



## Technical Note How to Submit Data to the ELPAT Program via Computer Modem

Curtis A. Esche

To cite this article: Curtis A. Esche (1995) Technical Note How to Submit Data to the ELPAT Program via Computer Modem, Applied Occupational and Environmental Hygiene, 10:2, 92-94, DOI: [10.1080/1047322X.1995.10389286](https://doi.org/10.1080/1047322X.1995.10389286)

To link to this article: <https://doi.org/10.1080/1047322X.1995.10389286>



Published online: 24 Feb 2011.



Submit your article to this journal [↗](#)



Article views: 1

---

# How to Submit Data to the ELPAT Program via Computer Modem

Curtis A. Esche

A new automated data entry system (ADES) has been developed and is now available for use with the Environmental Lead Proficiency Analytical Testing (ELPAT) Program. The ELPAT Program is a proficiency testing program that requires quarterly reporting of data from a series of paint chip, soil, and dust wipe analyses from participating laboratories throughout the United States and Canada. This system was developed to provide a faster, more accurate method to receive ELPAT data from several hundred participating laboratories. The ADES has advantages over faxing and mailing, including multiple phone lines for easier access and elimination of illegible ELPAT report forms. All that is required is a computer, modem, communications software, and a phone line. Laboratories receive a copy of the data entry program, detailed instructions on how to operate the program and upload the data, and a security password. Future enhancements to this system include the ability of laboratories to download their own proficiency ratings. That would enable the laboratory to receive their ratings faster than by regular mail. A similar system will soon be installed for the Proficiency Analytical Testing Program. ESCHÉ, C.A.: HOW TO SUBMIT DATA TO THE ELPAT PROGRAM VIA COMPUTER MODEM. APPL. OCCUP. ENVIRON. HYG. 10(2):92-94; 1995.

An automated data entry system (ADES) has been implemented for the Environmental Lead Proficiency Analytical Testing (ELPAT) Program. The ELPAT Program is administered by the American Industrial Hygiene Association in cooperation with researchers at the National Institute for Occupational Safety and Health (NIOSH) and the Environmental Protection Agency (EPA). The ELPAT Program is designed to evaluate laboratories performing analyses associated with lead abatement and to supplement their internal quality assurance programs. The types of lead matrices available in the

program are lead in paint chips, soil, and dust wipes. Four samples of each type are sent quarterly to participating laboratories, which return their results to NIOSH for evaluation. Participation in the ELPAT Program is mandatory for laboratories seeking accreditation under the EPA National Lead Laboratory Accreditation Program.<sup>(1,2)</sup>

The ELPAT ADES, developed to provide a faster, less error-prone means to receive ELPAT data from laboratories, replaces the traditional method of faxing or mailing results to NIOSH. The ADES system has advantages over faxing and mailing. The ADES system has multiple phone lines for easier access during peak times. It also eliminates the problem of illegible faxes and handwriting. ADES is also not subject to common fax machine problems, such as paper jams and cartridge malfunctions. Quick reporting is important so that data can be analyzed at NIOSH and results provided to laboratories for corrections before the next set of samples is sent. All that is required is a computer, modem, communications software, and a phone line.

The participating laboratories receive, at no cost, a copy of the program, detailed instructions, and a security password. Instructions are geared toward personnel with little knowledge of computers. The program simulates filling out an ELPAT result form. There are several opportunities within the program to correct mistakes if errors in data entry occur. Once the results satisfy the user, the program creates an output file containing the ELPAT results. The laboratory then uploads the output file to NIOSH over a modem. Details on how to use the program and upload the file to NIOSH are included in the instructions. The program can be used for all upcoming ELPAT rounds. The data entry program described here runs on DOS® (Microsoft Corp.) compatible computers, but a data entry program is also available for Macintosh® (Apple Computer, Inc.) computers.

The instructions are divided into two sections: how to enter ELPAT results and

how to upload (send over a phone line) those results to the ELPAT data entry system. Most of the instructions are first-time setup details. After the setup is completed, entering ELPAT results and uploading them to the ELPAT data entry system is a matter of a few keystrokes.

### Section 1: Entering the Data

The first section of the instructions describes how to enter ELPAT results. The program is an executable file named "ELPAT.EXE." It is recommended that the program be placed in a directory other than the root directory. Instructions are included on how to create a subdirectory and copy a file to a subdirectory. To activate the program, type "ELPAT" at the DOS prompt. Once the ELPAT.EXE program is activated, the user is prompted for various pieces of information, the first of which is his or her laboratory identification number, company name, and ELPAT round number. When the ELPAT and Proficiency Analytical Testing (PAT) Programs switch from eight-digit to five-digit laboratory identification numbers, laboratories can enter the new five-digit numbers into the program. Before any results are entered, the instructions inform the users not to enter the units, such as percent or micrograms. The program already knows what the appropriate units are, so the users need only enter the numeric values. The three types of samples that may be analyzed in the ELPAT Program are paint chips, soil, and dust wipes, and their respective units are percent, milligrams/kilogram, and micrograms.

The users are asked at this point if they analyzed paint chips this round. If they answer "yes," the laboratory will answer questions about which analytical method and sample preparation technique were used, as well as the actual numeric values for each of the four paint chip results. If the laboratory did not analyze paint chips, the program asks if soil was analyzed this round, repeating the same questions. The program finally asks if dust wipes were analyzed. The only dif-

ference is that dust wipes have four samples and a blank to analyze, whereas the paint chips and soil do not have blank samples as a part of their kit. The wipe blank should be subtracted from wipe sample values before submitting results.

At various points in the program, the laboratory has an opportunity to review and change their responses if necessary. When the user is satisfied with the data entered, a summary of the results is displayed on the screen, as well as the name of the output file which contains the results. It is this output file that is uploaded to NIOSH each ELPAT round. The output file is named by using the laboratory identification number, plus the three-digit ELPAT round number for an extension. (Example: The output file for ELPAT round 005 results for the laboratory 12345001 would be named 12345001.005.)

#### Section 2: Uploading the Data to NIOSH

The second section of the instructions provides details on how to upload a laboratory's results to the ELPAT data entry system. Prior to performing the upload, the modem, phone line, and communications software must be correctly installed and connected to the computer. In the communications software, there should be some type of dialing directory. In this dialing directory, such information as name, number, baud rate, parity, etc. can be entered, or the number of the ELPAT AIDES can be dialed manually. There are presently two separate telephone numbers that a laboratory can dial to submit ELPAT results. Additional phone lines will be added in the near future to handle the increased data traffic. The communications software chosen to receive ELPAT results is Procomm Plus® (Datastorm Technologies, Inc., 1987, 1991).

The instructions that follow are for Procomm Plus. Other programs can be used to send ELPAT results if they support the appropriate file transfer protocols. Once the number has been dialed and a successful connection has been made, the laboratory is greeted by "Welcome to the ELPAT data entry system." The user is then prompted for their first name, last name, and password, all of which have been mailed to the laboratory with the instructions and the ELPAT.EXE program. Once accepted into the

system, the user selects "U" for "upload" from the options menu.

The laboratory then selects the appropriate file transfer protocol, and the program asks for the filename. It is crucial at this point that the user provide only the filename, and not the drive and directory where it resides. The specification of the drive and directory happens later in the session. The user is then asked for a description, such as "ELPAT round 001 results." To begin the file transfer, the user presses the "page up" key. The user is prompted again for the upload protocol. At this point, the laboratory is asked for the file specification, and the user must provide the drive, directory, and filename of where the ELPAT results reside so that the communications software can retrieve the file and upload it over the phone line. The ELPAT data files are small, generally less than 1000 bytes, and take less than 10


seconds to transmit. If the file transfer has been successful, it will say "completed." If not, it will say "aborted," and the laboratory must try to resubmit the file. After the file transfer is complete, the laboratory can disconnect from the system.

If laboratories discover they have made a mistake after creating an output file, there are a couple of options to correct the situation. If users have not uploaded the ELPAT results to the ELPAT data entry system, they can simply delete the output file that contains the error. Of course, the ELPAT results will have to be reentered to recreate another output file to upload to the ELPAT data entry system. If the ELPAT results have already been uploaded, the laboratory should call the telephone number at the end of this article. The incorrect ELPAT results can be deleted from the NIOSH computer and the laboratory can then upload the corrected version.

**Z mda scientific**

**PERSONAL OR AREA MONITORING  
OF HAZARDOUS GASES**

The MDA IsoLogger® Hazardous Gas Monitoring System. The smallest, most comfortable instrument for personal monitoring, tracking, and documenting of exposures available. And doubly valuable, because the detector can also be used as an area monitor.



IsoLogger measures parts-per-billion toxic gas concentrations using MDA's gas-specific Chemcassette® technology. An optional display shows real-time concentrations. Data is printed in tabular or graphic form or stored on disc for future retrieval by your PC. Selectable audible or visual alarms make the IsoLogger especially useful for monitoring during normal operation or maintenance procedures.

**For complete information, call or use the reader service number.**

**Z mda scientific**  
The Technology to Know  
**1-800-344-4632**  
Z a zellweger company

**ISO 9001  
CERTIFIED  
SUPPLIER**

Circle reader action no. 130

It is recommended that laboratories maintain paper copies of the results they submit to the ELPAT data entry system. Since the output is an ASCII file, each laboratory can generate a paper copy of the ELPAT results by typing "print" and the filename at the DOS prompt.

#### Upcoming Program Improvements

Future enhancements to the ELPAT ADES will be the ability of laboratories to download their own proficiency ratings and receive them faster than by mail. The only additional software that might be necessary to do that would be a word processing package. The following are instructions for this anticipated download capability. The laboratories would dial into the ELPAT ADES as if they were submitting results, but instead of uploading they would download. There are two files they would download, their individual report and another file containing generic information about the ELPAT round just completed. Their individual report would be named by using their lab identification, plus the three-digit round number as an extension (example: 12345001.005). The other file would be named "ELPATLAB," plus the three-

digit round number as an extension (example: ELPATLAB.004). The downloaded files are in ASCII format, otherwise known as text files. They are very wide (132 characters). Unless the laboratory has access to a printer which, by default, is capable of printing a file that is 132 characters wide, the laboratory may want to import the files into a word processing package so the margins and character size can be adjusted.

A similar ADES will soon be implemented for the PAT Program, which processes audit sample results from 1400 laboratories in 17 countries each quarter.<sup>(3)</sup>

Laboratories participating in the ELPAT Program and wanting to submit results via ADES should call Andy Esche at (513) 841-4316.

#### Acknowledgments

The author thanks John Scalera, U.S. Environmental Protection Agency, Office of Pollution Prevention and Toxics, for funding the project, and Martin Abell, NIOSH, for developing the data entry program for the Macintosh computer. Recommendations for program improvements were provided from Rob-

ert Ballinger, Gregory Deye, Jensen Groff, and Stephen Spaeth, NIOSH, and Robert Metzger of Atlantic Research Corporation.

#### Disclaimer

Mention of company names or products does not constitute endorsement by the Centers for Disease Control and Prevention.

#### References

1. Schlecht, P.C.; Groff, J.H.: ELPAT Program Report: Background and Current Status. *Appl. Occup. Environ. Hyg.* 8(8): 681-686 (1993).
2. Schlecht, P.C.; Groff, J.H.: ELPAT Program Report: Background and Current Status. *Appl. Occup. Environ. Hyg.* 8(11): 912-918 (1993).
3. Schlecht, P.C.; Groff, J.H.: PAT Program: Proficiency Analytical Testing (PAT) Program. *Appl. Occup. Environ. Hyg.* 8(10): 837-839 (1993).

**EDITORIAL NOTE:** Curtis A. Esche is with the U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Division of Physical Sciences and Engineering, 4676 Columbia Parkway, M.S. R-8, Cincinnati, OH 45226-1998.

**Applied Occupational and Environmental Hygiene  
will go the extra mile to get original research  
contributions from the smartest, most committed  
professionals in the field.  
Hey, we're talking about you.**

Come on. Submit an article to *Applied Occupational and Environmental Hygiene* for possible publication.

Now more than ever, your colleagues need practical answers that can help them prevent — or, at least, reduce — occupational disease and injury, by means of original research in:

- General industrial hygiene
- Engineering controls
- Occupational and environmental epidemiology
- Occupational and environmental medicine
- Ergonomics and human factors
- Applied toxicology
- Applied environmental chemistry.
- Health and safety management

Share your knowledge and experience in any one of these important areas by sending a manuscript to: Editor, *Applied Occupational and Environmental Hygiene*, 1330 Kemper Meadow Drive, Cincinnati, OH 45240.

For detailed information on manuscript submissions, please see the "Authors Instructions" near the back of this issue of *AOEH*, or call (513) 742-2020.