

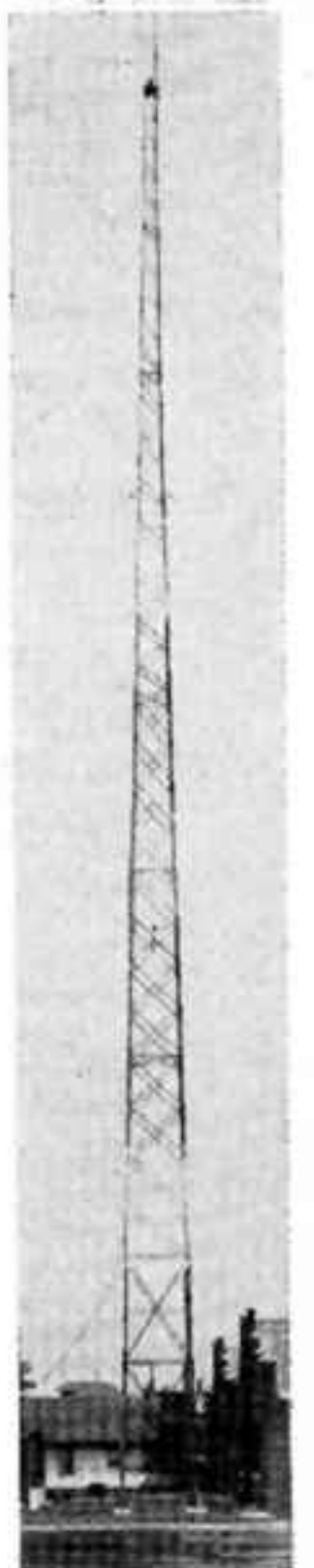
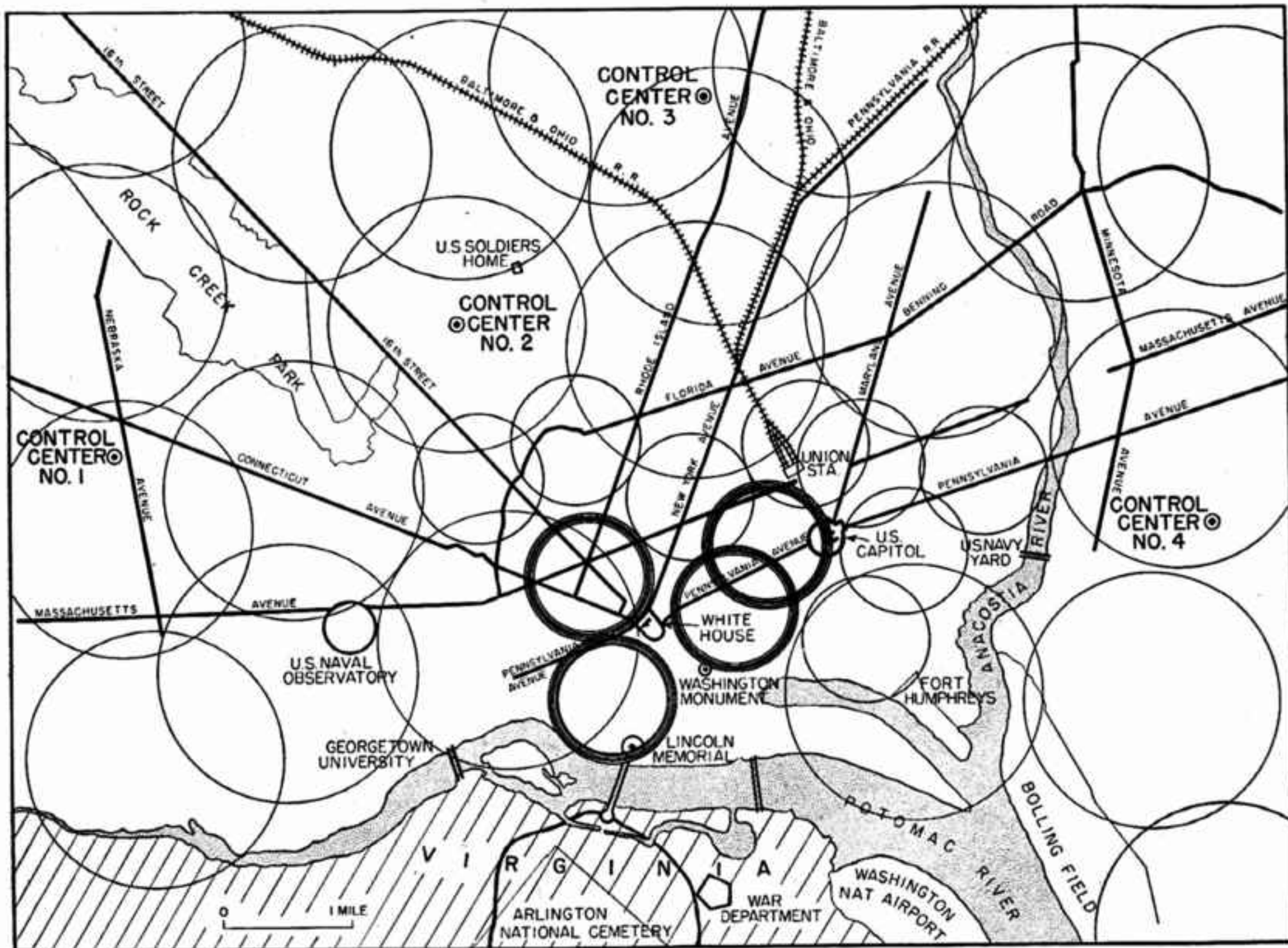
Electronic siren at control-transmitter location generates alarm signals for all receiver locations



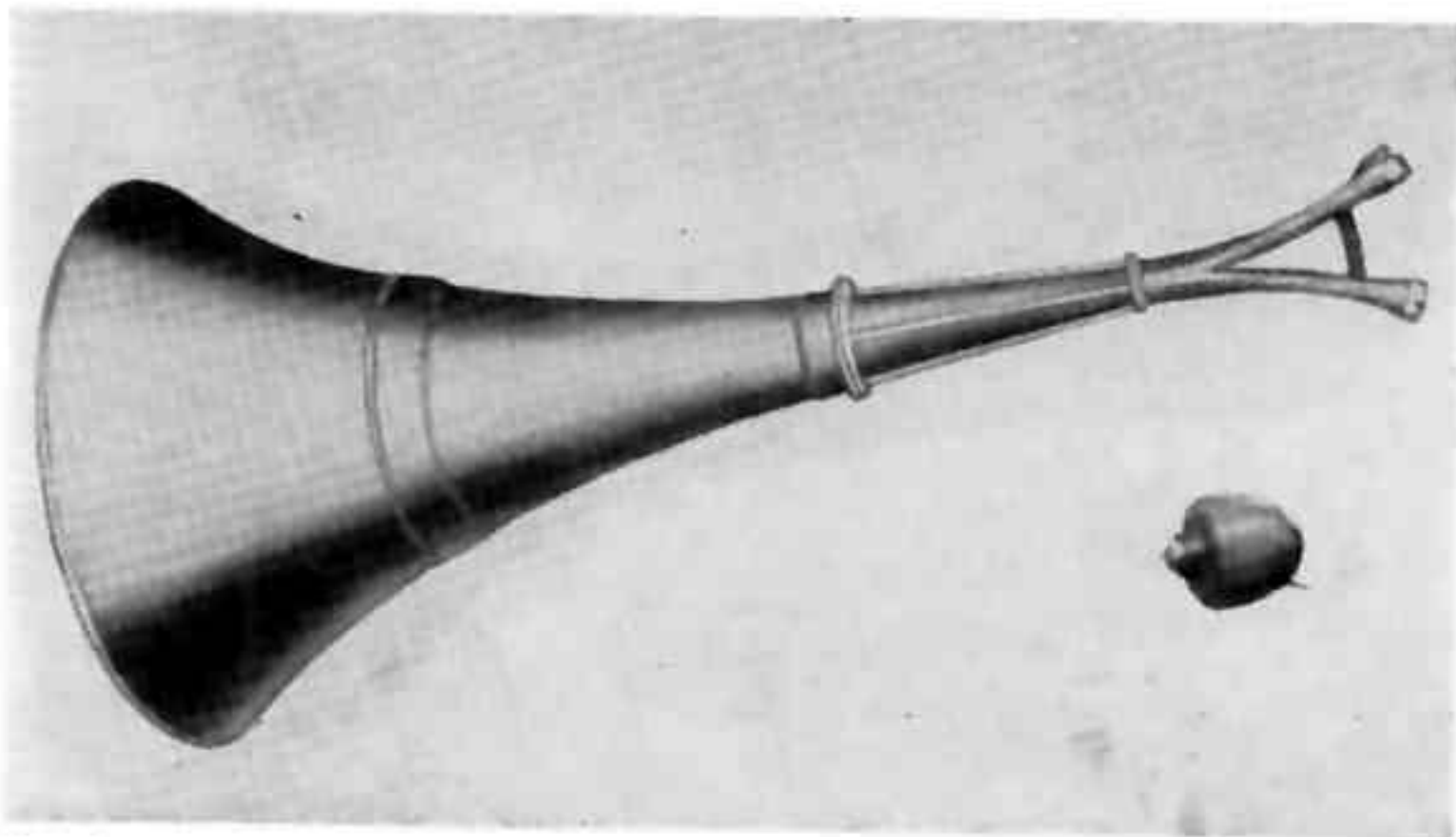
Entire populace can be warned from central control station which can broadcast both alert signals and verbal instructions during and after an attack

WASHINGTON ADOPTS Automatic

F-M transmitters at control locations send coded messages to strategically-located alarm positions. Decoding receivers and high-powered amplifiers broadcast transmitted alarms instantaneously. System can also disseminate verbal instructions



Each alarm position (center of each circle on District of Columbia map at left) receives coded signals from control center antenna (shown at right). Heavy circles in vicinity of White House and U. S. Capitol indicate alarm positions that have already been installed



Warnings are broadcast by six-foot horn loudspeakers, each of which is fitted with two driving units, and capable of providing 75-db signals at one mile



Mobile units are also tied in with District of Columbia emergency-communications system

C-D Warning System

SUCCESSFUL operation of a city's civil-defense organization depends on the existence of a dependable communications system.

Warning centers are faced with two communications problems: (1) air-raid-warning signalling, and (2) civil-defense communications for operational purposes. For various reasons, land lines cannot be relied upon as the sole means of signalling and communicating. Radio lends itself to the problem in many ways and can, in fact, be used as the basic mutual-aid communications system after a warning has been activated by the Air Force.

The system described here has been approved for use in the District of Columbia for the protection of Washington and much of the area surrounding it. Every known safety precaution has been incorporated. In the event of an alarm, the pushing of a single button will immediately alert the entire populace, and the same equipment can be used subsequently for issuing verbal instructions to the public.

Coding System

The warning system makes use of f-m transmitter control stations

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so designed that special coded signals are transmitted which automatically turn on loudspeaker horns located throughout the city. Each horn is equipped with an automatic decoding device that can be operated only by the controlling transmitter, and then only when the properly coded signals are transmitted, thus preventing any horn from issuing a false alarm. As an additional safety factor, and to facilitate maintenance and possible future signal changes, the actual 400 to 1,000-cps alarm tones are generated by an electronic siren at the control headquarters. The siren has a distinctive tone that distinguishes it from fire and police alarms. Provisions are made for transmitting alerts, the all clear and such verbal instructions as may be desired. All main equipment at a command center, including auxiliary power supplies, is in duplicate.

The accompanying map shows the general locations of the various alarm units. Each circle designates one alarm unit, the multiple circles

indicating installations that have already been made. Alarm units are capable of providing a minimum of 125 db at 100 feet, or 75 db at a distance of one mile.

Each alarm unit contains a receiver, a decoder, and four 70-watt amplifiers that are capable of continuous operation. Each of these amplifiers is connected to a 6-foot horn speaker equipped with two driving units, as illustrated in the photographs. These horns broadcast information transmitted by the main station transmitter, whether actual alarm signal or voice.

The power amplifiers have less than 5-percent distortion. In full operation, they consume over 220 watts. Push-pull 807's in class AB₁ provide the desired amplification, when used with 10-db inverse feedback. Standard output impedances are provided. Self-contained power supplies operate on standard line power. The response curve of the amplifiers is essentially flat from 20 to 20,000 cps, gradually tapering off at both ends. The receivers used are conventional.

Alarm-position equipment is designed to perform under all conditions of weather, and all components are electrically and mechanically interchangeable.