

Codes and Signals

MORE DISCUSSION ON THE RADIO CODE PROBLEM

By CORWIN EMMONS, Ohio State Patrol

EDITOR'S NOTE: *The use of radio codes is always an interesting subject and usually a controversial one, due to the varied requirements of the different state, municipal and county communication systems. We wish to thank Mr. Emmons for this explanation of the Ohio State Patrol code system.*

We were very interested in the Analysis of Code Usage compiled by the late Capt. Sprague of the San Diego Police Department, published in the May issue of the *Bulletin*. We appreciate the time involved in the tabulation and analysis of 16,000 messages in order to get the percentages of use of the different codes.

The Ohio State Patrol started using a set of signals more than a year before the "ten" signals were first used. In the development of our signals we started with several requirements which are repeated in Capt. Sprague's article. Most outstanding of these are as follows:

1. To reduce air time when the channel is crowded.
2. Secrecy. (Not always required.)
3. A code should not be complex beyond the ability of the average officer to use (and memorize) it. The time consumed looking in the "Code Book" nullifies any advantage the code may have except secrecy.
4. Assignment of code signals should be limited to those which are used a relatively large number of times.

Capt. Sprague's analysis shows that only eight (8) types of messages or codes were used more than 1% of the time. Also only twenty-nine (29) were used more than .1% or the equivalent of twenty or more times in 16,000 transmissions. Also the analysis tabulates thirty-four codes used less than .1%, some of which were used only once, and twenty are listed which were not used at all in the 16,000 transmissions. One cannot help but question the justification of the assignment of so many codes that are practically never used; codes that

the officer cannot remember and has to look up in a book.

In a general way the analysis would apply to the code usage of any department. With this in mind, following is a discussion of codes and the "signals" used by the Ohio State Patrol. The most used code (45% of all signals used) is acknowledgment. In Ohio we believe it is easier and more natural for a man to say "OK" than to learn the code "10-4." Also we see no reason for secrecy in an acknowledgment so no "code" is required.

The next most used codes are "in service" and "out of service." In the interest of time saving the codes used the most should be the small numbers. This follows the reasoning on which the Ohio Codes are based since signals referring to operating are 1 to 9 inclusive. The following comparison shows both the Ohio and "ten" signals in this group.

Ohio Code	Meaning	"Ten" Signal
1	Out of service	10-7
2	In service	10-8
3	Out of service, subject to call	10-10
4	Out of service, equipment failure	
5	Rush or immediately.	
6	Reference previous traffic.	
7	At your convenience. (Capt. Sprague indicated a need for this information.)	
8	Unable to read, change location. 10-1, 10-9, 10-92 or 10-99	
9	Unable to answer at this time	10-6

In the Ohio Code the next two groups were set up with the thought of easy memorization. Signals 10 to 19 refer to an action to be completed by telephone. Signals 20 to 29 refer to the same action to be completed in person.

- 10 Call given point by phone.
- 11 Call GHQ by phone.
- 12 Call DHQ by phone.
- 13 Call your post by phone.
- 14 Call radio by phone.
- 15 Call home by phone.
- 16 Call dispatcher by phone.
- 19 Relay by telephone.
- 20 Report to given place in person.
- 21 Report to GHQ in person.
- 22 Report to DHQ in person.
- 23 Report to your post in person.
- 24 Report to radio in person.
- 25 Report home in person.
- 26 Report to dispatcher in person.
- 29 Relay in person.

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STEPHEN HORNAK, right, SUPERINTENDENT OF PLANT PROTECTION at U. S. Steel's Homestead Works, explains part of guard set-up to three visiting APCO members, Robert E. Mix, Detroit Police, Francis A. Burns, New York City Police and President of APCO, and W. M. Gamble, Pittsburgh Police. More than three hundred APCO members and wives visited this plant during the Conference.