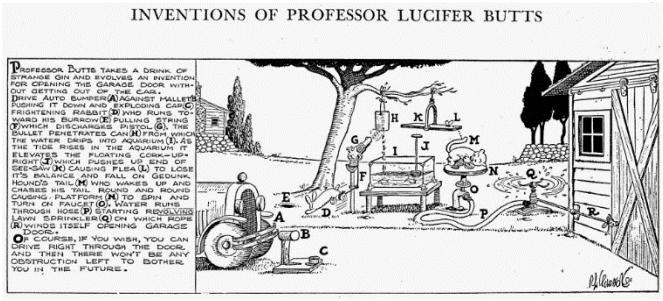
GARAGE DOOR AUTOMATION

By Roy Bardowell, CDDC

This article is a second part that follows my June 2020 article titled “The garage door industry”—In a nutshell. You can find Part One in the list in Roy’s Blog.

Garage Door automation has come a long way since its introduction in the early 19th century. Before 1950, most commercial doors had been lifted using a hand chain, but in the 1880’s after the invention of the electric motor automation began to get popular. The first units used an electric motor that drove a winch like unit. Today, commercial or industrial doors can be automated by many means; however, the electric motor is still the main element in the operator.



The first residential door operator consisted of a clever contraption that was connected to the car’s front bumper. This unit looked much like an articulating arm with a clamp on the end. When driving toward the garage door, the driver had to take care to stop exactly in the right place for the arm to reach out and grab the special bracket on the door. This arm mechanism could move a garage door open or pull a garage door down to close it. The main problem was you had to leave the garage door unlocked, so security was sacrificed for convenience. It was 40 years ago when I first saw a brochure on this operator, and wish to find it again. Even my numerous internet searches have shown nothing on this mechanical arm and you will have to imagine what it looked like from my description. I believe this mechanism was used for only a short period.

Eventually door operators were designed to look more like what we see today. A motor head and rail assembly that drives a carriage back and forth on the rail with a belt, cable, or chain.

Residential door operators are made in America, Europe and China, and are used all over the world. After residential, there are the commercial garage doors as described in Part 1. When it comes to commercial operator types, the variety is wide. Commercial garage doors can be

made in very large sizes, which in turn make them very heavy. The many different weights of commercial doors mean many operators capable of lifting the large doors. Where residential doors rarely exceed 350 pounds and can be lifted with a 1/3 horsepower motor, commercial doors can go into the thousands of pounds requiring a more powerful motor, such as ½, ¾, or 1.0 horsepower. In extreme cases, a 1.5, 2.0, 3.0, or 5.0 HP motors are employed.

Of course, we must remember all garage doors have torsion type springs that are used as counterweights to help move a door up and down. Most people underestimate the power in the garage door springs and firmly believe the motor does all the work. I estimate the torsion springs are responsible for 75% of the heavy lifting. The operator is only a replacement for a person's arm and permits remote operation.

In addition to the many types of commercial door operators there is a long list of options that can be included on your operator. Environments play a huge role in the options category. When a commercial door is in a wet environment you must ensure the electric operator can endure the moisture. Most operator manufacturers use the NEMA standards to equip the operator with the correct protection. In Europe they use IP standards. For example, a NEMA 4 is equivalent to an IP 65 standard. I won't go to deep into this because it would take 25 more pages. NEMA definitions start with NEMA 1 (general purpose applications) and go right up to NEMA 13. An operator used in a car wash would need a NEMA 4 option.

This option can easily double the cost for the right machine, but you have no choice. Water and electricity don't mix. NEMA 7 & 9 standards address hazardous locations such as gasoline refineries or grain elevators used in rail stations where grain is poured into box cars.

It just so happens that grain dust is highly flammable, so a commercial door operator with a NEMA 7 option must be employed. Once again, there is no choice

even though a NEMA 7 or 9 triples the operator price. You must always do the right thing, which is to apply the proper machine to prevent a catastrophe.

The current big trend in door operators is permitting access from your smart phone. In the future nearly everything that can be activated and turned on will happen with your cellphone.

Roy Bardowell, CDDC, served as Operations Manager at Guardian Access & Door Hardware until 2014. He has been in the door and operator industry since 1973 and is known as one of the industry's most experienced operator technicians and trainers. Roy received the IDEA Commitment to Excellence award in 2008 and IDA's Jerry R. Reynolds Volunteer Service Award in 2017. Contact him at roythedoorman@gmail.com