



History of the Button

Bill DeRouchey

Push Click Touch Press

Notes

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Punk rock anthems played on Fender Telecasters are however permissible.

Thank you for taking time to read this draft. This book is clearly a work in progress. All feedback is welcome and I am grateful for it, however.. I'm seeking feedback primarily on the concept, the structure, the flow, the content. Ignore the small stuff, when content becomes text, fonts, spacing, that level of design. That comes later. Aim for the big stuff.

Some notes:

- The book will be 6" x 9". Printing in full color throughout is the only option.
- The typography is only temporary, but the spacing of headings is close.
- The images will look weird. Ignore that. I only took photos of them, screengrabbed, stole but only for now, and sorta placed them. Later I'll rent a high-res scanner and do them proper, if I choose to use them. Off is ok.
- The order of the images won't matter that much right now either. Don't worry if the image doesn't match the text next to it. They're close enough.
- That being said, which images do you enjoy the most? The least?
- Don't worry about phrasing or anything at the sentence level. Mostly trying to fill things in for now. But what grabs your eye?
- If you know anywhere I've cited things wrong, let me know. I'm far more into conveying truth than I am protecting my ego.

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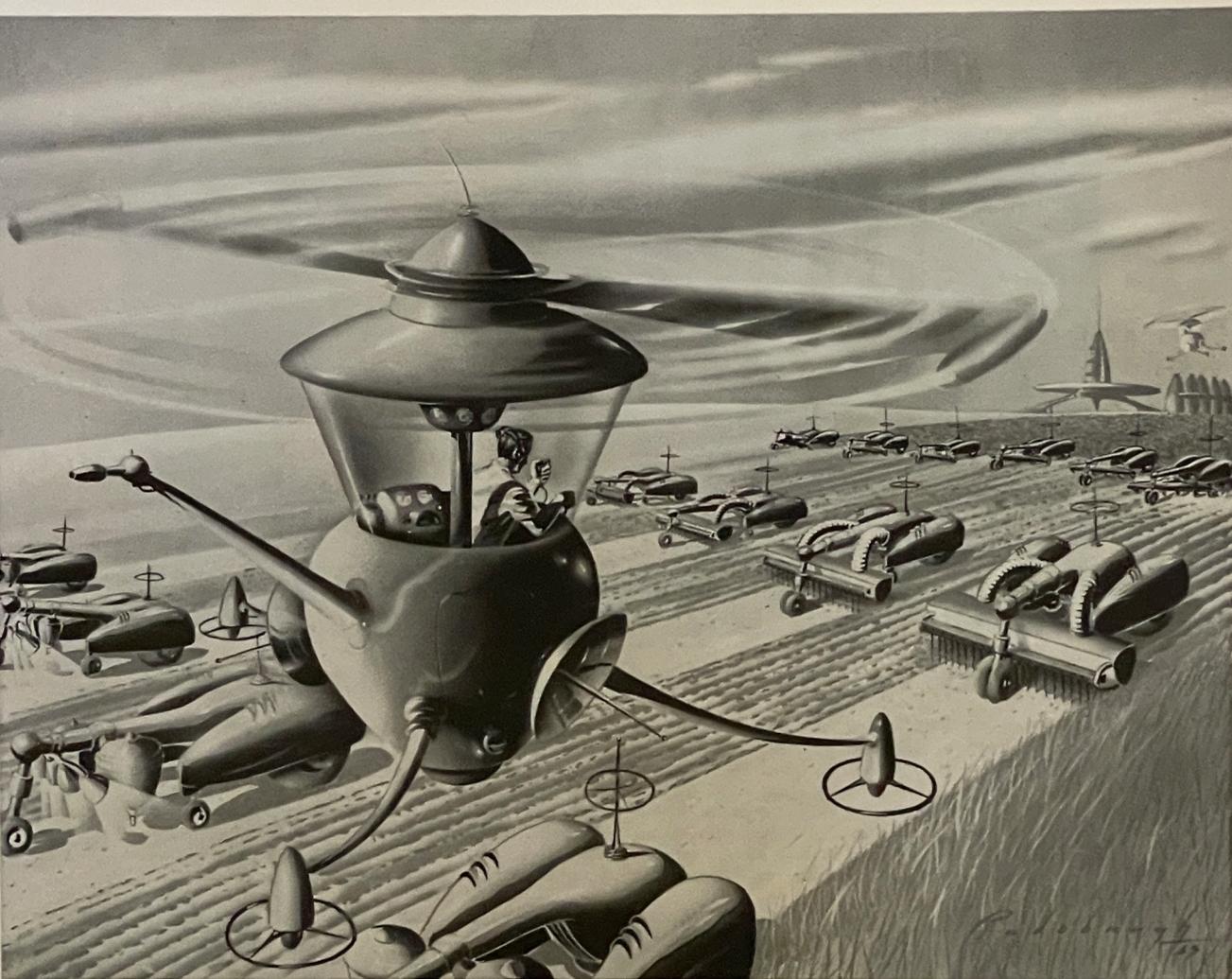
Hello

This book chronicles the history of the button, from before Kodak promoted buttons centrally in their cameras, before flashlights adopted them and changed lighting, all the way up to today, more or less. There is no way we'll cover every tiny thing, but we'll cover a bunch.

Note that this is about pushbuttons in particular, and not clothing buttons. The latter are quite important, yet they comprise a different book altogether. Although it is clearly straightforward that *pushbuttons* are clearly derived from clothing *buttons* with *push* describing the difference. A *button* is at its core a finger-sized circle that when you push it, something happens. But it's the range of *something* that makes all the difference. This book is about that difference.

Buttons changed everything.

Let's back up from today. Here we sit in 2026. The grand world wide web is where we communicate today. It wasn't this way 40 years ago, and 40 years from now it will likely be different, but currently we have the web. But in 40 years when I'm likely but not necessarily gone, whenever we want to do something, whenever we choose to do something and want to take action on it, there will be something that we need to push/click/touch/blink/think/whatever, and given how things have progressed, that thing will likely be called a button. But for today in 2026,



When "push-button" farm machines are a reality...

National Oil Seals will protect their performance

Some day soon, in the air-conditioned comfort of his helicopter "control tower," the farmer will flip a switch and send teams of ingenious machines out to till his fields. In a single integrated operation, the robot gangs will pulverize, condition and furrow the soil, drill seed and fertilize, perhaps implant soluble water capsules and transmit a pest-killing electronic "bath."

Such machines will represent a superb achievement in engineering. Yet, like today's equipment, performance will still depend on oil seals and O-Rings. Oil seals

are steel-and-synthetic rubber or steel-and-leather parts that keep lubricant in and dirt and water out of assemblies. O-Rings are synthetic rubber diameters—pressure seals used in hydraulic and pneumatic assemblies.

National pioneered oil seals and O-Rings, and today is a leader in this field. Perhaps precision National Oil Seals and O-Rings can improve your product's performance, lengthen its life, or make it easier to assemble or service. Our long experience is at your disposal.



Original equipment on cars, trucks, buses, tractors, agricultural and earth-moving equipment, railway rolling stock, machinery and appliances.

NATIONAL MOTOR BEARING CO., INC.

General Offices: Redwood City, California. Sales Offices: Chicago, Cleveland, Dallas, Detroit, Downey (Los Angeles County), Milwaukee, Newark, Van Wert, Wichita. Plants: Redwood City, Downey and Long Beach, California; Van Wert, Ohio. Products: Oil, Fluid and Grease Seals, O-Rings, Airtron® Ducts, Silicone parts, Shims.

*T. M. Reg.

2738

let's definitely call it a button.

How I wrote this

Why I wrote this book is a decent story, although how is far more interesting.

I struggled for 15-20 years for how to structure this book, which, prior to you holding this in your hand, was a near impossibility for me to choose. How could I possibly cover the entire history of the button within [x] pages? Going chronically by topic seemed interesting, but in the end I didn't think it would be. But taking it with themes did seem interesting.

How that journey is made, from confusing adults to becoming a language for little children, will be the subject of this book. Starting in the times when making food was nearly everybody's responsibility, all the way to today. Well, maybe we'll stop a few decades earlier.

This book will translate one aspect of this story from the old days to the current days by tracking the story of buttons, from their beginning to their widespread existence throughout the world. It seems like almost an impossible thing these days, but buttons were not always completely obvious to use. We needed to learn them bit by bit over the years. This book will cover the bit by bit.

However, this book will not be exhaustive. There is no way that I can do that, given the time it would take, and my attention span. Instead this is going to be a fairly fun romp through the course of history, bringing together advertisements that push pushbuttons in some way, with text about how buttons have grown and expanded in their reach.

We all know that the evolution of technology over the last 100+ years radically transformed how we live our daily lives. Computers, phones, airplanes, cars, internet, medicine, stainless steel and so on have formed the basis of a daily life that somebody from 1880 would find confusing. What are the little rectangles that people are staring at while walking around? Where are the candles? Where are the horses? They of course weren't dumber or less evolved; they just grew up with a smaller range of technology.

World's Greatest Cooking Combination!
Hotpoint Pushbutton
 Cooking
With Amazing Instant Heat Calrod Units!



Packed With Features Everyone Wants, New 1952 Hotpoint Ranges Give You Greater Convenience, Better Baking and Cleaner Cooking Than Ever!

YOU GET more cooking speed—more flavorful meals—more ease, efficiency and kitchen economy with Hotpoint's exclusive combination of Pushbutton Cooking and Calrod® instant heat!

● ● **What's more, you enjoy** better baking, cleaner cooking and uniform results every time. At the turn of a dial, the

touch of a button, this new Hotpoint range cooks your entire dinner to perfection, automatically—just the way you like it. And Hotpoint's amazing new Calrod units have a pan-hugging construction that puts the heat into the food you're cooking instead of into the kitchen.

● ● **With a Hotpoint Electric Range,** you enjoy such thrilling features as pushbutton controls, Talking Colors, extra large oven, deep-well cooker, automatic timer and many other advantages which Hotpoint, the pioneer, has engineered into this most beautiful and complete of all ranges.

● ● **See — compare** the new Hotpoint Pushbutton Electric Range at your nearest dealer's*. There's a model for every budget and easy terms if you desire. Hotpoint Inc. (A General Electric Affiliate), 5600 West Taylor St., Chicago 44, Illinois.



*See classified phone directory for dealers' names.

Everybody's Pointing To
Hotpoint
 Quality Appliances

Similarly, if we were thrown forward 100 years, we would not be able to immediately navigate a world where people are communicating neuropathically via implants, adjusting their DNA automatically based on the gravity well of their next exospace job, or autofacturing a fork from the hunk of goo in their pocket. We could adjust and figure it out, but on day one, we would have no mental framework to comprehend that future world.

Instead, this book will focus on the more subtle evolution over the last century: how we conceive, understand, and interact within the world around us.

This is the story of how we as humans have radically changed our concept of the world over the last century.

How many times do you tap a button in a single day? A thousand? Ten thousand? Think about your phone, texting, searching, buying, browsing, gaming, writing, reading, listening. Think about your computer, typing, searching, random browsing, filling in forms, working. Your car, your microwave, your stove. Your washing machine. And so on and so on. We interact deeply with the objects that we surround ourselves with. They guide us.

But this wasn't true 100 years ago. The world was simpler. You might pull a rope, push a broom, lift a bottle, pull a lever. Each object really had only one function. Simpler life. We guided them.

So how did we get from there to here? How did we learn along the way to interact with an increasingly complex world? How did we make it? What drove us to do that?

Design behind buttons

The history of the button is the history of design. Although it's likely not "design" as you're thinking about it, but it is. It's problem solving through products.

Granted, it's in that world of capitalism, where the question is, how can we better sell this product to people? What would set our product apart from the others? Or, how can we catch up to them?

The history of the button is the history of technology. It's the history of how will we pull off this thing that the design group invented?

PUSH BUTTON GIANTS

The ingenuity of American industry has combined the functions of numerous machine tools into coordinated giants. Push buttons control their complex mechanisms that deliver completely machined units as regularly as clockwork.

Such speed and precision call for quality lubricants. Texaco supplies them—through more than 2300 wholesale supply points in the U. S. And—to insure the utmost efficiency and economy in the use of its lubricants, Texaco's specialized engineering service is on the alert for all industry.



THE TEXAS COMPANY

—in all
48 States



The history of the button is the history of how we all interact with products. In the end, it's all about the history of how we as people understand the thing that we are meant to use. Is it simple enough to wear owner's manuals are no longer needed?

Interaction design is a difficult thing to define because it encompasses a lot of fields. It can be the design of a software application or the design of a website. It can be the design of a physical product, especially one with controls, an interface.

The common thread is of course the design of how people interact with things. In particular, things that can be controlled with some form of interface. And the common thread in all these types of things is the button.

Physical products have all kinds of controls: buttons, knobs, toggle switches, sliders, wheels (really big knobs), levers. Onscreen products also have their own controls: buttons, checkboxes, radio buttons, text fields, links, sliders and more. But only the button really transcends both the physical and onscreen worlds.

Industrial design is purely physical. Web and software design are purely digital. But designing digital products crosses this boundary, requiring the skills of both disciplines. Responsibilities intersect at the button. The industrial designer is responsible for the form, shape, look, and feel of the product. The interaction designer (or someone with one of the many related titles) is responsible for how it works and what happens onscreen. But they overlap at the buttons. They must collaborate on how many buttons (or other controls) will exist and where they are placed on the product. The interaction designer then continues with what the buttons do. The industrial designer continues with their look and feel.

But the button concerns everybody and therefore lies right at the heart of all the disciplines that comprise interaction design. What else do washing machines and websites have in common? [sigh, now wifi]

The Framework

I have a framework for thinking about the history of the button. A proper history needs a story, a narrative. A tale that steps above the facts and dates and puts the tidbits in context. The history of the button is no different. Let's make the button a character and bring life to this little thing we push to make something happen.

These photographs show how telegrams were sent (left) and how they are now sent (below) at Philadelphia. The new era of streamlined push-button telegraphy is here. For, as these pictures show, instead of typing a telegram the switching clerk now merely pushes a button and—presto—the telegram is at its destination.



PUSH-BUTTON TELEGRAPHY

A NEW ERA OF FASTER, FINER

WESTERN UNION SERVICE

Another dramatic development in ultramodern, high-speed communications! Now, in a flash, push buttons automatically speed telegrams to their destinations.

THE new \$2,000,000 push-button system at Philadelphia transmits telegrams to their destinations with far greater speed and efficiency. It has ultimate capacity three times that of the old system. It is the largest unit in a new nation-wide network of Western Union switching centers now being installed.

Thus, Western Union achieves another

dramatic milestone in the never-ending advance of telegraph service... a service that now transmits more than a half-million business and social telegrams every day. For people everywhere know that a telegram is convenient, inexpensive and now even swifter than ever. They know that Western Union will get their messages there on time—just as it has been doing for nearly 100 years.

THE PERFECT "PERSONAL" TOUCH



Whatever the occasion—engagement, birthday, anniversary, holiday—a telegram is always thoughtful, always appreciated. To send one, drop into your nearby Western Union office or telephone Western Union from home or from any phone booth.

"Isn't there someone who would like to hear from you today?"



WESTERN UNION TELEGRAM

LA122 12=
WILLIAM PATTEN=
42-60 KETCHAM ST ELMHURST NY=

Here is the table of contents.

Before the button. Humans create devices that can be pushed, but they're all mechanical. Time is introduced into daily lives, teaching people that they needed to save it. Musical instruments such as pianos and various horns. Keys. Telegraphs. Guns. Even the first Kodak cameras.

Buttons are novelty. Electricity first becomes available in homes. Batteries are invented. Electric devices are simple, on or off. The electromechanical switch is born. Doorbells, call buttons, light switches, flashlights. Buttons enter people's daily lives.

Buttons are convenient. Buttons are added to devices to create shortcuts to work. Steps are reduced. Radio presets arrive, introducing the concept of saving, favorites, and personalizing the technology.

Buttons present challenges. Nuclear bombs ended World War II and triggered worldwide fear. Nuclear war was personified by someone with their "finger on the button." Fear ruled because war was now push button easy.

Buttons promise leisure. During the Depression, the contemporary view of the future imagined a world where technology removes the drudge from everyday work, increasing our leisure. The phrase "push button" is used widespread in advertising to mean "easy to use."

Buttons provide leisure. After the war, advancements in electronics led to adding buttons on devices, making them easier to use. The promise of the 1930s began to be realized. Appliances, TV remote controls, and much more used buttons to increase leisure. Remote controls included the first buttons that controlled objects from a distance. Buttons are used widely to automate manufacturing.

Buttons are everywhere. Computers. Arcades. Home video games. Calculators. Watches. Microwaves. ATMs. Washing machines. Dishwashers. And so on...

Buttons are metaphor. The graphical user interface arrives. The Macintosh introduces the mouse and buttons onscreen into popular culture. We learn about virtual buttons through software. Anybody can now use a computer.

Buttons are anything. The Web arrives. The button changes form from rectangles, squares, and circles into nearly anything. Text can be a button.

A Push-Button Meal



Stokely-Van Camp, Inc., Indianapolis, and Stokely-Van Camp of Canada, Limited.

Irregular shapes can be buttons. Anything onscreen can be actionable.

Buttons are culture. Cell phones. Blackberries. Video game controllers. Car keys. Texting. The thumb generation comes of age.

Buttons are concept. New technologies allow the button to dissolve into the surface. We can touch the surface to activate something instead of needing a distinct button. We tap object to object to make connections. Gesture technology becomes common. Our relationship with technology evolves to where we instinctually connect with the object itself, touching anywhere, instead of looking for our friend, the button.

But wait, there's more.

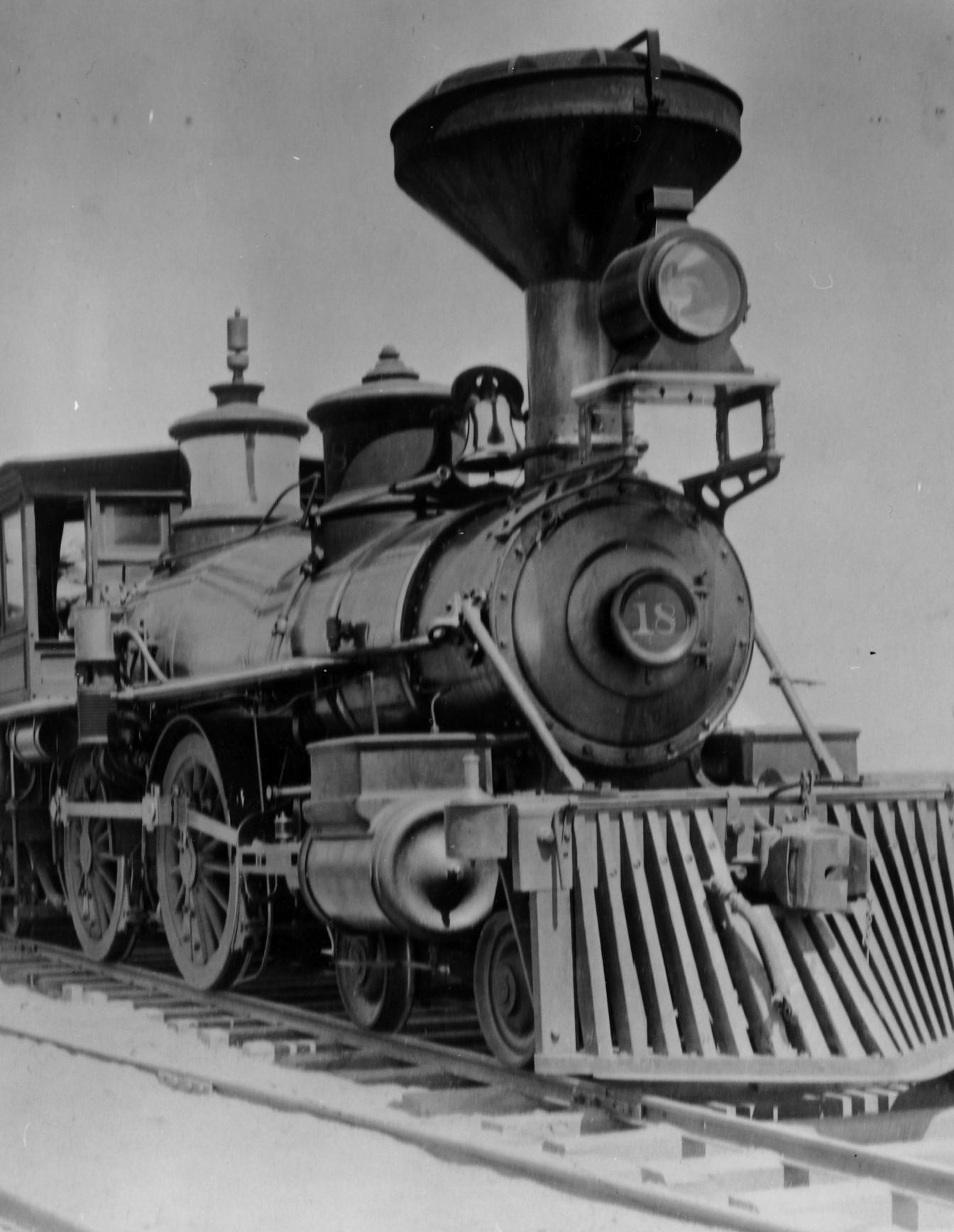
This book will also include mini interstitial chapters that focus more on *about buttons* rather than present them within a point in time. Examples...

What is a button? will cover the question that I hear most... what was the first button? In short, adding electricity to pushing things is what changed everything.

Crossing the chasm will cover the role that buttons play within the classic chasm diagram that somehow shows which people are where concerning technology.

Hidden function behind buttons will cover its various aspects that we all assume when we push things. Context, location, reaction, action, and feedback are examples of the hidden things that go behind when designing buttons.

Any more?



Before the Button

We must first back up to just before buttons made their discovery upon the Earth.

When thinking about the history of the button, it's important to think about the world just prior to it. What did buttons replace, or simply add to our lives? What was the world they were falling into? Since buttons started becoming bigtime in the 1890s, let's back up forty years or so to consider what was happening at the time. Let's chat about trains, telegraphs, and elevators.

Trains & Telegraphs

Every good book written about buttons should back up to the 1870s to talk about trains and telegraphs. But first, try this thought experiment.

It's 1855 and you're working on a farm in western Pennsylvania. You always awake before dawn. You begin the day by letting the cows and chickens out from the barn to graze in the fields. It's a good day.

Today your main task is to repair the fences on the other side of the western hill. You gather your wire-bending tools and hammer and whatnot, saddle up your favorite horse Sparky, pack a lunch, and head out for the fifteen minute ride to the far side of your property. During the ride, you reflect back on the letter you just received from your sister in New York City. She wrote of the exciting news that she's pregnant with her fourth child. You hope to be able to visit her next

spring but the ride there is [x] days and you'd need to be gone for [x] weeks away from the farm. It's been seven years since you've seen her and her family. You've only even met just one of her kids.

As you're riding, a shiny hole appears in the sky ahead of you. An object falls from the skyhole onto the grass about twenty feet ahead. You approach it warily. It's black on one side, the other appears to be glass. You see your reflection in it. There are various circles and holes on all the edges. The other side is shiny and metallic. It appears to be a dull silver. There is one big word on the back side. You don't read very well but you do know letters. It says "iPhone". That means nothing to you. You don't even know what a "phone" is.

A symbol on the back looks like an apple, but with a bite taken out of it. You picture the Garden of Eden and the snake of Satan convincing Eve to bite the apple against the wishes of God. You wonder what this object of Satan is...

Fast forward 200 years or so when your 18-month old great-grand daughter picks up an iPhone, turns it on, swipes the screens, taps one icon and begins playing [name of game]. Total time: about three seconds.

(section)

Trains and telegraphs had extremely similar trajectories. Trains moved people and things, faster. Telegraphs moved information, faster. Both were invented in labs in roughly the 1820s and 1830s, yet both didn't explode within the US until the 1870s. Both served as the hub of information where even telegraphs were initially housed within train stations with telegraph wires running along train tracks. Both of these technologies paved the way for buttons to exist, but not from a technical standpoint. They both added to people's mindsets and how they think about the world.

Telegraphs brought the news from a distance faster, and trains took you to those places faster. Both of them shrank our world, making places like St. Louis or Houston or even Paris part of our current world. They were no longer these myths from afar. They became reality.

Telegraphs gave people their first information from nowhere near them, tens, hundreds, or even thousands of miles away. Trains took people to where they've



rarely imagined, hundreds of miles away.

Imagine that you're 50 years old in 1858, fairly old for the time. In the local railway station, a telegraph is set up. You give the man the message and he taps taps the message in. You have no idea how he does it. It's just too weird.

Now imagine that you're an 8 year-old standing behind the 50 year-old and the technology is new, yet so are you. This is different. This is the new thing in the world and you're the perfect age to take advantage of it. Likely not currently, but for life yes.

You learn everything about telegraphs. But the key thing that you're learning is how to tap the telegraph key, Or, the button.

Tap tap tap tap, tap, tap taaap tap tap, tap taaap tap tap, taaap taaap taaap is "hello" in Morse Code. Not as easy as it sounds, but considering that the world had zero ways to communicate across distances, this was huge.

(section)

For thousands of years heading back into antiquity, our best option for traveling distances by land was by horse. Whether it was wartime, sending mail, or simply traveling from town to town, the horse was our best friend. But this also meant that our fastest travel speed possible was the speed of a horse. Long-distance travel depended on the health of the horse, how much weight it was hauling, and so on. At best, we could travel about 20-30 miles per day via horse.

This limitation of land speed (and expense) naturally dictated how far we traveled, which in turn dictated how big of a world we were aware of. We could only travel so many miles a day and only did so in extreme circumstances. Naturally, towns grew up about a horse day apart (true?). We rarely ventured far from our families and homes. We had a simpler life and our everyday sense of the world had a small radius. News from distant places took days or weeks to spread via chains of horse travel.

Trains and telegraphs gave us the basis with which to create a standard reality, at least starting with Europe and the US. The ability to travel across far distances

gave us the standardization of time zones. Longitude. Big train stations within every large town, Washington to Florida, California to Maine.

Then our world exploded 150 years ago when the introduction of locomotives in the 1870s.

Even though locomotives were invented in the 1820s, traveling by train didn't become feasible for everyday people until the 1870s, when railroads for both passenger and freight purposes spread like wildfire across the country.

In 1869, railroad networks in the eastern and western halves of the United States were finally connected (in Utah), leading to a boom of train travel. Travel from NY to SF went from months by stagecoach to a week by train, at about 20% of the cost.

Between 18xx and 18xx, xx000 miles of track grew like weeds across the United States. We could travel further in a day, or for several days. Goods moved further. News came faster. We moved to new locations far more often. Our mental radius expanded.

For someone born in 1855, trains likely weren't part of their daily awareness until they were around 15. (true?) They knew the world when travel was by foot or horse, and then they experienced the transformation to a world when travel was by locomotive. By the time they were 40 in 1895, they could travel xxx miles in a day. But for their child born in 1875, this was the way the world had always been.

Trains compressed our sense of distance. Fifty miles transformed from an adventure to an errand. For thousands of years, our everyday sense of the world was small. After locomotives, our everyday sense of the world became big.

Trains compressed distance. Trains compressed time.

This is a pattern that we're going to run into repeatedly in this book. Trains, buttons, radio, computers, the Internet, artificial intelligence, quantum computing, and space travel. Each one of them significantly changed, or will change, reality as we know it.

Elevators



Life Magazine
September 15, 1947

<https://elevatorworld.com/article/the-history-of-operatorless-elevators-push-button-control-1886-1895/>

“Although push button switches existed prior to 1880, this date is typically identified as marking the introduction of the electric push button.”

“John H. Clark. In August 1886, Clark filed a patent application with a deceptively clear title: “Electric Elevator.” UP and DOWN

“In November 1887, New York engineer Charles E. Ongley filed three related patent applications for an “electrically-controlled elevator.”

—
(This section is fiction, a short story.)

The year is 1920. Gladys is living in downtown Chicago, near where Weeghman Park became Cubs Park. Next year, William Wrigley Jr would buy the team. In 1927, he'd change the field name to name it after himself. [Wrigley doesn't make sense, likely 30-45 minutes away from Marshall Field's]

Gladys was born in 1898. She was born in Iowa but came to Chicago with her family after the great war in 1918. Parents? At 22 years old, her life was getting started, but seemingly starting to slip away a bit.

Gladys works at Marshall Field's where she operates an elevator. She lucked into the job and it does feel like a step up. She attended an eight week course just in order to work here. It's important stuff where they learned what clothes to wear. How to stay skinny. What their makeup should look like. And how to announce out the various sales that were happening in the building. Answering customer questions? Of course.

Gladys was thought of well for having the job.

Part of the course was where they learned about how the elevator operates, Gladys learned about the building's elevator buttons. Thirteen stories. Fourteen? 76 elevators?!?!

[“Give the lady what she wants.”]

[gathering place for women]

[first store that included a tea room]

Bobby got in Elevator 23 where Gladys worked. He eyed the 13 buttons and asked her, “what do those do?” Bobby was a 6yo kid.

Gladys: “What a smart question! Each button represents one floor in the building. The bottom floor is number 1, the top floor is number 13.”

[had the job, went on strike, afterwards her job was different]

[no “colored” people]

[Dorothy Lamour worked in an elevator in Chicago in 1930]

[[[In order to do this job, female elevator operators, called elevator girls, had to attend "charm school." The elevator operators for Marshall Field & Co. in Chicago, were required to attend an 8-week long course, where they learned how to dress, do their makeup, lose weight, clearly announce key merchandise areas, and answer customer questions. As a result, sales increased, and operators were "happier and more beautiful.”]]]

[[[Not only in Chicago, but across the United States, maintaining a polished appearance was seen as important to the success of elevator girls. In an office building in New York, female elevator operators had to maintain their dyed red hair; and wear white uniforms, which included cosmetics and silk stockings.]]]

[chime, bell, buzzer]

The elevator button is another example of what may be the first buttons people saw.

<https://drloihjournal.blogspot.com/2019/05/the-elevator-girls-at-marshall-field-company-1947.html>

By 1920, company- controlled factories in the US, China, Philippines, produced everything from shirts, pajamas, underwear , and neckties, to tablecloths, towels, curtains, lamps, window shades, rugs, and linoleum.

In April 1920, 17,000 elevator operators went on strike in [New York City](#).^[7] Roughly 900 of these strikers were women.^[7] The strike was due to operators seeing wage cuts of 10–15%; and, nightmen working 84 hours a week, with no days off.^[8] As a result, they asked for wage increases of 25–30%, an eight-hour workday, and for the union to be recognized.^[8]

With no one to operate the elevators, tenants and firemen began running the elevators themselves.^[7] The New York Times reported several people were killed in elevator accidents that were not being controlled by trained operators.^[9] Most people were too fearful to operate the elevators themselves, leaving them to walk up and down flights of stairs in the tall New York buildings.

In response to the strikes, W.T. Ropes, Chairman of the Employees Committee of the Building Managers and Owners' Association, said, “The trouble is that these men have picked easy jobs and are asking for wages to which they are not entitled by their service.”^[7] Ropes also said that women would

replace the men on strike, and that a new operator could be trained within several hours.^[7]

Within a week, the momentum of the strike had dwindled. Over 200 agreements were made between operators and building managers, which resulted in over 5,000 elevator operators returning to work.^[10]

In 1925, the union organized another strike of the elevator operators, and called on others like firemen, engineers, and maintenance employees to join.^[8]

[wikipedia]

What is a Button?

Before we get too far we need to ask, what is a button? Because invariably, whenever I mention to people that I'm writing the history of the button, they ask, "what's the first button?" Good question to ask, hard question to answer. Asking "what is the first button?" is really two questions: "what *is* a button?" and then "which one was *the first*?" This is not as easy as it seems.

Buttons have a beginning. Everything does, but we need a moment to mark the beginning of this book. Otherwise we're going back to old movies based in Egypt where they press that one spot on the big massive face on the underground wall and then bad stuff happens. Yes, that is a button, but it's not a *button*.

Adding electricity gives us a clean moment to start from.

Musical instruments such as pianos, accordions, trumpets, saxophones and more all have things that you push down to change the tone. However, they are usually called *keys*. Not many people would conflate *buttons* with *keys*.

Pre-electric buttons are purely mechanical. When you press it, things happen underneath, a catch releases, a catch catches, arms move, gears turn, and then a combination of physical motions occur, no matter how small, until the final result happens.

[simple example, another, and another]

But when you add electricity into the mix, anything can happen. Maybe not even in front of you. Maybe multiple places. Now with pocket phones, buttons even disappear and nobody cares. It's normal.

Electricity changed everything.

A button is essentially a *switch*. The simplest earliest buttons closed an electrical circuit. Press on the button. Metal contacts on the backside connect two wires, which in turn feeds power to something in order for the power to run in a circle. Doorbells ding dong inside the home. Light switches turn lights on and off. Flashlights do this portably.

But here is the key that sets everything in motion. When every motion prior produced a scaled output, buttons for the first time let us perform an action (push a button) that had no visible relationship to the result. A light goes on. A sound is dinged. A bank account is opened. A pizza is delivered. All those results have no physical relationship with your finger moving forward.

Buttons separated the physical motion of pushing from the actual result afterwards. You could hold your finger and move it forward a quarter inch and it might ring a doorbell, start a microwave, or order a pizza online.

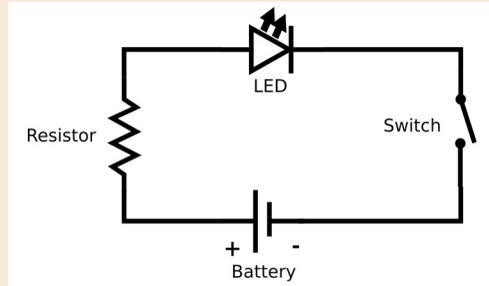
Buttons abstracted motion. Buttons abstracted intent. This is where it all began.

We could take the route of word origins. Button is ultimately a French word, derived from bouton or "small round thing." [really? check it]

There are clearly buttons on all of our tops, shirts, pants, dresses, and so on. Small round (although not always) things that (usually) fit into a buttonhole in order to bind two pieces of fabric together. Buttons as we mean in this book's title isn't this type of button, although their connection is obvious.

We know clearly what things are button. Car radio presets are buttons. Start and stop buttons.

Consider flashlights (on page [x]). They may have the simplest wiring diagram of all buttons. A battery (or plural) provides power, which leads to the pushbutton switch, which then leads to the lightbulb. [The resistor in this thing, is it necessary?]



And naturally, nearly everyone asks me when they learn about this book, asks the question “what was the first button?” The answer, as best as I can surmise, is... it depends.

What was the first button that people could carry around with them? Essentially, which was the first portable button? Flashlights in 1898.

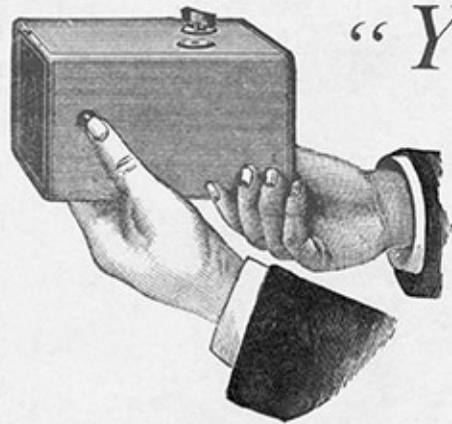
Or, what was the first button that people maybe saw out there in the world, in particular within cities? Elevator buttons.

Random stuff to delete

John Holmes, 1884, invented the quick disconnect break switch, but it's not a push button switch

Granville Woods, 1890, invented pushbutton dimmer switch. Found a venue within theaters

The Kodak Camera



*“You press the button,
we do the rest.”*

OR YOU CAN DO IT YOURSELF.

The only camera that anybody
can use without instructions. As
convenient to carry as an ordinary
field glass World-wide success.

The Kodak is for sale by all Photo stock dealers.

Send for the Primer, free.

The Eastman Dry Plate & Film Co.

Price, \$25.00 — Loaded for 100 Pictures.

ROCHESTER, N. Y.

Re-loading, \$2.00.

Buttons are Novelty

(Clever text to open the chapter)

Cameras and Kodak

1887.

Another angle we can take is to move away from the machine at hand. Buttons so far have been described in terms of what the thing does. How it behaves. Description of its components. But now consider what George Eastman invented, what Kodak spread: what the button “is.”

You press the button; we do the rest.

One of the most famous advertising slogans across all time incorporates and even initiates “button” as a means to move things into the future. Buttons becomes the reason for the product to exist. They became the identity of the product. This is beginning of button = easy.

George Eastman was a smart man. Living up in Rochester, New York (confirm) in 1887 (confirm), Eastman needed a vacation. He was packing up all his necessary things for a trip when a friend of his [who?] suggested that he bring along a camera. Interesting idea. This was when cameras were big lugs of things. Gotta carry that big heavy box that sits on three legs and you get to hide under



MAKING MOTION PICTURES WITH A CINÉ-KODAK (THE MOTOR CRANKS THE CAMERA)

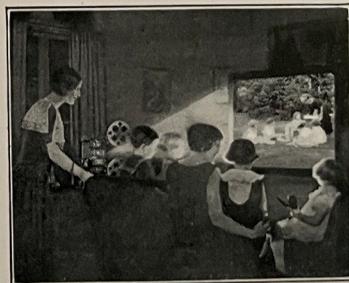
You press the button; we do the rest

CINÉ-KODAK, the new Eastman invention, and its projector, the Kodoscope, enable you to show in *motion* on your screen the sort of pictures you turn to first in your album. Train the camera, press the button and the result is a reel of personal motion pictures that for you and yours will be priceless.

And the fascination of personal photoplays isn't all. Through Kodoscope Libraries, Inc., professional releases may be rented for projection in your own home.

Price of complete outfit, Ciné-Kodak with either motor drive or tripod and crank, Kodoscope, Screen, etc, \$335. Cost of operating is less than 1/5 of the operating expense of equipment using standard width film, and your finishing by Eastman experts in Eastman laboratories is paid for when you buy the film. *You press the button; we do the rest.*

Descriptive booklet at your dealer's or from us



SEEING THE PICTURES WITH THE KODASCOPE

Eastman Kodak Company, Rochester, N. Y., *The Kodak City*

the blanket when you cross your fingers and take a picture. That sounds damn fun.

He bought all the necessary camera gear, but then never left for vacation. All of the weight of the gear, the processing of plates, and so on, seemed cumbersome to Eastman, but then he was hunting for something to do. Photography was the thing.

He spent three years in his mother's kitchen working on creating a dry plate coating machine for photography. In 1880, he patented it, started a company, and began marketing it. He pored himself into making photography lighter and more accessible to people since that's what he saw separating it from the masses. Not everybody has the weight and luxury to deal with gear. It needs to be easy and simple.

In 1887, Eastman shipped the first camera that was easy to use, that was for everyday people. Kodak was all George Eastman, even the name itself. It meant nothing. George invented the tagline "you press the button, we do the rest" and that became marketing and branding gold for generations.

In 1888, George Eastman wrote a simple line, "You press the button, we do the rest." He invented the name Kodak because he liked the letter K. And of course, he figured out how to simplify photography.

This is a pivotal moment in the history of the button.

Eastman had a vision. Anybody can be a photographer. He was working during a time when you had to lug around a wheelbarrow of equipment and develop your own glass plates to make a photograph. The idea of anybody doing this was preposterous, as most brilliant ideas are.

But how do you communicate to everyday people that they too can participate in this advanced technology? How do you eliminate preconceived notions of difficulty and complexity to say, those days are over, it's easy now?

Eastman knew. You press the button. All you have to worry about is getting your subject in the frame. Then push this one button. We do the rest. Don't worry about developing film or anything like that. Just bring your roll of film, and for \$10, we'll develop your film, reload it with 100 future pictures, and send it back to you. Automation. Ease of use. Simplicity. Push the button.

This is likely where "push the button" was first overtly linked to "it's so easy

anybody can do it” in advertising. This may be the moment that sets the tone for all the subsequent radios, washing machines, computers, and biomemejacks. Eastman wrote the code.

As early as 1890, the button was becoming entrenched into the popular culture of public life. So popular that there was a song written about it.

In 1891, W.S. Mullaly and Webster Fulton wrote “You Press the Button, We Do the Rest”, titled after the Kodak advertising slogan. Naturally, it marvels at the wonders of the Kodak camera. But more amazing, it also mentions other ways the button was introduced, and the frustrations therein. It draws connections between different technologies and focuses squarely on the button as a sign that times are changing. Dig these lyrics.

*We're living at a rapid pace I vow,
These times are filled with fancies strange and queer,
Electric snaps are now familiar things,
New wonders great are bobbing up each year.*

Thanks to the industrial revolution, inventions were showing up at a “rapid pace ... bobbing up each year.” The telegraph connected the world. Locomotives connected the East and West coast of the US. The telephone began to connect individuals. For us in 2026, this pace of change is cute, but change is always rapid in the eyes of the beholder. Our pace of change will be adorable to someone 100 years from now. Change may itself be currency. Can you spare some change?

Note that buttons are also called “electric snaps.” Buttons, snaps. Clothing metaphors were used to explain this new technology.

*In olden days for pictures they would sit,
In attitude like this an awful guy!
But now a days the Kodak changes that,
And photographs are captured on the fly!*

*Isn't it simple? Isn't it quick?
Such a small box, It must be a trick!
How do you work it? What is the test!
You press the button, we do the rest!*

The magic of the small box. Press the button to take photographs, not like the olden days of three years earlier! This song was written only three years after Eastman introduced the Kodak camera.

*No longer is a cottage small our home,
Apartment buildings come to take their place,
We all before the janitor bow down,
The elevator boys the toughest case!*

*He's always down when you are at the top,
When you're in haste, he's reading or asleep!
You ring an hour and then an hour you wait,
You swear and he replies, well walkin's cheap.*

*Isn't it tiresome? Isn't it slow?
He makes you wait above or below,
Oh what a nuisance! Oh what a pest!
You press the button, he takes a rest!*

The 1880s saw a massive migration of people from rural town to urban cities, forcing cities to go vertical. That means elevators — the first electric elevators were built in the US in 1887. But how do you use them? Push the elevator button, which calls the elevator boy to come to your floor. But you can't trust that boy, always reading or asleep!

*Last week I traveled far into the West,
To Iowa and Kansas both I went,
And plainly saw how Prohibition works,*

'Twas funny just as an experiment.

*A hotel man may keep a stock of drugs,
And when the thirsty pilgrim seeks the bar,
The clerk, with many smiles will read the rules,
As posted on the door and there you are!*

*One ring for water, Two rings for ice,
Three for a lemon, or sugar or spice.
Don't give the snap away, This their request!
You press the button, They do the rest!*

Here's another example of using a button to get somebody's attention. Press the button the correct number of times for water, ice, or whatever. The code gets you what you want, but don't tell anybody!

It's a sure sign that something has hit mainstream when a popular song is written about it. It's a testament to how much something is being thought of. How much is it affecting everyday life. Frankly, I was really surprised to discover this song. Well, finding any song about the button is odd enough, let alone one written in 1891.

In 1888, George Eastman wrote a simple line, "You press the button, we do the rest." He invented the name Kodak because he liked the letter K. And of course, he figured out how to simplify photography.

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Doorbells

Doorbells say hello. One of the first uses of buttons in the home was to simply say hello. Arrive at the front door. Check your hair in the window. Adjust the line of your suit or dress. Hello there, I’m here! May I come in?

It’s the 1890s. People travel by horse and train. They wear big-striped swimsuits that look like pajamas down at the shore. They light their homes with gas and flames, to much ado. Men have really big mustaches. Maybe beards. Maybe they still shoot each other in duels.

And the electrification of homes is just beginning. Edison and Tesla+Westinghouse are dueling over whether homes should be fed alternating current (AC) or direct current (DC). There’s a lot of money at stake. Edison loses this battle to Tesla, but ends up winning the war.

Homes didn’t need a fully built-out electrical infrastructure to enjoy the electrical fruit. All you really need is a battery.

The doorbell is perhaps the most basic of electrical devices. When you push your finger into the doorbell, you force together two pieces of metal. One side is connected to an electrical source, whether battery or power grid. The other side is connected to a mini-transformer that fires a buzzer, strikes a bell, rings a chime, or yells “how do you do.” The button completes the circuit between the two. It closes the hole. It fills in the electrical moat.

INCANDESCENT LIGHT SUPPLIES.

C-S FLUSH SWITCHES.

C-S FLUSH DOUBLE PUSH SWITCH—Double Pole, Single Pole, Three Wire.

C-S FLUSH DOUBLE PUSH COMMUTATION SWITCH—Three Wire, Four Wire.

SPECIAL POINTS OF EXCELLENCE.

- 1.—Nothing in sight but an ornamental face-plate, set flush with the surface of the wall, the body of the Switch being recessed in the wall.
- 2.—The only house Switch that indicates by the position of the push buttons the condition of a current to a distant lamp as to whether it is "on" or "off."
- 3.—The only double push Switch that will operate a lamp or a series of lamps from two, three or more points.
- 4.—Absolutely fire-proof. The switching mechanism being enclosed in fire and moisture proof casing, all danger from a possible arc is confined to the interior of the casing.
- 5.—Positive and instantaneous break of 1-2 an inch in the single pole and 7-8 of an inch in the double pole, and a perfect contact between heavy terminal brushes. A ten ampere switch is competent to "carry" or "break" fifteen amperes with the utmost safety.

C-S FLUSH KEY SWITCH—Double Pole, Single Pole, Three Wire.

- 1.—Absolutely secret. The face-plate is flush with the surface of the wall and is fastened to the body of the Switch with a lock; one key removes the face-plate while another key operates the Switch, or a master key may operate both.
- 2.—No tampering possible. No screw or bolt heads appear on the surface of the face-plate, the only access to the Switch being through the keyhole alone.

This form of Switch is designed specially for use in institutions, hotels, public buildings, etc., and in all places where an open Switch is liable to be tampered with.

C-S FLUSH AUTOMATIC SWITCH—Single Pole.

- 1.—Operates automatically upon the opening or closing of a door. Set flush in the rabbet of a door jamb in a manner similar to a burglar alarm spring; opening the door turns on the light, closing the door turns it off.

This Switch is designed particularly for use in dark rooms and closets, and obviates the necessity of either placing a switch upon the outside of the room, or of hunting around for one in the dark.

- 2.—A perfect Burglar Alarm. An intruder finds himself confronted by a bright light immediately upon opening the door.

C-S FLUSH DOUBLE PUSH SWITCH.

Trade Word.	Price.
Alc. Double Pole, double break, 20 amp., pol. brass or nickel, each.	\$2.50
Aleberry. Single " " " " " " " " " " " "	2.00
Alehouse. Three Wire, " " " " " " " " " " " "	2.50

FACE PLATES IN COLORS OTHER THAN POLISHED BRASS AND NICKEL.

Silver, Silver Oxidized, Silver Mottled	Extra, beyond polished Brass
Bronze, Bronze Oxidized, Copper Oxidized, (" or Nickel	15c
Bower Barite, extra, beyond polished Brass or Nickel	25c
Gold	50c

Other colors or specially designed plates special. In ordering state color of face-plate wanted, otherwise Nickel will be sent.



C-S DOUBLE AND SINGLE POLE CLOSED.

C-S FLUSH COMMUTATION SWITCH, 10 AMPERES.

This switch is constructed upon practically the same lines as our double pole, the only modification being in the arrangement of the terminal contacts.

The particular service performed by this device is to operate a distant lamp, or series of lamps on the same circuit up to 30 lamps, from three or more stations. For this extended service one switch is required at each station. For example:

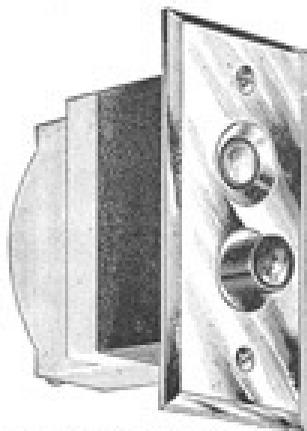
EXAMPLE 1.		Each and every switch will operate any light or lights in the circuit, wherever they may be placed.
Station 1—First Hall, 1 Three-Wire commutation.	} Each and every switch will operate any light or lights in the circuit, wherever they may be placed.	
" 2—Second " " 1 Four " " "		
" 3—Third " " 1 Three " " "		

EXAMPLE 2.		Each and every switch will operate any light or lights in the circuit, wherever they may be placed.
Station 1—First Hall, 1 Three-Wire commutation	} Each and every switch will operate any light or lights in the circuit, wherever they may be placed.	
" 2—Drawing Room, 1 Four " " "		
" 3—Dining " " 1 " " "		
" 4—Second Hall, 1 " " "		
" 5—Sitting Room, 1 " " "		
" 6—Billiard " " 1 Three " " "		

Trade Word.	Price.
Alcemble. Three Wire either polished Brass or Nickel	\$2.50
Alength. Four " " " " " " " " " " " "	4.00

Face-plates finished as above.

For Explanation of Trade Word see page 4.



C-S COMMUTATION SWITCH. 3 WIRE. 4 WIRE.

Compare ringing a doorbell to knocking. Knocking has a harsh tone, banging on the door, demanding to be let in. A doorbell is pleasant, currently. You announce your arrival with the ringing of bells. What could be more pleasant? Of course, the electrical doorbell was merely an evolution from the simple pull-chain bell. Pull the rope or chain down to make a bell shake, peal, and ring.

But homes only needed a single button for the doorbell. There was only a single family inside the confines of a home built for a family. There was only a single front door. There was no need to put anything, any labels, next to the doorbell.

Now consider an apartment building. Let's call it five floors with four apartments per floor. That's 20 different doorbells, 20 different places that the door ring can go to. In these cases, you need labels next to the doorbells, the classic pencil on paper labels that you maybe still see.

Light Switches

The year is 1909. Jimmy lives in a house in Boston, Massachusetts.

1890s-1910s

Most homes had knockers, the metal thing, about eye height, that you'd lift and bang down on top of other metal. The loud sound would signify "hello, I am at your front door." Others had a rope or piece of fabric that hung down near the door, and went into the house where it rang a bell. Buttons would soon replace these.

Sometime around 1890, the doorbell was invented. After cameras, before flashlights.

Following up from a previous post on early light switches, here's some more insight into the history of the button.

To recap, the light switch and the doorbell were the earliest electromechanical buttons to appear in the home. They portended an interesting future for people

living around 1900. However, light switches arrived earlier than I thought.

Bo Sullivan at Rejuvenation was kind enough to send me the following page from the Illustrated General Catalogue published in 1893 by the Central Electric Company in Chicago.

If these switches were designed enough to be an 1893 catalog, they must have been invented in 1891, at the absolute latest although it was probably earlier.

There are two interesting points in the listed Special Points of Excellence:

Nothing in sight but an ornamental face-plate, set flush with the surface of the wall, the body of the Switch being recessed in the wall.

The only house Switch that indicates by the position of the push buttons the condition of the current to a distant lamp as to whether it is “on” or “off.”

In Special Point 1, “nothing in sight” indicates that the previous generation of light switches were messy looking, with probably wires or the switch body showing. This may have been the first switch to be designed to be “ornamental.”

But Special Point 2 contains the gem for interaction designers. This catalog page claims this is the “only house Switch that indicates by the position of the push buttons ... whether it is on or off.” Could this be the first double-button light switch?

Or, maybe it’s the first to use position of the push buttons to indicate on vs. off. We do know it took separate buttons for on and off. They hadn’t invented the toggle switch yet. But could the subtlety in this phrase mean that other light switches had two buttons but didn’t use position to indicate on vs. off? In reality, how could a tiny set of two buttons not convey position?

Whatever the answer is, this is still a cool piece of evidence. Thanks Bo.

Flashlights

Flashlights are often thought of, when asking yourself, what was the first button? Natural question. But first let’s consider why is that.

Flashlights may have been the greatest invention ever, or at least a top five candidate. It’s a cylinder, plain as you picture it. Batteries for power and a switch for on and off. Sometimes the switches are buttons, other times they are sliders or

otherwise. Today, likely different levels and styles, maybe a whoohaga sound, but not back then. Metal cylinder. One end has a light, in the other go the batteries. Stick a button on top and you are done.

The year is 1896. This story begins with bicycles.

David Misell, an Englander by birth, had lived in New York City for a few years. In 1896 he invented a Portable Electric Lamp, a hand lantern that didn't really go anywhere special. The next year 1897 he applied for a patent for a bicycle light. Called the Misell Bicycle Light, it included three batteries.

Meanwhile elsewhere in New York, Conrad Hubert ran a novelty store and sold electric necktie pins. He noticed Misell's bicycle light, and in the fall of 1897, Hubert met Misell.

In 1898, flashlights were invented by David Misell and Conrad Hubert. The Acme Electric Light Company. Joshua Lionel Cowen had started (company) but then he got bored and started some small company, Lionel brand train sets. Not bad.

There was some kind of ruling later... in 1904? From that thing came the following quote, written by Judge xxx.

The result is that they have produced a design which has advantages peculiar to itself, and an electrical arrangement which is so simple that no one, however ignorant of electrical matters, can fail to operate it properly. (1)

Not bad, eh?

Following up on the previous post on flashlights, here's an interesting twist. According to the Electrochemistry Encyclopedia,

A two pound (~one kg) Leclanche battery is a little large and heavy to

carry around in one's pocket. Recognizing this, Conrad Hubert at the American Electrical Novelty and Manufacturing Company in 1898 and 1899 pioneered the use of the flashlight which was just that. It provided a relatively short flash of light for a time and then one waited for the batteries to recover. Two sizes of batteries were invented to power this type of device, "C" cells and "D" cells, as well as small light bulbs for the devices. It is said that the "C" cell is the diameter of a broom handle and the "D" cell is the diameter of a shovel handle. When the batteries and flashlights became popular, many more uses were found for the batteries and the industry grew rapidly with many companies and devices.

Was the pocket-sized battery invented for the flashlight, or was the flashlight invented based on the pocket-sized battery? If you invent the cell phone, you probably don't start from, "Hey, here's a new odd-shaped battery, what can I do with it?" You start with your invention, handheld light, and then figure out how to power it.

The American Electrical Novelty and Manufacturing Company was the original Flickr. They invented one thing (flashlight), created a subtechnology to support it (small battery) and then found that the subtechnology was the real brilliance. They quickly changed their name to Ever Ready and eventually Eveready in 1906.

I particularly like the broom handle and shovel handle connections to the C and D battery. Those references feel correct.

Everything has a beginning. Each story starts somewhere. The button is no different. So what was the first portable button?

First, it has to be electromechanical. When we think of buttons, we always think of pushing a switch that triggers an electrical connection that triggers an event. We don't consider a gun trigger a button. Or piano keys, typewriter keys, etc. But a doorbell? That's a button.

Check your pockets. You're probably carrying around at least a dozen buttons every day. It's part of our culture. So what was the first portable button?

I believe it was the flashlight.

Before we could carry around buttons to do things, we had to be able to carry

around power. The battery. In 1896, the D cell battery was invented, the first small battery. Take two of those, but them in a tube, add a bulb, wire in an on/off switch, and you have a flashlight. This is what Conrad Hubert of the Ever Ready company did in 1898, creating the first portable flashlight.

The initial switches were simply metal flaps that you held down to make the electrical connection, but soon afterward, this became a button. You still had to hold down the button to make it light momentarily. Or, flash the light, hence the name. Flashlights evolved into pocket-sized designer versions, and the button craze was off and running.

So how many fires were prevented by not using candles or kerosene to look around at night?

[[1892, The first automatic or push-button controlled elevators are installed
1898, The first patented flashlights are produced and announced. Among the important contributors are the names of Bugg, Paget, (David) Misell, and (Conrad) Hubert. Early patents were assigned to the American Electrical Novelty & Mfg. Co., predecessor of the American Ever Ready Co. which later became part of the National Carbon Co., Inc. The early flashlights were in the nature of toys and novelties.

1905 STOPPED]]

[[<https://www.candlepowerforums.com/threads/history-of-the-first-tubular-flashlight.3947/>]]

[[the following was written by the guy at this forum]]

Misell had a number of electrical gadget patents to his credit. He patented a Signal Light with a wood case in April 1896 which looked very much like a hand lantern. This patent was a few months ahead of the Acme Bike Light but for some reason, it never got off the ground.

While working for Dr. Ted Birdsall in 1896, Misell created a Portable Electric Lamp which was a hand lantern. It appeared to have potential, but that too was never a commercial success.

In 1897 David Misell noticed the popularity and success of Acme Bicycle

Light and redesigned his Signal Light patent and applied for a bicycle light patent on Oct. 8, 1897. It was patented on April 26, 1898. The Misell Bicycle Light held 3 batteries.

In 1897 Conrad Hubert, eventual founder of the Ever Ready Company, was selling novelty Electric Necktie Pins in his novelty shop in New York City. These tiny electric pins must have stimulated his interest to acquire something more substantial in portable electric light and the David Misell Bicycle Light caught his attention.

In the Fall of 1897, Conrad Hubert met with David Misell who had acquired the shop and inventory of Dr. Ted Birdsall following his untimely death in 1897. Misell was looking for someone to buy or finance his operation.

While Hubert and Misell negotiated over the bicycle light, Misell mentioned that his assistant, Gustave F. Hitzelberger was “getting up” a tubular light. Hubert ended up buying the entire operation including the shop, Bicycle Light patent, and the rights to the tubular light that Misell and Hitzelberger were working on. Conrad Hubert chose to call it a flashlight.

The tubular flashlight battery consisted of 3 cells 2-1/4” inches in length x 1-1/4 inches in diameter. This was 3/4 inches shorter than the 3 inches batteries used in the Misell Bicycle Light and in the Acme Electric Lamp. This shorter battery allowed the tubular flashlight to be short enough to be carried in the pocket, a favorable selling point to the 1898 consumer.

Misell and Hitzelberger went to work for Hubert, making bicycle lights and flashlights. Hubert quickly realized the tremendous potential of the tubular pocket light and concentrated most of his energy promoting it.

Misell had experience in acquiring patents and applied for a patent of the flashlight on March 12, 1898, and assigned it to Conrad Hubert and his new company, The American Electrical Novelty & Mfg. Co. After the application was accepted Hubert went into production and placed several flashlights in the hands of NYC policemen and the responses were very favorable.

About the same time, in the Spring of 1898, Hubert reserved a space at the 3rd annual Electrical Show in Madison Square Garden, New York City. The show lasted the entire month of May in 1898 and the flashlight was a success.

The flashlight patent design was approved on January 3, 1899. The flashlight patent itself was approved on January 10, 1899. The success of the Ever Ready Flashlight diminished the sales of Acme Electric Lamp Company products and the flashlight became the most popular form of portable electric light.

Because the first flashlights were made in a small and modestly equipped shop they were made without threads, on either end. The lens was held by friction fit and the endcap was secured with a bayonet type fastener. After the success of the flashlight was assured, Hubert moved into larger quarters and began equipping the flashlight with threaded fittings on both ends.

The endcap was blank, and remained without a trademark until 1901. The switch was a spring-loaded momentary contact type. It provided light when the ring was depressed. The ring contact switch was used until 1903 when the permanent type, Ever Ready Glove Catch switch was patented and placed into use.

Contrary to many articles that have been written, the first flashlight was not made as a toy. Conrad Hubert never made a toy flashlight during the 16 years he owned or controlled the Ever Ready Company.



Buttons are Convenient

(chapter opening)

Radio Buttons to Remote Controls

The 1920s and 1930s were the Golden Age of Radio. Sandwiched between the two world wars, the new technology called radio rapidly exploded upon the country and the world.

Imagine it. Prior to radio, there was... nothing, nothing broadcast live at all. Sure, there were newspapers, magazines, books and other print media. They'd been around for a few hundred years. Bookstores, libraries, newsstands, and more, all filling up space throughout the world with knowledge and stories. They were normal.

Normal is an interesting word. It contains this mythos that there are people or ideas that don't need to be questioned, or shouldn't be questioned. They are automatically true. They are normal. Back in the 1920s, it was still possible for things to be "normal" because great things didn't change that fast. That was maybe the last decade for this to be true.

Now—just press a button—that's all

TOUCH TUNING

**BRINGS IN YOUR STATION
INSTANTLY — SILENTLY — AUTOMATICALLY**

WHEN a radio tunes itself—that's news! And this is exactly what the new General Electric Radio does—it actually tunes itself!

All you do is pick your program—by pressing a button. There are separate buttons for your favorite stations—each one marked with station letters. The merest touch of your finger—and instantly your program's there! Automatically tuned with hairline precision!

Touch Tuning makes manual dialing a thing of the past. It's the radio sensation of the year.

The new G-E Tone Monitor brings tone perfection in addition to Touch Tuning, the new General Electric Radio brings you another remarkable achievement—the G-E Tone Monitor, a radio circuit of radically new design. The Tone Monitor corrects distortions. It assures life-like reproduction of the highest and lowest notes of each orchestral instrument. Nor is this remarkable improvement confined to the higher priced G-E Radios alone. Many of the moderately priced G-E sets offer this new feature.

**\$10* down delivers any G-E
Touch Tuning Radio into your home**

All the new 1938 G-E Radios are now on demonstration at your nearest General Electric dealer's. You can own any model you choose for only a few dollars down.

**12 Super Value G-E Models
to Select from**

Beautiful new console models, personal radios, armchair radios, from **\$19.95 to \$295**. Prices slightly higher South and West. Subject to change without notice.

Your G-E Radio Dealer will arrange liberal terms

*Through General Electric Contracts Corp.



GENERAL ELECTRIC

The New  **RADIO**

FOR REPLACEMENTS SPECIFY GENERAL ELECTRIC PRE-TESTED TUBES

But radio brought the ability to listen to something else live. You could listen to the same thing, far away from where you were at the moment, at the same as your neighbors and community did. Baseball games would be broadcast out people's windows so that you could hear it as you walk down the street. It's no surprise that jazz and radical new dance wear became huge in this decade. The Great World War was over. The great Spanish flu pandemic was over. The old world was over. Radios with their ability to listen to things live across the country gave people hope again after it being lost. This was a big deal.

A big deal.

In 1923, only 1% of homes owned a radio. These were naturally the wealthy families across the country. It was still a new thing, but everyday people quickly began to understand what this meant to them. In only eight years, over half the households had radios at home. From next to nothing all the way up to half in eight years, or 1931. By 1937, over 75% of homes had radios.

Granted, the Great Depression (was everything Great back then?) did start about halfway through radio's preponderance in the US. People were out of work. It was unlike anything experienced in this country before, or after. But radios were the future. They gave people hope.

Throughout the lifetime of radio during these years, people needed to dial in the frequency of their preferred station. Essentially, they fished for their station. Tuning into 980AM? Turn the dial to about 985, back off to 977, back to 983, 979, and then finally 980. It was a process that people didn't realize at first was difficult. They needed to associate their favorite radio stations with a specific spot in the dial.

Then in 1938, buttons happened. RCA Victor among others in that year came out with automatic tuning, or as they were later called, radio buttons. "Every program is tuned as if an engineer did it for you" proclaimed an ad from RCA. "It makes you want to trade in your old set on the spot."

Radios provided a bank of five or six buttons on the front that let you guide what those buttons meant. You would tune to a local station as you did before, but then when you got it perfectly dialed in, you would either push in the button further in another level or first pull it out to then save your setting at that position. Then the next time, you'd simply push the button. Likely from the comfort of

**PUSH A
BUTTON—
THERE'S YOUR
STATION**

RCA Victor gives

And presents in its new 1938

you Electric Tuning!

Models an Entirely New conception of Radio



NEW! Tune your favorite stations from your favorite chair. Simply push a button to change about from station to station. Every program is tuned as if an engineer did it for you.



NEW! Thousands have acclaimed the Magic Voice as radio's finest. But RCA Victor engineers have made it still more tone-full by new simplified Sonic-Arc Tone Chamber built like a band shell.

ARM CHAIR CONTROL

SONIC-ARC MAGIC VOICE



NEW! Five tuning bands, each over 9 1/2 inches wide. Foreign and other short wave stations are 50 times farther apart than on ordinary dials. Short wave stations are as easy to tune as domestic.



NEW! All RCA Victor cabinets are made by skilled craftsmen in world's largest musical cabinet shop. Each combines beauty of appearance and tone. Only RCA Victor offers the Beauty-Tone cabinets.

OVERSEAS DIAL

BEAUTY TONE CABINETS

ONE look at a 1938 RCA Victor with Electric Tuning tells you that you've caught up with something new! You push a button—and there's your station. It's truly automatic. At sight you know it's different . . . and better! It makes you want to trade in your old set on the spot.

Instead of the usual dial you see five wide, open-faced tuning bands. Under an inviting curve of glass, they spread the world's radio stations out before you. This totally new kind of dial is nothing less than an overseas dial that puts your home on a nation-tonation hook-up. At a touch of your finger, Electric Tuning takes you back and forth among your favorite local stations. Every station is tuned "right on the nose". No distortion! No wavering! You hear the Sonic-Arc Magic Voice with new tone-fullness.

Choose your Programs from your chair
With RCA Victor's Arm Chair Control, you literally have a reserved seat for radio's great shows. You can sit across the room and switch programs around as you please. To change from one to another requires no effort beyond pushing a button . . . And when you want international entertainment, the big, nine-inch-wide short wave bands on the Overseas Dial make foreign programs as easy to tune as domestic stations.

There are 39 new 1938 RCA Victor models. At your dealer's store you'll find a complete variety of size and price. All have new Beauty-Tone cabinets by Victor . . . bigger dials, finer, easier tuning. Let your dealer show you how RCA Victor's many improvements mean more for your money, whatever you plan to spend for a new radio.

What RCA ALL THE WAY means to You

Through the National Broadcasting Company, one of the RCA family, RCA creates and broadcasts the majority of network programs. From practical experience in radio communication with 47 countries and ships on all seas, RCA knows how to build superb short wave broadcasting and receiving equipment. Through Victor, RCA has the benefit of 39 years of sound reproduction experience. RCA is the only company that makes everything in radio—from microphone to receiving set. You get this extra value that is RCA ALL THE WAY when you buy RCA Victor.



\$20 DOWN
puts this Electric Tuning Magic Voice Model in your home. Other electric tuning models as low as \$15 down.

All these Important Features in Model 813K (above)

Electric Tuning . . . Arm Chair Control . . . Sonic-Arc Magic Voice . . . Magic Brain . . . Magic Eye . . . RCA Metal Tubes . . . Overseas Dial . . . Beauty-Tone Cabinet . . . Magnetite Core I-F Transformers, keep circuits in permanent adjustment . . . Beam Power Tube, doubles output, eliminates fuzzy reception. Many other features. Price \$200*
Arm Chair Control, \$15.00 extra.
You can buy RCA Victor Radios on C.I.T. Easy Payment Plan! Any radio is better with an RCA Antenna System. *All prices f. o. b. Camden, N. J., subject to change without notice.

RCA Victor

A SERVICE OF THE RADIO CORPORATION OF AMERICA

RCA presents the "Magic Key" every Sunday, 2 to 3 p. m., E. D. T., on NBC Blue Network

your couch or living room chair.

[Refer to the coin image]

[get people's reactions to this]

This simple seeming story is not this simple.

These simple radio buttons mark the first time in our history in which we had the ability to save things. Doorbells, light switches, flashlights and so on beforehand didn't have this. Your options were set before you, essentially on or off. But this was transferring the random dial of nearly infinite options (ok, many finite ones) into a fixed set of favorites. Analog to digital.

This was important because every region had different radios available to them. Cincinnati vs Boston vs Los Angeles all had their own radio stations. Radio manufacturers had no way to know where individual radios would end up. There was no way to provide preset buttons. They had to be handled locally.

Local radio sellers within various cities would often presave radio presets for their customers. If you were in Pittsburgh, then they would set up KDKA for you, and so on. [find a local story] This was geared toward people who didn't understand this technology that well, which at first, was nearly everybody. Yes, in order to push/pull a button, but at the time, this was important. [find a local example]

And then of course, anybody familiar enough with the web should be asking themselves "wait, are these the same radio buttons that I know?" Yes indeed. You have a bank of options available to you, and you can only select a single one. Radio buttons are indeed radio buttons. Check with your co-workers to see who knows this. I'll bet that half of them don't.

Radio was the heart of home news and entertainment for the bulk of the 1930s and 1940s. Skipping beyond World War II (which we'll visit later in this book), by the late 1940s, everybody had begun to hear about the visual version of radio. The ability to see people saying and acting the words that they were hearing. This was television and it was bound to have as large an explosion as radio did back in the 1920s.

Television manufacturers had a similar problem that radio manufacturers had

20-30 years earlier. Where radios originally had a purely analog dial in which people had to fish in their stations from, television had a fixed set of channels available, yet different in different cities. My channels 2, 4, and 7 were likely different from your channels 5, 8, and 11. Same shows, similar networks, different channels.

[explain how they are all on the same frequency distribution]

Remote Controls

In [year], remote controls were invented.

Remote controls were amazing because they were the first buttons that controlled things from a distance. You could sit on your couch and control the television across the room. No touching the TV itself.

The question often arises: how did they even work? No wifi, no satellites. There were computers, but they were huge beasts that you needed to program, before even punch cards. There was nothing within a 1950 life that could do this. So how did they work?

In the early 1950s, Robert Adler and Eugene Polley were engineers working within Zenith. They were assigned the not-so-easy challenge of helping television viewers change channels on the television without getting up, or without tripping over the control cable strung across the living room. Remote controls had already been invented, but they included long cables that stretched across the living room floor. Clever, but not an ideal solution.

Polley invented Flashmatic remote controls in 1955. They worked based on light. Not bad, but you needed to point them directly at the television, and in daylight hours they barely worked at all.

Adler in 1956 used ultrasonic waves. One of the things I find so difficult in

researching the history of the button is learning about the actual people involved. The engineers. The inventors. Their stories. But sadly, their stories are rarely recorded. They remain anonymous. That's why I like this story so much. Besides, he looks like a cool old man that you'd like to share a glass of lemonade with.

So let's open one up to see how they worked.

Pictured here are the Space Commander 300 and Space Commander 600.

Here's the Space Commander 300. It has only two buttons, one for Channel, one for Volume. You push the Channel button to go lower one channel. Want to go higher? Sorry, you have to go lower until you go all the way round the circle. Similar for Volume, three settings for Low, Medium, High, Off.

[wait, did the channels go down while the volume went up?]

Here's the Space Commander 600. Now with four buttons! Two for Channel Lower and Channel Higher. This is a much better approach. One for Volume. One for Mute. Plus, as the remote says, "adjust hue after pushing mute." Yes, you have to mute the TV to adjust the color. That's a classic example of the danger in overloading buttons.

Ok, let's open them up. What could go wrong?

Inside the Space Commander 300. All these early remotes are purely mechanical. No batteries at all. No electricity. When you push the button, a small hammer strikes an aluminum rod, triggering a sound above our hearing range [true?] that's picked up by the TV. Each rod is a different length, thus a different frequency, thus distinguishable by the TV. The TV then has a [frequency

distinguisher] that discerns which of the buttons was pushed.

Note also the two empty slots in the middle. The case is ready for the next model. They had a product roadmap in mind.

Inside the Space Commander 600. Now with four aluminum rods, one for each button. Notice how all the parts are identical to the 300. They planned the manufacturing out well in advance so they could simply use the same molds in production.

But the mystery is, are these really the first remote controls?

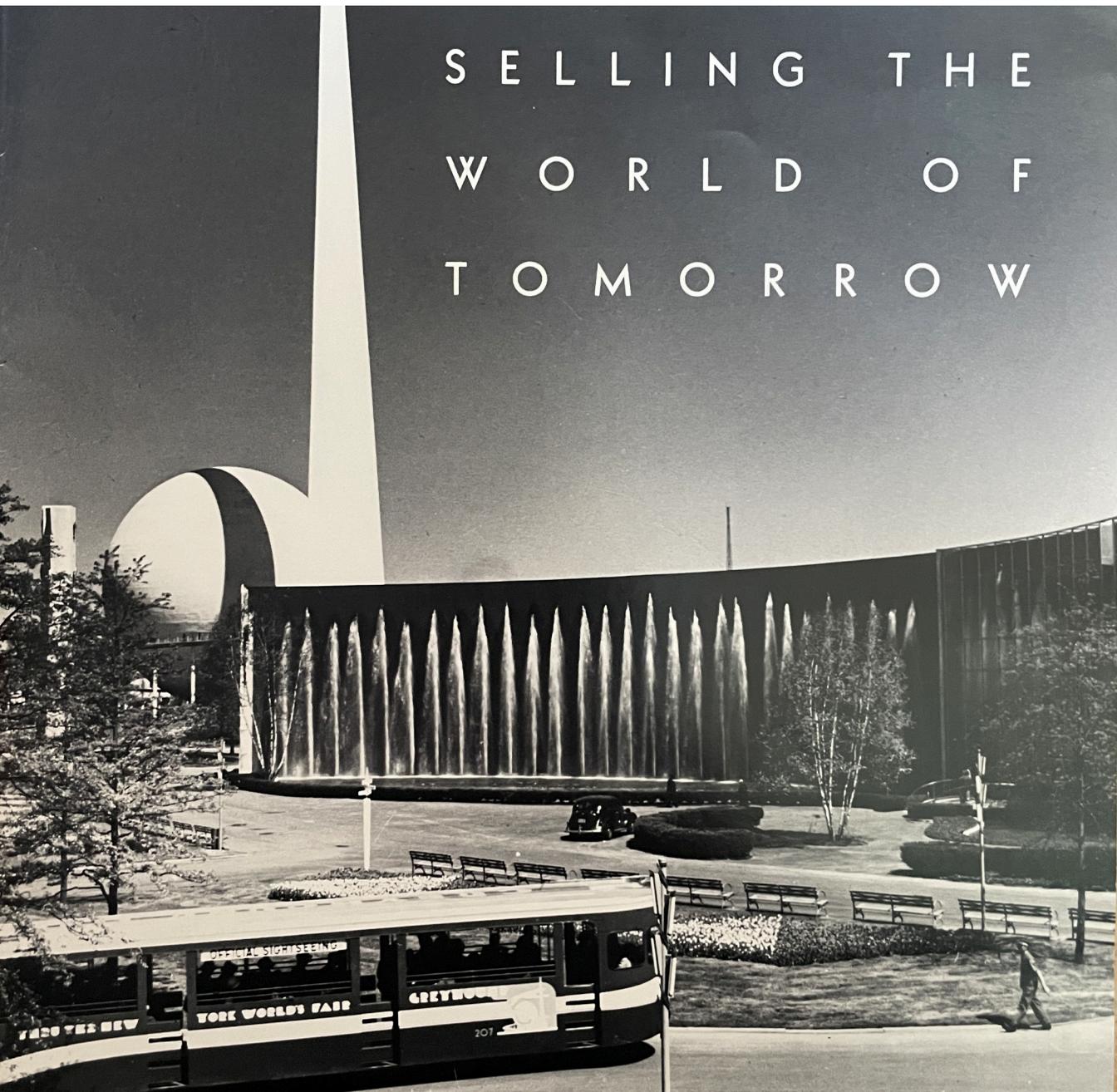
There were two remote control products prior to the Space Commander. The Zenith Lazy Bones came out in 1950, but it was wired, a wire running across the living room from couch to TV, tripping Grandma along the way. In 1955, Zenith produced the Flash-matic, basically a flashlight at a specific frequency, but ambient sunlight sometimes changed the channel. Then in 1956, the Space Command which used ultrasonics as we saw above.

[[In situations like this, I like to imagine my Grandma Russell and guess what she may have done. She was actually my great-grandmother, my dad's mom's mom. Born in 1898, she lived until she was 103 in 2001, and yes she lived within three different centuries. My story of the 20th century is very much her story.]]

Automats

In 1902, Joseph Horn and Frank Hardart had an interesting idea. Within Philadelphia in 1902, they opened Horn & Hardart, a restaurant without waiters, without people asking what you wanted, without cash registers. They called this an automat. People would go into automats and view foods and desserts in a wide variety, viewable from small windows. Then they would simply buy that exact thing they were looking at, likely for just a nickel. But, they would first insert the nickel, and then push a button, which opened the window, and then they grabbed their food.

They expanded into New York City in 1912, and later on down to Baltimore. More than 150 locations across all three cities, people across the entire economic



spectrum, across racial lines, would simply buy their meals and eat them together within the luxurious dining halls.

1939 New York World's Fair

In the midst of the Great Depression, people yearned for an optimistic future. This culminated in the 1939 New York World's Fair. Many of the items shown there heavily incorporated buttons as a signifier of a future oriented on leisure and luxury.

Buttons represent the bright shiny future

Middle class gets buttons

This era culminates in the New York World's Fair of 1939. Pushbutton technology promises us a future life of leisure. Automation. Robots.

“Why can’t
we wash dishes
by pushing a
button?”

WHEN you see push buttons and levers moving mountains in war plants, you may ask yourself this question:

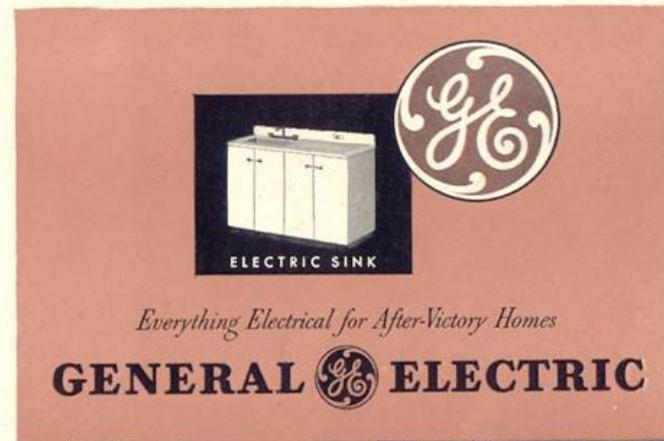
“Why can’t electricity do more of the drudgery of housework—washing dishes, for example?”

And General Electric’s answer is this: if you can’t have an electric sink with dishwasher and garbage disposall in your home today, it’s because General Electric—like you—has given up peacetime work for war.

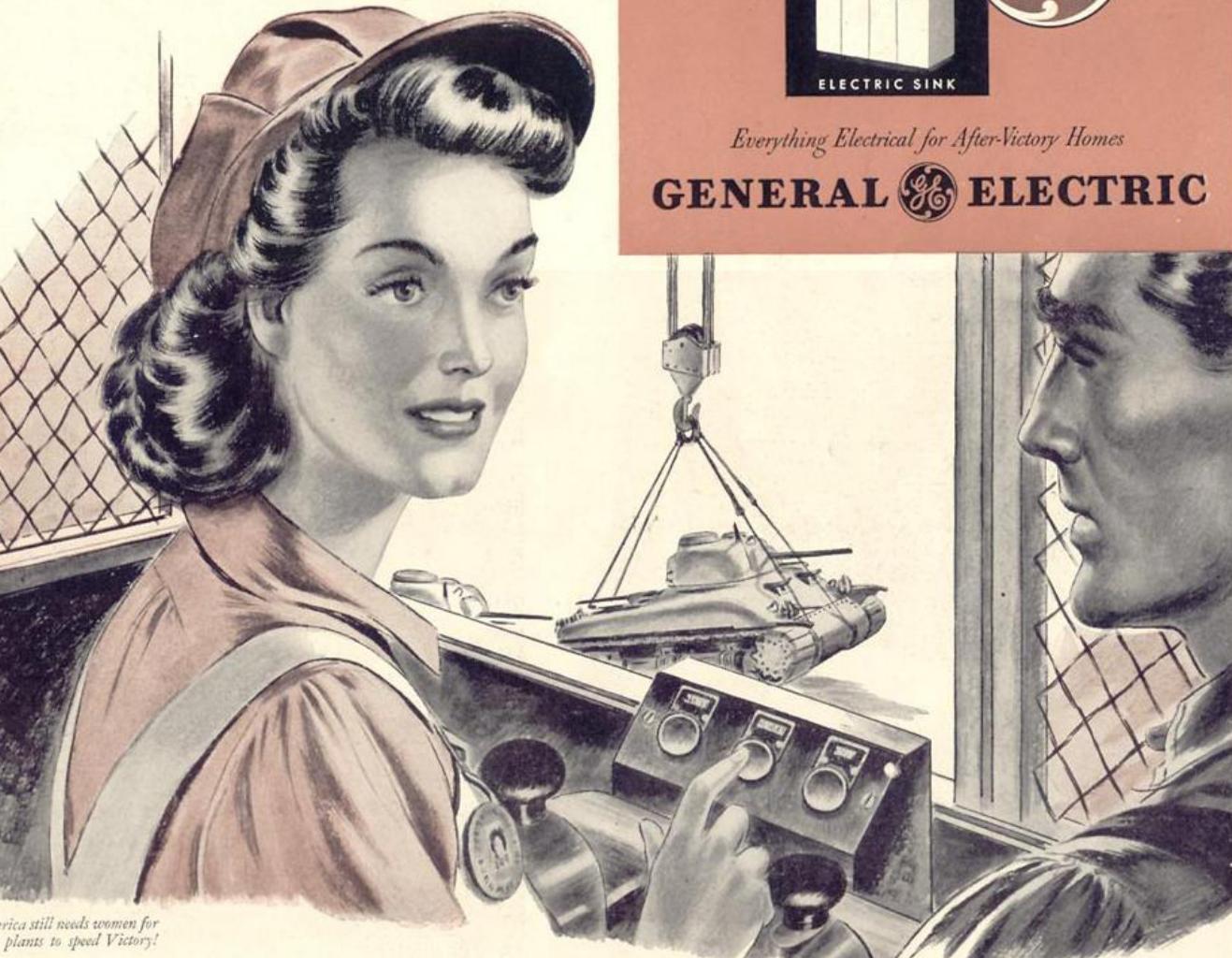
But peace will come again and with it still greater General Electric skills developed by the precision manufacture of wartime.

Thus, when you’re ready for that wonderful after-Victory home or kitchen you’re planning now, General Electric will also be ready with the electric sink you dream about—a General Electric sink with a dishwasher that requires only a turn of the wrist to wash, rinse and dry your dishes. And a disposall that shreds all garbage and washes it down the drain without fuss or bother.

So buy War Bonds today—and keep on buying to hasten Victory—and for better living electrically in your after-Victory home!



The advertisement features a red background. At the top left is a black square containing a white illustration of an electric sink with the text "ELECTRIC SINK" below it. To the right is the GE logo. Below these elements is the text "Everything Electrical for After-Victory Homes" and "GENERAL ELECTRIC" in large, bold letters.



America still needs women for plants to speed Victory!

Buttons Present Challenges

New technologies don’t always offer completely positive things. There are often downsides, and some people found the downsides among buttons.

“The Machine Stops”

Not everybody needs to immediately love using buttons. There is also a group of deniers in technology, whether for better or for worse, are firmly against the progress of technology. Certain people were skeptical of this typically-positive forward progress that technology always pursues. A few decades ago, I would’ve mostly disagreed with them, but now with AI causing so many concerns across society, their beliefs now ring true with me.

Then she generated the light, and the sight of her room, flooded with radiance and studded with electric buttons, revived her. There were buttons and switches everywhere — buttons to call for food for music, for clothing. There was the hot-bath button, by pressure of which a basin of (imitation) marble rose out of the

floor, filled to the brim with a warm deodorised liquid. There was the cold-bath button. There was the button that produced literature. And there were of course the buttons by which she communicated with her friends. The room, though it contained nothing, was in touch with all that she cared for in the world.

– “The Machine Stops” by E.M. Forster, 1909

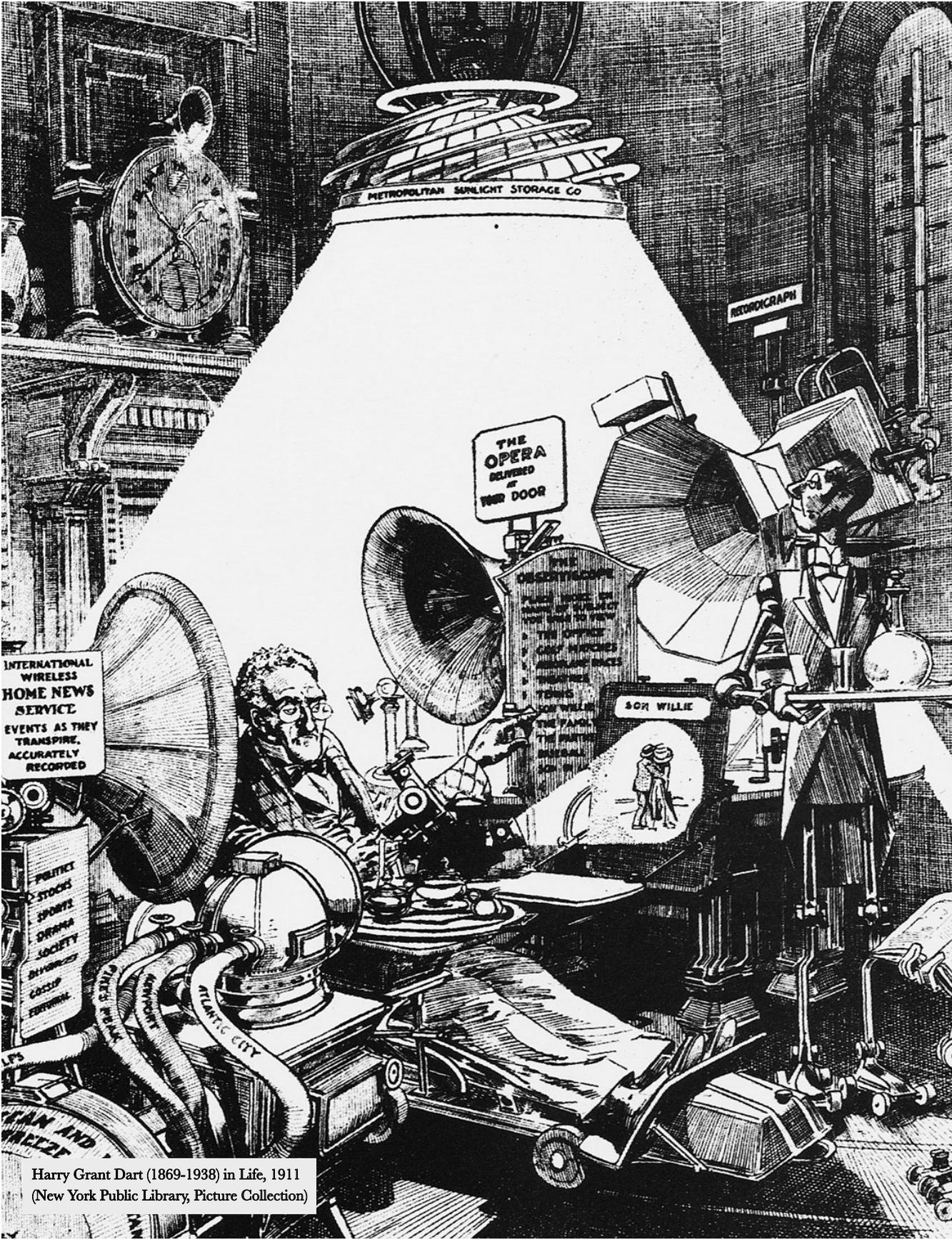
In 1909, E.M. Forster wrote the short story “The Machine Stops,” roughly at the same time that he wrote *Howard’s End*, about the age of only thirty. Forster was a gay man living in England, although he never publicly admitted it, unsurprising considering the era that he lived in.

“The Machine Stops” was the start of an entire genre, technological dystopian fiction. This, along with later *We* (Yevgeny Zamyatin, 1924) and *Brave New World* (Aldous Huxley, 1932) inspired writers that followed to today and beyond.

Written in response to H.G. Wells and his quasi-novel of the time, *A Modern Utopia*, written four years earlier in 1905. In “The Machine Stops,” Forster argues that technology itself is what ultimately controls people. Mechanism the religion develops.

According to Forster, “The Machine Stops is a reaction to one of the earlier heavens of H.G. Wells.”

“The Machine Stops” is a vastly future-oriented story, especially one written in the early 20th Century. Vashti is a woman living in the future deep underground within a hexagonal room, “like the cell of a bee.” She continually communicates with friends, much like today’s social media. In fact, that’s all that she does. The other primary person is Kuno, her son, who lives all the way across the world, yet wants her to visit him, an act that Vashti cannot understand, a drama that will play out throughout the story.



Harry Grant Dart (1869-1938) in *Life*, 1911
(New York Public Library, Picture Collection)

The passage cited above sets the tone for the space that Vashti lives within. She sees nobody face-to-face, yet sees tons of people virtually. But she is surrounded by buttons. Buttons to set the temperature of the water. Buttons for food. Buttons for clothing. Buttons for books. And on and on. Even a mysterious button that she never pressed before, until she did and a doorway opened for her to leave.

Forster is being extremely straightforward here. The year was 1909, or more likely 1908 when he was writing this. Buttons were barely available throughout society. You'd see them on doors to say hello, on light switches in a small amount of homes, or randomly on gadgets like cameras or flashlights. And yet, Forster essentially imagined how we live today, over a hundred years later.

Then a couple of years later in 1911, *Life* magazine published this art from Harry Grant Dart. It's effectively exactly what we have today. Sure, the technology is of the time, or slightly before it, but the intent is on the spot.

Stored sunlight is beaming from above. Films of his son Willie are showing. News from around the world, "accurately recorded." Opera delivered as if it was on Spotify. You can even see one of the first robot servants ever drawn, a good nine years before "robot" as a word was invented.

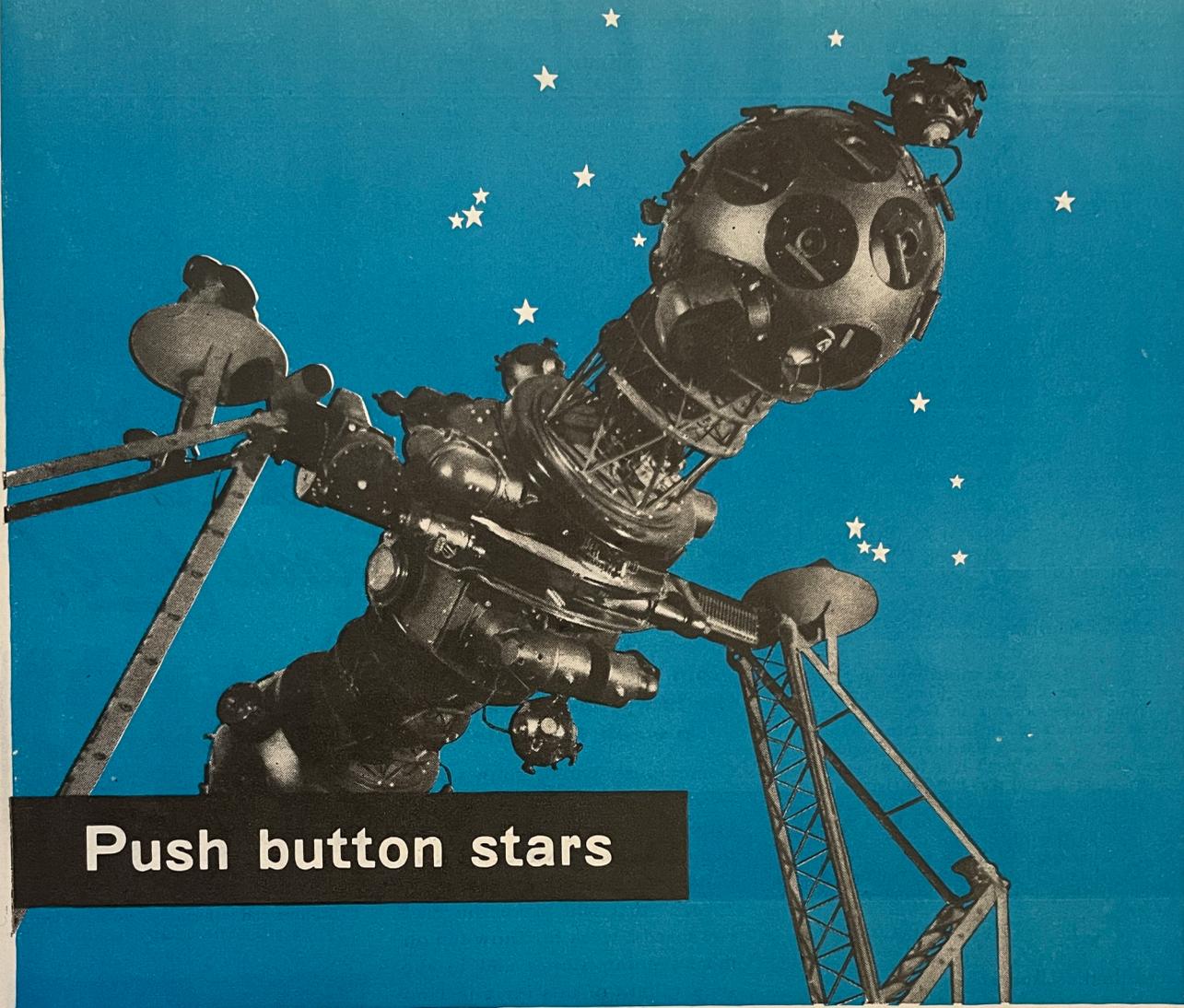
But if you look closely enough, you can see the buttons, especially in the Observascope that he's currently pushing.

Dart must've read Forster, the similarities between the two are almost impeccable. But most importantly, the basis for each are identical. You have a person, likely sitting down comfortably, surrounded by all the gadgets that they need, all within an arm's reach. Food, clothing, entertainment.

The parallels to today are striking. While we aren't that isolated from each other, the pandemic in particular helped us to live alone more gracefully. That, and scrolling on our button-filled phones all day long.

NOTES

[[Father died before he was two. Gay. England. Close with his mother. Wrote six novels. Was definitely against America. *Howards End*. *A Passage To India*. *A Room With a View*. Constantly refused to turn his works into films. That all



Push button stars

Stars do queer things in this man-made sky. Winter constellations rise in mid-summer, course through a hundred seasons in a night. Not nature, but an electric switch is law in Chicago's renowned Adler Planetarium. The audience, too, can smile at seasons. Outside, the day may be hot and sultry but inside the darkened, windowless room dependable air conditioning by Carrier keeps the "weather" pleasant as spring. And dry, filtered air helps maintain the fine adjustment of the star projector.

Leaders in every field choose Carrier, for Carrier has brought year-round comfort to countless buildings all over the world. To banks in China and Paris theaters, to Indian hotels and Czech restaurants, and to great factories here and abroad. Now Carrier draws on this rich experience to build you a more dependable Food Freezer, a more efficient Room Air Conditioner, and a more economical Store Weathermaker. Ask your own dealer to tell you about them. Carrier Corporation, Syracuse, New York.

happened after his death.]]

Industrial & Automation

Everything so far within this book so far has concerned the average home buyer. Or, pushbuttons for individuals. Baking in the kitchen, driving on the road, and tuning a radio all were individual tasks for people to accomplish. Fairly simple, fairly straightforward.

But nearby, large businesses were watching and learning. They saw the benefit, but accomplishing it would be harder for larger industries. What happens when large enterprises can push buttons to accomplish what they need to? Will they save costs in producing their work? Will they be able to slash jobs? What they came up with was automation and eventually computers.

Automatic controls of various machines had been around early since the development of the steam engine. In 1801 Joseph Marie Jacquard created his cards that would control and automate how looms worked. Within their first eleven years, over eleven thousand Jacquard looms were used throughout France.

But automatic doesn't immediately connote automation. To achieve the latter, feedback must be included in the loop.

The word and concept of automation itself didn't exist until John Diebold and Delmar S. Harder independently invented it. (Note: There is no known relationship between Diebold and the Diebold-Nixdorf family of businesses.) It was essentially short for automatization, [the ability to create functional job work using computers]. In Diebold's book *Automation* (1952), he says, in essentially the first sentence of the book, that automation means "both automatic operation and the process of making things automatic."

(More from the book)

But here's is where it gets extra interesting:

Diebold said the following in 1957:

Like the pioneers in the first Industrial Revolution in the 18th century, we face a world in which only one thing is certain: change. Fundamental change. We're

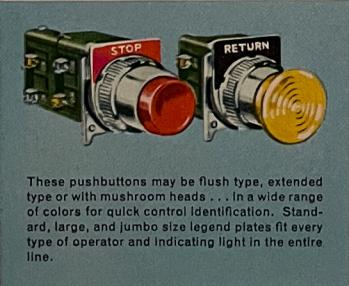
Now...for machinery designers...new heavy duty pushbutton units built to the standards of the spectacular new Cutler-Hammer Three-Star Motor Control



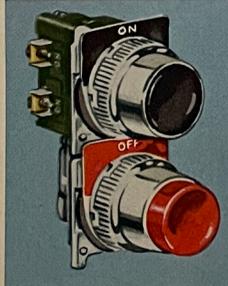
These are the world's smallest heavy duty pushbuttons. They require a behind-the-panel depth of only 1 3/32". This is 40% less space than needed by the next smallest units on the market. Double-pole contact blocks are available in all combinations of normally open and normally closed contacts. Each control circuit is electrically and mechanically isolated from the other. Each circuit is clearly identified and all terminals are color coded. Rapid on-the-job circuit additions are obtained by stacking contact block on contact block.

- ☆ they install easier
- ☆ they work better
- ☆ they last longer

Design engineers are quick to recognize that these new heavy duty pushbuttons have *everything*. There is nothing on the market like them. They are amazingly compact to require the least back-of-panel depth. They are one-hole mounting and they are oil tight. They easily provide for as many as eight separate control circuits per pushbutton, eight completely isolated heavy duty contacts either normally open or normally closed. The buttons may be flush type, the extended type or with mushroom heads. They can be black, red, yellow, green or gray. See the new one-button control station, C-H Roto-Push. See the easiest-to-install maintained-contact pushbutton attachment and the means for padlocking any of the standard pushbuttons. There are both knob and key operated selector switches in this complete line. Also matching indicating lights and the new automation safety light, PresTest. Be sure you have complete information *now*. Write today on your company letterhead for a copy of the new Cutler-Hammer Panel Builders Handbook Pub. EE-120. CUTLER-HAMMER, Inc., 1320 St. Paul Ave., Milwaukee 1, Wisconsin.



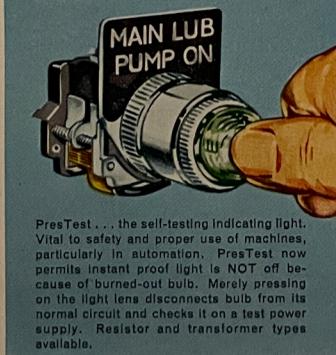
These pushbuttons may be flush type, extended type or with mushroom heads... in a wide range of colors for quick control identification. Standard, large, and jumbo size legend plates fit every type of operator and indicating light in the entire line.



A maintained-contact pushbutton assembly that saves more than its entire cost by installation savings. New attachment with its pushbuttons mount in minutes; no fussy adjustments. Neither alignment nor spacing of units is critical. Pushbuttons will not bind or stick; always operate perfectly.



The C-H one-hole mounting oil-light indicating lights with new wide-visibility lenses are the most visible from all angles by actual light meter tests. Available in either transformer or resistor types. Lenses offered in six different colors.



PresTest... the self-testing indicating light. Vital to safety and proper use of machines, particularly in automation. PresTest now permits instant proof light is NOT off because of burned-out bulb. Merely pressing on the light lens disconnects bulb from its normal circuit and checks it on a test power supply. Resistor and transformer types available.



The most complete line of oil-tight selector switches on the market. Key or knob operated; two or three position. Positions may maintain contact or have spring return. Three standard contact blocks provide a wide range of circuit combinations with the use of just a single block. Unlimited circuitry by adding blocks.



Roto-Push... the one-button control station. One Roto-Push can provide all the control functions for which two or three separate pushbuttons would be used normally. Available in a wide range of selector and button operators, Roto-Push simplifies panel design and saves installation time to cut costs. Improves machine-operator efficiency.

leaving the push-button age. We're entering an age in which the buttons push themselves.

— John Diebold said in 1957, from <https://www.youtube.com/watch?v=JBAzEB4G4bA>

The buttons push themselves. Diebold was onto something here. This was very early within the information age, when people started looking around and noticing how much computers could help them within their business. Diebold was warning them that fundamental change is on the horizon. They better prepare for it.

Many books were coming out to gather famous authors to hear what they think about a particular field. In 1959, Howard Boone Jacobson and Joseph S. Roucek at the University of Bridgeport [needed to understand] the effects that automation was having on society. They had people write about automation in railroads, manufacturing, automobiles, the post office, electronics, data processing, telephones, and much more. They published their results as *Automation and Society* (1959).

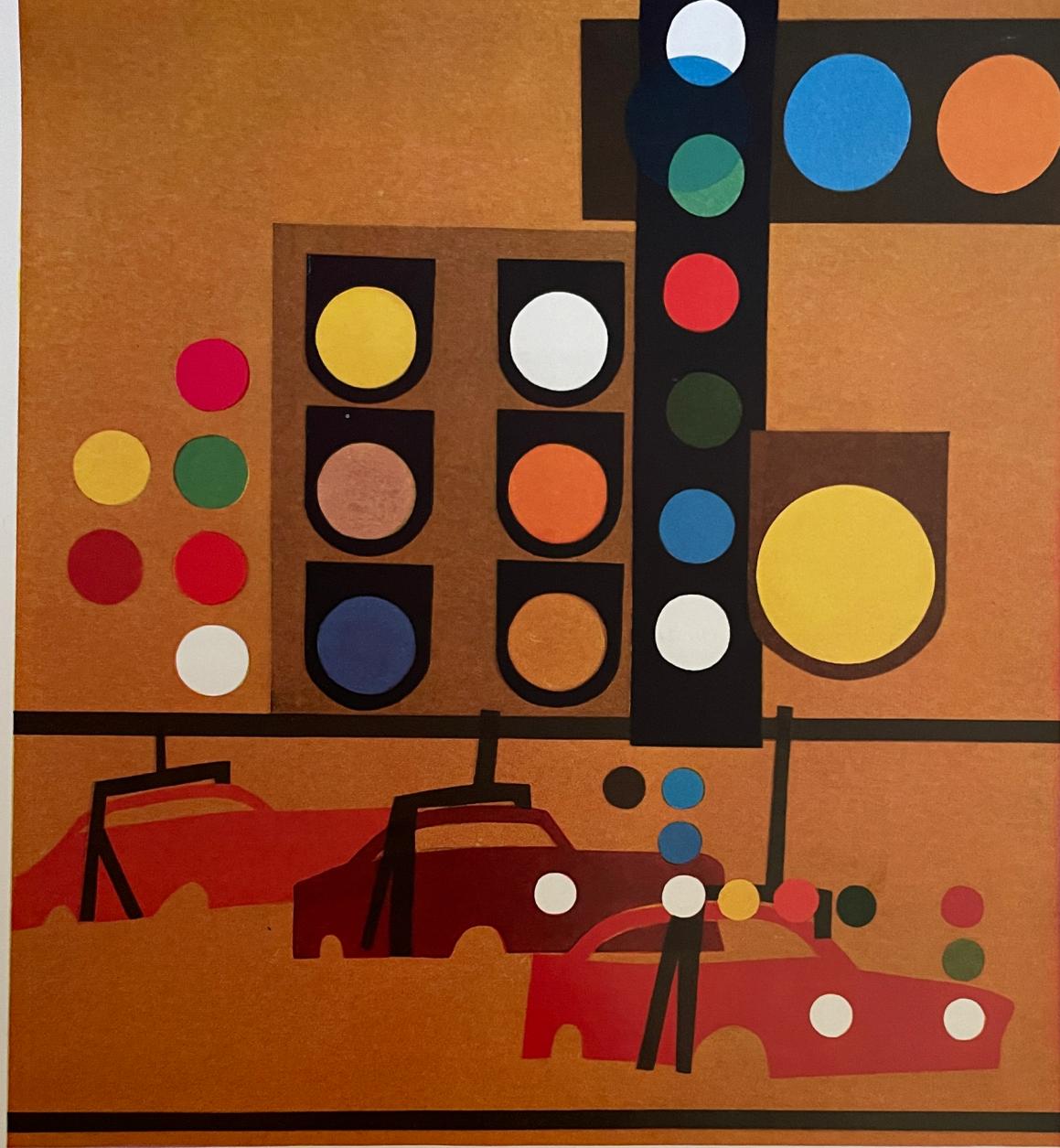
Naturally, John Diebold was one of the men they contacted to write for this book. In his piece "Automation as a Management Problem" written in maybe 1958, Diebold writes.

The unfortunate part about [implementing automation] is that too few of the published accounts are based on practical experience. The danger, it has been well said, is not in having push-button machines, but in being content with a "push-button type of thinking."

— John Diebold

Push-button machines vs push-button thinking. At first it's looking like we need to pick one or the other, but Diebold is saying that we want neither one. Let's try an example.

Let's say a woman pushes a Medium High button on her oven, or a man



J-30301

it's a pushbutton world...
 controlled by the Westinghouse World of Pushbuttons

Push a button and a lump of iron is transformed into a finished engine block. Push a button and a shining body settles snugly onto a chassis. Wherever motions are mechanized, pushbuttons put control at man's fingertips. Westinghouse makes an almost unbelievable variety of these pushbuttons... more than 1,500,000 combinations to help you make every motion count. Make your selection easy by writing for the two free brochures (B-7022, B-7274) describing the Westinghouse World of Pushbuttons. Westinghouse Electric Corporation, Standard Control Division, Beaver, Pennsylvania.



it's a pushbutton world!... served by the Westinghouse World of Pushbuttons

Push a button—to blast a rocket spaceward! Push a button—to command the lifting power of a multi-ton crane! Things marvelous and commonplace happen continuously, every time someone pushes a button. Westinghouse makes these pushbuttons—more pushbuttons, in more types and styles, for more industrial applications, than anyone else in industry. And we know the importance of making pushbuttons that respond *every time* someone pushes the button.

For your pushbutton applications, marvelous or commonplace, select with confidence from the Westinghouse World of Pushbuttons. For two free brochures (B-7022, B-7274) describing this World, please write: Westinghouse Electric Corporation, Standard Control Division, Beaver, Pennsylvania. J-30295



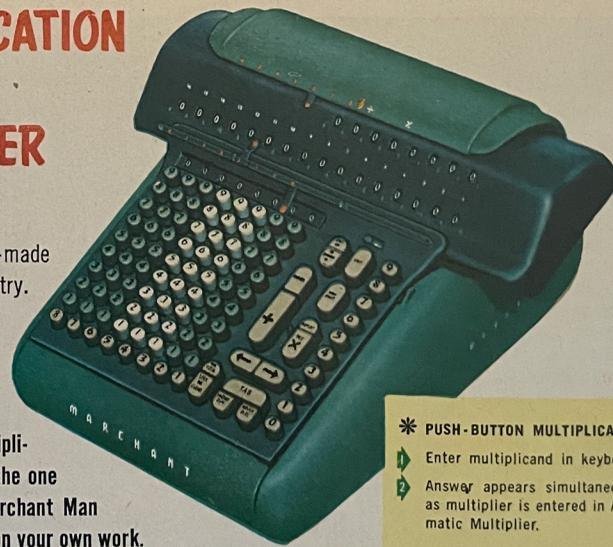
*
PUSH-BUTTON MULTIPLICATION
 makes the job go
EASIER-SURER-FASTER

EASIER—because Marchant saves at least one step in every multiplication.

SURER—because Marchant is the only American-made calculator with dials for verifying the keyboard entry.

FASTER—because Marchant requires fewer operator steps in multiplication, and its mechanism performs at speeds ranging up to twice those of any other calculator.

Since more than half of all calculator work is multiplication, the obvious choice among calculators is the one that multiplies easier, surer, faster. Ask the Marchant Man in your phone book to prove this statement on your own work.



* **PUSH-BUTTON MULTIPLICATION**
 1 Enter multiplicand in keyboard.
 2 Answer appears simultaneously as multiplier is entered in Automatic Multiplier.

MERCHANT
 AMERICA'S FIRST
Calculators

Mail this Coupon with your business letterhead to get our free GUIDE TO MODERN FIGURING METHODS
 ILLUSTRATED BOOKLET ABOUT MERCHANT CALCULATORS
MERCHANT CALCULATING MACHINE COMPANY
 OAKLAND 8, CALIFORNIA T-5

pushes Drive in his car. (Again, these are examples from the 1950s.) In each case, the person knows just a bit less about the machine they are running. She no longer needs to eyeball the gas flame to set the oven perfectly. He no longer needs to engage the clutch and crank the gearshift. Pushing buttons allows humans to know their machines just a little bit less. We have over time moved away from knowing how they work.

This is “push-button thinking,” the ability, or even need, to make the machine work by simply pressing a button. You’ve removed a layer of thinking by using them, and as these add up, you end up with a situation similar to today. Consider how much stuff is simply thrown away today, either from the personal inability to fix it, or the manufacturing production creating things that don’t last as long.

The challenge coming up for Diebold (or behind for us) was training people to use the new button-oriented machines. This is not as easy as it sounds. For example, in the manufacturing field, all the jobs that were built for men who were built, strong, big, burly men, could now be handled by smaller guys. There’s no more lifting of items en masse. Instead, just push the buttons. Anybody can do it.

Consider how this metaphor compares to the AI of today. We often hear people complaining about the results of AI, how it produces random text or can’t even perform simple math. Those are push-button devices that people are complaining about. But then you hear about how people are becoming dumber or can’t think as clearly. That’s push-button thinking in action. When people don’t understand how things work, they get testy.

NOTES

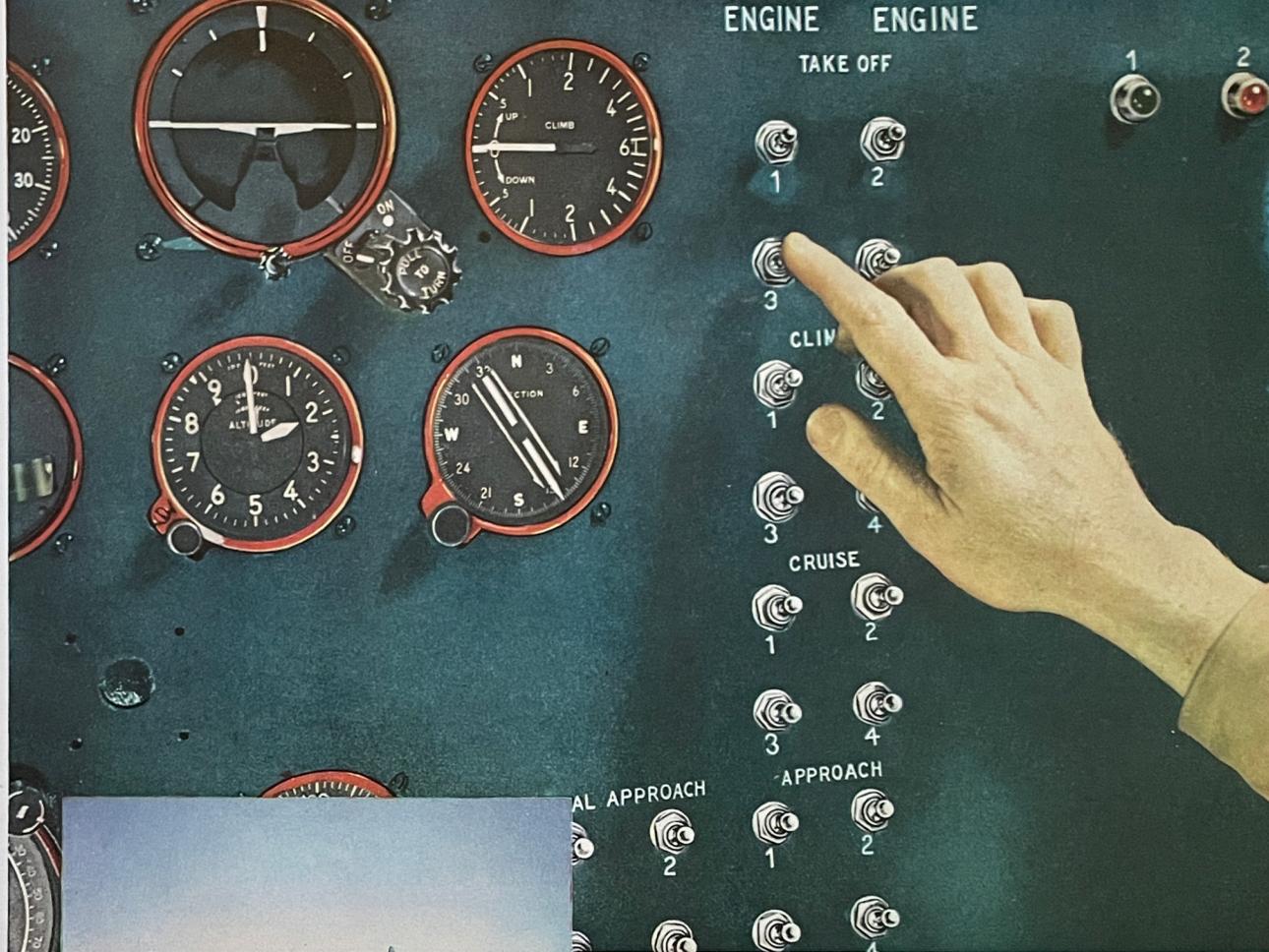
“Automation as a Management Problem”

In Automation and Society, pg 310

1959, copyright Philosophical Library, Inc, 15 East 40th Street, New York

recorded:

It is the exception rather than the rule to find genuine personal concerns on the part of a top level manager with his automation program. Ordering the machines all too often seems to be a way of appeasing management’s conscience that something is really being done about an important but unknown new field.



"Push-button" Flying— Army Air Force Style

At the U. S. Army's All-Weather Flying Base, Wilmington, Ohio, two Army airmen climb into a big 4-engine plane. The pilot flicks a series of "flight planning" switches, then presses a button. After that he leans back and relaxes. *His work is done.*

Automatically the plane takes off . . . wheels retract themselves . . . wing flaps are raised . . . at the right altitude the ship banks into a turn . . . heads for Newark Army Airport, 650 miles away.

At the end of straight flight the automatic pilot guides the descent. Changing air pressure lowers flaps and wheels. The touch of the landing-strip applies the brakes and the plane rolls to a stop.

An impossible dream? No. The "Automatic Flight Controller," developed by the Army Air

Forces, will enable any airplane equipped with it to fly a given course in any weather!

It's just one of the myriad Air Forces achievements that are advancing aviation with breathtaking speed . . . such achievements as radio-controlled pilotless aircraft . . . the coast-to-coast record of 2470 miles in 4 hours, 13½ minutes, set by a jet-propelled P-80 . . . the world's non-stop distance record of a B-29, 8198 miles from Guam to Washington . . . radar forecast of the movement of storms . . . the XS-1, first airplane in the supersonic speed range, propelled by rocket engines . . . a huge new bomber with twice the size, load, range and performance of the B-29!

Thrilling things are happening all through our peacetime Regular Army. The young American

who joins the Army today has the proud privilege of sharing in the world's foremost program of scientific research. Allied with civilian and industrial technicians, Army men are pushing forward new developments that will be of incalculable benefit to mankind.

Here is a career that will appeal to every keen young man with ambitions in the field of science . . . an almost unlimited opportunity for training. Enlistments for 1½, 2 or 3 years are now open to men aged 18 to 34, inclusive (17 with parents' consent). Full details are available without obligation at any U. S. Army Recruiting Station.

Listen to "Sound Off," "Warriors of Peace," "Voice of the Army," "Proudly We Hall" and Major Football Broadcasts on your radio.
U. S. ARMY RECRUITING SERVICE

By and large, managements are accepting the generalities they hear about automation. The unfortunate part about it is that too few of the published accounts are based on practical experience. The danger, it has been well said, is not in having push-button machines, but in being content with a "push-button type of thinking."

shorter:

It is the exception rather than the rule to find genuine personal concerns on the part of a top level manager with his automation program . . . The unfortunate part about it is that too few of the published accounts are based on practical experience. The danger, it has been well said, is not in having push-button machines, but in being content with a 'push-button type of thinking.'"

World War II

Beginning in 1945 and well into the 1980s, The Button was a very bad thing. Science and technology had progressed to where we had mounted highly destructive bombs on highly accurate missiles. Nuclear bombs that could rip apart entire cities, killing millions in a heartbeat. All you had to do is Push The Button.

We developed political strategies like they were chess games. If you push the button, we will push a bigger button. If you destroy us, you destroy yourself. Mutually-assured destruction. And the ease with which this was possible, the simplicity of launching a fleet of missiles that could trigger a war that can not be recovered from, was personified by a single big red button.

This was one button you did NOT want to push. Usability was, maybe for the first time, definitely undesirable. The designers of this button did all they could to make this button nearly impossible to push. Put it inside a glass box. Lock the box. Give the key to someone important. No, put two locks in there and make two separate people turn their keys on 3, 2, 1. Add a secret code that must be entered into the CRM114 before the two men turn their keys. Usability was highly discouraged.

We will never know if there actually was a big red button, but because movies and television communicate this simplicity of destruction with a big red button,

that's how we visualize it. It's a perfect shorthand, extending the the contemporary notions of "buttons mean automation" to "the button means automated war."

To this day, the phrase having a "finger on the button" implies "Do you trust this person to wisely use their potential power for destruction? Do you trust their access to the button?" And sadly, the answer is usually No.

WAR

Automation of killing

Abstraction of death

THE BOMB

"who has their finger on the button?"

worldwide annihilation was perceived as one button push away

Crossing the Chasm

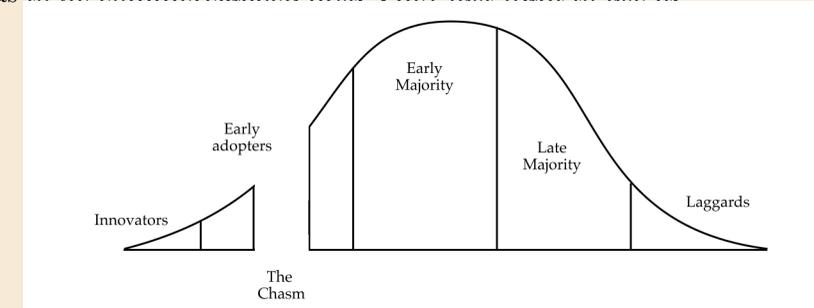
“pushbutton _____” means that the masses can now use ____ technology

Like most advertising messages, the phrase “push button” has become a code. At the most immediate level, it simply means “it’s easy.” From advertising examples such as early radios to sketchy ones like Rit’s changing sheets is like changing colors, “pushing the button” means make something easier. Push-button driving. Push-button photography. Push-button blogging. Just push a button to make something incredible happen, start your laundry, place your book order, focus your camera, and so on. But there’s a deeper code underneath it all. One that relates to the larger field of technology.

Every technology goes through phase changes, starting with hard and working down to easy. The earliest versions require a lot of configuration and expertise in order to use them. Can you recompile your own software? Can you solder together a radio? Can you code the guts of your phone? This phase is not for the faint of heart, but it is heaven for the innovators, likely the engineers of the world.

Innovators love new technology because it gives them the chance to figure it out. Let’s call them the 1% using an extreme measure. The true number is likely way below that. Not everyone can. The rest of the public has to wait for a technology to evolve enough so they too can use it, but without all the twiddling. It

has to be commercialized first. They just want to use it.



When the phrase “push button” is applied to any technology, that means the chasm has been crossed. The phase where only innovators and early adopters use the technology is over and now the general public can start using the technology too, beginning with the early majority.

The phrase “crossing the chasm” was invented by Geoffrey A. Moore in 1991 in a book with the same name. In his work, he [[what?]]

Furthermore, “push button” is code specifically for the general public, letting people know that it’s okay for them to come out now. They too can now join the technology party. They can now drive a car with ease, focus a camera with ease, use a computer with ease. Push-button laundry got easier. Push-button appliances got simpler to use. Push-button driving? Oh now that gets interesting.

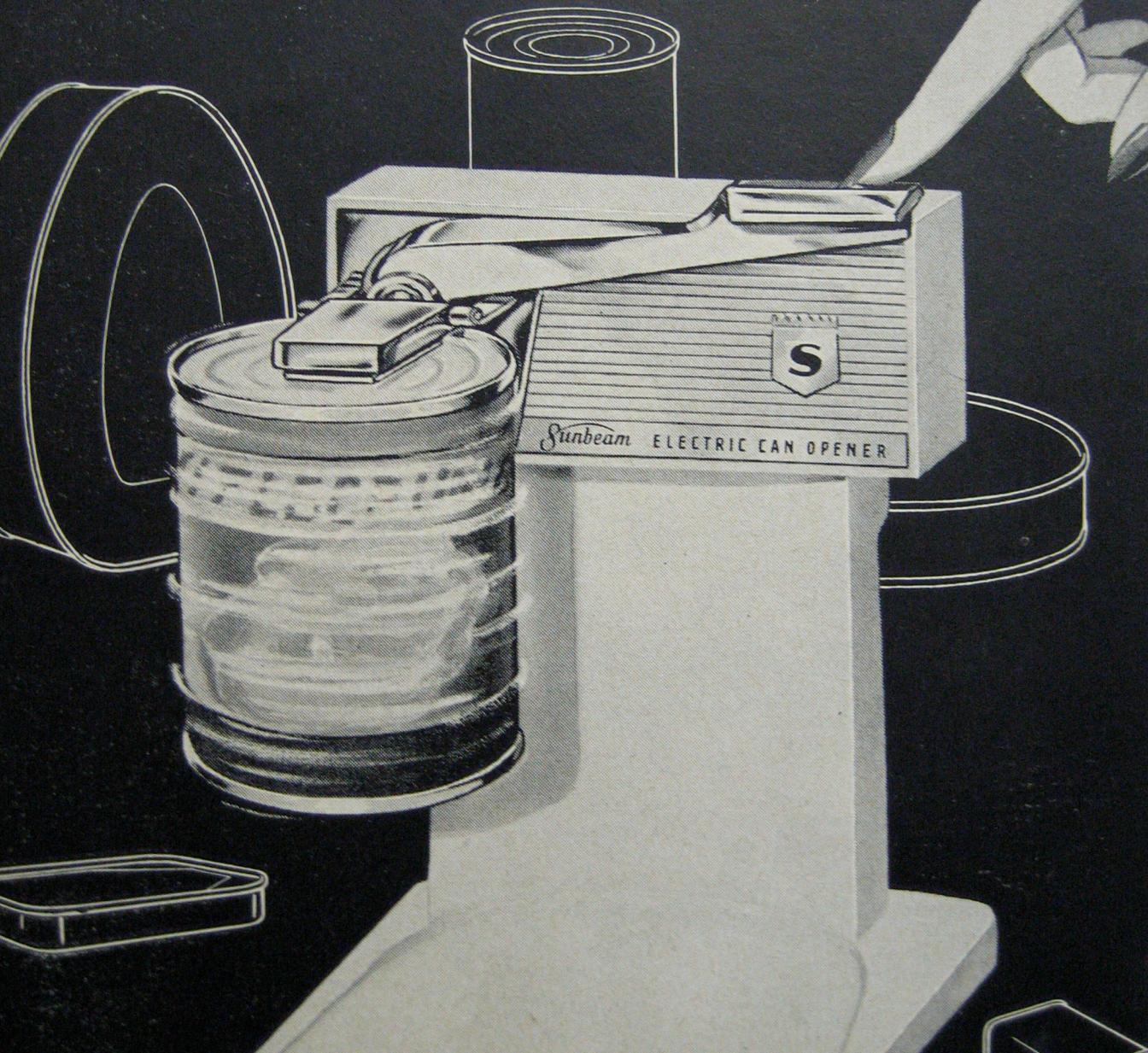
The following decades will see push-button artificial intelligence, push-button quantum computing, and so on. Whether they are good for society as a whole, we’ll have to wait and see.

Granted, it’s not this way anymore. The phrase “push button” is barely used today since we’ve moved beyond the need for it in most technologies. In fact, it’s almost technology as a whole that we’ve completely moved through the chasm cycle. There are working adults today who grew up with the web being, just is. The web just is, to them.

This is fascinating in the sense that they don’t know how the web works. Consider me born in 1965 and 30 years old when the web arrived. I can cite for you the likely set of things that need to happen to create and publish a website. I won’t know the exact particulars and details of each but I could figure them out if

I needed to. Now imagine the http protocol. I have zero idea of how that works. It existed when I grew up. That was the generation prior. My dad can probably tell me what was involved with that, but I have no idea.

One finger
does it...
automatically



Buttons Provide Leisure

From the early promises in the 1920s to the mass market available in the 1950s, buttons would finally land in places of our everyday lives. In the kitchen, in the car, maybe your laundry, buttons made the things that we do every day that much easier. And not surprisingly so, advertising continued this trend. Everything was *pushbutton*, even things that made zero sense.

Sooner or later, every single advertisement that promised that leisure would enter our homes would need to follow up on it.

Kitchen

If there is anywhere in the home where buttons would be appreciated, it's the kitchen, the center of the home. It's where most of the work happens, and in the 1920s, this was women doing it. Buttons would save women's time.

Prior to buttons, work took a lot of time. Washing and drying clothes by hand, sorting them into different bins, hanging them out in the backyard on lines out to dry, that took time. All of the dishes needed to be washed by hand. Even all the cooking was mostly via gas stoves. Women's labor was real, not just a byproduct of

See Hotpoint's "Pushbutton-Cooking"

-with wonderful "Talking Colors!"



Everybody's Pointing To

Hotpoint
Automatic Electric Ranges

Here's The Thrilling New Easier Way To Cook That Everyone Is Talking About!

ALL you do is push a button! Just select which of Hotpoint's five measured heats you want—then press one of Hotpoint's amazing new Pushbutton Controls. Instantly Hotpoint's Calrod® Units respond. Instantly a colored light glows on the beautiful Hotpoint back panel, telling you that the unit is on at the exact heat you want. It's far simpler, more convenient, and best of all, more accurate. You're sure of better cooking results. And you'll be thrilled with all the other Hotpoint advancements.

● **Hotpoint DeLuxe Ranges** with Pushbutton Controls and sensational "Talking Colors," are available in both single- and double-oven models. Hotpoint Rotary-Switch Electric Ranges—newly designed for 1949—are loaded with Hotpoint style and convenience features and budget-priced for every pocketbook. Hotpoint Inc. (A General Electric Affiliate), 5620 West Taylor Street, Chicago 44, Illinois.

Call Western Union—Operator 25—for name of your nearest Hotpoint dealer.

Only Hotpoint

gives you all these kitchen-planned electric range features:



Sealed-Heat Oven, with unit under oven floor, bakes more evenly, holds more food, cleans easier.



Hi-Speed Broiler broils steak for 12 people in 10 minutes; seals in all the juicy goodness and flavor.



Famous Calrod® Units respond instantly, and their pan-hugging construction puts heat into the food—not into the kitchen!

staying at home. They became the focus of advertising.

General Electric was one of the first companies to target kitchens for use, like with most things in the first half of the century. They produced everything you can imagine. Light bulbs...

1909, GE did something...

The blender was invented not for the kitchen, but for malt shops. In the 1920s, people were drinking powdered malt far more often. Malted barley plus wheat flour plus evaporated whole milk powder was consumed increasingly as a substitute for drinking regular milk. But on hot days, people desired to drink it as a refreshing cool drink, except that malted barley begins to bind together when it gets cold.

In 1922, Stephen Poplawski fixed this by inventing the blender.

Fred Waring expanded it...

Laundry

The button was added to many household appliances in the 1950s and 1960s to eliminate daily drudgery, to automate daily tasks that get in the way of our leisure time with the remote control. And what has more drudgery than washing clothes?

This ad for a 1959 Hotpoint washing machine sums it up well. She has Touch Command! She has absolute control over her laundry! Do not get in her way! Notice how she pushes the button, as if she's knighting a valorous warrior.

So did automating washing machines really cut down on our laundry time? Yes and no. They definitely cut back on the brute muscle work in washing clothes, yet we still do a lot of laundry. Easy access to clean clothes now meant that we should own *more* clothes. Consider the sizes of closets in homes built in the 1920s and 1930s compared to homes built in the 1970s. You were expected to have more clothes. Automating laundry meant that expectations increased on cleanliness and

Everyone Thrills to Hotpoint's Wonderful "Pushbutton-Cooking!"

**Finger-Tip Controls, "Talking Colors" And 36 Other Improvements
In This Exciting New Range Make Your Cooking Simpler, Surer!**



SEE FOR YOURSELF why this thrilling new Hotpoint Electric Range is winning cheers all over the country.

● **All you do is push a button!** Yes, just press the Pushbutton Control that gives the exact cooking heat you want. Instantly the button lights up and tells by its color which unit is on and at what heat. ♪ Hotpoint's famous Calrod® cooking units respond *at once*. You can gauge your cooking *accurately* and you can be *sure* of better cooking results.

● **And Hotpoint has packed 36 other wonderful improvements** into its 1949 models. *Hotpoint's Pushbutton Controls and "Talking Colors"* are available in both single- and double-oven ranges. Hotpoint's Rotary-Switch models—all newly designed for 1949—are loaded with Hotpoint style and convenience features, and budget-priced to fit your pocket-book. Hotpoint Inc. (*General Electric Affiliate*), 5600 West Taylor Street, Chicago 44, Ill.



Call Western Union—Operator 25—for the name of your nearest Hotpoint dealer.



Hi-Speed Broiling—Sealed Heat Ovens

Hotpoint's Hi-Speed Broiler—fastest ever developed for home cooking—broils steak for 12 persons in 10 minutes, sealing in all the juicy goodness and flavor. Hotpoint's Sealed Heat Ovens hold more food, bake

variety, not just removing the drudge.

By this time, the phrase "push the button" was completely entrenched to mean "hey, it's easy!" It was so entrenched that products that never had and never will have buttons could get in on the button act. Look at this ad for Rit color dye.

This fickle woman just can't make up her mind what color this bedspread should be. No problem with Rit! Just push a button. It doesn't matter whether a block of dye has buttons or not. Just push the button to follow your whim.

Telephones

Automobiles

The 1950s were definitely a decade for driving. Shifting Gears. Routine sock hops. American Graffiti. Drive-in restaurants. Drive-in movie theaters. Cruising the boulevard. The Blob.

Advertising was all in on the car and pushbuttons. It was almost as if the future was being built right there in the car. Fins out the back end resembled space ships. And pushbuttons make driving nearly a background effort.

During this decade, the Eisenhower Interstate System was being built and exploding, as regulated and regular as the landscape would allow. Odd numbers from highway 5 in the west to highway 95 in the east. Even numbers from

Everybody's Pointing To

Hotpoint

Automatic Electric Ranges

NEW! HOTPOINT WASHER WITH TOUCH COMMAND!

ONE TOUCH OF YOUR FINGER GIVES YOU PROPER WASHING METHOD FOR EVERY KNOWN WASHABLE!



MATCHING HOTPOINT DRYER WITH TOUCH COMMAND!

With the new Hotpoint dryer, one touch of your finger and you command the proper drying method for every known washable regular fabrics, wash-and-tears, special items. Clothes Minder "measures" moisture, shuts off dryer when clothes are dry. Clothes come out soft, manageable and actually wrinkle-free.



This new Hotpoint Washer is yours to command! Just push a button and it automatically selects the right washing method for any kind of fabric—your best blanket, your smartest wash-and-wears, that party tablecloth. Each comes out beautifully washed—soft, wonderfully clean.

New Hotpoint Underwater Lint Filter traps lint under water and ends forever the problem of excess lint on clothes.

All porcelain — inside and out. Only Hotpoint offers this protection against rust, stains, and scratches in every model. See your Hotpoint dealer now.



NEW DUAL DISPENSER FOR BLEACH AND RINSE Adds bleach and fabric conditioner automatically at the proper time for whiter, softer, more luxurious washes.

Hotpoint



highway 10 in the south to highway 90 in the north. The world war was over and now, just messing about and traveling was on everyone's mind. Weekend adventures crossed minds everywhere. Motels exploded on

Cars were being evolved based on space and spaceships [really?]. Fins.

Buttons were a massive part of the evolution of cars. Every car manufacturer wanted their car to be the "car of the future" and what better thing could they do then incorporate buttons into the controls, beyond flying of course. No more finding the correct gear by banging on the gear shift. Just press D or R or N or etc in order to select how you want to drive. P = park. R = reverse. N = neutral. D = drive. L = low. In fact, "PRNDL" became (something important).

The glory days of cars is often the 1950s for the US. So much promise of "this is the future," and that future was indicated via push-button driving.

That wasn't the only area of improvement. Radio buttons (yes, radio buttons) became important as well.

While the 1950s were massive in terms of companies advertising using push-buttons as a metaphor, the primary focus was on automobiles.

Automobile advertisements in the 1950s primarily focused on replacing shift levers. Instead of moving a lever to indicate whether you want to drive forward, reverse, be in neutral, or simply park, you could now simply push the F, R, N, or P buttons.

Now! Change your colors
as easily as you change your mind !

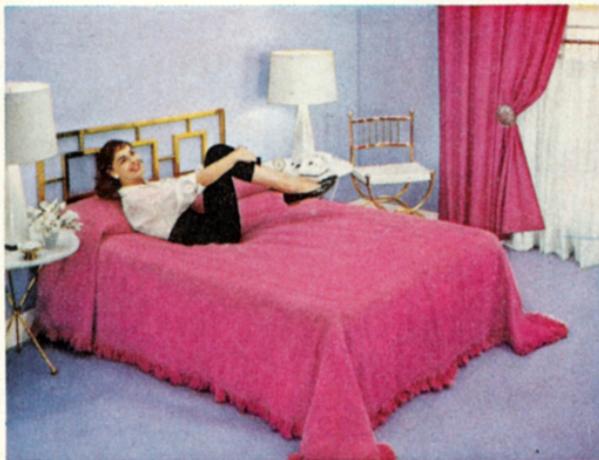


Rit lets your washer do the work!



Rit Royal Blue did the trick here.

Just push the button on your washer
...RIT **COLOR** will do the rest!



Draperies and bedspread dyed with Rit Fuchsia.



Rit Yellow brightened this spread and drapes.

195? Chrysler gearshift.jpg

195? Chrysler pushbutton magic.jpg

195? DeSoto has all its buttons.jpg

195? DeSoto new pushbutton driving

1956 Chrysler 1 of 5.jpg

Remote Controls

We've arrived at an interesting time within the history of the button. This is the first time, I believe, in which pressing a button travels through the airwaves to reach its target. This is remote controls.

The year is 195?. (Who?) at Zenith television division (confirm) was determining, what is the future of television? What will set their version apart from the competition?

Good enough, but how would they accomplish this? Remember, this is 195?. This is before home wifi, before satellites, pretty much before the entire computer industry. Nearly nothing within daily life to accomplish this.

In the early 1950s, Robert Adler and Eugene Polley were a pair of engineers working at Zenith. They were assigned the not-so-easy challenge of helping television viewers changing channels on the television without getting up, or without tripping over the control cable strung across the living room. Remote controls had already been invented, but they were wired. Long wires stretching across from the couch to the tv. Bad things were bound to happen.

Opening up one will reveal the secrets. And unlike anything with today's



computers, once you look inside, you'll see and understand everything how they pulled off the miracle of remote control.

Check out the page to your left. Inside each remote control is two or four aluminum rods.

In his six decades working for Zenith, Adler amassed over 180 patents in the fields of communications and electronics. However, it's the remote control that stands out as his most famous invention.

In the early 1950s, Adler was one of about two dozen engineers "given the mission to find a new way for television viewers to change channels without getting out of their chairs or tripping over a cable." Fellow engineer Eugene Polley developed the Flashmatic remote control in 1955, a wireless remote based on light. Adler's Space Command instead used ultrasonic waves.

@archivesRobertAdler932007

Pictured here are the Space Commander 300 and the Space Commander 600. Recently, PC World published their 50 Greatest Gadgets of the Past 50 Years. The Zenith Space Commander 300 made the list at #21.

One of the things I find so difficult in researching the history of the button is learning about the actual people involved. The engineers. The inventors. Their stories. But sadly, their stories are rarely recorded. They remain anonymous. That's why I like this story so much. Besides, he looks like a cool old man that you'd like to share a glass of lemonade with.

Ever since the remote control's co-inventor [Robert Adler passed away](#) a few weeks ago, I've wanted to own one of the first remote controls. After trolling through eBay every now and then, I finally have in my hands a piece of the history of the button. But there's a mystery: which piece?

Here's the Space Commander 300. Just two buttons, one for Channel, one for

BILL LUNDIGAN* SHOWS YOU WHAT'S HAPPENED

TO THE GEARSHIFT! (* Your TV host on "Shower of Stars" and "Climax!" Thursdays, CBS-TV)



1. "BACK IN MY GRANDDAD'S DAY you needed a long reach, a strong back and a third eye to shift gears. The gearshift was outside the body of the car, where it was a tempting toy for the neighborhood kids. This was long before *my* time!



2. "I REMEMBER IN DAD'S first car, the gearshift had moved in out of the rain, but in everybody's way. Rising like a flagpole from the floor-board, it tangled with legs, hands and the handbrake. If you sat three in the front—oh boy!



3. "NEARLY 20 YEARS AGO it moved to the steering post. When automatic shifting came the lever *stayed* on the post! But then Chrysler Corporation's PowerFlite transmission made possible a still more convenient, foolproof location!



4. "IN THE 1955 CHRYSLER CORPORATION CARS— the cars of THE FORWARD LOOK—the Selector was moved right next to the ignition key, on the instrument panel. It was simple, convenient, out of the way and everybody liked it!



5. "NOW COMES PUSHBUTTON MAGIC! Leading the field again, Chrysler Corporation introduced PUSHBUTTON POWERFLITE in its 1956 cars—Plymouth, Dodge, De Soto, Chrysler and Imperial. Like magic—you just push a button and GO! It's fully tested and perfected. Let your dealer

demonstrate its simple mechanical design. You'll find that safer, surer, PUSHBUTTON POWERFLITE cannot run down your battery. This is but one of dozens of Chrysler Corporation automotive 'firsts'. Another reason why you can always expect more from a Chrysler Corporation car!"

CHRYSLER CORPORATION  **THE FORWARD LOOK**
PLYMOUTH • DODGE • DE SOTO • CHRYSLER • IMPERIAL

Volume. Push the Channel button to go lower one channel. Want to go higher? Sorry, you have to go lower until you go all the way round the circle. Similar for Volume, three settings for Low, Medium, High, Off.

Here's the Space Commander 600. Now with four buttons! Two for Channel Lower and Channel Higher, far more civilized. One for Volume. One for Mute. Plus, as the remote says, "adjust hue after pushing mute." Yes, you have to mute the TV to adjust the color. That's a classic example of the danger in overloading buttons.

The next thing I had to do was open them up to look inside. Just four little screws. What could go wrong?

Inside the Space Commander 300. All these early remotes are purely mechanical. No batteries at all. When you push the button, a small hammer strikes an aluminum rod, triggering a sound above our hearing range that's picked up by the TV. Each rod is a different length, thus a different frequency, thus distinguishable by the TV. Damn clever.

Note also the two empty slots in the middle. The case is ready for the next model. They had a product roadmap in mind.

Inside the Space Commander 600. Now with four aluminum rods, one for each button. Notice how all the parts are identical to the 300. They planned the manufacturing out well in advance so they could simply use the same molds in production.

But the mystery is, are these really the first remote controls?

There were two remote control products prior to the Space Command. The Zenith Lazy Bones came out in 1950, but it was wired, a wire running across the living room from couch to TV, tripping Grandma along the way. In 1955, Zenith produced the Flash-matic, basically a flashlight at a specific frequency, but ambient sunlight sometimes changed the channel. Then in 1956, the Space Command which used ultrasonics as we saw above.

So did I have the first Space Command?

I wanted to learn which years the various Space Command models were



Fireline Spartian in Crimson with contrasting Surf White emphasizes the beauty of De Soto Flight Sweep styling

New push-button driving...

DE SOTO

You're looking at the smartest, easiest way ever invented to drive a car. In the glamorous '56 De Soto you simply touch a button and GO! No lever... no nose-to-the-wheel squinting to select the driving range. Responsive and agile in city driving... safer, more comfortable at super-highway speeds. New 255 hp engine with high torque take-off... new super-highway brakes... new Flight Sweep styling. Drive the dramatic **1956 De Soto—for the super-highway age!**

TRY YOUR HAND at De Soto push-button driving. Buttons are at your fingertips—and to the left, out of the reach of children. Positive mechanical control. Absolutely foolproof. Try it at your De Soto dealer's. De Soto Division, Chrysler Corporation.

DRIVE A DE SOTO
BEFORE YOU DECIDE!

DE SOTO—OFFICIAL PACE CAR 1956 INDIANAPOLIS 500-MILE RACE
De Soto dealers present GROUCHO MARX in "You Bet Your Life" on NBC radio and TV.

released, so I tried using this new thing on the World Wide Web called Google. Have you seen it yet?

I was assuming that the Space Commander 300 I had was the first. Look at this listing from PC World's [50 Greatest Gadgets of the Past 50 Years](#).

Yes, that's pretty clearly the same remote I have, the Three Hundred. But the first clue that something was amiss was the article described four buttons, yet this had two.

The mystery deepened. Look at this Zenith ad from 1957 featuring George Burns.

And then this image from a great write-up on Adler's passing at [Design News](#).

Uh oh. That is also a Space Commander 400. Yet there is another Space Commander 400 in the same form factor as the 300 and 600 shown above. Zenith used the exact same name for different products, one of the cardinal sins in product marketing. So now what?

My inner information architect wants them to have different names, so let's name them. How do we distinguish them? Button shape will do. The buttons in the top version look like ovals. The buttons in the second version look like gas pedals in a car. Oval. Pedal. Now we can actually have a conversation about them.

Both Oval and Pedal use the name "Space Commander." Pedal uses numbers to describe the model (300). Oval uses words (Four Hundred).

The [Wikipedia page on remote controls](#) shows an image of Oval, but we all know the dangers of trusting Wikipedia as a solid source of knowledge.

Then I spotted this 1964 Zenith Space Command TV on eBay. There's the Oval remote control. (If you look closely, I Love Lucy is on the TV.)

I have a feeling I was duped, but I wasn't the only one. The Oval model is almost always used in articles that discuss the Space Commander as the first wireless remote control. But it seems that the Pedal model may really have been the first. My hunch is that Pedal was used from around 1956 to 1958 and then Oval was used from 1958 to 1965ish. After that, other models of Space



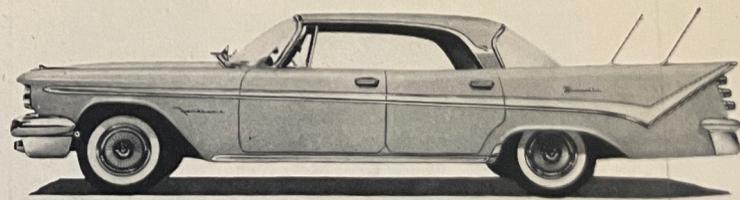
THE CAR THAT HAS ALL ITS BUTTONS

At last they've made a generous-size car a lady can drive with her fingertips!

Almost everything in De Soto works with push buttons. There's push-button drive, push-button heat and push-button entertainment. Also available are push-button power windows and push-button power seats that adjust six ways to fit you perfectly.

You'll find De Soto "has all its buttons" in every sense of the phrase: people-size headroom, people-size doors, beautiful fabrics and rugs you'd be proud to have in your home.

Find out how much more fun it is to drive the fashion leader the year. See your De Soto dealer today.



FIRE DOME 4-DOOR SPORTSMAN

DE SOTO

The smart way to go places

Commander showed up. Zenith just kept using the same name over and over. Very confusing.

Buttons are Play

Pinball

Meanwhile across the country, games were becoming a thing.

The anti-pinball movement was in a rage across the country. They were being banned simply because people viewed them as chance games, which naturally leads to them being gambling games.

Harry Mabs was a game designer at Gottlieb, one of the larger pinball manufacturers in the US. He worked for over 20 years in the industry, ending up at Williams. He worked on at least 65 different machines.

Mabs created the concept, designed the game, worked the engineering, and dealt with the animation for Humpty Dumpty.

Mabs placed two buttons on the left and right sides of the machine. These controlled six flippers within the game. Now, these flippers were, compared to all modern machines, backwards. They flipped out towards the sides instead of protecting the primary hole in the center.

It wasn't until 1950, three years later, when flippers were turned around to essentially where they are today. Spot Bowler also published by Gottlieb.

Announcing...
The GREATEST TRIUMPH in PIN GAME HISTORY!

GOTTLIEB

HUMPTY DUMPTY

with
 the sensationally new
**PLAYER-CONTROLLED
 FLIPPER BUMPERS**

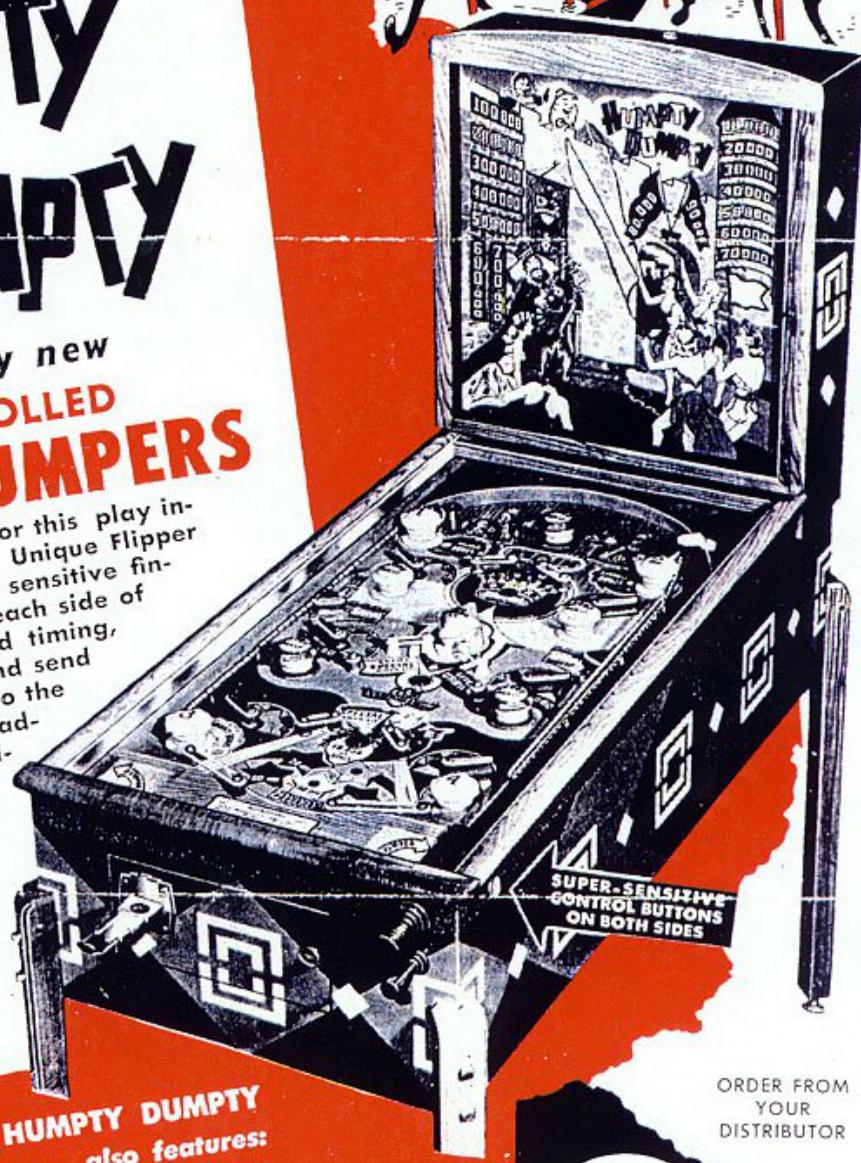
Phenomenal is the word for this play inspiring Gottlieb innovation! Unique Flipper Bumpers are motivated by sensitive finger-tip control buttons on each side of the cabinet. With skill and timing, the player can control balls and send them zooming right back to the top of the playing field for additional scoring! The combination of controlled Flipper Bumper action and controlled ball action provides amazing earning power... a proven "shot-in-the-arm" for any location!

There IS something NEW under the sun... get this game of KILL and TIMING on location NOW!

There is no substitute for Quality!
 A PRODUCT OF

D. Gottlieb & Co.

HUMPTY DUMPTY
 also features:
**HIGH SCORE
 SEQUENCE
 BONUS
 KICKER POCKETS**



**SUPER-SENSITIVE
 CONTROL BUTTONS
 ON BOTH SIDES**

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NOTES

Beginning in the early 1940s, a large anti-pinball movement gained steam across the country, resulting in its banning in a number of locations, including New York City, Los Angeles and Chicago (where most of the machines were manufactured). Much of the opposition to pinball stemmed from the belief that it was a game of chance, and thus a form of gambling. The introduction of the flipper in the late 1940s was important not just as a key component of what people today think of as pinball, but also because it brought a new level of control and skill to pinball. (Although it would be another three decades before most of the pinball bans were lifted).

Humpty Dumpty had six flippers--all facing outward, away from the center of the playing field. It wasn't until a 1950 game called Spot Bowler that the key hardware for game play took on its now common incarnation at the bottom of the playing field, facing inward.

<https://www.popularmechanics.com/technology/a3461/4276614/>

reel to reel players consumer electronics pinball
 video games

arcade games
 Pinball

handheld electronics

NES, playstation, xbox, etc

Tonight I went to Ground Kontrol to shoot pictures of buttons of classic arcade video games and pinball machines. Absolute heaven. I shot 99 pictures. If I had been paying attention, I would have shot one more.

Like most people my age, the arcade floods the memories. Pocket full of quarters to push the buttons all day long. Push to jump, punch, fire, rotate, kick, thrust, pepper, flap and more. Super Zapper. Knockout. 1 Player 2 Players. Scramble at the 7-11. Tempest at the other 7-11. First seeing Space Invaders at the bowling alley. Ground Kontrol replicates this arcade memories through the sheer mass of games they have.

The button had arrived as a mass entertainment device. In the mid 70s, the button moved beyond a symbol of convenience and automation and became a symbol of fun. Entertainment could be had indoors instead of outdoors. Granted, this may not be a good thing, but there it is. From here, it's a very short hop to handheld video games and their explosion.

Games

Calculators

Hidden Functions Behind Buttons

We are now traveling the edge between analog and digital buttons. The world of buttons is about to explode as they go from relatively simple one-off devices to the multitude of digital options that we see today. We need to now tear them apart to understand how they work, since the how will change rapidly when they go digital.

Let's break down the overall experience of what pushing a button really means.

- CONTEXT** Everything is based on this. What is the user of the button actually doing, and what do they want to do?
- LOCATION** Where is the button located? Is it fixed in time? Does it move around? Can you find it without looking at it? Does it appear and then disappear?
- SELECTION** If there are multiple buttons within the same interface zone, do you know which one you need to push? If it's two, it's likely not an issue, left vs right. Even three is fairly doable without looking. But if it's four or more, it will be. You'll need to look at

them to choose the correct one.

- APPEARANCE** What does the button look like? Is there an icon associated to it? Does it have a specific shape? Are there shapes beyond the rectangle or circle? Is there a light on/off associated with the button?
- REACTION** What is the button expected to do? Are there multiple things that this button does, depending on the context? This must be known before the ACTION is taken.
- ACTION** In the end, everyone must push or tap the button in order to make things happen. But do you push? Tap? Hold it? Hold it for longer? Double tap?
- FEEDBACK** Did the correct thing happened when you pushed/tapped/hold it?

Let's take a simple example: a garage door opener. Suppose that you want to leave your home and you need your car to do so and your car is located in the garage. Therefore you exit your home (say from the kitchen) and open the door.

- CONTEXT** You want to leave your home and you need your car to do so. Your car is located in the garage. Therefore you exit your home (say from the kitchen) and open the door. You see that the garage door is closed.
- LOCATION** Known and consistent. The button is physical and mounted. Not only is the button's location fixed, but also where it's attached to is fixed. It's LOCATION never changes.
- SELECTION** There is only one.
- APPEARANCE** The button is likely dimly lit when the door is closed so that you can see it within the dark garage. No icons nor labels are necessary.
- REACTION** The button only has two states, open or closed. It opens the door when it's closed, and it closes the door when it's open.
- ACTION** Push it to get the reaction. There are no taps or holds.
- FEEDBACK** The garage door opens if it's closed, or closes if it's open.

Now let's try a tricky example: selecting the email application on your phone.

- CONTEXT We likely all have email set up on our phones, although some of us may even have more than one.
- LOCATION Our primary button for email is likely on the first screen. The phone moves around all day long, but we likely know where it is.
- SELECTION
- APPEARANCE
- REACTION
- ACTION
- FEEDBACK The email application is opened. The entire screen changes to reflect that.

Now let's try an even trickier example: when designing a car's dashboard, choosing which controls are digital and which remain analog. This situation is where all of the above options come into play. Maybe this will help explain why designing cars are so dang tricky. Let's be more specific, let's select the air conditioning unit to turn on. It's a nice but little too warm day outside.

- CONTEXT We're driving a car on the freeway, surrounded by cars on all sides of us. The day is warm so we want to turn on the air conditioning unit. The car is new enough that it includes a display panel for a whole bunch of car things. Ideally we would select a variety of car functions without ever looking at them.
- LOCATION First big decision: we know the car will include A/C, but do we turn it on with a physical button, or do we make it a digital button and put it in the display? It does need to be in the driver's half of the entire control panel, within arm's length but without stretching for it. This is a central challenge for the dashboard design team. Which controls become physical, and which become digital?

- SELECTION A/C on/off is likely not alone. It's surrounded by many different functions within the car. Fan speed selector. Fan temperature. A/C Max. Maybe the radio. And so on.
- APPEARANCE There is likely an icon or label associated with A/C to distinguish it from the other surrounding controls. There is also likely a light to indicate that A/C is on/off.
- REACTION
- ACTION
- FEEDBACK The car gets cooler, although you don't feel it immediately. Does the system beep to let you know that you turned it on? Is there a different beep for when you turn it off?