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Radiation Laboratory

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TELEPHONE FIRE-ALARM SYSTEMS FOR INDUSTRIES AND LABORATORIES

C. R. Wintersteen

June 24, 1957

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Berkeley, California

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ABSTRACT

This paper describes the telephone-type emergency-reporting systems now in service at the Berkeley and Livermore Sites of the Radiation Laboratory.

TELEPHONE FIRE-ALARM SYSTEMS FOR INDUSTRIES AND LABORATORIES*

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Although both telegraph and telephone fire-alarm systems have their individual merits, the Radiation Laboratories at Berkeley and Livermore, California have adopted telephone systems tailored to their needs. The decision to make the change from our original telegraph-type alarm systems was based on the economics of replacement and (or) maintenance of outmoded systems. Also, it was felt that a better system of communications for reporting all types of emergencies was needed.

Now, instead of scattered alarm boxes that could report only a fire situation, hundreds of telephone instruments installed for routine business can be used for reporting any emergency that might occur. In addition there are a number of telephone boxes placed at strategic locations for use by inspecting police officers on the after-hour patrols. (See Fig. 1). Sprinkler-system alarms and thermal-detection signals are carried over leased telephone wires to the communications center of the police office.

At either Laboratory a person can report an emergency by dialing extension 333 on any business phone, which rings a phone in the police communications center. The desk officer takes the report and activates a "crash alarm" system that rings special phone instruments in key points, such as the first aid station, radiation-safety office, the fire chief's office and other points. Each instrument rings continuously until answered, at which time labeled signal lights appear on the police annunciator panel. The report is then relayed simultaneously to all agencies involved, and assistance is dispatched.

At the Berkeley Laboratory, where volunteer forces are used, the police officer on duty uses the project public-address system to make coded

*This work was performed under the auspices of the U. S. Atomic Energy Commission.

announcements to advise emergency personnel of the location of the incident. The Berkeley City Fire Department is called by activating a standard alarm box, and a verifying phone call is made immediately thereafter.

At the Livermore Laboratory, a coded zone system utilizing large air horns is used on second-alarm fires to direct auxiliary assistance to the scene of the emergency. The Livermore Laboratory Fire Department is first alerted by a horn on the roof of the fire station, and receives the location of the incident from the police by use of a teletalk system.

Complete two-way radio systems are used at each location, and a repeater station links the two sites together.

Misdialing, which could cause a false alarm, presents no problem, because the police communications center serves as a screening point for emergency calls and for subsequent action to be taken.

The equipment at the communications centers (See Fig. 2) includes items such as "Conelrad" radio; sprinkler-system annunciator panels; laboratory radio transmitter; transmitter for outside assistance; auxiliary microphone for the public-address system; "Bell-and-Light" equipment for air alerts; and timing or code devices for air horns, fire sirens, and air-raid sirens. Emergency power is provided for this equipment as well as for the telephone rectifiers that charge batteries and maintain a power supply for the ringing circuits.

Based upon the low rental rates for telephone circuits, the dependability of these circuits, and the excellent service rendered, the experience of the Radiation Laboratory has been that such a system has many advantages for self-contained industries, institutions, and laboratories.

Figure Captions

Fig. 1. Employee using the yard telephone.

Fig. 2. Berkeley police communication center.

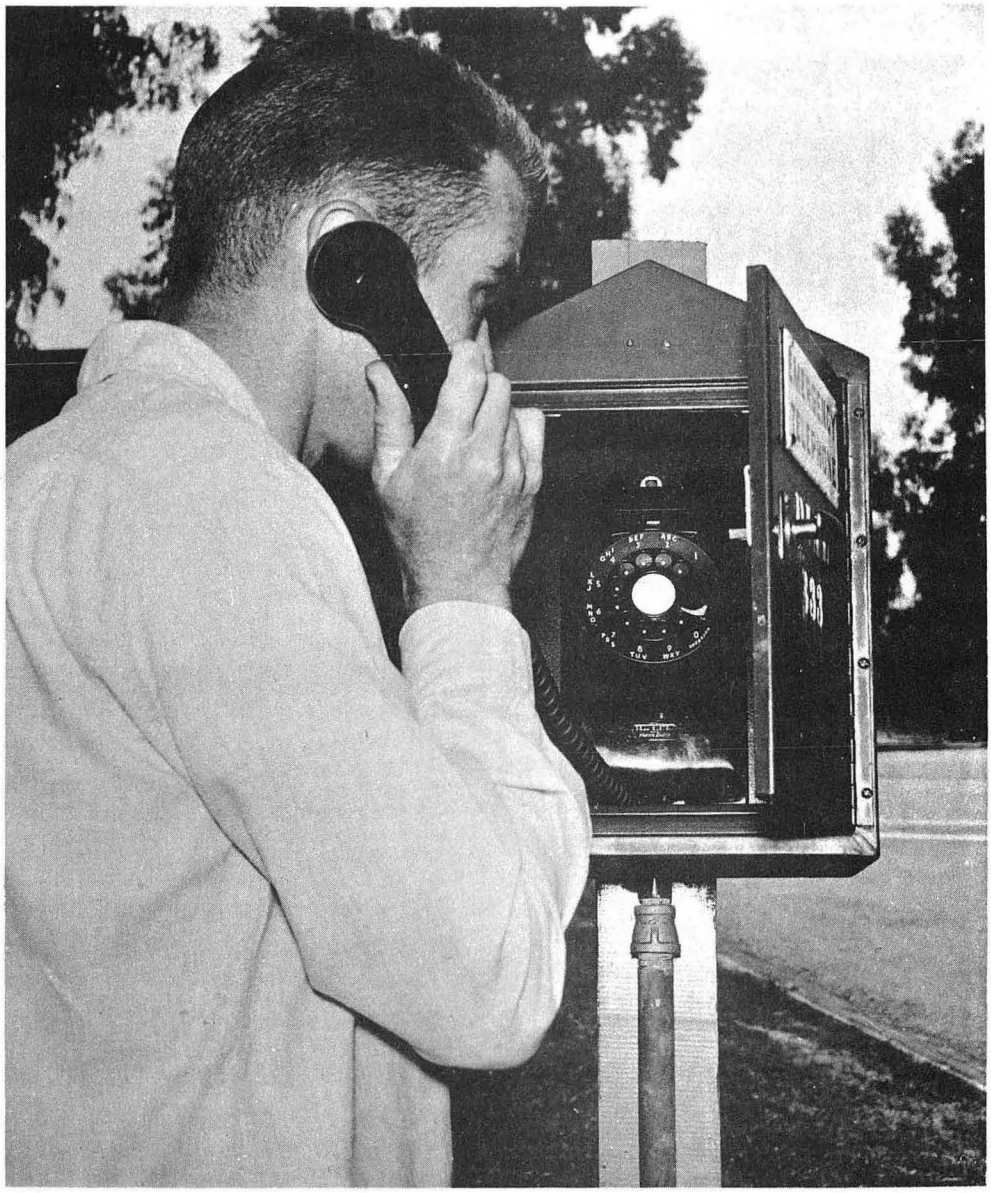

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Fig. 1. Employee using the yard telephone.

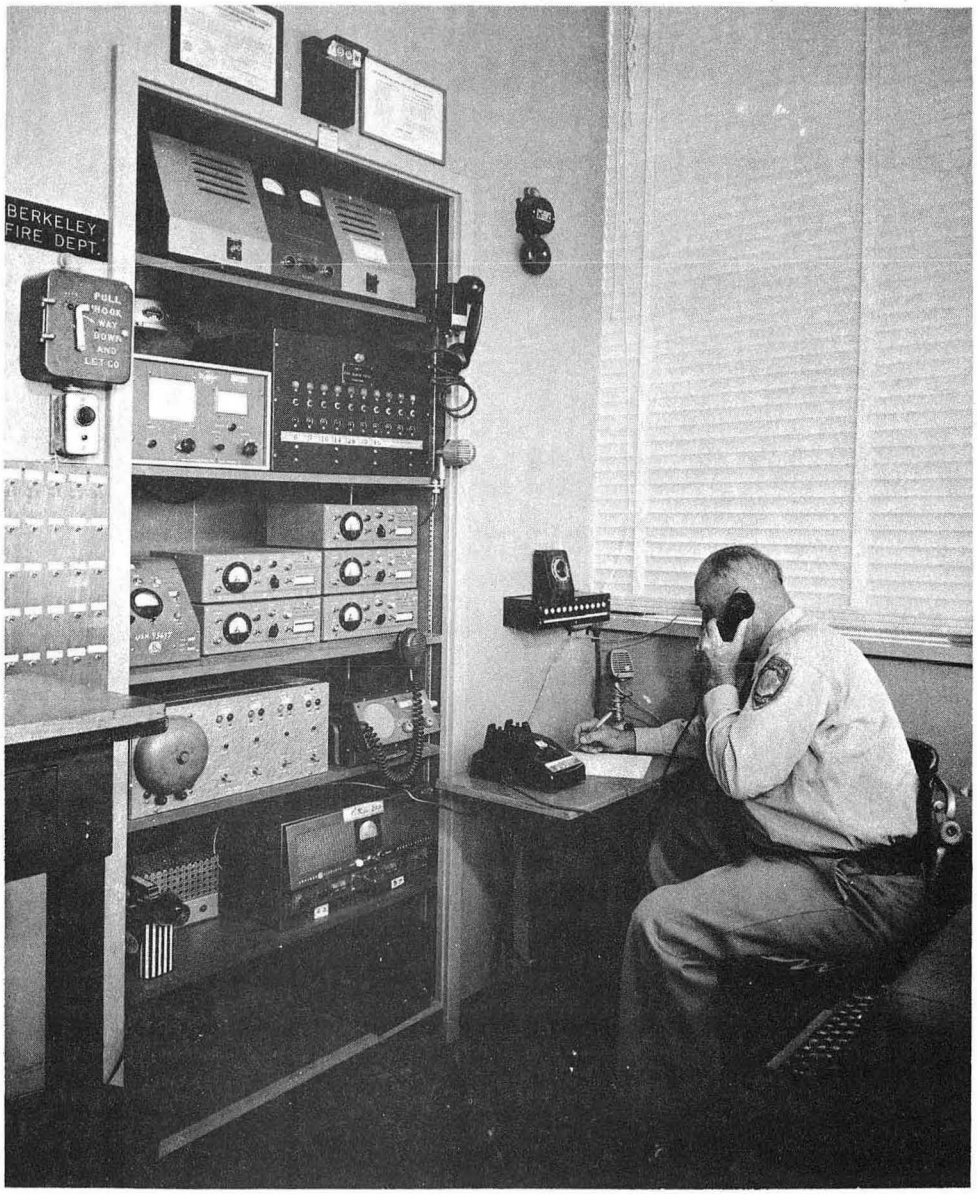

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Fig. 2. Berkeley police communication center.