

On Pedestrian Push Buttons: Small Equipment, Large Impact

Submitted by Gregory D. Bremser, Traffic Signal Technician I, Signal Service Inc., West Chester, Pennsylvania

Why Push Buttons?

Pedestrian push buttons and related equipment are certainly not the largest, most expensive or even the most interesting piece of equipment that a signal technician may encounter. Other issues with traffic signals will certainly grab more attention and perhaps rightfully so. However, I feel that the pedestrian detection system is just as important as any other part of the signal system.

Planners and engineers these days are very likely to talk about “livable” and “healthy” communities which involves pedestrian and bicycle friendly roads and intersections to encourage people to walk or bike. In May 2006, I attended a Pennsylvania Department of Transportation (PennDOT) bicycle and pedestrian facilities training session. The major topics were placement, timing and signage at intersections.

Engineers and planners can create the nicest and most pedestrian friendly intersections imaginable on paper with signs, countdown signals, ADA buttons and so forth. However, if the equipment is not installed or operating as it should, then it is useless. Traffic Signal Technicians and Traffic Signal Inspectors play a very important role to ensure that all of the intersection hardware and software is installed and operating as it should.

Issues with Pedestrian Traffic Control

Many of the problems involved with pedestrians at signalized intersections are beyond the scope and control of the Traffic Signal Technician. There are engineering, design and societal issues at play. Much has to do with the the average person’s lack of understanding regarding traffic signals and pedestrian buttons, but that would be another article for the Journal. Unfortunately, most people don’t know that one has to push the button and WAIT for the walk signal. Another issue is that many are accustomed to pre-timed pedestrian signals and don’t realize a button needs to be pressed. The many new signal installations feature pedestrian movements that are fully actuated.

Malfunctioning and Neglected Push Buttons



Push buttons without signs, even if functional, do not command the proper attention and respect from pedestrians.



Signage that presents a shabby appearance may give the impression that the push button is old and will not work.

Plainly put, push buttons that do not work are a liability in many ways. First, we have the potential human tragedy. For example, a pedestrian wishing to cross a busy road attempts to use a button that has not worked for several years. He/she realizes that the light is not working properly and darts out into traffic getting hit by a car. No matter the severity of the injury, the signal system has sadly failed the victim. Lawyers get involved and a legal battle follows. Another problem scenario is when vehicles that have a green are delayed due to pedestrians crossing against a light.

While walking near an intersection with pedestrian detectors, I have overheard pedestrians uttering remarks towards pushbuttons. One that sticks in my mind is a man talking to his wife, “Do these [push buttons] ever actually work?”. Another instance that left an impression was while I was repairing a button in a downtown area. A woman giving a walking tour came by said to me in a sarcastic way, “That button doesn’t work, does it?”. I asked her how she knew, and she then told me that she has been conducting walking tours of the area for awhile and it never has worked.

These experiences and others with the general public really show declining respect toward the traffic control system. Signal Technicians and Inspectors must strive to change this attitude by paying closer attention to the pedestrian systems at intersections.

Traffic Signal Preventive Maintenance and Inspection

We all know that preventive maintenance (PM) practices vary from agency to agency, due to different factors such as money and manpower. PennDOT publishes guidelines, known as Publication 191, for the frequency and methods of preventive maintenance. A good preventive maintenance checklist that is completed on sight will help a signal technician be sure to test the pedestrian buttons.

The proper and thorough inspection of new or modified intersections can also play an important part in the state of your pedestrian detection system. In my career, I have encountered intersections that have buttons that are not hooked up, improper signs and certain cases where signs and buttons are missing altogether.

General guidelines that an inspector or signal technician will want to pay close attention to:

- Are all the push buttons present and do they have the appropriate sign as shown in the permit or plans?
- Are buttons required to be audible and/or vibrotactile? Do they communicate the proper information as to the direction and street a pedestrian would be crossing?
- Make sure each button brings up the appropriate pedestrian phase and that there are no conflicts with protected turn movements or overlaps. For example, Phase 6 Pedestrian WALK comes up when phase 2+5 turn green.
- Make sure that any non-actuated pedestrian phases are programmed for Ped Recall.
- Are the buttons and signs installed in the proper physical orientation as shown in the plans? An example would be a button that is on the road side of a pole as opposed to the sidewalk side where it is shown in the plans.
- Check the push button signs for location, legibility and damage.
- Keep your eyes out for push buttons that "stick".

A Holistic Approach

The pedestrian detector system is an integral part of the larger whole, the

signalized intersection. We all know the expression that a team is only as good as its worst player. This thinking could be applied to traffic signals as well. Just as malfunctioned loops will cause needless delays, so too can malfunctioning push buttons. Unnecessary pedestrian recalls or pedestrians darting out in front of traffic with a green light, because the light will not change, are both scenarios that cause needless delays and frustration.

In conclusion

I hope that you were able to gain new ideas, methods or insights by reading this article. As traffic signal technicians or inspectors, it is impossible to solve every problem, but we should do our best. We can make a difference in the communities that we serve by making intersections safer for the walking public.

The focus of my article was more on theory of operations and stressing the importance of maintaining a properly operating pedestrian detection system. I thought that going into the trouble-

shooting or installation would distract from my main point.

Greg Bremser, 27, is a certified Level I Traffic Signal Technician. I have loved traffic lights since I can remember and always thought that working on signals was an awesome job.

I am employed by Signal Service Inc. a respected maintenance and sales contractor in southeastern Pennsylvania. I am responsible for the preventive maintenance and service calls of various municipalities in Montgomery and Bucks counties near Philadelphia. As a part of our preventive maintenance program, we check all of the pedestrian buttons and timings at an intersection.

My interest in writing an article on this topic is not only from my feelings about it as a Traffic Signal Technician but also as a regular citizen who likes to walk places around town. In a previous position, I took a special interest to fix and rehabilitate malfunctioned push buttons. They were located in a variety of places, some in more isolated locations and others were in downtowns with heavy foot traffic.

I take pleasure in reading the IMSA Journal and also enjoyed writing this article. I hope to have another article published in the future.



Sometimes your sources aren't what you think.

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