

# CTI Goes To School

by Clare Climaco

## *A Suburban High School Takes a Hard Look at Emergency Communications Necessities*



Longmeadow High School in western Massachusetts is, in many ways, your typical suburban high school. The school boasts a strong academic curriculum, offering an array of advanced placement and fine arts courses that successfully prepare more than 90 percent of its graduates for college. But what sets the school apart isn't so much found in its academic program, but in its unique computer-based phone communications system recently installed by Fire Detection Systems of Chicopee, Massachusetts.

Longmeadow is only one of a handful of schools in the U.S. and Canada that are currently equipped with a CVS Voice Communications System, made by Canadian manufacturer Telecor, Inc. The system offers critical 911 communications capabilities that the vast majority of schools don't have, such as the ability for authorities to remotely listen and communicate with individuals in an emergency situation and the automatic identification of an emergency call on campus. Such features have made the system especially attractive to schools looking to upgrade their communications systems in light of recent incidents of school violence.

"In most schools, teachers can dial 911 from the classroom and directly reach police, but the office doesn't know about it," explained Joe Cebula, president of Fire Detection Systems. "With the Telecor CVS system, once a 911 call has been made the system automatically announces over the loudspeakers in the school's main

office that a 911 call has been placed, and from which room."

Longmeadow's decision to upgrade its phone system was driven both by security concerns and need. "The phone system that we had was 54 years old and beyond repair," said Joseph Flahive, Longmeadow School Department's assistant superintendent for business. "So when we were going to buy a new phone system, we naturally wanted a system that addressed our security concerns as well."

In addition to security features, the CVS system offers a wide variety of software-based capabilities designed to facilitate communication among teachers, students and parents. The system includes a voicemail system that teachers and staff can access anytime from any phone, and a comprehensive set of Auto Attendant features that provides access to a school directory, information on school events, and class specific homework assignments.

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### System Specifics

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The installation, finished in one week during winter break, was relatively simple, Cebula said. FDS left all the school's existing phone wiring in place, installed 144 classroom phones and a dozen LCD display phones for

school administrators. A total of 135 25-watt 8-inch speakers mounted in wall enclosures were also installed in classrooms and hallways, while a dozen Atlas AP-15T speakers were installed in the gym and pool areas.

"When we pulled out the old communication console, we found a variety of wiring schemes and color combinations based on various additions to the school over the years," Cebula explained. "We had to trace all the existing wires and connect them to the new system. We punched them down into 66 blocks and from there they're cross-tied to the input blocks of the new Telecor equipment."

The Telecor equipment is rack mounted in a custom-built closet in the school's main office. At the heart of the system is a Telecor Computerized Voice Server (CVS) unit. The CVS system essentially links two subsystems - the phone system and the intercom system - so that the two can interface and operate as one. Phone data throughout the school is processed through the primary Telecor PEU-205 and eleven PEU-200s, which in turn are connected to the CVS server via ISA slots. A single PEU (Port Expansion Unit) contains 16 programmable ports.

"The PEUs are very flexible," Cebula explained. "Each port on each PEU can be programmed for anything, whether it be an attendant console, single-line phone, and LCD display phone, etc., while the first eight ports can additionally be programmed as CO (central office) lines." The intercom subsystem establishes the second path of

communication, allowing individuals to communicate through the overhead speakers. The key to the intercom system is the Telecor XL CPU, which handles all switching functions for the 147 loudspeakers located throughout the school. The XL unit is also connected to the CVS server via serial cabling.

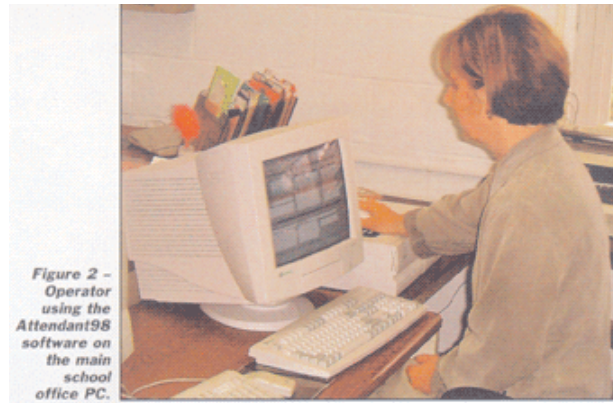
This dual communications system enables local authorities to remotely listen in on emergency situations as they unfold in the classroom, a feature known as Crisis Control gives police or other designated authorities access to the school's internal communications system from any location with a quick phone call. Steve Craft, a Telecor Engineer who worked on the Longmeadow installation, explained how remote communication works: "Because there is data communication between the two systems via RS-232, calls can go in both directions, either to the intercom system from the phone system or to the phone system from the intercom system. The local authorities are set up with Direct Inward System Access (DISA), which allows them to get into the system and listen in on a particular zone of speakers. In an emergency situation, they would call the phone number, dial an access code, then dial another code to listen to a group of speakers in the hallways or even dial directly into a specific room."

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Bob Cano, Telecor's Director of Marketing, added: "They not only can just listen, they could actually announce messages such as an evacuation notice. For example at Columbine, the SWAT team would have been able to dial into the system and monitor various sections of the building to give them an idea of what's going on, and get some insight as to how they're going to handle that."

With two paths of communication, a 911 operator or police can respond to an emergency call, even if the classroom phone is disconnected or off the hook. Once

the 911 call is placed, the 911 call center computers will trace the call. The 911 operator can then call the school, whose office personnel are already aware that the call has been placed, and ask that they be transferred to the room where the emergency is occurring. If the phone is off the



hook, the call will automatically be switched to the speaker in that classroom so they can monitor the situation.

The Longmeadow system is also completely redundant. A Telecor MCC-4 control console, connected through a serial port to the XL CPU, acts as a back-up so that the communications system will continue to operate even if the main CVS computer fails.

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## More Capabilities

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The installation's simplicity belies the system's broad capabilities. Like the 911 capabilities, the Urgent Call feature allows a teacher to immediately alert the main office staff of a situation, even if the phone line is busy. Explained Cebula: "If you can't get through to the office, you dial 500 and it automatically announces over the speakers in the office that there's an urgent call from that room or area. A group of pre-determined phones, in this case in the office, will ring and the LCD will display that an urgent call has been placed and from where it's been placed." And like emergency calls, office staff can dial into the speaker in that classroom to talk live or listen in on what's going on.

The system can also be programmed for day and night modes, just as was done at Longmeadow. During the day, 911 and urgent call announcements are programmed to play only over the office speakers. At night, the announcements are broadcast campus-wide. "The night mode feature is critical for a teacher who may be working late. If there's an emergency, the page will be sent out over all the speakers so anyone that's around, maybe a custodian, will be able to know there's an emergency," Cebula said.

Homework Helpline allows students who've missed class to retrieve homework assignments or other class information by dialing into the system. They simply call a designated phone number, select the appropriate teacher and class, and listen to a pre-recorded message of the day's assignments. The student can also ask questions about assignments or lessons by leaving a voicemail message. The Parent Center feature allows parents to dial into the system to get a variety of information, from upcoming school events to what's on the school lunch menu this week. Because both features rely on voicemail, they are accessible 24 hours a day. The system's extensive voicemail capability is extremely popular among staff and teachers. Flahive said, "It gives staff a convenient way to communicate without the phone ringing and disturbing the class."

The CVS system also allows Longmeadow to create private phone lines for top administrators without the added expense of hardwiring. Cebula explained: "This system allows you to program in up to 800 phone numbers of people who you regularly take private calls from, so that when the call comes in, the system automatically recognizes it, and it bypasses the receptionist and rings the line directly. It reduces the load on the receptionist for routine calls that happen every day. It's a very powerful time-saver."

The Conference Room feature allows up to 16 people to participate in a conference call from any phone, on or off campus. These "rooms," explained Craft, do not take up physical phone lines, but are set up on virtual extensions. In other words, participants call into the extension, or be transferred to the extension, but the extension itself isn't

connected to an actual phone. Likewise, guest voicemail boxes use virtual extensions for added convenience without taking up phone lines. “Substitute teachers, vendors or other school guests can have voicemail as well, and can access their messages from any phone on or off campus.”

The system can also be programmed for automatic call distribution, noted Cebula. “At this school there are three main people who field calls, and rather than getting one overloaded, the system can be programmed to distribute the calls evenly.”

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## Computer and Phone as One

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The Telecor CVS phone system, while specifically designed for school use, is among a growing number of phone systems on the market that are PC-based. In fact, computer-telephone integration (CTI) hardware and software systems, such as Telecor’s, were ranked among the fastest growing equipment categories in 1999 (up 66 percent over 1998), according to a recent study by the Multimedia Telecommunications Association. The trend toward computer-based phone systems is no surprise, as they offer numerous advantages - increased flexibility and capabilities with minimal hardware costs - over “traditional” phone systems.


“Traditional” phone systems would be comparable to a mainframe in the computer network,” Cano explained. “You have a central set of electronics, the mainframe, with work station terminals set up around it. A server based phone system

is comparable to a server-client computer network. A traditional phone system would require separate computers to handle various capabilities, such as voicemail, automatic call distribution, etc. In a server-based phone system, all those features are software driven, so you have a single computer to handle the software information and tie that computer to your phone.”

The server-based system also eliminates the need for a bulky phone console at the school’s main receptionist desk. At Longmeadow, FDS loaded Attendant98™ software onto a school-supplied PC. Attendant98™ is a Windows®-based CTI software program that, with a phone headset, essentially allows the computer to function as a phone.

“In essence, we’ve taken that traditional DSS [direct station select] phone, removed it from the receptionist’s desk, and stuck it inside their PC, so all of their phone functions are in the computer. By doing that we give them a tremendous amount of flexibility,” Cano said.

Attendant98™ adds drag-and-drop convenience to managing multiple phone lines and incoming calls. The program includes a full directory of staff names, departments, and extensions. An incoming call is displayed on the computer screen with caller ID, which the operator can pick up with the click of a mouse. To transfer the call, the operator simply drags the call and drops it to the requested extension. Other Windows® functions, such as search and sort, are also available to locate extensions alphabetically, by department or grade.



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The operator can also type in messages for each incoming call, so that when the call is transferred the recipient can read the message attached to the call. The program can also store notes on an individual caller, which are displayed every time that person calls.

Another advantage of having a computer-based system is that it can be programmed remotely by modem. “We connect to the system using a program called SiteLink, and that program allows us to make changes to the system’s configuration and conduct diagnostics from a laptop or PC,” noted Craft. “I’m able to connect with these systems and help them with any problem so they have factory support without having to actually be on site.”

The ease of installing and programming a computer-based phone system allowed FDS to tailor a communications solution that addressed all of Longmeadow’s needs — from expanded 911 capabilities for campus-wide security to a convenient voicemail system for teachers and staff. “It wasn’t a one-size-fits-all system,” Flahive said. “There was a real effort to offer personal service to address the needs of our school. It is truly a complete communications system.”

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*The writer, Clare Climaco, is a freelance writer and regular contributor to Sound & Communications.*