Radio Communications . . . Or the Lack Thereof

By

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Frustrated with too many trying to talk on the radio at the same time? "Stepping" on one another? Guessing whether a message was received? Well maybe some of the techniques presented below might help to improve your radio communications.

If your layout, however, is modeled strictly after, say, the Union Pacific and you want to follow *their* radio transmission rules and techniques for ultimate realism then read no further. But if you find you are just not satisfied with the radio communications on your layout or even on someone else's but just don't know how to improve them, read on.

I have operated on model railroad layouts as road crew, running yards and dispatching. Fairly often there's some frustration with respect to radio communications—or lack thereof. Sometimes the dispatcher is frustrated, sometimes the crews, or both.

When I got my first chance to dispatch several years ago I got a few compliments but never gave it much thought as to why. Perhaps I was just lucky, I thought, or just had a good day. I began to notice other dispatcher's styles and listened closely to the radio chatter. It occurred to me why I might have gotten a few compliments. I was trained. No, not as a train dispatcher; I was trained for communications.

Before I retired I worked at Lockheed Martin building, testing and launching satellites. I was on the launch team for a commercial satellite that was the first high resolution commercial imaging satellite (IKONOS) that started all of the Google type imagery you enjoy today. It was launched from Vandenberg Air Force base; and the satellite launch team, including me, had to go to class a few weeks before launch to learn how to talk on the "net."

I realized a few years later that I was still using what I had learned operating on model railroads. Hey, it worked for launching satellites, why not for model railroad radio communications?

Below are some of the techniques that I learned from the "How to talk on the net" class, and other sources; plus my own observations that might be useful in improving radio communications.

1) **Recipient *first* and then *wait* for acknowledgement:**

The first thing we learned in our launch console class was when you are making a call you say to whom you want to speak to *first* and *then* identify yourself. For example, in my case, I was the Satellite Launch Director, SLD, calling the Launch Director, LD:

"LD, SLD." That's it.

In a model railroad case if I was the Dispatcher: "Train 501, Dispatch" (dispatch*er* if you prefer) or even "501, Dispatch."

Why? It's like the old phone pages; "Bill Dye, call 4556." They didn't say, "4556, Bill Dye." If you say, "Dispatch to Train 33" no one is really listening until they hear their train number. Besides, 99% of the time it's the *dispatcher* calling trains; rarely, if at all, train to train and infrequently the train calling the yard. Hearing "dispatch . . dispatch . . dispatch" over and over first just clutters the airwaves and they stop listening until they hear their number called; and, more often than not, more than once. So it may take a couple of calls before they "wake up" and realize they are being called.

After you "call" then *wait* for acknowledgement. I've heard something like, "Dispatch to Train 16 hold where you are and meet train 44 then continue to West Branch when 44 has cleared." . . . . crickets . . . . . crickets . . nothing, no response. Then after a few calls, "Sorry dispatch we are having locomotive difficulties and I didn't hear your transmission."

We were trained to call the name you want to talk to, identify yourself and then *wait* for acknowledgment. The idea is to have both parties knowing that they have each other's attention and are ready to communicate.

So it might be:

Dispatcher: "501, dispatch"
Train 501: "501"
And *then* the instructions begin.

2) **Repeat back the instructions:**

Another source of inspiration came from listening to air traffic controllers and commercial airline pilots for many hours while flying on company business. Airline pilots usually repeat back the instructions they heard; maybe not exactly like this but close:

"United 37 turn right to 244, reduce speed to 250 knots"
"Turning 244, reducing to 250; United 37"
Or, on the ground:
"American 127 take taxiway G, hold short of runway 36"
"Taxi G, hold short of 36, 127"

True that air traffic controllers don't usually adhere to item number 2, waiting for acknowledgement, but let's face it, they have many aircraft to direct and every second counts so the pilots are expected to be listening at all times. There may be times where that can occur even in our communications and will be discussed later.

The dispatcher needs to know if the engineer got the correct train orders. But many times I would hear:

Dispatcher: "Train 16 you are cleared to cross from main one to main two at Salmon River"
Engineer: "OK," or worse, no response.
Dispatcher: "16 did you copy?"
Engineer: "Yup"
Dispatcher (still waiting) . . . . and thinking: Well, what are you going to do? . . .

Might be a tad better if it went more like this:
Dispatcher: "Train 16 you are cleared to cross from main one to main two at Salmon River"
Train 16: "Main 2 at Salmon, 16"

3) **Interruptions:**

If you hear the dispatcher placing a call to a particular train and he's waiting for a response don't place a call. It might take a few seconds for the engineer to put down the cards or switch list and key his mike. And if it does happen, an interruption, I don't acknowledge the guy butting in. Wait your turn.

4) **OS-ing:**

Usually the complaint from dispatchers is that "no one OS-es so I don't know where they are." And, yes most of the time that is true. It would be nice if more road crews OS'd. On the other hand be careful what you wish for.

If the dispatcher is already having a conversation with an engineer and you are at an OS point, skip it and OS at the next station or say you are "thru Marion." It's more important to *not* interrupt the directing of, say, a rather involved meet just to OS. As a dispatcher I would not want to be bothered with OS-ing in that instance.

Usually what happens is that the OS'er ends up transmitting right on top of the train receiving orders from the dispatcher. And the radios begin squealing. Then you get into, "repeat the last transmission" and it goes downhill from there because two are transmitting at the same time (stepping on each other).

Also, if I'm the dispatcher during a period of heavy radio traffic and a crew OS-es during an "opening", what I do is just toggle the transmission button to acknowledge that I heard him. It's not necessary that the road crews be sure that the dispatcher got the message. They already have their train orders and are OS-ing for the dispatcher. This cuts down on the radio chatter. If the chatter is light, then I will acknowledge him verbally.

5) **Consistency:**

I've found that "newbees" get confused by the inconsistency of the experienced operators. It really helps if everyone is at least somewhat close to being consistent, no matter what system you use. A few examples:

a. Some guys use "Over" and some don't. To me it's not necessary. I think it's more important to establish a communication link (see #2) than to express when you are done talking. Usually the latter is obvious. But if *everyone* wants to say "over after each transmission, fine.
b. "10-4": Same as "over" but in this case, if you want to sound like Police and/or CBers fine but then have everyone do it. To me, it just doesn't seem appropriate.

6) **Yards:**

The dispatcher should have the courtesy to give the yard master a "heads up" about future incoming traffic and/or if there may be two or more trains descending on the yard. The yard master can then tell the dispatcher which has the highest priority as far as yard capacity. For example, a through freight is on its way. The dispatcher calls the

yardmaster and asks if he can take the freight into the yard or not. If no, then the dispatcher can hold the freight on a siding further up the line so as not to stack trains up at the yard limit.

When clearing a train to the yard, clear him to the yard limit (which should be marked on the layout) and have him contact the yardmaster for permission to enter the yard.

7) **Permission:**
Some folks believe the dispatcher is there only to track them . . . like the dispatcher's a human radar or something. For example: Train 44 is on my dispatcher's board awaiting departure from staging. I receive no request from 44 to move and I still think he's getting ready to go. Just as I'm about to call him to see what's the delay, I hear commotion and then, "Dispatcher, this is Train 44 I'm at Emeryville on my way to Ward's Gap and there's a train in my way."

I usually reply, "Really!" while thinking, 'And *that's* when I killed him your honor!' Then I try to clean up the mess after pointing out to him, politely, that he wasn't given permission to leave.

Or, sometimes I hear:

Train 111: Dispatcher I've left Pittsburgh and I'm on my way.
Dispatcher: Negative 111; hold your position
Train 111: Well I'm already at McKeesport.
Dispatcher: (silently) . . . sigh . . .

Permission must be granted by the dispatcher for any train movements within his jurisdiction. It's not a power thing; but if everyone agrees that the dispatcher is controlling the movement of all of the trains on the layout then everyone should recognize and adhere to that. Otherwise there *will* be cornfield meets, jam-ups, delays and grumbling.

8) **Surprises:** I have found it beneficial to try eliminating surprises. For example, a local is working a siding and is physically out of site of another oncoming train. To make matters worse the approaching train engineer has to leave sight of his train and go into another room where the local switching is going on—and where his train will allegedly come out. It is a good idea to tell the oncoming train there is traffic ahead—just in case; not to

mention telling the local that a train will be coming through—just in case he snuck onto the main.

So if local 807 is working a siding in Beaver Falls the message to the oncoming train, Train 45, might be:

Dispatcher: "Train 45, Dispatch"
Train 45: "45"
Dispatch: 45 you are clear to proceed to Youngstown, caution local 807 is working the siding at Beaver Falls"
Train 45: "Proceed to Youngstown, traffic at Beaver Falls, 45"
Dispatcher: "Local 807, Dispatch."
Local 807: "807"
Dispatch: 807, train 45 approaching on the main."
Local 807: 45 approaching, main is clear"

9) **Congestion:**

Some layout superintendents don't like congestion. Me, I'd rather be busy directing traffic; that's the challenge and the fun. Sure, you don't want so many trains on the layout that either the yard gets slammed or there aren't enough sidings to get past one another. But having a standard meet with two through freights is all part of railroading. It is also the reason there are passing sidings; use them.

One point about congestion: say, for example, there are three trains involved in a meet, one on the siding, one working another industrial siding in the same area and a train approaching on the main. The dispatcher can take license to omit his call sign. All three trains have already been in contact with the dispatcher within a few seconds of each other so the conversation might continue like this:

Dispatcher: "61, hold the siding at Evans City"
Train 61: "Holding in Evans city siding, 61"
Dispatcher: "44 you are cleared to proceed on the main through Evans City; caution, local 788 working that area."
Train 44: "Cleared to proceed, traffic ahead at Evans City, 44"
Dispatcher: "Local 788, when 44 is clear you have track and time at Evans City on the main."
Train 788: Track and time on the main after 44 is clear, 788"
Dispatcher: "61, when 44 is clear of the East siding turnout you are clear to proceed, caution; 788 working your area"
Train 61: "Clear to go when 44 is clear, I see the local and he's clear"

10) **Cooperation:**

A dispatcher is usually looking at some tape stripes on a magnetic board and moving magnetic numbers along trying to regulate the flow and prevent bottle necks. There are times when there might be a fair amount of congestion; perhaps a local working a siding near a Main 1/Main2 crossover or an interchange. It may not be entirely clear to the dispatcher as to what is blocked and what isn't. In these cases it's sometimes easier for the crews to work together to execute a pass.

For example, the dispatcher might say something like, "Local 16, train 44 is approaching your position. I would like you to work out the meet so train 44 can cross over to main 2." Usually, I've found in situations like that, the crews appreciate giving them the "goal" rather than telling them in great detail how to sharpen a pencil.

11) **Reasons:**

As an engineer on a road crew, I find myself really not caring *why* the dispatcher is asking me to do something—unless, of course it has a direct bearing on my train or my train orders. Instead of:

Dispatcher: "Train 67"
Train 67: "67"
Dispatcher: "Train 67, I have to hold you in Breakneck siding because there is a train in front of you that needs to get around a local freight that's occupying the passing siding. Once I'm done with that I can clear you to proceed."
Train 67: ". . . OK"

Maybe this:

Dispatcher: "Train 67"
Train 67: "67"
Dispatcher: "67, hold your position"
Train 67: "Holding in Breakneck siding, 67"

There are many radio communication styles and techniques and certainly these suggestions won't necessarily provide all the answers. But a few years ago I did notice on one layout we operate on, where the radio expertise was less than stellar, I started repeating back the instructions. Within a few op sessions I noticed the majority of the engineers were repeating back the instructions.

So, plant a seed! See what grows. Even if a few of the suggestions presented here are followed there is a good chance that radio communications on your layout will improve.

About the author:

Bill Dye began participating in operations sessions in the late 90's in the San Jose, CA area. After retiring from Lockheed Martin in 2007 he and his wife moved to Hendersonville, North Carolina where he actively operates on several layouts in the Western North Carolina area. He is in the process of building a large N scale layout that focuses on the Pittsburgh, PA area (B&O, P&LE). He has written and published, Climbing Into My Dream, An Aerospace Engineer's Journey (iUniverse or Amazon) that gives an often humorous, entertaining memoir of an aerospace engineer with more than three decades of experience including IKONOS, a commercial earth imaging satellite that changed the world.