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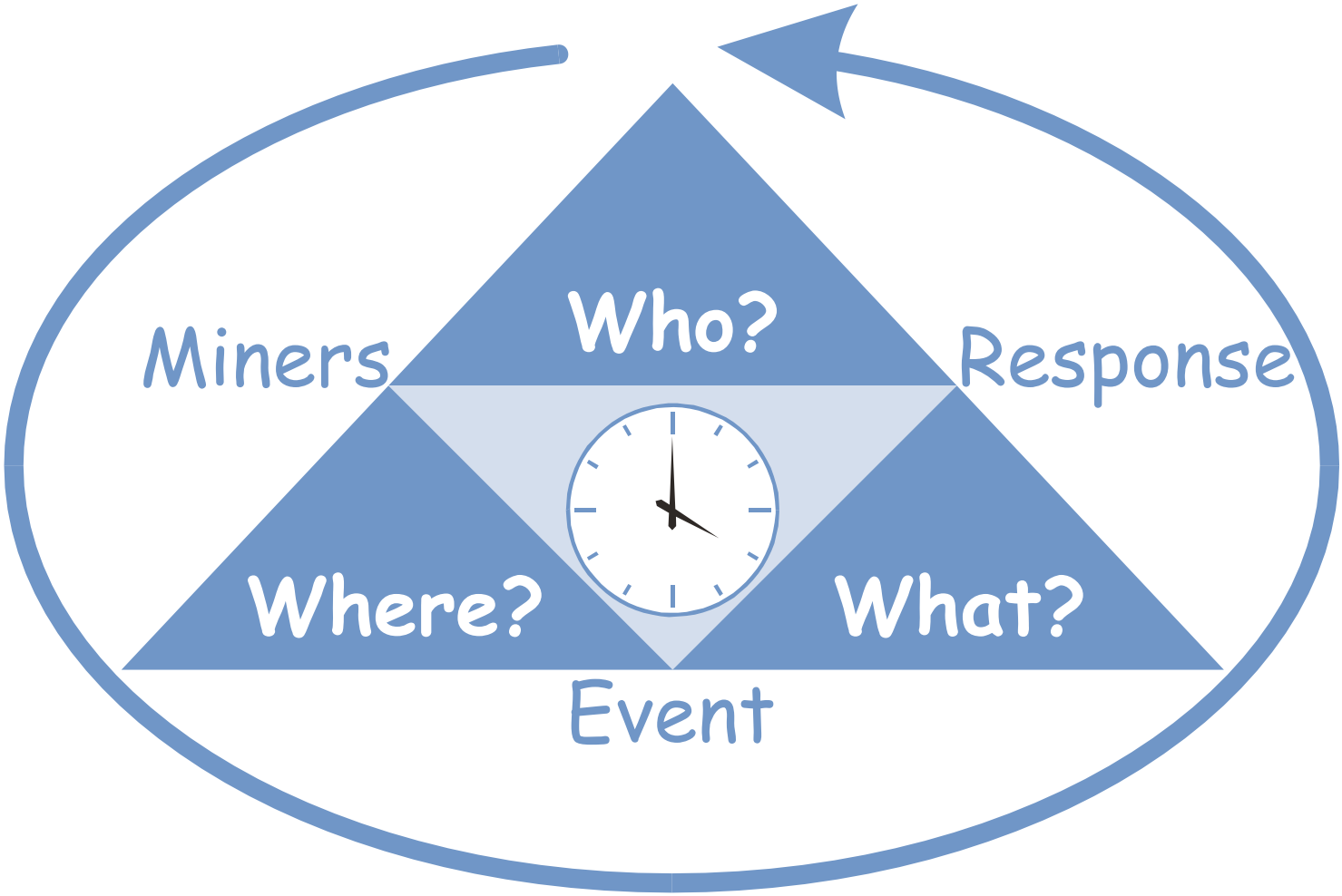
The Emergency Communication Triangle



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

The Emergency Communication Triangle

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Safety Talk: The Communication Triangle
INSTRUCTOR=S GUIDE

Purpose: This training material focuses on the content of emergency warning messages. Research has shown that when an emergency occurs, people often do not get the information they need for the purpose of taking appropriate action. This safety talk presents a procedure, using mental cues that can be used by senders and receivers of emergency warnings.

Intended Use: This material has been developed for use in short safety-training sessions such as start-of-shift safety or Atoolbox@ talks. The information can be presented in approximately fifteen minutes and is appropriate for workers at all experience levels. While the examples and illustrations are taken from the underground coal mining industry, the training can be tailored to any work setting by substituting appropriate examples.

Materials Needed: The instructor will need to prepare the figures provided in a form that can be seen by the entire class. Suggested methods include the use of: (1) overhead transparencies, (2) laminated pages that can be held up for small groups, and/or (3) handouts with copies of the figures for each trainee. As a supplement, stickers featuring the communication triangle can be placed on hard hats, telephones or other communication devices to remind workers about the key to effective emergency communication.

The Talk: The accompanying script is a guide for presenting this safety talk. Training is enhanced if these materials are covered but not simply read by the trainer. Examples given in this guide are from real experiences. To make training more interesting and effective, the instructor can substitute examples from his/her workplace.

Additional Resources: The following references will provide further information about communications during emergencies.

Auf Der Heide, E.(1989). Disaster Response: Principles of Preparation and Coordination. The C.V. Mosby Company, St. Louis.

Mallett, Launa, Charles Vaught, and Michael J. Brnich Jr. (1993). ASociotechnical Communication in an Underground Mine Fire: A Study of Warning Messages During an Emergency Evacuation@, Safety Science, 16, pp. 709-728.

Nigg, J.M. (1987). ACommunication and Behavior: Organizational and Individual Response to Warnings@ in Sociology of Disasters: Contributions of Sociology to Disaster Research, R.R. Dynes, B. De Marchi, and C. Pelanda (eds.), Franco Angeli, Milan, Italy, pp. 103-116.

The Communication Triangle

The topic for today's talk is emergency communications. In past mine emergencies, the information required for effective response did not always get to the right people. While sometimes this was due to equipment failure, often it was due to inadequate warning messages. We must ensure that everyone at this mine knows what information to include when they are reporting an emergency and what questions to ask when they are receiving a warning.

(Figures should be shown to the class as each is explained using the information given below.)

Figure 1 - Why is effective emergency communication important?

Effective communication will:

- reduce confusion.
- increase confidence in decisions.
- stop rumors and incorrect information.
- improve the likelihood of success.

Figure 2 - What types of information is <u>Needed During an Emergency</u>?

One of the biggest problems in the early stages of an emergency situation is the lack of information. There are many questions that need to be answered. A few examples of questions that should be asked and answered during an emergency are shown in this figure.

Figure 3 - What information is available during an emergency?

As an emergency unfolds everyone has questions, and detailed information is necessary for the best response. Remember, too, that everyone is under stress that further compounds the problem. This figure shows the kind of emergency communications that could happen if not prepared.

How can we plan for better communications? We could list all the things we need to say when an emergency happens, but research has shown that most people cannot remember long lists of items. (The average person can remember about 7 distinct items on a list and this is one reason why telephone numbers are 7 digits.) However, we are better at remembering things, if we have something to help cue the material.

Figure 4 -How to help us remember the important information that needs to be communicated during an emergency.

We have all studied the **fire triangle** at some time in safety training. (Remember, the sides of that triangle are fuel, oxygen, and heat.) A similar triangle can also be used for emergency warning communications. Look closely at this communication triangle and I'll break down the parts to tell you what each part represents.

Figure 5 - WHO

When reporting an emergency or receiving a warning, first clearly identify who you are. This is important because based on who gives them information, people react differently.

For example; think about the different reactions that might happen in the following situation: Someone calls the communications person and says "There's a large fire going here! Get help!" How would the communications person respond, if the miner making that call had been on the mine rescue team for 10 years and was known to be a calm and levelheaded person? Would the communications person react the same way, if the individual making the call was a young, inexperienced miner who had only been working there for a month? Most likely, the communications person will act much more quickly based on the warning given by the mine rescue team member than that given by the inexperienced miner. In the later case, the communications person will probably look for confirmation of the problem from someone else more experienced.

When people receiving a warning do not know who it is from, they are likely to try and gather more information before acting and thus, critical time can be lost.

Remember, when providing a warning, identify yourself.

Figure 6 - WHERE

Next, give or find out the location of the problem. This may seem like common sense, but it doesn't always happen.

For example, one day the communications person at a large underground mine received a call from a miner who said, "There's a fire on the belt!" The person making the call then took off to start fighting the fire. The communications person was left knowing only that somewhere on the mine's more than 7 miles of belt there was a fire. The communications person's first task was to find out the location of the problem, not initiating a response.

Another example comes from research conducted on three mine fires that forced the evacuation through smoke of more than 60 miners. Of the forty-eight miners interviewed about their experiences, only two knew where the fire was located as they were escaping, even though this information was known by the dispatcher or the person who discovered the fire. As a result, miners had to make decisions about escape routes without knowing the source of the problem. This lack of knowledge also increased the stress during the situation because they couldn't determine how far they would have to walk to find fresh air.

Figure 7 - WHAT

Next, tell exactly what is happening at the scene. Again, this may seem like common sense, but it does not always happen in an emergency.

For example, during one serious mine fire, a warning message was given for everyone on the section to evacuate. Miners who had been near the phone when the call came in went to gather the others on their crew. One of these miners, a shuttle car operator, ducked under the check curtain and yelled to the miner operator saying, "Come on down to the mantrip. We're going out." Since the belt was down and it was close to quitting time, the miner operator and his helper thought they were just leaving the section a little early. They went through their normal end of shift routine including backing the continuous miner out of the cut, setting jacks, tightening check curtains, and disconnecting the power before reporting to the mantrip. Thus, valuable time was lost.

In summary remember: **Who, Where, and What**. It seems simple. But if we don't think about it, the job of communicating necessary information doesn't get done.

Figure 8 - Now for **THE DETAILS**

After giving the three most important pieces of information (**Who, Where, and What**), there are still three more questions that need to be answered:

a. ***Endangered MINERS***

Is anyone hurt?
Has everyone been accounted for?
When and where was a missing person last seen?

If miners may be in trouble, make them the highest priority by reporting what you know.

b. ***EVENT***

Will this problem require a first aid kit or an ambulance?
Should we call for mine rescue teams or just a couple of fire extinguishers?

Report exactly what you are facing.

c. ***RESPONSE***

What's been done so far? (No need to duplicate efforts.)
How many people are on the scene?
What equipment is on scene?

Be **specific** about what equipment is needed.

For example, during an emergency at one mine that had battery powered haulage equipment, the responders couldn't take scoops and other equipment out of service long enough to allow the batteries to be fully charged. They called a neighboring mine and asked for help in the form of additional scoops, batteries, and chargers. The neighbor said, "Of course, we'll send over whatever you need." In response, the neighboring mine then sent all the extra cap lamp batteries that they had on hand. Somewhere in communicating what equipment was needed, the request for scoops, batteries, and chargers was translated into cap lamp batteries. Thus, valuable time was lost as the needed items had to be requested again.

Figure 9 - THE COMPLETE PICTURE

When giving or receiving information about an emergency, be sure to cover these six points. It will take a little time, but it will eventually save everyone time. People will react more quickly. Their responses will be more appropriate and better coordinated.

In summary, in reporting an emergency, go through each step and give whatever information you have about each point. If you are receiving a warning, go through each step to be sure that you're given all the information that you need to protect yourself. Following these guidelines should result in better communication and efficient emergency response.

Effective Communication will:

- Reduce confusion
- Increase confidence in decisions
- Stop incorrect rumors
- Improve the likelihood of success

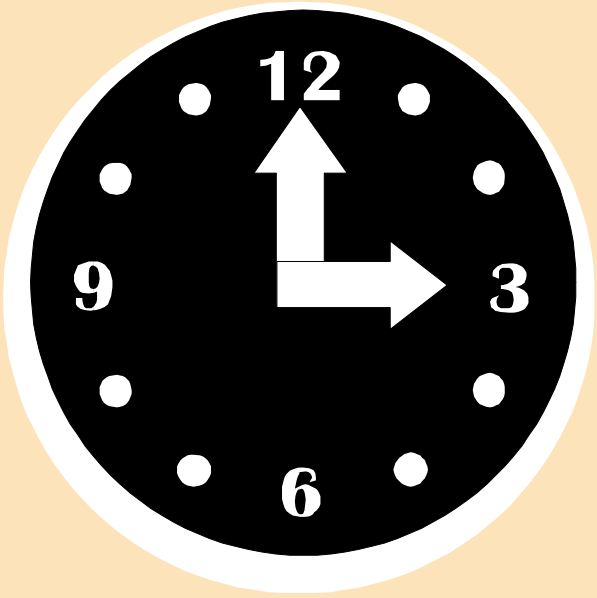

Figure 1

Information Needed During an Emergency

- What is happening?
- Is anyone in danger?
- How big is the problem?
- Who reported a problem?
- Where is the problem?
- Has a response started?
- What resources are on-scene?
- Who is responding so far?
- Is everyone's location known?

Figure 2

Information You Will Get Without Planning

We have called the agencies.

Four miners are missing.

We are coming out the primary escapeway.

There is a fall.

I am the section foreman.

The tailpiece is on fire.

We need crib blocks.

Everyone is safe.

Figure 3

The Communication Triangle

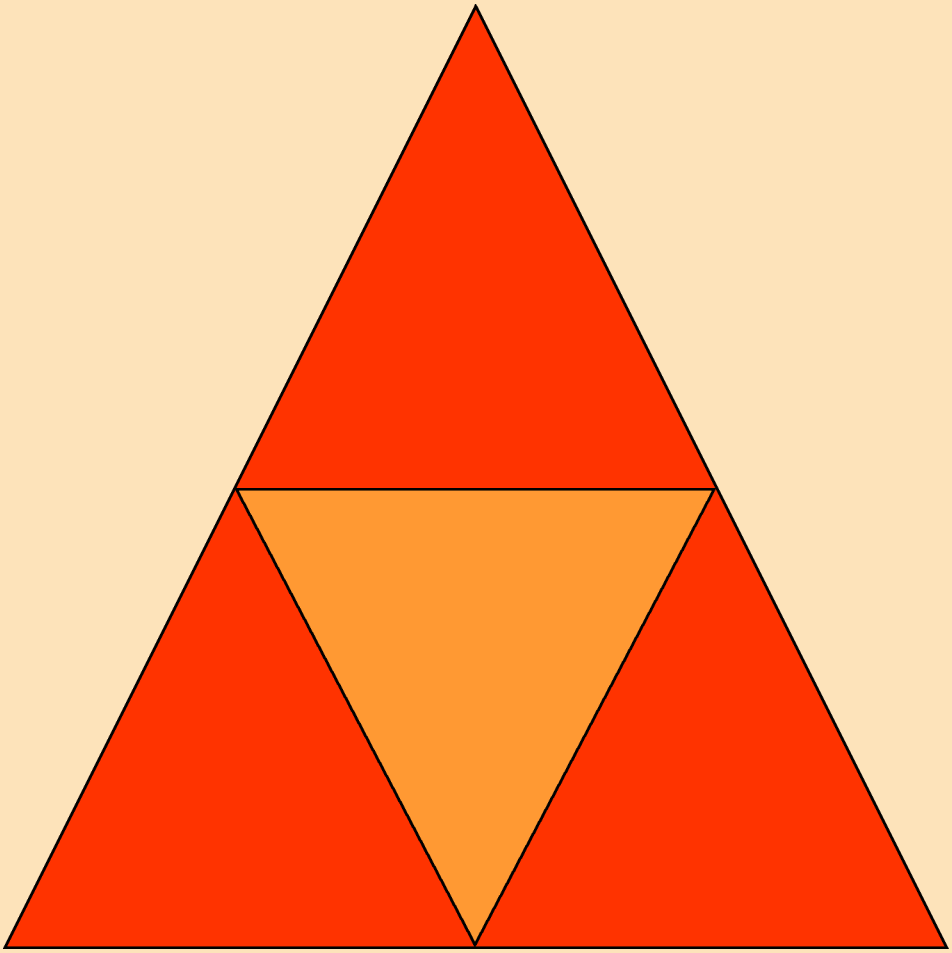

Figure 4

1. Identify Yourself

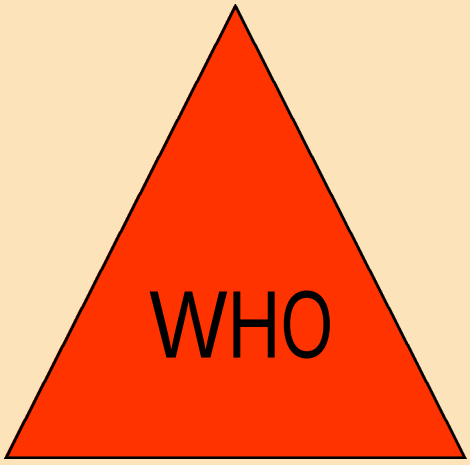

Figure 5

2. Identify the Location

Figure 6

3. Identify the Problem

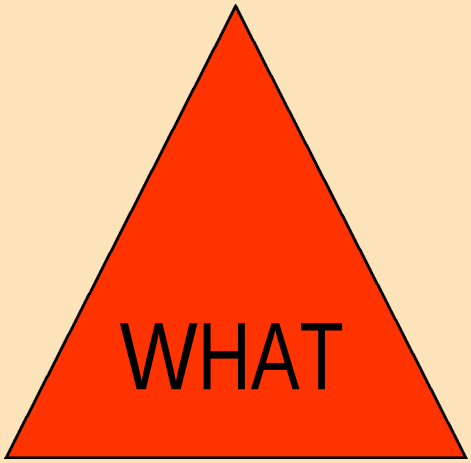

Figure 7

Give Details!

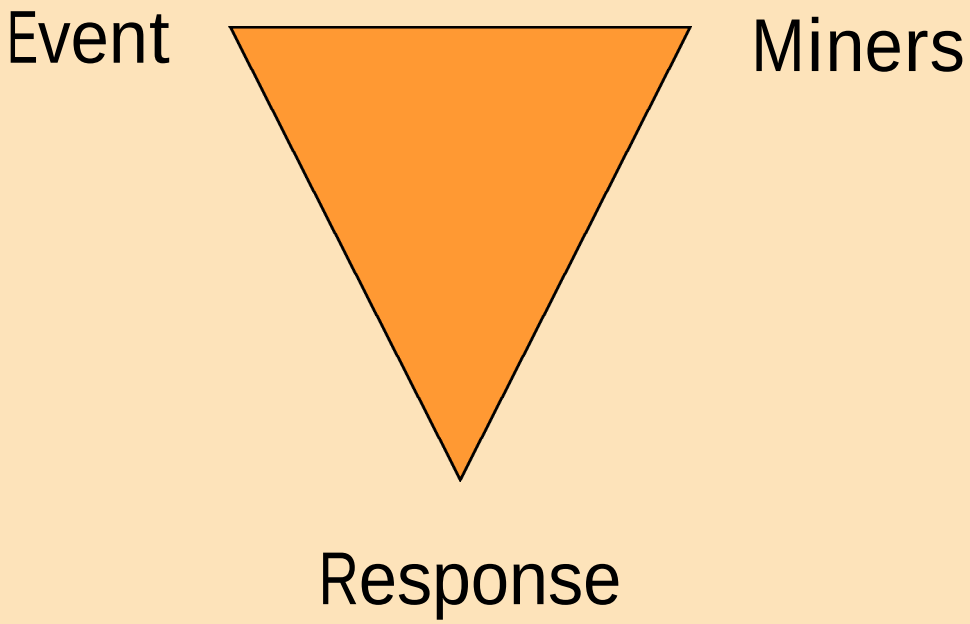

Figure 8

The Complete Picture

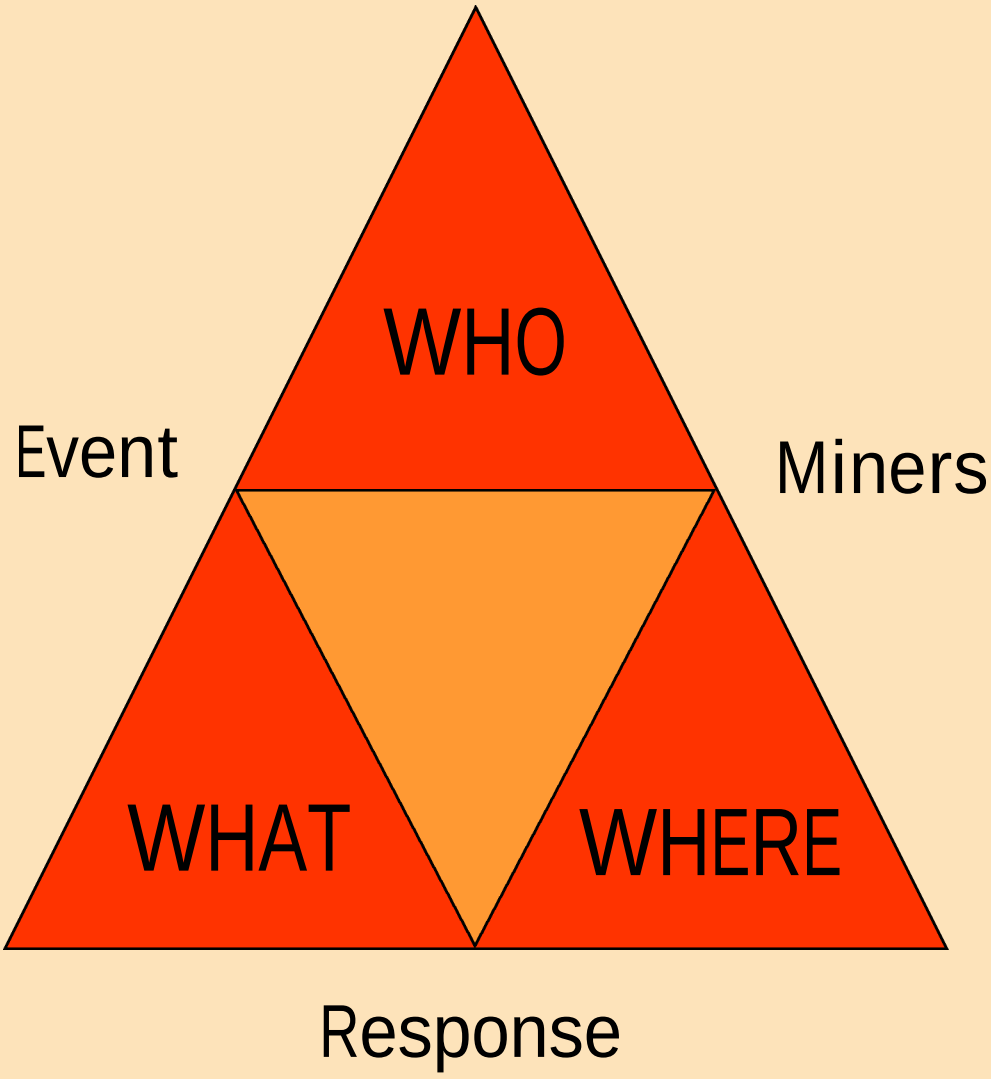

Figure 9

Delivering on the Nation's promise:
Safety and Health at Work
For all people
Through research and prevention

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1-800-35-NIOSH (1-800-356-4674)
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Email: pubstaff@cdc.gov

Or visit the NIOSH web site at www.cdc.gov/niosh

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