be trapped behind the contact and cause irritation, damage, or both to the eye;
2. Chemical splashing may be more damaging to the eye if the removing the contacts causes the delay of first aid treatment (flushing of the eyes) exposing the eye to contact with the chemical for a longer period of time;
3. Dusts, gases, fumes, and vapors can cause excessive irritation to the eye and result in excessive watering of the eye.

In 1978, the National Institute of Occupational Safety and Health (NIOSH) began recommending that workers who were exposed to chemicals should not wear contact

lenses. The reasons for this decision are listed above and were made by a committee, which used their best professional opinion and the available literature at the time.

By 1997, this issue concerning the wearing of contact lenses had begun to resurface. The May/June 1997 issue of the *Chemical Health & Safety* published an article on "Contact Lenses and Chemicals".<sup>6</sup> Current policies reported in this article by those on the Safety listserv were:

- "We are still running on the old advice not to wear contacts in the lab. That having been said, the reality is that this rule is not enforced and I'm not in a big sweat to start enforcing it because of new thinking on the subject. Some day we will get around to eliminating the prohibition unless new information comes out again in the meantime."
- "Based on the rulemaking record, OSHA believes that contact lenses do NOT pose additional hazards to the wearer and has determined that additional regulation addressing the use of contact lenses is unnecessary.... As a result of this statement, we have changed our corporate policy to allow the use of contact lenses under appropriate eye and face protective equipment."
- "Our occupational physician actually wrote me a memo allowing the use of contact lenses with the appropriate eye protection over them. We allow them."
- "For years we had prohibited the use of contact lenses in our workplace.... As we worked on the issue we tried to think of what a contact lens user would do beyond what a non-contact user would do...we came to the

conclusion that everything a contact lens user would need for protection, everybody would need. As a result, we allow contact lenses with no restrictions beyond what the rest of our workforce requires."

- "We have a policy that employees are not allowed to wear contact lenses in the lab areas unless they have a medical condition where they have to wear contacts; then they have to wear a full-face respirator with organic vapor cartridges. One chemist broke the rule and was wearing soft, daily wear lenses. Solvent vapors got into her lenses and she suffered painful chemical conjunctivitis. After that incident, we had less of a problem enforcing the no-contact rule in that lab."

It was becoming apparent that in the General Industry, the NIOSH recommendations of 1978 were being questioned as to its validity. Of course, it only took until June of 2005 for NIOSH to update its recommendations.<sup>7</sup> According to this "Current Intelligence Bulletin #59", a number of groups has issued new guidelines that remove the restrictions for wearing contact lenses in the workplace. These include the American Optometric Association, the American College of Occupational and Environmental Medicine, the American Academy of Ophthalmology, the American Chemical Society, and the Prevent Blindness America.

In addition to these groups, the Occupational Safety and Health Administration (OSHA) had adopted the American National Standards Institute (ANSI) standard of eye protection, ANSI Z87.1, and had codified it as enforceable. The Z87.1 states that only that: "Wearers of contact lenses shall also be required to wear appropriate covering eye and face protection devices in a hazardous environment. It should be recognized that

dusty and/or chemical environments might represent an additional hazard to contact lens wearers.”<sup>6</sup>

The respirator standard for OSHA (29 CFR 1910.134) also had an impact as well. OSHA had funded a project that was researched at Lawrence Livermore National Laboratories (August 1985) that determined the associated hazards of wearing contacts with full-facepiece respirators by firefighters. In 1994, OSHA adopted the policy change that "violations of paragraph (e) (5) (ii) involving the use of soft (hydrophilic) contact lenses with any type of respirator shall be characterized as de minimis if it has no direct or immediate relationship to employee safety or health. Citations are not issued for de minimis violations, and there is no monetary penalty or requirement for abatement."<sup>8</sup> Another proposed rules publication included this statement: "OSHA believes the Lawrence Livermore contact lens study of fire fighters supports removing the prohibition on the use of contact lenses with respirators. No evidence shows that wearing contact lenses with respirators increases safety hazards. Therefore, OSHA is proposing to remove the prohibition in the current standard on the use of contact lenses with respirators."

By 1998, OSHA had eliminated the reference to banning the wearing of contact lens with respirators (see 29 CFR 1910.134 (g)(1)(ii)). OSHA had reviewed recent literature and sponsored several studies and determined that there was no evidence that the use of contact lenses increased the chance of injury to the eye while wearing a respirator.

Based upon the information presented, many cities have revisited the restriction on the requirement of the UVA tests. The City of Hamilton has posted class qualifications for employment with their fire department<sup>9</sup> and one of the items is a vision

screening standard. It matches the requirements of *NFPA 1582* (20/100 binocular for wearers of hard contacts or spectacles, uncorrected).

In looking at the case of *Columbus Civil Service Commission v. McGlone*, the question that was answered by the Ohio Supreme Court was that a UVA is not a handicap as defined by the Americans Disability Act. In fact, the Ohio Supreme Court pointed out that many of us in society have an issue with uncorrected vision acuity and thus we must wear eyeglasses or wear contact lenses to correct that problem in our lives. So based upon the Ohio Supreme Court ruling, the needs of small volunteer fire departments, and the lack of a pool of candidates for firefighters who have perfect vision, what do we do to acquire firefighters and stay out of court?

There are four action items that we as supervisors and fire departments can take to avoid litigation and provide a clear hiring and training policy: <sup>6, 10</sup>

1. *“Establish a Written Policy:* This should document general safety requirements for the wearing of contact lenses, including the required eye and face protection, contact lens wearing restrictions, if any, by work location or task. Evaluate restrictions on contact lens wear on a case-by-case basis. Take into account the visual requirements of individual workers wearing contact lenses as recommended by a qualified ophthalmologist or optometrist, in order to be able to perform the essential visual functions, and this policy statement.” Additionally consider the adoption of *NFPA 1582*.
2. *“Provide Training:* In addition to providing the general training required by the OSHA personal protective equipment standard (29 CFR 1910.132),

provide training on employer policies on contact lens use, and first aid for contact lens wearers with a chemical exposure. Routine training of medical and first aid personnel in the removal of contact lenses, management of pain, blepharospasm, and the appropriate equipment available. In the event of a chemical exposure, begin eye irrigation immediately and remove contact lenses as soon as practical. Do not delay irrigation while waiting for contact lens removal as the lens may come out with the irrigation or can be removed when irrigation is complete. Instruct workers who wear contact lenses to remove the lenses at the first signs of eye redness or irritation. Removal of contact lenses should only be done in a clean environment and after the worker has washed his/her hands. ...Encourage workers to routinely inspect their contact lenses for damage and/or replace them regularly.”

3. *“Provide Personal Protective Equipment: Comply with current OSHA regulations on contact lens wear and eye and face protection. The Code of Federal Regulations Preamble on Respiratory Protectors (29CFR 1910.134) and Personal Protective Equipment (PPE) (CFR 1910.132) allows contact lenses to be worn under full-face respirators and other Personal Protective Equipment for the eyes. Provide suitable eye and face protection for all workers exposed to eye injury hazards, regardless of contact lens wear. The wearing of contact lenses does not appear to require enhanced eye and face protection. For chemical liquid or caustic hazards, the minimum protection consists of well-fitting indirectly vented*

goggles or full-facepiece respirators. Close-fitting safety glasses with side shields provide limited chemical protection, but do not prevent chemicals from bypassing the protection. Face shields should be worn over other eye protection when deemed necessary for additional face protection, but workers should not wear face shields instead of goggles or safety glasses regardless of contact lens wear.”

4. *“Notification to Supervisors, First Aid Responders and EMS Responders: Identify to supervisors and first aid responders all contact lens wearers working in eye hazardous environments.”* Know which firefighters are the wearers of contacts in the event of an emergency for eye exposure.

By taking these four recommendations and implementing them in the department’s policies manual and based upon previous court cases on these subject areas involving the ADA, litigation risk can be reduced a great deal.

The fire department can make reasonable accommodations to assist the volunteer firefighters who need to use visual corrective lenses in order to accomplish the tasks associated with firefighting. Allowing engineers to wear glasses, contacts or goggles (sport type) in order to drive the apparatus to the scene. For the firefighter who will wear an SCBA, allow the insertion of corrective lenses on a mounted frame approved by or from the manufacturer of the SCBA. This would allow the user to see clearly in the SCBA without the need for contact lenses. Alternatively, fire departments can allow the use of contact lenses based upon the data that has been presented and the fact that OSHA no longer bans the use of contact lenses when wearing an SCBA.

REFERENCES:

<sup>1</sup> *NFPA 1582* (2007 edition) “Standard on Comprehensive Occupational Medical Program for Fire Departments”, retrieved on June 2, 2007 from <http://www.nfpa.org/codesonline/>

<sup>2</sup> Padgett, Vernon R., Ph.D., Research Psychologist, (June 1989), retrieved on June 2, 2007 from [www.Med-Tox.com](http://www.Med-Tox.com)

<sup>3</sup> Good, GW; Maisel, SC; Kriska, SD; (October 1998), retrieved on June 2, 2007 from [www.PubMed.gov](http://www.PubMed.gov)

<sup>4</sup> Retrieved on June 2, 2007 from [http://en.wikipedia.org/wiki/Contact\\_lens](http://en.wikipedia.org/wiki/Contact_lens)

<sup>5</sup> U.S. Army Center for Health Promotion and Preventive Medicine, *Chemicals, Contact Lenses and Respirators*. (2005), retrieved on June 2, 2007 from <http://usachppm.apgea.army.mil/HIOFS/>

<sup>6</sup> Segal, Eileen B., *Chemical Health & Safety* (May/June 1997 issue), retrieved on June 2, 2007 from <http://pubs.acs.org/hotartcl/chas/97/mayjun/con.html>

<sup>7</sup> *NIOSH Publication No. 2005-139*, “Current Intelligence Bulletin #59” (June 2005), retrieved on June 2, 2007 from <http://www.cdc.gov/niosh/docs/2005-139/pdfs/2005-139.pdf>

<sup>8</sup> OSHA: Interpretation of 1910.134; 1910.120, 4/26/94; *Fed. Regist.* **1994**, 59(219), 58922

<sup>9</sup> City of Hamilton, Ohio, (June 2007), retrieved on June 2, 2007 from [http://216.68.73.167/CivilService/employ\\_ff.html](http://216.68.73.167/CivilService/employ_ff.html)

<sup>10</sup> American College of Occupational and Environmental Medicine, “Use of Contact Lenses in an Industrial Environment”, (May 2003), retrieved on June 2, 2007 from <http://www.acoem.org/guidelines.aspx?id=570>