Fact Sheet:

September 1996

(LL-16)

Total Installation Noise Management Firing Information and Range Execution (FIRE) System

The Problem

Noise levels of Army activities continually concern Army managers and others responsible for monitoring Army training operations. A state-of-the-art management system to assist personnel in this function would be of great value.

The Technology

Army managers responsible for considering and reducing the noise impact of Army operations can now draw on the microcomputer-based Firing Information and Range Execution (FIRE) system to manage this problem. FIRE provides for the horizontal, electronic linking of all players related to real-time training lands management. It combines many elements of U.S. Army Construction Engineering Research Laboratories (CERL) research from the past 16 years into one comprehensive management tool. Elements of FIRE include:

1. Local capability to produce noise zone maps for blasts, helicopters, fixed-wing aircraft, small arms, and vehicles.
2. Local capability for the real-time collection of airfield operations at the control tower and range operations at the range control radio operator.
3. An integrated blast noise monitoring system for:

a. Warning of high noise conditions,

b. Documenting compliance with applicable criteria (most installations meet criteria but respond incorrectly to complaints when the noise is well below criteria levels), and

c. Identifying the noise coming from the installation (Data indicate that up to half of the noise generating complaints originate from off-post sources, such as quarries and highways under construction.)

4. Local capability for logging complaints and comparing them with real-time operational logs and noise measurements.

5. Local capability for comparing long-term measurements with long-term noise zone maps (validation).

6. Local capability to play "what if" games (scenarios for new helicopters, new weapons, new firing points, etc.).

7. Local capability to couple meteorologically based expert system predictions of noise problems into the total management methodology.

Benefits/Savings

FIRE puts noise management into the hands of the trainer, who is the source of the noise. It imbeds noise management within the Range Facility Management System, which is used for day-to-day range management and enhances communication among the people involved in noise management. These include the Director of Public Works (DPW) (Environment and Master Planning) and the Public Affairs Office (PAO). With FIRE, range personnel can manage day-to-day noise issues and involve the PAO when complaints arise. Meanwhile, the DPW can take the lead in terms of the Installation Compatible Use Zone program, off-post compatible land use, and environmental assessment. For non-acoustical purposes, FIRE data can enhance range operations and management. Weather systems that predict noise, for example, also provide information on downrange wind for helicopter pilots and for fire-danger assessment.

Three elements of FIRE, TOWER, flight-following (FF), and RANGE, permit the Army to effectively handle noise problems. By gathering real-time operational data, TOWER and FF help the airport tower operators monitor airspace, while

simultaneously compiling data for noise purposes on aircraft operations. RANGE gathers real-time operational data to help the range office monitor range utilization. The Army can better deal with long-term compatibility planning and, to a lesser extent, community complaints about noise. COMPLAINT, itself, provides a real-time method to respond to and track complaints.

Status

RANGE is in use at about 10 major Army installations and Noise Monitors are also in use at about 10 installations (only two overlap). TOWER is fully functional as a network system at Fort Drum, NY and as a stand-alone system at Fort Richardson, AK, and Wiesbaden Army Airfield, Germany. COMPLAINT is fully functional at Fort Drum, NY; Fort Capnbell, KY; Fort Lewis, WA; and Fort Carson, CO. The initial expert system to "clean" noise monitor data is about 95 percent complete.

Point of Contact

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