



Free Speech vs. Regulation of Professional Engineers

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Figure 1. Mats Järnlström, who wanted to express his ideas about traffic-signal timing

1. Introduction

In the United States, state licensing boards have the right to regulate the activities of persons engaged in the practice of engineering. Engineers in the United States also have a right—the right of free speech defined by the First Amendment to the Constitution. What happens when these two rights conflict? Precisely this question recently arose in the State of Oregon. What follows is the story of what happened when an overzealous licensing board tried to prevent a determined but unlicensed engineer from speaking publicly about an engineering issue related to public safety.

2. Powers of the Board

2.1 Oregon's Licensing Statutes for Engineers

Perhaps the best place to start is to examine the rights of the Oregon State Board of Examiners for Engineering and Land Surveying and the rights guaranteed by the First Amendment. Among the Board's powers are defining who can be called a "professional engineer"—the so-called "Title Laws." The 2017 version of the Oregon Revised Statutes states that

"Engineer," "professional engineer" or "registered professional engineer" means an individual who is registered in this state and holds a valid certificate to practice engineering in this state [1].

A takeaway from this wording is that "this definition treats the word 'engineer' as synonymous with 'professional engineer' and 'registered professional engineer' [2]. Anyone who describes himself as an "engineer" is *simultaneously claiming to be a "registered professional engineer."*

Another of the Board's powers is to decide who is engaged in "engineering practice"—the so-called "Practice Laws." The relevant statute states that

(1) "Practice of engineering" or "practice of professional engineering" means doing any of the following:

(a) Performing any professional service or creative work requiring engineering education, training and experience.

(b) Applying special knowledge of the mathematical, physical and engineering sciences to such professional services or creative work as consultation, investigation, testimony, evaluation, planning, design and services during construction, manufacture or fabrication for the purpose of ensuring compliance with specifications and design, in connection with any public or private utilities, structures, buildings, machines, equipment, processes, works or projects [3].

This definition of "practice of engineering" is extended by another part of the statute [4]:

(1) A person is practicing or offering to practice engineering if the person:

(a) By verbal claim, sign, advertisement, letterhead, card or in any other way implies that the person is or purports to be a registered professional engineer;

(b) Through the use of some other title implies that the person is an engineer or a registered professional engineer; or

(c) Purports to be able to perform, or who does perform, any service or work that is defined by Or. Rev. Stat. § 672.005 as the practice of engineering.

Because, as has already been observed, an individual calling himself an “engineer” is simultaneously claiming to be a “registered professional engineer,” the portions of the statutes just quoted imply *that the individual is necessarily practicing or offering to practice engineering*. Thus, the individual calling himself an “engineer” and practicing engineering is violating not one but two statutes, if he is not registered.

2.2 How the Board Has Used its Power

The Board has used its powers aggressively, as is shown by some eyebrow-raising examples [5]:

- **The Board fines a retiree for complaining about his flooded basement.** A retiree wrote the Board a letter, complaining that city engineers in his home town had caused water damage to his home. The Board said they couldn’t do anything about the water damage. But they did fine the retiree for calling himself a “PE” (the abbreviation for a Professional Engineer) *in his letter*. [Emphasis added.] He had been a licensed professional engineer in Maryland for decades, but he wasn’t licensed in Oregon. As if the flooded basement weren’t enough, the Board fined him \$350 and subjected him to years of government enforcement.
- **The Board fines a different retiree for helping his daughter.** Another retiree testified on his daughter’s behalf in a property dispute, and a complaint was filed against him with the Board. The Board determined that the retiree had said, “that he has been a mechanical engineer for over 40 years in court testimony, without stating that his registration was in retirement status” For that violation, the Board fined the retiree \$500.
- **The Board investigates a businesswoman based on a magazine article celebrating her achievements.** The “Oregon Woman 2015” edition of *Portland Monthly* included an article titled, “The incredible story of the engineer behind Portland’s newest bridge,” about a female immigrant and entrepreneur. Most readers probably found the article inspiring. The Board took a different view. It decided to open a law-enforcement case against the woman “because of the reference to [her] as an engineer in the on-line version of the story when in fact [she] is not a registered professional engineer.” Agency minutes suggest that a Board investigator even interrogated the journalist who wrote the article before the Board finally dropped the case.
- **The Board investigates a local candidate for how he’s described in a voter guide.** In 2014, the Board received a complaint against a candidate for Portland City Commissioner. A voter pamphlet described the candidate’s occupational background as

“environmental engineer.” The candidate [held] a B.S. in Environmental and Civil Engineering from Cornell, an M.S. from the MIT School of Civil Engineering, and membership in the American Society of Civil Engineers. He [was] not, however, an Oregon-licensed professional engineer, so the Board sprang into action. Nearly a year after receiving the complaint, the Board voted to warn the candidate against using the word “engineer” in “incorrect” ways.

- **The Board investigates a gubernatorial candidate for a political ad.** [In 2017], the Board voted to open an investigation into a candidate for the Republican gubernatorial primary based on a complaint that he misused the word “engineer” in one of his political ads. In the ad, the candidate said: “I’ll take a different approach. I’m an engineer and a problem solver.” The candidate earned a B.S. in Mechanical Engineering from Purdue University, worked as an engineer at Ford and Boeing, and [earned] a string of engineering-related awards. Again, though, he [was] not an Oregon-registered professional engineer, so the Board launched a government investigation against him.

What is striking about these examples is that in every case, no one was employed or under a contract to perform engineering work. All actions for which people were investigated by the Board involved offering opinions for free or claiming to be an “engineer” in the common meaning—not the Board meaning—of the word. In other states, disciplining an engineer for performing paid engineering work without a PE license is common, but disciplining an engineer without a PE license for communications occurring outside the context of an employment or contractual relationship has occurred rarely, if at all.

3. First Amendment Rights

3.1 Text of the Constitution

The First Amendment to the U.S. Constitution states:

Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances.

Although the Amendment states that “Congress shall make no law, ... the Supreme Court has long interpreted the [Free Speech] Clause to protect against government regulation of certain core areas of ‘protected’ speech ... while giving the Government greater leeway to regulate other types of speech, including a handful of limited categories that the Court has deemed largely *unprotected*. ... The Court generally identifies these categories as

- Obscenity
- Defamation
- Fraud
- Incitement
- Fighting words
- True threats
- Speech integral to criminal conduct
- Child pornography [6]

Some legal scholars may offer a slightly different list.

The Board has, in effect, claimed that an additional category of unprotected speech must be added to the list, namely, “describing oneself as an ‘engineer’ [2]” while not an Oregon registered professional engineer.

4. The Mats Järnlström Case



Figure 2. The intersection where Laurie Järnlström got a ticket

4.1 Mats Järnlström's Wife Receives a Red-Light Camera Citation.

In May 2013, Mats Järnlström's wife, Laurie, drove her Volkswagen through the intersection of Allen Boulevard and Lombard Avenue in Beaverton, Oregon. A surveillance camera at the intersection detected that she had not entered the intersection when the traffic light turned from yellow to red, and she later received a notice in the mail stating that she was being fined \$260 [2, 7]. His interest piqued by his wife's experience, Järnlström decided to study the engineering basis for traffic-signal timing. He "devoted approximately one-third of [his] time to the study and analysis of traffic light timing at intersections in the City of Beaverton" [8]. He concluded that the formula in current use did not take into account the additional time that would be needed were a driver to slow down and make a right turn at the intersection. His work, which included a 26-page paper [9] describing his ideas, generated interest among technically knowledgeable people. Little did he anticipate that speaking publically about traffic-signal timing would bring about a Federal court case pitting the right of free speech guaranteed by the First Amendment against the right of the Board to regulate the engineering profession.

4.2 Is Järnlström an Engineer?

In a declaration filed in support of a lawsuit [8], Järnlström described his background: "I was born, raised and educated in Sweden with an equivalent of a U.S. Bachelor's degree in Science in Electrical Engineering. I have excellent mathematical and scientific skills. I did an airplane-camera project for SAAB. Additionally, I was a Pro in Sweden before moving to the United States as an expert in motional feedback of powered (distance, velocity, and mechanical-acoustical witness in the United States Audio Products International self-employed and conducting new test and measurement maintain, upgrade, and Warfare Division that at

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