



The ClearingHouse for Inventories and Emission Factors

CHIEF

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United States
Environmental Protection
Agency

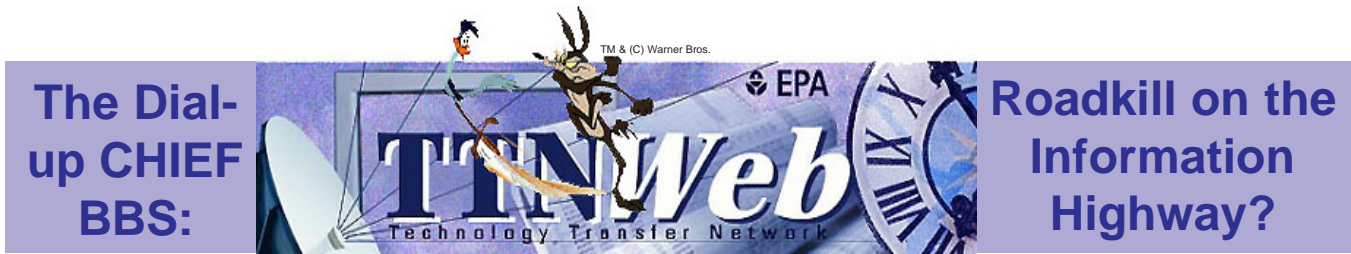
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The Dial-up CHIEF BBS:

Roadkill on the Information Highway?

by Ron Myers, EFIG

A little more than one year ago the *CHIEF* bulletin board system (BBS) was available only by a dial-up bulletin board system which had limited access to the Internet through TELNET. Each week approximately 1250 people accessed the BBS to obtain about 1800 different files. Each person was "online" for about 15 minutes for an estimated total of 315 hours. At a long distance rate of \$0.15 per minute, our users paid about \$2,800 per week to Ma and Pa Bell and their siblings for our information. Our users comprised about 20% of the users and downloads for the Technology Transfer Network (TTN) system. Compared to the other technical areas of the TTN system, we were tied for second most active area behind the *Clean Air Act Amendment (CAAA)* BBS.

To improve the overall system, the TTN staff began the process to expand the system to allow access through the Internet. It was recognized that some technical hurdles would be encountered. However, the administrative hurdles were at least as formidable as the technical hurdles. After a long education and negotiation process, the administrative staff agreed to let the TTN staff establish a "research" network with access to the Internet. However, they required that the TTN system would eventually become a part of the "official" network of file servers for the Internet. Some of the stipulations on when TTN systems would be transferred from the "research" system to the "official" system were based upon: 1) the identification of methodologies to provide the equivalent functionality of the TTN system by the "official" system, and 2) a relatively high percentage of the accesses being through the Internet. It was expected that the established criteria for migration would not be reached for about three to five years and that dial-up service would continue during this time period.

During the education and negotiation period, the TTN staff obtained the hardware and software needed to expand the system to allow access through the Internet. Following the approval to expand the BBS, connections were made to the Internet. The connections were made, first through

a File Transfer Protocol (FTP) server, then through the World Wide Web (WWW) server. The information that was available through the existing dial-up system, the TELNET system, the FTP system and the WWW system were made consistent by networking all of the separate servers and establishing software that updated the directory files daily. The menu files for the BBS were converted into semi-complete hypertext markup language (HTML) menu files for the WWW system and master lookup files for the FTP server.

Over the last year usage of the TTN system has grown from the 10,000 downloads per week to about 20,000 per week. Because of the anonymous nature of FTP and WWW service, the number of users and the time they spend accessing our files cannot be determined. However, we have noted a substantial decrease in the dial-up access to the *CHIEF* BBS. Recently, the number of dial-up users of *CHIEF* has averaged 340 users and the average time online for these users has decreased to 13 minutes. These dial-up users have obtained an average of only 450 files per week out of the average total of 3,800 files per week.

As a result of the quicker than expected adoption of accessing the TTN BBS by Internet FTP and WWW service, the TTN BBS is being relocated to the "official" EPA Internet system under <http://www.epa.gov/>. All of the BBS menu files are being converted into a more acceptable format than could be achieved with the automatic software conversion from the dial-up BBS menu system files. Although users have been able to access the *CHIEF* BBS files from the "official" EPA system via the EFIG Home Page (<http://www.epa.gov/oar/oaqps/efig>), the files have been linked to and maintained on only the TTN system. Keeping the multitude of sources of information (e.g. paper, Fax, CD-ROM, dial-up BBS, and Internet access) consistent has always been a challenge. The migration of TTN to the "official" EPA internet system adds one more source of the same information to the pre-existing forums that have already been difficult to maintain.

(cont'd. on p. 3)

OMS to Release AP-42 Volume II, Fifth Edition

by Terry Newell, EIG/AMD/OMS

The Office of Mobile Sources (OMS) is nearing completion of a new Fifth Edition *Compilation of Air Pollutant Emission Factors, Volume II: Mobile Sources* (AP-42). The last update to Volume II was Supplement A (January 1991), which included updates to almost all highway vehicle related sections of the document and corresponded to the MOBILE4.1 highway vehicle emission factor model. The new Fifth Edition will include complete updates to both the highway vehicle and nonroad mobile source sections of the document.

Since the last update of AP-42 Volume II, OMS has completed and released a new highway vehicle emission factor model (MOBILE5a, 1993), and has also completed an extensive study and review of emission factors from nonroad mobile sources (Nonroad Engine and Vehicle Emission Study, or NEVES), covering numerous equipment types (e.g., lawn and garden, construction, agricultural, mining, etc.). Considerable new emission factor information has been developed for locomotives as part of EPA's regulatory process establishing new emission standards for those engines. In addition, the Federal Aviation Administration (FAA) has developed a database for aircraft and aircraft engine emissions data; this database is updated periodically by FAA and the most recent version is available through the OMS Web site.

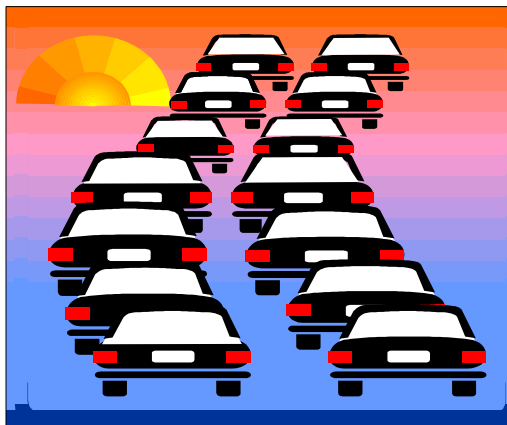
The current schedule provides for an EPA contractor to provide a new Part II of Volume II (Nonroad Mobile Sources) in May 1997. Part I of Volume II (Highway Vehicles) is being updated by OMS and another contractor to correspond to the MOBILE5a model, and is essentially complete. After the two main sections are integrated, the new Fifth Edition of AP-42 Volume II will be made available through a variety of media. The first place to find this new edition will likely be on the EPA Web sites; links will be provided through the EFIG and OMS Home Pages (<http://www.epa.gov/omswww/>), and an alert to web browsers will be posted notifying interested parties of the availability of the document. While the new Volume II will not be complete in time to be included in the next CD-ROM release, plans are to make it available in that format at a later date. OMS plans to have a limited number of hard (paper) copies of the new volume made available for parties lacking Web access later this year.

CHIEF BBS (cont'd.)

Because the use of the dial-up BBS has been decreasing in absolute numbers and the relative access to files on the CHIEF BBS is down to about 10-percent, we have tentatively decided to maintain only one electronic access site. We will phase out support of the CHIEF dial-up BBS site as of September 1997. We are aware that this could create a difficult situation for some people, since some users are not connected to the Internet. We would like to hear from you if gaining access to the Internet is a major problem. Any decision to possibly extend the cutoff date for telephone access to the CHIEF BBS will depend on the feedback we receive from users.

CHIEF files on the current TTN server will be maintained through the end of September of this year to allow those without Internet capability to continue to access CHIEF BBS through the present telephone bulletin board service. We hope that this will give those without an Internet account sufficient time to take the necessary steps to gain access to the Internet. Because the TTN will be moved to a different server, the address (<http://ttnwww.rtpnc.epa.gov>) will also change. We expect the new address to be changed to <http://www.epa.gov/ttn/>, but this is not definite. In the mean time, users can always find the CHIEF BBS web page as a link from the EFIG Home Page at <http://www.epa.gov/oar/oaqps/efig/>.

If you do not expect to have Internet access by October 1997, please send comments to Ron Myers via TTN e-mail, Internet e-mail (myers.ron@epamail.epa.gov), fax (919-541-0684) or mail to: US EPA, EFIG (MD-14), RTP, NC 27711. Please include which types of files you expect to need from the CHIEF BBS.



New Version of Air CHIEF CD-ROM

by Dwight Bailey, Lockheed Martin Contractor

The Emission Factor Inventory Group (EFIG) plans to release the new *Air CHIEF* CD-ROM, version 5.0 in Summer 1997. *Air CHIEF* is EFIG's most comprehensive tool for estimating air emissions for criteria and hazardous air pollutants (HAP) from selected sources.

Version 5.0 of *Air CHIEF* expands and updates version 4.0 (July 1995) to incorporate Emission Inventory Improvement Program (EIIP) reports, hypertext links between EIIP and the *Compilation of Air Pollutant Emission Factors*, Volume I (AP-42), and a customized query template for finding emission factors in AP-42. Updates will include AP-42 Supplements A and B, *FIRE* v. 5.1b, *TANKS* v. 3.0 and new Locating and Estimating (L&E) documents. The L&E series documents present emission factors for selected hazardous air pollutants and process descriptions of emission processes. The *FIRE* database system contains EPA's recommended criteria and HAP emission factors. *TANKS* is a software program that estimates volatile organic compounds (VOC) emissions from organic liquid storage tanks.

Air CHIEF version 5.0 features the new addition of the EIIP documents. These are the "preferred" methods for collecting data and calculating emission from point, area, mobile and biogenic source categories. Hypertext links have been in-

corporated into the new version of *Air CHIEF*, which connect text from specific information in the EIIP reports to appropriate sections in AP-42, which allow users to view corresponding emission factors or more detailed process information. The advantage of this feature is that users will have access to additional information about a specific subject just by clicking a button. The hypertext links reduce the time the user would normally spend searching for additional relevant information.

Another helpful new feature of *Air CHIEF* version 5.0 is the addition of an emission factor query template. This feature allows users to search for emission factors in AP-42 by source category. With this query template, the user can obtain emission factors based on queries using Standard Industrial Classification (SIC) numbers, Source Classification Code (SCC), emission process name, or pollutant name. This flexibility in query syntax offers easier access to emission factors, and reduces search time spent looking for a specific emission factor.

These new features in *Air CHIEF* version 5.0 will facilitate easy retrieval of emission factor information and will allow users to obtain additional relevant information in an efficient, intuitive and user-friendly software environment. For more information about *Air CHIEF* Version 5.0, please call the *Info CHIEF* help desk at (919) 541-5285.

Visit the EFIG Home Page!
<http://www.epa.gov/oar/oaqps/efig/>

Software & Tools
Download EFIG databases and get information about other software.

What's New
Keeps you up to date with news on EFIG activities & web pages.

TTN/CHIEF
Link directly to the old familiar CHIEF BBS in web page format!

Related Sites
Links to EPA, State Agency, and many other web pages.

Data
Links to web sites containing emissions data.

Documents
Links to EFIG and other EPA electronic publications.

**For questions or help, call the
Info CHIEF help desk at (919) 541-5285.**

Info CHIEF's Most Frequently Asked Questions

Call (919) 541-5285 or E-mail info.chief@epamail.epa.gov
if you have questions!

Q: When I try to run Air CHIEF version 4.0 CD-ROM on Windows 95, the documents appear to be in an unusual font. I looked to see if there were any corrupted fonts installed on my computer, but could find none. Do you have any other suggestions to fix this problem?

A: Often, when your computer system does not have certain fonts used by the CD-ROM application, the CD-ROM will substitute a font that is installed on your computer system. The CD-ROM application utilizes the WIN.INI system file, which can be found under the Windows directory, to determine which font to use as a substitution. To change the font that it "selects" as a replacement, check the font substitutions that are listed in the WIN.INI file, and change or add a substitution. For example, if your computer is replacing the "CG Times" font with the "Wingdings" font (which is a collection of symbols) and would prefer to replace it with "Times New Roman" instead, then you should add the statement, "CG Times=Times New Roman" under "Font Substitutions" in the WIN.INI file.

Q: When will the new version of Air CHIEF be available?

A: The new Air CHIEF version 5.0 is currently under development. The new version will include EIIP documents, Supplements A and B sections of AP-42, new L&E documents and updated versions of FIRE and TANKS. We expect the new version of Air CHIEF to be available for distribution in Fall 1997.

Q: Where can I get the EPA document, Protocol for Equipment Leak Emission Estimates (Document number, EPA-453/R-95-017)?

A: The *Protocol for Equipment Leak* document can be downloaded from the CHIEF BBS web page, which can be found via the EFIG Home Page at <http://www.epa.gov/oar/oaqps/efig/>, using the "CHIEF BBS/TTN" link. The *Protocol for Equipment Leak* document can be found under the "Q&A's/ Policies/ Recommendations" menu which is under the "AP-42/EF Guidance" menu on the CHIEF BBS web page. The document is in both *WordPerfect*® and *Adobe Acrobat*® formats. You can also get an abbreviated version of it from the Fax CHIEF, by calling (919) 541-5626 or (919) 541-0548 from your fax machine and listening to the recorded voice instructions. When prompted, use document number 3502 to request the *Protocol for Equipment Leak* document.

Q: I have been using sections from the Compilation of Air Pollutant Emission Factors (AP-42) to obtain emission factors. However, I have questions about how these emission factors are obtained. Is there any way to get the test methodologies that were used to determine the emission factors?

A: EFIG maintains Background Documents for all AP-42 sections which contain literature reviews, test methodologies and other references. Most of these are available for download from the EFIG Home Page under the "CHIEF BBS/TTN" link. Go the "AP-42/EF Guidance" menu item, then select the "Background Documents" from the "AP-42" menu. Many people have found the information that they need in these Background Documents, without having to play "phone tag" with the AP-42 section Project Officer. The availability of the background document on the CHIEF BBS web page depends on how old the AP-42 section is. If you are unable to locate the Background Document that you need, or if you still have questions about the data, call Info CHIEF to find out which EPA Project Officer is responsible for that particular AP-42 section.

PM2.5 - Emission Factor Improvement Needs

by Tom Pace, EFIG

The Environmental Protection Agency (EPA) has proposed to revise the National Ambient Air Quality Standard (NAAQS) for particulate matter (PM) to address health effects from fine particles (PM2.5). A final determination on the NAAQS revision is expected in July 1997. A decision by the Agency to revise the PM NAAQS would necessitate significant improvements to the PM2.5 emission factors. With very limited resources, the Emission Factor and Inventory Group (EFIG) has made adjustments to the current PM-10 emission factors to enable a preliminary inventory of PM2.5 to be developed. This current version of the National Particulate Inventory (NPI) is adequate for preliminary planning, but clearly must be improved before detailed planning is attempted. The NPI currently overestimates the fugitive dust component of PM2.5.

EFIG has reviewed county level emission estimates in the NPI to determine priorities for revising the factors and emission estimates. An objective ranking scheme was used to evaluate the various emission estimation techniques, including the estimation factors and activity parameters that are used within the factors. Several source categories that scored low in this ranking comprise a substantial part of the inventory. These categories include construction, paved roads, unpaved roads, agricultural wind erosion and agricultural tilling and harvesting. This same analysis also indicated a weakness in the emission estimation techniques for ammonia (fertilizer application and animal husbandry). Ammonia is an important precursor that is involved in the formation of sulfates and nitrites—two important types of secondary PM2.5 particles. Another general subject area that will be investigated is the emission of gases that can condense in the atmosphere to form particles. Combustion sources are a principal source of condensibles.

The EFIG is currently evaluating the emission estimation techniques for each of these categories to determine specific tasks that should be undertaken to substantially improve the emission estimates. Improvements must be achieved within the next 2-3 years so they can be used by states to revise the NPI PM2.5 for use in State Implementation Plans (SIP). Supplemental funding has been requested so that the necessary improvements can be made in a timely manner.

National Nonroad Air Emissions SIP Model Under Development

by Greg Janssen, SAG/AMD/OMS

The Office of Mobile Sources (OMS) is currently developing a 486 PC-based nonroad equipment and vehicle air emissions inventory model called NONROAD. NONROAD will be able to calculate emissions in tons per year, month, and day (summer, winter, average weekday and weekend day during a month or year) down to the county level for criteria pollutants (exhaust and evaporative HC, CO, NOx, PM-10, PM-2.5, and SOx). The beta version of the model will calculate emission for recreational, lawn and garden, construction, light commercial, industrial, logging, agricultural, airport ground service, and recreational and commercial marine equipment. Along with the model, OMS will provide a detailed user's guide, as well as a programmer's guide. Although it is not part of the development effort at this time, OMS hopes to also provide a user-friendly interface for the model.

OMS staff from the Nonroad Modeling Team gave a presentation about the capabilities being built into NONROAD at the MOBILE6 workshop that was held in Ann Arbor, Michigan, March 19-20, 1997. A file containing the slides from this presentation can be found in the Nonroad Vehicle and Engine Emission Modeling section (<http://www.epa.gov/omswww/nonroad.htm>) of the OMS web page under the heading, "Directory of Nonroad Engine Emission Modeling Files." Additional presentations concerning NONROAD are being planned. OMS currently plans to begin the process of having the model peer reviewed in the fall of 1997, followed by the release of the beta version for user testing and review in the spring of 1998. The release of the final version of the model is tentatively set for the summer of 1998.

OMS encourages comments and questions from those in industry, state and local air agencies, and regional organizations who may use NONROAD and/or have expertise in nonroad emissions modeling. OMS will also need volunteers to test and review the beta version of the model and provide comments. Send comments and questions via electronic mail to mobile@epamail.epa.gov.

Work Begins on MOBILE6

by David Brzezinski, EIG/AMD/OMS

MOBILE5a, the current release of the highway vehicle emission factor model, was issued in March 1993. It has been used by state agencies and other parties to develop emission inventories and emission reduction plans required as part of the State Implementation Plan (SIP) process for nonattainment areas. The 1990 Clean Air Act Amendments require EPA to evaluate and update the MOBILE model periodically and the Office of Mobile Sources (OMS) has begun the process of updating the model. The release date for the new version of the MOBILE model (MOBILE6) is tentatively set for Summer 1998. A schedule and statement regarding the need for a new version of the mobile source emission factor model are posted under the "OMS Models & Utilities" section of the OMS Bulletin Board System (BBS) on the Office of Air Quality Planning and Standards (OAQPS) Technology Transfer Network (TTN). These are also posted on the Motor Vehicle Emission Modeling Software section of the EPA OMS Web page (<http://www.epa.gov/omswww>).

As part of the process, a workshop was held in Ann Arbor, Michigan, March 19-20, 1997 to inform stakeholders and other interested parties about OMS plans for updating the MOBILE model. The workshop included brief descriptions of the aspects of the model which are planned to be updated, and the data sources and analysis methods which OMS proposes to use. A complete set of the proposals prepared for the workshop are available on the TTN and the Web page. OMS is accepting comments from all interested parties on these proposals through May 1997. Another workshop is planned for Fall 1997 in Ann Arbor to discuss the results of the proposed analyses.

In addition to the updating of the emission estimates in the model, OMS plans to make significant changes to the user interface, the input and output formats, and to make the model and its output more consistent with transportation models used to estimate emissions from highway vehicles on specific roadway types. In these areas, it is important for OMS to receive comments from users in state and other government agencies who will be using the model for both SIP-related analyses and conformity determinations.

State/Local/EPA Emission Inventory Workshop

by Steve Bromberg, EFIG

A workshop for state, local, and EPA representatives who are involved with preparing emission inventories is scheduled for July 15-17. The meeting will be held at the Omni Europa Hotel in Durham, NC. Preliminary information describing hotel arrangements and agenda topics is in the mail to all potential participants.

The inventory community will be faced with many changes in the next several years. Some of the issues to be addressed include: new information needs regarding particulate matter, new methods for submitting inventory data to EPA, new initiatives in emission factor development, and the major effort associated with the 1996 Periodic Emission Inventory. The workshop will be interactive—participants will be encouraged to join in discussions associated with the various topics.



If you are responsible for inventory preparation, please mark your calendar and make plans to attend this very important meeting. Please call Pam Phillips, (919) 541-5575, Sally Dombrowski, (919) 541-0875, or Steve Bromberg, (919) 541-1000 to receive a meeting package.

EIIP Undertakes Revamping of SCCs

by Ron Ryan, EFIG

A subcommittee of the EIIP's Data Management Committee has been formed to evaluate a potential major revamping of the Source Classification Codes (SCC) used in air emissions inventories. SCCs are used to prepare and summarize annual emissions data, and they also provide the necessary links to the chemical speciation and temporal allocation tables which allow modeling inventories to be prepared. For point sources, SCCs are currently made up of eight digits divided into four groupings (x-xx-xxx-xx). At the full 8-digit level an SCC identifies an individual type of emission process, specific enough to usually have a unique emission factor for one or several pollutants. The 6 and 3-digit levels identify successively larger groups of related source types, and are useful for the presentation of aggregated emission summaries. A somewhat analogous set of 10 digit codes exist for area sources.

Due to the expansion of emission inventories to cover a wider scope of both pollutants and source types, and to the demand to codify an increasing variety of information about a source within the SCC, both the point and area source classification systems have lost much of their original organization and have not always provided a good answer for the new demands. The Emission Inventory Coding System (EICS) subcommittee will be identifying the types of information that are necessary to an emission inventory and that should be standardized or grouped by a code. The subcommittee will also be identifying the level in an emission inventory system where each type of coded information should reside. Thus, the detailed information embedded in some of the current codes which provides information about the entire facility or emitting equipment—rather than process-level information—could become a separate code specified at a different level in the emissions inventory. The EICS subcommittee is not restricted to addressing just the process-level (SCC) data coding needs, and is therefore identifying data coding needs at the facility, device, and emissions levels as well.

The subcommittee has held four telephone conference calls as of mid-April. Calls are scheduled for every other Monday from 1 to 3 PM EDT. Dennis Goodenow of CARB and Ron Ryan of US EPA co-chair the subcommittee, which consists of almost 30 members representing state and local agencies, industry, EPA, Environment Canada, consortiums and consultants familiar with current inventory data systems. Additional participation as either a core group member or as a reviewer is welcomed. Please contact Ron Ryan at (919) 541-4330 for further information or to obtain the schedule and agendas for upcoming meetings.



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The CHIEF Newsletter is produced quarterly by the Emission Factor and Inventory Group; Emissions, Monitoring, and Analysis Division; of EPA's Office of Air Quality Planning and Standards. Its purpose is to enhance communication within the emission factor and inventory community by providing new and useful information and by allowing for the exchange of information between and among its readers. Comments on the Newsletter and articles for inclusion in it are welcome and should be directed to Emission Factor and Inventory Group (MD-14), US EPA, Research Triangle Park, NC 27711; telephone (919) 541-5285.

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