Introduction to Technical Writing

A Rhetorical Approach

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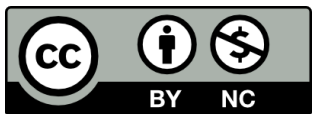
A Member of The Pennsylvania Alliance for Design of Open Textbooks



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About the Author

Dr. Moe Folk is a Professor of English at Kutztown University of Pennsylvania. He completed his Ph.D. in Rhetoric and Technical Communication at Michigan Technological University. He teaches a wide range of courses and helps to administer the Technical Writing certificate and Technical Communication minor at Kutztown University. He hopes that this book will help students around the world, as well as teachers without training in teaching technical writing, develop skills—and interest—in technical writing.

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Chapter 1 | What Is Technical Writing, and Why Is It Important?

1.1: Why Does Technical Writing Matter, and How Is It Defined?

Differences Between Technical Writing and Communication

Differences	Technical Writing	Technical Communication
Scope	Primary focus on written content	Uses all forms of communication
Medium	Written documents (manuals, guides, reports)	Text, images, audio, video, and mixed media
Goal	Clear, structured, and accurate written documentation	Effective communication using multiple formats
Required Skills	Writing, editing, structuring content, integrating images when necessary	Writing, design, multimedia production, editing words and mixed media

We are surrounded by technical writing. Countless times throughout the day, we rely on technical writing—and also its larger cousin, technical communication—to help us achieve what we need to accomplish. Think about all the things you do that were unfamiliar to you at one point in time but that you can now accomplish easily, and you will find technical writing and technical communication played a role in developing your skills. Think about what you've done since waking up this morning: Whether it was making coffee in a brand new coffee maker you programmed to have ready by 8:00 a.m., getting a new baked pancake recipe together for breakfast, putting a new head on an electric toothbrush, or simply following the road signs, traffic lights, and parking procedures while commuting to university, technical writing and communication helped to make it all happen.

In fact, if technical writing didn't exist, it would be almost impossible for us to do many of the activities we are used to doing in today's world. So many things we take for granted such as paying bills through an app; navigating to see a friend who just moved to a new town; and booking an airline ticket online, then getting

to the airport and taking that flight home for the holidays would be significantly more difficult if not nearly impossible to accomplish in a reasonable amount of time, if at all. While the world would be a much less entertaining, understanding, and empathetic place without creative writing, the world as we know it could still function; without technical writing, by contrast, the world would devolve into chaos, with the relative smoothness and efficiency we rely on during our daily activities grinding to a halt. While that may sound dramatic, try this experiment. Start cataloguing the number of technical writing documents and other pieces of technical communication you encounter throughout the day: user manuals, online FAQ, reports, instructions, road signs, parking permit signs, login pages, recipes, business PowerPoints, and menus, just to name a few. Not only will the number shock you, but you will also be able to reflect back on how the day would have gone differently (and, perhaps, more inconveniently) if those pieces of technical writing and technical communication were missing.

While many definitions of technical writing exist, the definition put forth by Kristin R. Woolever (1999) in Writing for the Technical Professions best captures the purpose and ubiquity of technical writing: “Technical writing is writing that gets things done.” Earlier visions of technical writing tended to have a tighter focus on documents such as user manuals and technical reports; however, we live in an age when technical writing is multiplying, and even the traditional writing style within the field is evolving as entirely new forms of technical writing are developing.

Before we examine those changes and the difference between technical writing and technical communication, though, let’s unpack Woolever’s definition. In order to “get something done,” a piece of writing needs to connect with a group of specific people to help them achieve a specific goal. In technical writing, those people are referred to as “users” because they are going to use the technical writing to accomplish a task. Whether it’s using a manual to assemble a bike, reading online FAQs from Apple to program a new iPhone, or even watching a Tik-Tok video to bake a vanilla strawberry cake, technical writing has to keep the needs of users foremost during its construction.

Many people’s conceptions of technical writing are still shaped by traditional notions such as user manuals or instructions, especially those rooted to technical devices such as computer hardware and software. Other common types of technical writing include how-to guides, quick references, informative illustrations, job training documents, FAQ, product support, journal articles, instructions, and reference materials. Most of the writing and communication in a workplace setting would also fall under the umbrella of technical writing.

Although the average person might still think of technical writing as words on printed paper (i.e., a user manual that comes with a new laptop or cellphone), those paper manuals can get lost or damaged. Additionally, the proliferation of technical writing across all available digital technologies means people can often find information from the same paper manual in a different form such as a short or long YouTube video, a website, a podcast, a Reddit thread, or a Tik-Tok video. The technical writing of the manual can exist across different forms and might be more accurately characterized as technical communication.

1.2: What Is the Difference Between Technical Writing and Technical Communication?

While this textbook's title indicates a focus on technical writing, it is important to note all technical writing includes aspects of the larger genre it resides in, which is technical communication. When you are first asked to picture technical writing, you may picture a dense manual filled only with words. Yet, even such a manual has many elements beyond words to help the manual connect with users and allow them to accomplish what the manual sets out to achieve. For example, visual elements such as the margins on the page, white space after paragraphs, and bold headings are indispensable in making the information clear to users. In academic settings, much of the writing you are often asked to do focuses solely on the words, never asking student writers to change elements of design such as typeface or font size and to integrate images or graphs that might help readers.

Becoming a strong technical writer often means breaking out of entrenched writing habits from earlier classes that focused on genres such as essay writing. Technical writing relies on other modes of communication beyond the written word, and modern technical writers have to be excellent communicators who can craft messages in words, sounds, charts, graphs, still images, moving images, and mixtures of some—or all—of these modes. This book will cover aspects of technical writing that some would characterize as technical communication, but the fact is the two modes are closely integrated and almost impossible to separate at this stage. For example, a United States student from Pennsylvania is known as a Pennsylvanian and has an identity based on that reality. If that student is meeting students from other states, the Pennsylvania origin would come up when meeting new people at university, but the same student studying abroad would share identify as an American first when meeting people and later as a Pennsylvanian. In other words, the student is both Pennsylvanian and American, but the claimed identity shifts based on other people's familiarity with the United States. Technical writers are also technical communicators, and their

identity shifts based on what kind of communication they need to meet the needs of their users.

If you want your writing to "get things done," you will have to understand how best to reach users. That may mean going beyond words on a page to create a set of images, or a video with minimal words, or a warning sign instead. Technical writing may not be creative writing, but technical writers must be creative during the entire planning, drafting, and revising process. Technical writers must be flexible and adaptive: There is no easy set of writing rules and checklists that translates into a perfect finished product to meet all users' needs.

While this book embraces an expansive notion of technical writing, it does help to look at ways others may see the relationship between technical writing and technical communication.

To demonstrate how tricky it can be to distinguish technical writing from technical communication, here's a definition of technical communication from the Society for Technical Communication that can also apply to technical writing: "Technical communication involves the delivery of clear, consistent, and factual information—often stemming from complex concepts—for safe and efficient use and effective comprehension by users. Technical communication is a user-centered approach for providing the right information, in the right way, at the right time so that the user's life is more productive." (Society For Technical Communication, "Defining Technical Communication").

Note that the definition from the Society for Technical Communication never mentions writing or words specifically, but all modes of communication would be covered under what they say technical communication does: Somebody—whether a technical writer or technical communicator—shapes information in a clear, consistent, and factual way for users. Although information can now be delivered in myriad ways thanks to the proliferation of digital genres enabled by contemporary digital technologies, technical writing still has some unifying characteristics that can help its practitioners to accomplish their ends.

1.3: What Are the 5 C's of Technical Writing?

Because technical writing consists of many genres and types of communication, it helps to identify stylistic hallmarks that most technical writing strives to achieve. Understanding these traditional qualities helps student writers to identify technical writing and to deploy them in their own writing. Collectively, these

stylistic qualities have been called the "5 C's" of technical writing: **clear, concise, complete, consistent, and correct.**

1. Clear

The clearer a technical writer can convey information, the easier a document will be to understand for its users. Readers shouldn't have to re-read sentences multiple times and routinely go outside the text to look up the meaning of words. Clarity is found not only in word choice and sentence structure, but also in the choices made when delivering content in general. Instead of words, it may be better to use a graph, image, diagram, or screenshot to explain it instead. Here are some other aspects that help technical writing to become clear:

- Writers should only use complex and technical terms when necessary and appropriate
- Writers should try to select words that have one clear meaning
- Writers should define terms, abbreviations, and acronyms that may be new or may be used in an unfamiliar sense for readers
- Writers should include clear examples to help put unfamiliar words and concepts in context for readers

2. Concise

Technical writers strive to convey their information as succinctly as possible. Overwhelming readers with too many words can get in the way of understanding the main message. Making writing concise can be difficult for student writers who are accustomed to writing for classes where they have to artificially inflate their word counts to reach specific page requirements. On the other hand, cutting too many words from a piece of technical writing can be just as detrimental as including too many. Testing a piece of technical writing with intended users is key to figuring out if you have achieved the perfect level of concision.

- Writers should make sure every word is necessary
- Writers need to employ strategies such as effective summary to shrink content
- Writers need to understand when one image or chart or graph can replace a large section of text

- Writers need to distinguish between good repetition that can enhance understanding and bad repetition that bloats documents
- Writers need to develop editing skills to make their technical writing as concise as possible

3. Consistent

A piece of technical writing that follows the principle of consistency helps users to understand the information better and more quickly. A consistent piece of technical writing also instills confidence about the author in the reader.

- Writers should follow similar writing and design conventions throughout a document (e.g., heading style, typeface, comma placement in lists, alignment, paragraphing style, tone)
- Writers should make sure internal citation style, if used, is consistent with the citation style of the end references
- Writers should make sure elements such as charts and graphs follow consistent conventions in how they are introduced, presented, and discussed afterwards
- Writers should make sure additional elements such as lists follow similar conventions and employ parallelism—making sure to list items with the same part of speech, such as a noun or verb

4. Complete

While making sure a document is complete may sometimes cause issues with making sure it remains concise, a complete document seeks to include all relevant information for users. A complete document is one that can stand alone. Users shouldn’t have to consult other documents to finish understanding your piece of technical writing.

- Writers should include all relevant information in sufficient detail
- Writers can include additional resources and appendices to make sure users have additional information they need
- Writers can only be sure their content is complete by getting feedback from their intended users and revising accordingly

5. Correct

Technical writers need to make sure their writing is correct, which covers aspects within their control such as grammar, mechanics, and spelling, as well as aspects they may need to consult other people on, such as whether all information is correct and all claims are truthful. Technical writers may need to consult other colleagues and subject matter experts to make sure their content is correct. Mistakes in content and form can lead to major problems on the user's end, and technical writers who cut corners when it comes to correctness are guilty of ethical lapses because mistakes and omissions can lead to actual physical harm in some cases.

For example, Malm furniture from Ikea tipped over and killed multiple children because the instructions did not state that wall anchoring was required to avoid accidents. (For more information, see the recall notice Ikea put out in 2016)

- Writers need to produce error-free writing that enhances understanding, trust, and credibility
- Writers need to start early and revise often so they have enough time to address issues of correctness thoroughly before publishing
- Writers need to consult others to get feedback and fresh perspectives on the correctness of their writing
- Writers need to be proactive in consulting others who may be subject matter experts in order to weed out inaccuracies
- Writers need to understand their users thoroughly in order to provide the right information in the right format

1.4: How Does Rhetoric Apply to Technical Writing?

Throughout this textbook, rhetorical terms and concepts will be applied to technical writing. This section will provide a brief overview of rhetorical terms and concepts; then, **each chapter will expand on and apply the concepts to various technical writing assignments.**

Defining rhetoric is kind of like defining technical writing. Various types of definitions abound, and some have a much more expansive notion of rhetoric than traditional definitions.

With that in mind, this definition from Gerard Hauser (1986) is most helpful: "Rhetoric is the management of symbols in order to coordinate social action" (p. 3).

Note how Hauser's definition tracks with Kristen Woolever's definition of technical writing.

By coordinating "social action," rhetoric can also be used to "get things done." In Hauser's definition, somebody—an author, a creator—is managing symbols, which can be methods of communication such as words, audio, images, and gestures to help people do something.

In Hauser's definition, a key question arises: If a speaker or writer is "managing symbols" to "coordinate social action," then who is performing the social action? In rhetorical terms, that would be the **audience**, and in technical writing terms, that would be **end users**. In rhetoric, the concept of audience has many layers since different audiences may use a text or document in different ways. A **primary audience** is the original intended audience who might use a document for its original intended purpose, but a **secondary audience** may use a document for a completely different purpose. In technical writing, a document often has just one overarching goal that tends to be the focus. For example, if you're creating an instruction manual to put a bicycle together, you need to shape the necessary information so the primary audience can perform the action of putting a bike together for its rider to use it safely and effectively. A secondary audience might be end users who are trying to purchase a bike based on how easy it looks to put together.

The tricky part is that whatever end users the technical writer has in mind, no two people are exactly the same; therefore, no two people will read, digest, and deploy the information in the manual in the exact same way. To make it more difficult, the world we live in has so many digital technologies that audiences can be broader than ever before because of how easy it is to share information around the world. Today's manuals—or any other piece of technical writing—can have a much larger audience of end users than originally intended. However, many factors will affect whether that manual can connect with a wider audience: How good would somebody's English skills need to be to follow the manual? Do the manual's writers have the skills to produce the manual in multiple languages? Can the manual writer rely on the audience to not only have access to the right tools (i.e., screwdrivers and so forth), but also be able to use them use correctly? Figuring out the interest level, skills, and aptitudes of the end user—and

structuring the language in documents to meet their needs—is the key to technical writing.

Companies can't afford to conduct exhaustive research on each customer and tailor their user manuals to each one. Instead, technical writers have to access data about their end users—if any exists—and otherwise try to factor in how personal aspects such as age, language ability, skills, interests, occupation, intelligence, class, values, and beliefs will affect how those end users interpret what the technical writer wrote. Ideally, technical writers would be able to "test" their documents first on some end users before releasing them to the wider public, a process known as usability testing.

So, if you are tasked with writing a technical document for a class, you might approach the assignment from your own point of view and think about the people around you as end users because that's the audience you may be most familiar with. However, you may be thinking of the needs of those fellow students when writing your document and realize your final draft meets the needs of a broad range of 19-25-year-olds who speak English as a first language, are curious, and are reasonably well-educated. But would a 70-year-old person with a passing knowledge of English and vision problems be able to fully access and digest the same instructions?

Another key rhetorical term associated with audience is **purpose**, which is the goal of a particular piece of communication, or what that piece tries to accomplish relative to its intended audience. A couple of common purposes include: to persuade, to entertain, and—like this textbook—to inform. If technical writing aims to "get things done," what it hopes to have end users accomplish would be the purpose. One common purpose covered in the rhetorical sense is to entertain, and it's also one purpose not traditionally associated with technical writing. However, end users are people, and people do not adhere to the same style, habits, and tone forever. Culture has an impact on people, and while technical writing often has a main goal of informing, how it accomplishes that goal has shifted so that elements of entertainment are increasingly used to engage users and help them understand concepts. For example, the TikTok star Khaby Lame shows users how to make overcomplicated lifehacks simple in humorous ways.

How culture affects a society and thus impacts how people respond to texts is covered by another rhetorical term: **context**. Both audience and purpose are inextricably affected by context. These are historical, cultural, emotional and temporal factors that shape a composition relative to audience and purpose. In

other words, context is outside of an author's control, but context will affect how users perceive a piece of writing, whether it's technical writing or any other kind of writing. For example, at this moment in the United States, most people—even if they have the ability—don’t have the time, bandwidth or patience to read a 200-page instruction manual in print form. A company that recognizes this reality would decide to give end users instructions that were much shorter, perhaps even just focusing on a few particular tasks instead of one comprehensive manual, and they may choose to publish the manual on YouTube or Tik-Tok instead.

Similarly, how we communicate in terms of style is shaped by the greater context as well. Current instruction manuals don’t use the same stiff, formal wording as before, and they don’t feature extremely long sentences and gigantic paragraphs, either. There has been a shift toward informal communication in public and private discourse, and that affects what people expect from—and how people perceive—technical writing.

You can see this shift even if you look at pieces of technical writing that are as deathly serious as airline safety cards. Below, Figure 1 shows one of the first airline safety pamphlets, produced by KLM airlines for Amsterdam-London flights in 1924:

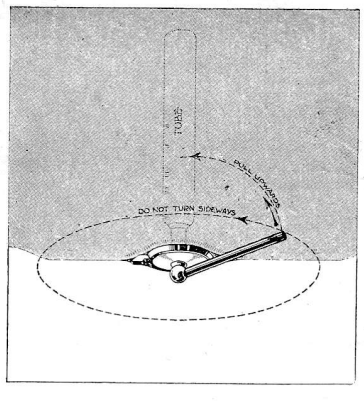
Figure 1: 1924 KLM Safety Pamphlet

In case of engine trouble a pilot is able to circle with a diameter of 4 miles to select a field where the machine can be safely landed. These fields are situated at regular intervals on the route and are well known to pilots.

When about to land the pilot diminishes the speed of the propellor and passengers have no cause for alarm when hearing the engine slowing down, it is only an indication that the pilot is preparing to land.

When descending passengers are recommended to close the mouth and perform the operation of swallowing or „gulping" down food, so as to prevent temporary deafness.

Weather conditions are sent out every hour from wireless stations, informing the various aerodromes of such weather conditions along the route. The pilot is therefore fully aware of the weather he may expect when leaving an aerodrome. Further he will find on his route certain signals (large white figures on a dark ground) indicating weather conditions at the next station. For instance these signals displayed at Flushing inform him of the conditions at Ostend and at Ostend those for Calais. This enables him to arrange his flight accordingly and should conditions be too bad for continuing, he can finish his flight before entering the bad area. This latter condition is very exceptional as the K. L. M. machines have proved their ability to fly in practically all weather conditions. Nevertheless, pilots have received the most stringent instructions never to take any unnecessary risks and the motto of „Safety First" has been and will always remain the guiding principle of the K. L. M. flights.



Operating lever and air tube.

ROYAL DUTCH AIR SERVICE CO.

GENERAL HINTS & INFORMATION FOR PASSENGERS.

1. Do not smoke or light matches in the machine.
2. Articles of any description must **not** be thrown out of the machine. In addition to it being an extremely dangerous practice, it is a breach of the Air Navigation Act.

LIFEBELTS.

3. For the channel crossing which occupies from 12 to 18 minutes, lifebelts are provided for each passenger should necessity arise.

Ordinarily the lifebelt is inflated by means of a compressed air bottle, operated by a lever, but it can also be inflated by the mouth.

TO ADJUST.

Put on the belt in waistcoat fashion, by passing the arms through the shoulderstraps, as in figure I,

FIG. I.

so that the brass operating lever comes to the bottom right hand side. Hook the brass buckles in front, as shown in Fig. II.

TO INFLATE.

Hold the air bottle (which will be felt inside the belt Fig. II, A) by the left hand and press the operating

A 1924 airline safety pamphlet from KLM (first and last page). Courtesy of Fons Schaefers from "History of Safety Cards, Part 6: Recent Trends (1990s—Current)", included on the basis of fair use.

Figure 2: Middle Section of the 1924 KLM Safety Pamphlet

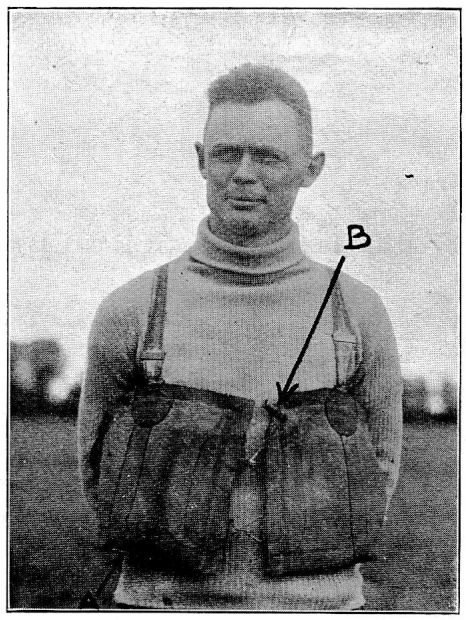


FIG. II.

lever upwards with the right hand. If the cylinder does not work, inflate by mouth, after unscrewing the valve on the left side of the belt. (Fig II, B). When sufficiently inflated, screw down tightly the mouthpiece valve. (Fig. III).

FIG. III.

EMERGENCY EXIT.

4. In the event of the door of the machine becoming blocked an emergency exit is provided. This exit is indicated in the machine and is opened as follows: — Pull with force the red ball of the linen covering, which then rips away the fabric and forms the exit, and climb out.

When making use of this emergency exit do not inflate your lifebelt until you have passed through, as the aperture would be too small.

Never tamper with the emergency exit during flight as it is extremely dangerous.

COMMUNICATION WITH PILOT.

5. In case of urgent necessity passengers can communicate with the pilot through the scuttle behind the pilot seat.

GENERAL NOTES.

Don't be concerned if the machine on starting taxies slowly towards a corner of the aerodrome. The machine always starts and lands head against the wind.

After running about 120 yards the machine almost imperceptibly rises from the ground.

The so-called „bumping" movement sometimes experienced is occasioned by the irregular temperature of the air or strong winds, and it is in no way dangerous. It corresponds to the motion of a ship at sea. The machines are so stable that passengers can have every confidence and with such get quickly accustomed to the motion. It may interest passengers to know that the machines of the K. L. M. have proved their air worthiness and stability by flights across the Channel when the regular cross channel steamers have been prevented from sailing owing to stormy weather.

Good ventilation prevents air-sickness. The windows of the K. L. M. machines are so constructed that they can be opened on both sides giving perfect ventilation without causing draughts.

In case of sickness receptacles are provided and kept in the left back corner of the cabin. Do not throw these receptacles out of the machine.

A metal water bottle and tumblers are also provided and stored in the small cupboard behind the seats.

When flying in a curve machines heel slightly to one side but passengers remain sitting upright in their seats.

There is no discomfort in looking downwards when flying; dizziness is unknown in aeroplanes as there is no connection with the earth.

Machines fly at an average height of 1200 feet. Follow your route on a map and your interest in the flight will be immeasurably increased.

Owing to the altitude of the flight the impression gained by passengers is that the machine is flying very slowly, whereas the speed is often about one hundred miles per hour.

The machines are so constructed that with the engines stopped they are able to „glide" on their wings. When gliding, for every hundred yards loss of height a distance of 800 yards horizontally is covered.

A 1924 airline safety pamphlet from KLM (middle pages). Courtesy of Fons Schaefers from"History of Safety Cards, Part 6: Recent Trends (1990s—Current)" included on the basis of fair use.

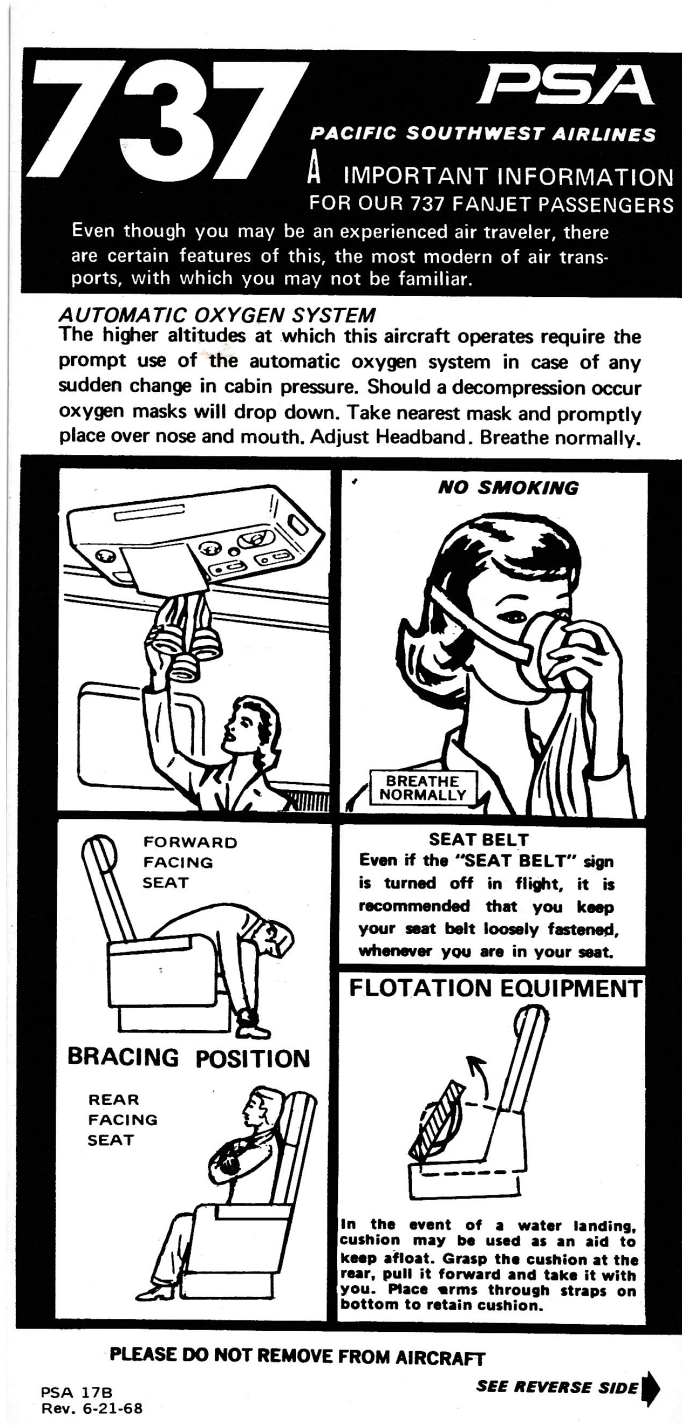
Note how the text does the main work to help end users understand the instructions—what the user needs to do in case of an emergency. The two illustrations are helpful, but not strictly necessary for comprehension.

While airline safety pamphlets/cards such as the one from KLM in Figures 1 and 2 existed in many forms and on many different airlines from the early 1920s onward, they weren't mandated to be on all United States aircraft until 1965. In Figure 3, you can see one of these early mandated airline safety cards from a Pacific Southwest Airlines Boeing 737 in 1968.

More than forty years removed from the KLM example in Figures 1 and 2, the 1968 PSA example in Figure 3 still relies on words to comprise the bulk of its message. However, there are more images that play an important role in understanding the message and in translating that message to the actions needed to save lives in an emergency. The ratio of word-image on the page in the 1924 example has significantly lowered by the 1968 example (the 1968 example is almost equal in word to image, but the 1924 example is about 90% words).

Later, safety cards evolved even further as culture shifted—flying became cheaper, meaning more people and more families were flying all over the world. As a result, the airline safety cards adopted the more universal language of images to get their message across to adults and children alike. That way, even adults who couldn't read English fluently or kids who couldn't even understand any words at all could still see how to accomplish tasks such as how to put on a mask and how to locate the floatation device under their seats.

Figure 3: Airline Safety Card for 1968 PSA 737



Airline safety card from Pacific Southwest Airlines Boeing 737 in 1968. Courtesy of Fons Schaefers from "History of Safety Cards, Part 4: 1960s – Mandated!", included on the basis of fair use.

Users still have to pay close attention to the visuals just like they had to pay close attention to the text in earlier iterations, but the audience for these image-

Figure 4: Mid-1970s Dan-Air Airline Safety Card

A mid-1970s airline safety card from a Dan-Air 727-200. Courtesy of Fons Schaefers from "History of Safety Cards, Part 5: Maturing: (1970s-1980s) by Fons Schaefers, included on the basis of fair use.

heavy safety cards is much broader than the earlier ones as exemplified in the pamphlet of 1924 in Figures 1 and 2. However, as we discussed before, the context for how documents are read and understood, as well as how end users can translate them into accomplishing a meaningful action, are always changing.

To wit, the act of flying has gotten less like the casual experience of earlier eras, in part because carriers have organized their business models around connecting flights from particular hubs, not to mention the act of getting to the plane itself has become more time-consuming since the security changes resulting from post-9/11 measures to ratchet up airport safety. Though the same visual safety card sits in the seat pocket before the passenger and the flight attendants stand up and demonstrate how to fasten and unfasten a seat belt or oxygen bag, a large portion of their audience is sitting there thinking: Am I going to make my connecting flight? Did I turn the stove off? Did I take a picture of the section number in the parking lot? Is my phone actually off and in “airplane mode”? Do I have the right information to find the shuttle at my final destination? Airlines noticed passengers weren’t paying attention to the safety procedures, and they reacted with a new type of airline safety card.

While airline safety videos emerged in the 1980s and were mainly low budget affairs that went routinely through the same steps the flight attendants were showing, subsequent airline safety videos became complex affairs that some airlines put a good amount of time and money into. Because airlines noticed how disengaged passengers were during these safety proceedings in the current context of modern life with technology, they introduced other types of technical communication aimed at engaging passengers while still conveying the same important safety messages.

As you might expect or have experienced yourself, these newer versions shifted from printed cards on the backs of seats and familiar in-person flight attendant demonstrations to engaging—even entertaining—videos. The videos were crafted to cut through the realities of current passengers and distinguish themselves from earlier airline safety cards in order to attract users’ attention. No matter how easy the visual safety cards may be to comprehend, they can’t be successful if no user plucks it out of the seat pouch and actually reads it. The videos have a tone and style not often associated with traditional notions of technical writing. They include non-sequiturs, induce laughter in some cases, and entertain as they inform. Some of them even serve multiple marketing purposes as they seek to inform passengers how to protect themselves from serious airline incidents. Figure 5 below is an airline safety video from Air New Zealand that exemplifies the means to attract attention and convey important safety messages, while also

helping to market Air New Zealand, New Zealand tourism, and a particular film franchise about to debut another film at the time of this safety video's release:

Figure 5: Air New Zealand Safety Video

"The Most Epic Safety Video Ever Made" by Air New Zealand. For the entire video with captions, watch on YouTube. (Note: The video transcript is included in the chapter appendix.)

While these and similar airline safety videos proliferated for a relatively long time, no piece of technical writing can engage 100% of its audience effectively for an unlimited amount of time. As a result, some airlines went back to more basic videos once the budgets needed to creatively "one-up each other" skyrocketed, Passengers acclimated to these entertaining videos as well, with many going back to ignoring them or just preferring a more serious and sober approach to the hazardous issue of airline safety. Regardless of which approach is best, technical writers need to understand how context affects their audience and to plan, adjust, and revise their documents accordingly. Changes in tone, style, form, and delivery must be made in order to maximize the connection and understanding of technical writing for their chosen audience.

In addition to audience, purpose, and context, the other three rhetorical terms that will come up often in this book are known as the "three classical strategies of persuasion." While not every piece of technical writing seeks to persuade its audience, many technical writing genres do seek to persuade, one of which—**recommendation reports**—is covered in this book.

The first of these three classical strategies is **ethos**. In previous writing classes, your instructor may have defined ethos as "the ethical appeal." In other words, the author/speaker bases an argument on what is best for the greater good, or what is more moral. Because the audience sees the author/speaker advocating for the greater good and following beneficial ethics as a means to an end, the author/speaker should be believed and the audience should be persuaded to follow that path.

A more expansive view of ethos highlights credibility as rooted in credibility: We should be persuaded based on the perceived character of the author/speaker. For example, if we are reading a medical report advocating for a particular type of treatment, readers would react differently if the text were written by a doctor with 30 years of experience treating this exact condition versus someone on Facebook who has never been a doctor and is advocating a treatment for the same condition based on something they overheard standing in line at the supermarket. In this sense, credentials and qualifications, as well as lived experience, contribute to ethos as a persuasive appeal. Credentials and qualifications tie back not only to the author of a piece of technical writing, but also to any people or documents cited in the piece of technical writing itself.

Ethos is also found in attitudes and beliefs communicated directly by statements within a text, as well as attitudes and beliefs communicated indirectly through tone and style. For example, if a piece of technical writing is stiff and formal or written in passive voice, it will come off much differently than one using informal language or humorous examples to get points across. Compare Figure 1 (the KLM airline safety card) to Figure 4 (the Air New Zealand Safety video) above in terms of ethos. One takes a matter-of-fact approach and one takes a humorous one, but both have the same end goals of helping users understand airline safety.

While you may not think you are deploying a distinct ethos approach in your technical writing (especially if you only think of ethos as "the ethical appeal"), ethos is always going to be present in your technical writing: If your name is on the document and if your perceived character as a technical writer is evident to the readers, then they will form an opinion of you and your skills as they read.

Are there three typos in the first sentence of your recommendation report? Did you tell users to use the wrong kind of screwdriver in the first step of instructions to put together a bike? Neither of these examples bodes well for establishing trust with your audience as a helpful, clear, concise, trustworthy author of technical writing.

The next classical strategy of persuasion is **logos**, which is the appeal based on logic or reason. In rhetorical terms, the logos appeal means the audience should believe the composer based on the logic found in their ideas, the cogent relationships between ideas, and the overall logical arrangement of the piece. A logos appeal is often easy to identify because readers will see a reliance on statistics, quantitative data, and indisputable facts. However, logos can also rely on crafting logical arguments and using structures such as cause and effect, and it can also be found in the overall logical arrangement of a piece. Having a natural order to the progression of ideas and logical, orderly transitions (or in technical writing such as user documentation, the right steps in the right order) can be seen as a type of logos, as well. Logos may also be present in technical writing in the overall arrangement by ascertaining how and when to integrate visuals and text in order to help readers understand information better.

The third and final classical strategy of persuasion is **pathos**, which is the appeal based on the aroused emotions of the audience. A pathos appeal means the audience should believe the writer/speaker based on the emotions provoked in them by what the author has put before them. Traditionally, pathos is achieved by using strong images and evocative words that arouse particular feelings in the audience. It can also be achieved by tapping into ideas that have deep cultural relevance or resonance, such as “freedom” or “the loving family.” Creative writers often evoke pathos by using descriptive language and tools like metaphor and simile to paint a picture in their readers’ minds that elicits emotions. Picture almost any commercial asking you to donate money to an animal shelter, and you will find a pathos appeal: The sad music and images of cute animals in need of love and care are designed to stir your emotions, particularly those of sympathy and compassion.

When considering pathos as an appeal, many people would say that pathos does not belong in technical writing whatsoever, and traditionally, pathos certainly has been lacking in technical writing. In the airline safety cards discussed above, note how pathos was missing from the early examples of airline safety cards. In this particular instance, you can see why the authors did not want to arouse emotions, such as fear or apprehension. Flying on airplanes, especially in air travel’s relative infancy, was fraught with danger and the authors wanted to

purposely avoid instigating any negative emotions of among passengers. Even with the visual airline safety cards, they do not rely on scary images involving plane crashes to arouse the emotions of the audience and make them pay attention; they adhere to a more logos-based approach of informing the users about each small step to take in order to achieve safety. Later, the Air New Zealand injected pathos as a way to attract and hold passengers' attention, primarily by using absurd images to generate humor and thus entertain the audience enough to pay attention to the pertinent information.

However, relying almost entirely on logos has been the main identifying strategy of technical writing since its inception, and that hasn't always worked out for end users. Some instruction manuals for products like VCRs, word processors, and cameras ran to hundreds of pages. Even in earlier eras with less competition for attention and means of delivering messages, people weren't clamoring for more technical writing pieces like those giant, logos-dominated user manuals.

Today, more and more technical writers are embracing aspects of pathos to better engage the audience, even if logos is still the primary strategy for delivering the information that needs to be delivered. Pathos can be deployed to attract a user's attention and direct it to the most salient points of information the piece of technical writing is trying to deliver, or simply to provide a break or re-set, allowing users to re-focus on the logos-heavy parts. Pathos can also be used in terms of design to help make things exciting and help users pay attention.

If the goal of technical writing is to "get things done," a piece of technical writing can't get anything done if people aren't paying attention to it. This doesn't mean every piece of technical writing has to sound like a piece of advertising engineered to recruit pathos to connect with viewers, but it does mean technical writers need to acknowledge the real circumstances that their audiences inhabit. In our current communication contexts, a tidal wave of content is trying to get our attention across print, audio, websites, phone apps, tv streaming apps, dozens of social media apps, etc., so technical writing has to be able to cut through the same noise every other piece of communication faces as well.

Though we may not think our modern society has much in common with ancient Greece, where these three classical strategies of persuasion were first identified and explored, it seems that the best strategy for many pieces of technical writing is similar to what Aristotle advocated so many centuries ago: An author/speaker needs to use all three strategies of persuasion—ethos, logos and pathos—to

create the kind of communication that's going to connect with the widest amount of the intended audience.

Pathos still may not be present in a very strong and consistent way across most pieces of technical writing, but it is found more and more in modern technical writing. Even if it means embracing the turn to informality that seems to be a growing shared cultural concept (which you can see in instruction materials for current video games compared to things like earlier pieces of computer software), technical writers must have the flexibility to appeal to the preferred attitudes and predilections of their audience regarding communication techniques to be successful.

1.5: How Do We Use This Textbook?

Rather than providing disembodied chapters focusing on lists of technical writing do’s and don’ts, this textbook includes chapters centered on one skill within technical writing and addresses it through an actual writing assignment and reviewing samples for that assignment. The goal is to produce a textbook that introduces students to technical writing and provides a baseline of skills they can use to enhance their skills in subsequent courses.

1.6: Chapter 1 Appendix

Air New Zealand Video Transcript

From the description under the video on YouTube:
As the official airline of Middle-earth, Air New Zealand has gone all out to celebrate the third and final film in The Hobbit Trilogy - The Hobbit: The Battle of the Five Armies. Starring Elijah Wood and Sir Peter Jackson; we're thrilled to unveil The Most Epic Safety Video Ever Made. #airnzhobbit Special cameos by Sylvester McCoy, Dean O’Gorman and Weta Workshop co-founder Sir Richard Taylor. Directed by Taika Waititi. Check out the Air New Zealand Facebook page to see behind the scenes pics from ‘The Most Epic Safety Video Ever Made’ and see firsthand Hollywood stars on the set of Middle-earth including Elijah Wood, Sylvester McCoy, Dean O’Gorman, John Rhys-Davies (as Gimli) and New Zealand’s own Sir Peter Jackson. Subscribe to Air New Zealand for more epic videos, and don’t forget to share this video with your friends. Enjoy!

Transcript

Air New Zealand Video Transcript

Time	Caption
0:01	HURRY!
0:19	[Elvish] Creoso ‘a ened kemen mellonamin.
0:31	Welcome to Middle Earth my friend.
0:34	I’m here to guide you on your journey so cease your rabble rousing and listen very carefully
0:39	and obey all crewmember instructions and all illuminated signs.
0:43	If the seatbelt sign were to illuminate, return to your seat right away!
0:48	Make sure all valuables at your feet are pushed under the seat in front of you.
0:52	and fasten your seatbelt low across your hips.
0:54	Although we recommend you keep your seatbelt fastened through the flight, if you do need to get up,
0:58	release by lifting the lever, or pressing down on the button.
1:06	Oxygen is precious to you beyond measure so if an oxygen mask should drop down from above,
1:11	pull down on the mask, place over your nose and mouth and adjust the elastic on both sides for a secure fit.
1:18	There’s no need to sound the alarm if the bag doesn’t inflate, there’s plenty of oxygen flowing through freely.
1:24	If you have halflings or young ones, secure your own mask before helping with theirs.
1:30	If there’s a mishap during take off or landing, brace yourself on the seat in front of you.
1:35	I myself prefer the more compact method.
1:37	Put your hands on your head, your elbows on either side of your legs and your feet flat on the floor.
1:45	When seated in Business Premier, sit upright, rest your hands on your thighs and keep your feet firmly on the floor.
1:54	Lifejackets are easily put on while seated, just rip open the pouch, slip it over your head,

Time	Caption
2:00	clip the waist bands together, and tighten. In Economy class, it’s located under your seat.
2:05	If you're seated in a Skycouch it's in your leg rest. In Premium Economy it's here under your seat.
2:10	And if you're seated in Business Premier it's located here beside you.
2:19	Inflate your lifejacket by pulling on the red tab but only when leaving the aircraft.
2:30	If you need to inflate the lifejacket a bit more, blow into the mouthpiece.
2:37	Crew will provide cute little life jackets for our littlest people should you need one.
2:42	Smoking anything, including electronic cigarettes, anywhere onboard is forbidden territory, as it’s dangerous.
2:51	We have lighting in each aisle to guide the way out if it’s dark. Your crew are now pointing out your exits.
2:58	Your nearest exit could be behind you. Count the rows to the exit so you know the fastest route out!
3:22	and CUT! It’s time to stow all electronic devices.
3:27	As you are onboard a 777 aircraft, lightweight handheld electronic devices may be used at any time.
3:33	For more information, please refer to your safety card or ask one of the Flight Attendants.
3:50	Thank you for embarking upon your journey with Air New Zealand,
3:53	may your path always be guided by the light of the stars
3:56	and may the future bestow upon you all the happiness and adventure our Middle Earth has to offer.
4:04	That’s a wrap everyone, I hope you enjoyed it!

Return to chapter 1 text.

1.7: Additional Resources

Additional Resources

To see how technical writing has changed, looking at early examples of textbooks can help. The earliest technical writing textbooks in the United States are T.A.

Rickard's Technical Writing (1908) and S.C. Earle's Theory and Practice of Technical Writing (1911). For more information, see the following Master's thesis by Stuart Maher:

Maher, Stuart W., "The origins of technical writing instruction in the United States with a survey of technical writing texts 1908-1977." Master's Thesis, University of Tennessee, 1990. https://trace.tennessee.edu/utk_gradthes/12721

For more information on airline safety cards, see the series of articles from Fons Schaefers on the World Airline Historical Society website from 2022-2025. You can begin with "The History of Safety Cards, Part one: The Pioneer Years (1920s Through 1945)."

1.8: Chapter 1 References

References

Hauser, G. (1986). Introduction to rhetorical theory. New York, NY: Harper & Row.

Woolever, K. (1999). Writing for the technical professions. New York, NY: Longman

Chapter 2 | Summarizing: Patent Summary Assignment

2.1: What Is Summary, and Why Is It Important?

One of the key skills writers must develop within technical writing is the ability to summarize complex documents so that a broader audience can access the main ideas from those documents. To recall the 5 C's presented in Chapter 1, technical writing strives to be clear, concise, complete, consistent, and correct. Summarizing information plays a part in being able to meet all those C's, especially in creating technical writing that is clear and concise.

A key element of technical writing involves taking information from a specialized audience to a more general audience who only needs—or wants—certain pieces of an original document. Technical documents often need to be read by many groups within a company or organization, and many of those workers are very pressed for time and need to access the main points of those documents that concern them or their departments very quickly. Most workers don't have the luxury of unlimited time to read a 150-page report that may or not pertain to them. Instead, that report will include elements of summary, such as an executive summary or abstract, up front in the report to help readers decide if the entire report is relevant for them.

Summaries such as these help people budget their time and direct their attention where it is needed.

The goal of a summary is to deliver an overview of the essential facts and key takeaways from a larger document. Summaries help to "get things done" because they allow a wide variety of audiences to be more efficient in grasping ideas and accomplishing tasks. Though summary may be most closely associated with helping to achieve clarity and concision, there are other reasons why the ability to summarize larger documents is so important to technical writing. Summaries can accomplish all of the following:

1. Facilitate Efficiency

- Summaries help readers understand large documents more quickly
- Summaries direct users' limited attention to the most important and relevant parts of a document

2. Increase Accessibility

- Summaries allow a wider range of readers to access—and make informed decisions about—larger, more complex documents
- Summaries increase accessibility, which can lead to better decision making and higher levels of organizational inclusivity

3. Improve Navigation

- Summaries can help readers figure out what sections of a larger document they may need to focus on

4. Help Knowledge Retention

- Summaries help readers remember important information because they deliver information in an accessible, easy-to-remember way
- Summaries can act as an excellent reference point in the future when readers need to return to a document for some reason

5. Ensure Consistency and Clarity

- Summaries help to maintain a consistent tone and message when condensing material from multiple sources

6. Preserve Important Details

- Summaries allow many industries and businesses to maintain records that can help with compliance, safety, and legal issues
- Summaries preserve essential details that can be important for future readers to access

2.2: What Are Some Techniques for Summarizing?

To summarize technical information, the first step is fighting the urge to do it quickly because that often ends up taking more time in the long run or needing to go back and revise significantly because of clarity and correctness issues. Many students try to summarize a document the first time they read through it, but the quality of the summary invariably suffers, and it will need heavy revision before it can connect with an audience satisfactorily.

Instead, it is more beneficial to slow down and approach summary in stages:

1. The Reading and Pre-Writing Stage

- Read the document you are trying to summarize multiple times
- Get as familiar with the source material as you can: Read it as many times as you need to until you know it better than you know your best friend
- Take the time to look up unfamiliar words
- Jot down notes along the way
- Identify the main points, findings, and conclusions or even what might be called the thesis of what you are trying to summarize
- Take the time to reach out to others who may understand the concepts more: Technical writing is a large and collaborative field—nobody can be expected to know the minutiae of every topic well enough to write about them accurately

2. The Writing Stage

- Be sure to include attributions such as author(s), titles, or technologies
  - ✓ Readers may want to consult the original text, so provide a means to access the original document being summarized when possible
- Include the wider context of the document such as date written and for what original purpose (e.g., a memo or feasibility report)
- Develop one sentence for each key point or main idea
- Structure the main ideas and key points in order of importance, with the most important appearing first (except when you are summarizing something organized in steps or some other pattern)
  - i. Identify the most important points and details
  - ii. Purpose: Why do readers need the information?
  - iii. Main Concept(s): What are the fundamental ideas?
  - iv. Steps/Processes (if needed)
  - v. Key Findings: What are the crucial stats/results/conclusions?

vi. Implications: How will this change things? How does this apply in practice?

- Focus on paraphrasing (putting the document into your own words) so that you can turn it into an accessible style the audience may require

  ✓ If the original is written in a way that is perfect for users already, then you may consider quoting directly from it in the summary

- Avoid jargon and acronyms if possible, or define them if they are key parts of the account

  i. How much you need to do this will depend on your knowledge of the audience: You won't have to do it much, if at all, if the audience is comprised of experts

  ii. If the summary is designed for non-experts, it may end up longer because key points and language terms may need to be defined

- Use simple, direct sentence constructions such as subject-verb-object

- Present the summary with visual elements that help the audience make sense of the information, such as headings, bullet points, and numbered lists

- If the source material contains a lot of complex data, try using charts, tables, and diagrams to simplify that data for readers in a more visual way

- The summary should be able to stand alone and make meaning: Readers shouldn't have to return to the original document to understand it

3. The Revision Stage

- Review your draft and focus on the following questions:

  i. Are the ideas in the original complete?

  ii. Are the ideas concise?

- Can you cut the draft down and still express the ideas adequately?

  i. If you can cut it down, is the summary still clear?

  ii. If you can cut it down, is the summary still correct and ethical in explaining what the original set out to do?

- Focus on proofreading, as well as on actual grammar and mechanics issues that may cause confusion
- Verify your summary is correct and true to the meaning of the original by consulting others who may be more knowledgeable about the subject being summarized
- Test your summary on a few people in your target audience before releasing it to a wider audience
- Is the summary comprehensive without being overwhelming? Can you cut the length by cutting out unnecessary information or phrases that are too wordy?

2.3: Assignment in Focus: Writing a Patent Summary

While many student writers are familiar with summarizing longer quotations to be included as sources within research papers, or maybe even writing abstracts and executive summaries for longer reports, the following assignment is a good one to develop students' abilities to summarize complex ideas for a more general audience. The assignment also helps students practice document design and information hierarchy, which are important tools in making summaries connect better with their audience.

The assignment asks students to select a patent from the United States Government patent search site and summarize it for a wider, more general, audience. Below, you will find the patent summary assignment sheet and rubric. After both of those documents, you can read about the larger context of the assignment and tips for putting it all together.

Patent Summary Assignment

Overview

For this assignment, we will practice core elements of technical communication—summary, information architecture, clarity, and visual rhetoric—that will be needed in future projects. It is worth 100 points of your overall grade.

Details

Select a patent from the US patent database and create a one-page, stand-alone synopsis sheet that includes a visual representation, as well as other design elements such as headings to help readers understand the patent. The goal is to

explain the item to a wider, more general audience: Show what it is, why it is needed, and why it is better than what already exists. You can pick any patent, no matter how odd or funny the topic might be; however, I urge you to pick a relatively modern one that readers could see a need for.

Places to Find Patents

- **Google Patents Search Engine**
- **Advanced Google Patents Search**
- **Google Resource for Searching Patents**
- **United States Government Patent Page**
- **Basic Patent Search Page by United States Government**

Note: While the United States Government site is more comprehensive, the Google Patents page is easier to navigate and includes patents from other countries, too.

Grading

My evaluation will consider how thoughtfully your information is summarized, selected, organized, designed, and presented (both textually and visually) with regard to your audience and purpose. Visuals should adhere to the principles discussed in class, and no typos should be present. See the Patent Summary Rubric for more detailed information.

Patent Summary Rubric

Criteria	Description	Points
Overall Format and Design	Professional format and design that engages the audience and aids understanding of the content.	10 pts.
Background Section	Concise yet clear explanation of the need for the idea/topic, providing the audience with a basic understanding.	20 pts.
Specifications/ Design Section	In-depth explanation of the topic/idea, including what makes it function, presented clearly.	20 pts.
Overview Section	Clearly demonstrates what is novel about the concept, explains why adoption is necessary, and provides access to the full patent.	20 pts.

Visual Image	Includes at least one visual image that adds credibility and helps the audience better understand the idea.	10 pts.
Tone	Maintains a professional tone throughout the entire document.	10 pts.
Mechanics	Free from grammatical, punctuation, and spelling errors.	10 pts.
Total Points		100 pts.

Starting the Assignment

To begin the assignment, the first step is to search for a patent that interests not only you but also a larger audience because of its utility. Within the patent summary search engine, you can easily find patents related to your interests and hobbies. Whether you're interested in video games, sports, dogs, ice cream, or inventions to help dogs eat ice cream, there's a patent for it. However, keep in mind the United States issued its first patent in 1790, so it will be helpful to choose a patent that's more modern for your audience to understand its applicability to their everyday lives.

After locating the patent you'd like to focus on, review the rhetorical situation for the assignment: You have one page to summarize the patent and to connect it with a wider, more general audience with the goal of convincing people to embrace the invention or possibly to invest in it. Think of the one-page summary as being handed out at a conference of venture capitalists or to the board of a local bank so that investors can help make the invention a reality for consumers.

For this to happen, your audience will need to understand the technology at the heart of the invention and why the product represents something better than what's currently available or, if a novel product, why it would be necessary in the first place.

Below, you will find a patent, and after that, a student's sample summary of the patent. In between, you will find additional context for student writers to consider while doing the assignment, as well as tips and strategies for improving the sample that you can apply to your work.

To begin, follow the process for summarizing that we outlined earlier in this chapter and read the patent a few times while focusing on what the invention is, what it does, how it works, and why it is needed.

Original Patent Example: Recharging Rolling Laptop Bag

[Note: View the Recharging Rolling Laptop Bag patent in its original form on the United States Government Patent search page.]

United States Patent Application Publication 20070052388 Kind Code A1 Publication Date March 08, 2007 Inventor(s) Wilson; John W. et al.

Abstract

A roller bag having integral thereto a battery and a small alternator geared to recharge the battery when the wheels of the roller bag are rotated (It might be me, but I do not understand this first sentence, particularly the phrase "integral thereto"). During times of commuting, such as within an airport terminal, between a terminal and a rental car facility, or in route to a hotel, the battery will remain charged and available to the mobile user to provide a reliable source of power. A power terminal is further integrated into the bag, providing external access to the battery, which power terminals (is "power terminals" needed here—sounds clunky) permit connection to portable electronic devices, and may include retractable cords and programming tips.

Inventors: **Wilson; John W.** (Phoenix, AZ), **Swanson; Jason W.** (Phoenix, AZ)

Family ID: 37829460
Appl. No.: 11/204807
Filed: August 16, 2005
Publication Classification
Int. Cl.: **H02J7/00** (20060101)
LOC Cl.: H02J
U.S. Cl.: USPC 320/114

Background/Summary

Field of the Invention

[0001] The present invention is generally related to accessories for portable electronic devices including power converters, notebook traveling bags, and other devices usable with portable electronic devices including notebook computers, MP3 players, cellular phones, portable gaming devices, digital cameras and so forth.

Background of the Invention

[0002] The traveling road warrior typically owns a host of accessories for their portable electronic devices to make traveling easier and more convenient. For instance, notebook computer bags, AC and DC input power converters, extra batteries, retractable cords and so forth are just some devices utilized to make operation of such devices possible when away from the office and during travel.

[0003] Power converters are typically utilized to provide power to portable electronic devices to facilitate the operation and/or recharging thereof. DC power, such as the kind available from vehicles including cars and airplanes, and AC power available from wall sources, are typically utilized by the power converter to power the portable electronic devices to avoid the depletion of battery and/or charge the batteries during use or when not in use. Unfortunately, auxiliary power is not always available, and sometimes there is no time to charge such devices in between travel, such as when traveling through the airport terminal to terminal, from the terminal to a rental car facility, and so forth. Hence, the traveling user often carries additional power sources, including additional batteries, during these time periods.

[0004] There is desired an improved accessory adapted to provide power to portable electronic devices in such situations, which accessory is convenient and affordable.

Summary of the Invention

[0005] The present invention achieves technical advantages as a roller bag having integral thereto a battery and a charger geared to recharge the battery when the wheels of the roller bag are rotated. During times of commuting, such as within an airport terminal, between a terminal and a rental car facility, or in route to a hotel, the battery remains charged and available to the mobile user to provide a reliable source of power. At least one power terminal is further integrated into the bag providing external access to the battery, which power terminals available to connect power cords for portable electronic devices. A universal power solution is achieved through utilization of a programming device, such as programming smart tips.

FIG. 1

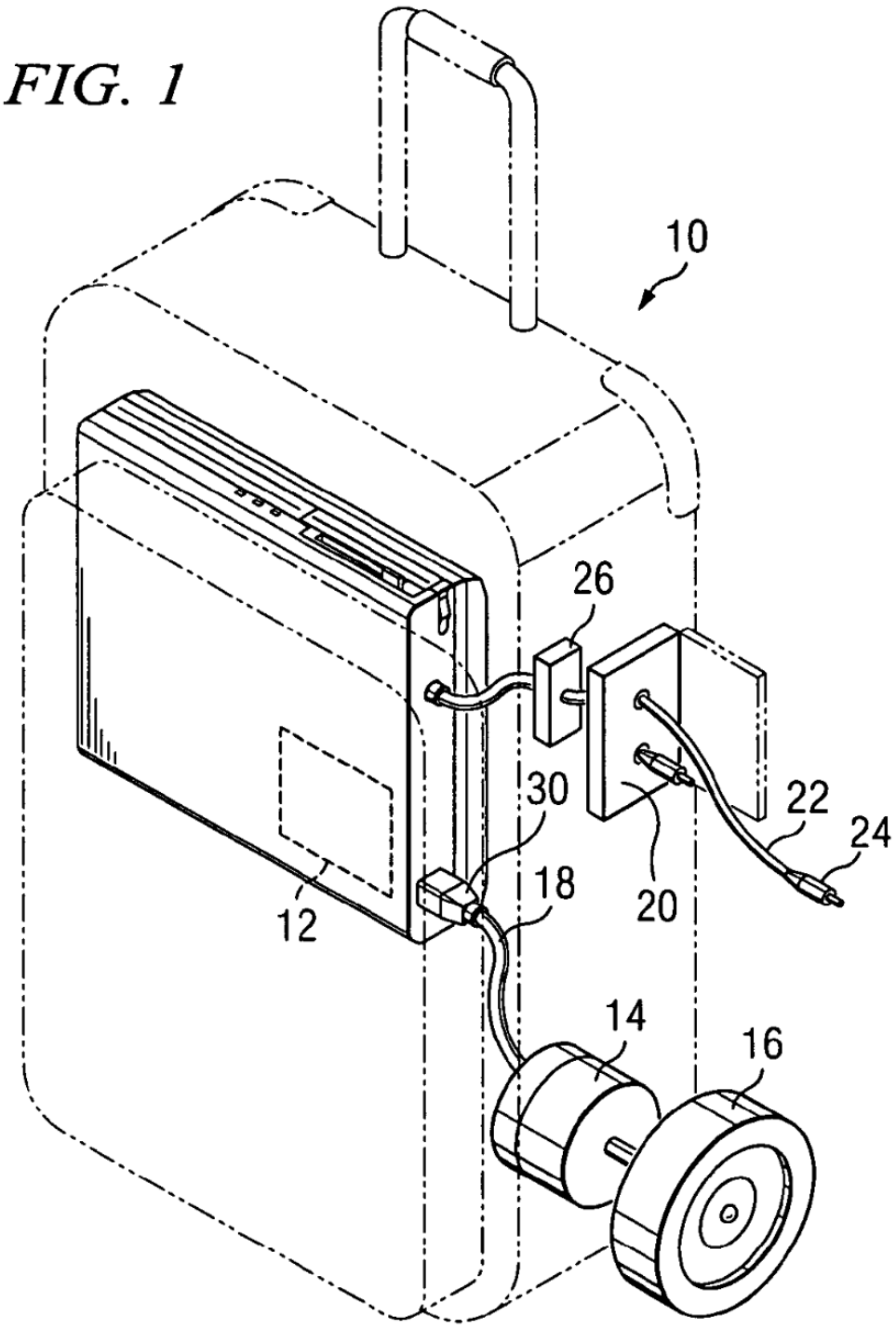


Fig. 1 from Recharging Rolling Laptop Bag (U.S. Patent No. 20070052388, U.S. Patent and Trademark Office) by John W. Wilson et al. included on the basis of fair use.

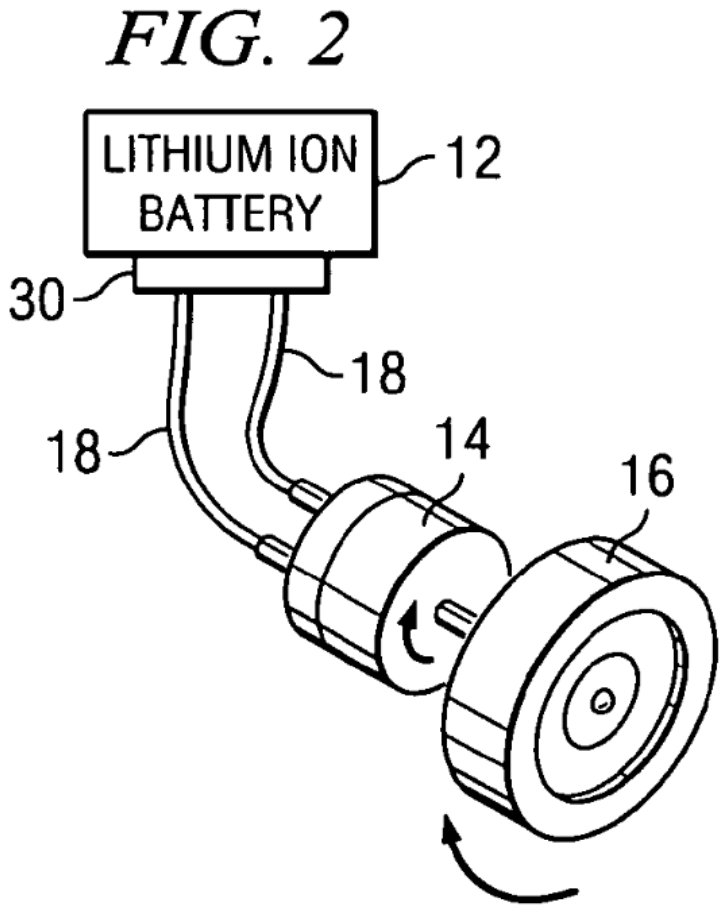


Fig. 2 from Recharging Rolling Laptop Bag (U.S. Patent No. 20070052388, U.S. Patent and Trademark Office) by John W. Wilson et al. included on the basis of fair use.

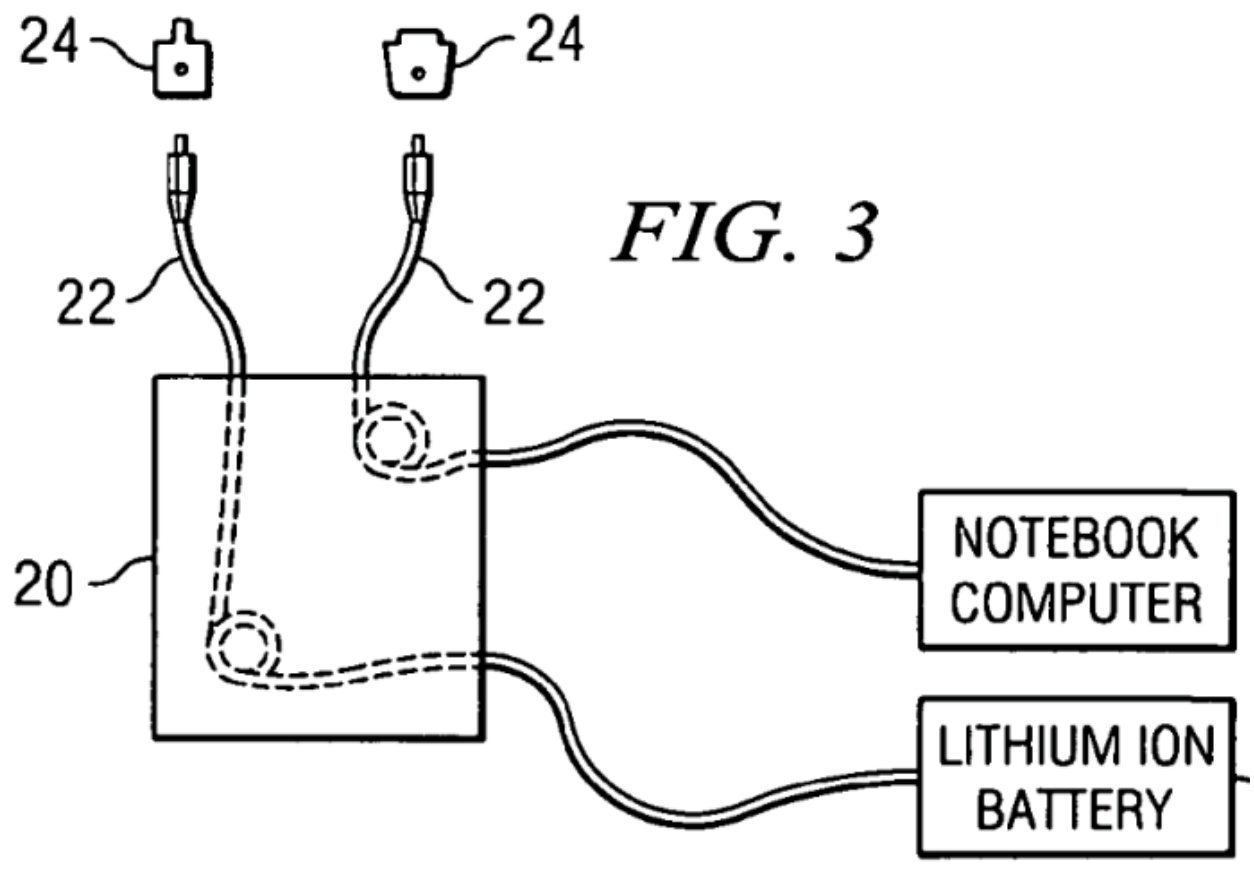


Fig. 3 from Recharging Rolling Laptop Bag (U.S. Patent No. 20070052388, U.S. Patent and Trademark Office) by John W. Wilson et al. included on the basis of fair use.

Description

Brief Description of the Drawings

[0006] FIG. 1 is a perspective view of a roller bag according to one embodiment of the invention;

[0007] FIG. 2 is a diagram of an alternator disposed between a bag wheel and a bag battery; and

[0008] FIG. 3 is a diagram of a retractable cable which may be integrated into the bag and be usable with voltage programming tips.

Detailed Description of the Present Invention

[0009] Referring to FIG. 1, there is shown a perspective view of a laptop roller bag at 10 having an integral battery 12 chargeable by a battery charger, shown as a generator 14, driven by wheels 16. Externally accessible connectors 20 are seen to be electrically coupled to battery 12, which provide access to power for charging and/or operating portable electronic devices via one or more cables 22. At a distal end of each cable 22 may be a detachable programming connector 24 adapted to mechanically interface to a variety of portable electronic devices, and further which connecters power 24 program the output voltage and/or current to deliver energy suitable to power a particular portable electronic device. Such interchangeable programming tips 24 may comprise of iTips.TM. manufactured and marketed by Mobility Electronics of Scottsdale, Ariz. Such programming connectors 24 program a power converter 26, which may be integral to battery 12 or interposed between battery 12 and connector 20 as shown, to deliver the appropriate power. Multiple connectors 20 are shown, each sourced with power from battery 12 so as to provide power to multiple portable electronic devices. Advantageously, the user has multiple power sources available via connectors 20, each of which can be configured to provide a suitable voltage to a different respective portable electronic device. Each of cables 22 may further be individually retractable into the bag to provide further convenient accessibility of cables 22 and convenient storage thereof when not in use. The detachable tips 24 may be stored in a pocket or pouch integrated within bag 10, or disposed within a pocket of bag 10. A retractable handle 40 is also provided for convenient use thereof.

[0010] Still referring to FIG. 1, there is shown alternator 14 electrically coupled via cable 18 and connector 30 to battery 12. Alternator 14 may be a DC alternator/mini-motor adapted to generate a suitable voltage and current to charge battery 12, such as an internal lithium ion battery, although other batteries are possible and limitation to a lithium ion battery is not to be inferred.

[0011] Referring now to Table 1 and Table 2 below, there is shown some basic battery charging calculations based on two and three 6.25 volt cell phone battery charging, respectively. TABLE-US-00001 TABLE 1 Basic Battery Charging Calculation Based on the IBM X40 Battery 61.92 1 0.95 0.9 0.85 Time to 100% 95% 90% 85% Charge (min) Efficiency Efficiency Efficiency Efficiency Efficiency 60 61.92 65.016 68.112 71.208 55 67.54909091 70.92654545 74.304 77.68145455 50 74.304 78.0192 81.7344 85.4496 45 82.56 86.688 90.816 94.944 40 92.88 97.524 102.168 106.812 35 106.1485714 111.456 116.7634286 122.0708571 30 123.84 130.032 136.224 142.416 25 148.608 156.0384 163.4688 170.8992 20 185.76 195.048 204.336 213.624 15 247.68 260.064 272.448 284.832 10 371.52 390.096 408.672 427.248 5 743.04 780.192 817.344 854.496 1 3715.2 3900.96 4086.72 4272.48

[0012] TABLE-US-00002 TABLE 2 Basic Battery Charging Calculation Based on One 6.25 Cell Phone Battery 6.25 1 0.95 0.9 0.85 Time to 100% 95% 90% 85% Charge (min) Efficiency Efficiency Efficiency Efficiency 60 6.25 6.5625 6.875 7.1875 55 6.818181818 7.159090909 7.5 7.840909091 50 7.5 7.875 8.25 8.625 45 8.333333333 8.75 9.166666687 9.583333333 40 9.375 9.84375 10.3125 10.78125 35 10.71428571 11.25 11.78571429 12.32142857 30 12.5 13.125 13.75 14.375 25 15 15.75 16.5 17.25 20 18.75 19.6875 20.625 21.5625 15 25 26.25 27.5 28.75 10 37.5 39.375 41.25 43.125 5 75 78.75 82.5 86.25 1 375 393.75 412.5 431.25

[0013] As shown in Table 1, there is calculated the time to charge in minutes to attain desired battery efficiency, based on the battery having 0 charge prior to charging. Such time to charge is based upon the alternator/mini-motor 14 providing a 4V voltage and a 2A current when rotated by wheels 16 having a 21/4'' diameter rotated at normal walking speed. As can be appreciated, a 100% efficiency can be achieved in approximately 60 minutes. Of course, the size of the battery, the size of the alternator, and the speed of rotation of same will determine the power generated available for recharging the battery.

[0014] In a further embodiment of the present invention, the notebook computer (not shown) disposed within the laptop bag 10 can be adapted to be directly charged from the alternator 14 if desired. Suitable wiring from the alternator 14 to a voltage regulator, and ultimately provided to the laptop computer, as shown in FIG. 3, provides for recharging of the notebook computer without the need to remove the notebook computer and connect same to the battery 12 via the cables 22.

[0015] Though the invention has been described with respect to a specific preferred embodiment, many variations and modifications will become apparent to those skilled in the art upon reading the present application. It is therefore the intention that the appended claims be interpreted as broadly as possible in view of the prior art to include all such variations and modifications.

Claims

1. A system, comprising: a bag having wheels and adapted to receive and protect a portable electronic device; a rechargeable battery disposed in the bag; and a power converter providing an output and disposed in the bag, coupled between the battery and a connector accessible from outside the bag and further including a charging device which charges the battery upon rotation of at least one of the wheels.

2. The system as specified in claim 1 wherein the power converter output is adapted to power a portable electronic device.

3. The system as specified in claim 2 further comprising a connector adapted to selectively electronically connect the power converter to the portable electronic device.

4. The system as specified in claim 3 wherein the connector is adapted to establish a voltage of power converter output.

5. The system as specified in claim 4 wherein the connector selectively establishes a resistor in a feedback loop of the converter to establish the output voltage.

6. The system as specified in claim 5 wherein the connector has an electrical component establishing the resistor in the feedback loop.

7. The system as specified in claim 6 wherein the electrical component is a resistor.

8. The system as specified in claim 1 wherein the charging device comprises an alternator coupled to the wheels and adapted to recharge the battery as a function of rotation of at least one of the wheels.

9. The system as specified in claim 3 further comprising at least one cord disposed between the power converter and the connector.

10. The system as specified in claim 9 wherein the cord is retractable.

11. The system as specified in claim 10 wherein the cord is retractable into the bag.

12. The system as specified in claim 9 further comprising a plurality of the cords disposed between the power converter and a respective said connector.

13. The system as specified in claim 12 wherein the cord is retractable.

14. The system as specified in claim 13 wherein the cord is retractable into the bag.

15. The system as specified in claim 2 wherein the power converter output comprises a DC voltage.

[End of patent.]

After you read the patent several times, a few points should stand out:

- Patents are a distinct genre: A general audience would not be able to understand the patent in its original form very easily.
- The patent itself is almost entirely an appeal to logos.
- A lot of information can be removed, and a summary can still project the key points of the patent

To begin summarizing the rolling luggage cart patent, readers may tend to gravitate toward the first section, the abstract, because that is, in effect, a summary of the entire patent. However, when reading the entire patent, note that the abstract is clearly meant as a summary for a specific audience—people

who process United States patents—not a general audience who may be interested in using or investing in the patent:

Abstract

A roller bag having integral thereto a battery and a small alternator geared to recharge the battery when the wheels of the roller bag are rotated. During times of commuting, such as within an airport terminal, between a terminal and a rental car facility, or in route to a hotel, the battery will remain charged and available to the mobile user to provide a reliable source of power. A power terminal is further integrated into the bag providing external access to the battery, which power terminals permit connection to portable electronic devices, and may include retractable cords and programming tips.

Notes on Summarizing the Abstract and the Entire Patent

Overall, although the tone and style of the abstract within the patent summary is not helpful to a general audience, certain sentences within the abstract do describe the total invention. As mentioned in the strategies for summarizing earlier in this chapter, those kinds of sentences would be much more effective if paraphrased—that is, using language crafted by the technical writer—rather than presented to the general audience in its original form as a direct citation.

That being said, technical writers must ensure that any paraphrases they make maintain a professional-sounding style and tone. If your patent summary sounds exaggerated/embellished because of excessive use of the pathos appeal, then it will sound like pop-up advertising and provide a negative ethos for the audience of technology investors. Instead, the patent summary will need to focus on a strict logos appeal: Logically, why do we need this invention, and what are the actual technological specifications that enable this invention to exist in the first place? Focusing on logos will allow the summary to sound like actual technical writing, which then allows the audience to focus on the heart of the invention, not overly dramatic descriptions of its potential. It is not ethical to overpromise and underdeliver on purpose, nor is it ethical to distort the abilities of a technology just to entice investors. Paraphrases need to maintain the intent of the original language, if not the same form.

In addition to focusing on language, student writers will need to consider the following questions as they draft their patent summary:

- Why would this invention be granted a patent in the first place?

    ✓ Luggage and chargers already exist, so readers will need to understand why combining them is needed/necessary

- How does this device function?

- The author will need to be clear about its specifications and design so readers can understand how it functions.

- How can readers picture the device?

    ✓ As the rubric states, there should be some type of visual that helps the audience understand the patent.

    ✓ Because many patents explore novel ideas without current iterations, student writers are left with the following choices when it comes to adding pictures: choose a representative image (or two) from the patent itself, include a publicly available image that helps readers understand how the patent might be used, or create an image to go with the patent

    ✓ Image selection is important because audiences rely on images to make meaning, but remember that some images from the patent may be too complex, and images included from other sources may feel like stock photos and give the summary an advertising feel that detracts from ethos

- How can design be used to help the audience understand the patent?

    ✓ Because the patent summary consists of only a few paragraphs that must fit on one page, it is important that headings be used to guide the audience to important information

    ✓ White space—the blank area of the page without text or words—must also be used to provide balance and not overwhelm the reader with text

- Can readers access the full patent?

- ✓ Interested readers—and one of the goals in writing the patent summary is to create readers interested in the new invention—should be able to access the original patent in order to verify the summary's claims and find out more information that was not covered in the patent summary

- ✓ Readers will need at least the patent number, year, and authors to locate the patent on their own, but including a link to the original (either as a hyperlink or providing the entire URL if it's not too long) would be helpful

Sample Rough Draft of Patent Summary

Read the following student summary of the power luggage bag and determine whether you think it answers all the preceding five questions adequately.

Luggage Bag with Internal Power Source

Abstract

This patent is a novel idea most suited for travelers who must make frequent transits in airports. This invention is a roller bag with a small alternator attached to the wheels of the bag, which provides a power source. The power source can be used to charge laptops or any other electronic device. The bag contains a lithium-ion battery that stores electricity as it is being charged.

Details

Most airlines allow hand luggage that can be stored by passengers inside the airplane during their travel. The average maximum weight of hand luggage is around 25 pounds across different airlines. The current typical lithium-ion battery weighs 1 pound and thus has the capability of providing a power source for 45 hours. This battery is capable of providing a power source for small electronic devices like smartphones and tablets for even longer periods of time.

A cross-section of the luggage bag showing the internal power source

Conclusion

International travelers frequently face the dilemma of not being able to charge their electronic devices during transits between countries or places. International airports actually try to monetize on this basic need by not providing wifi or power sources to their travelers. Hotel rooms and lounges at these airports are usually

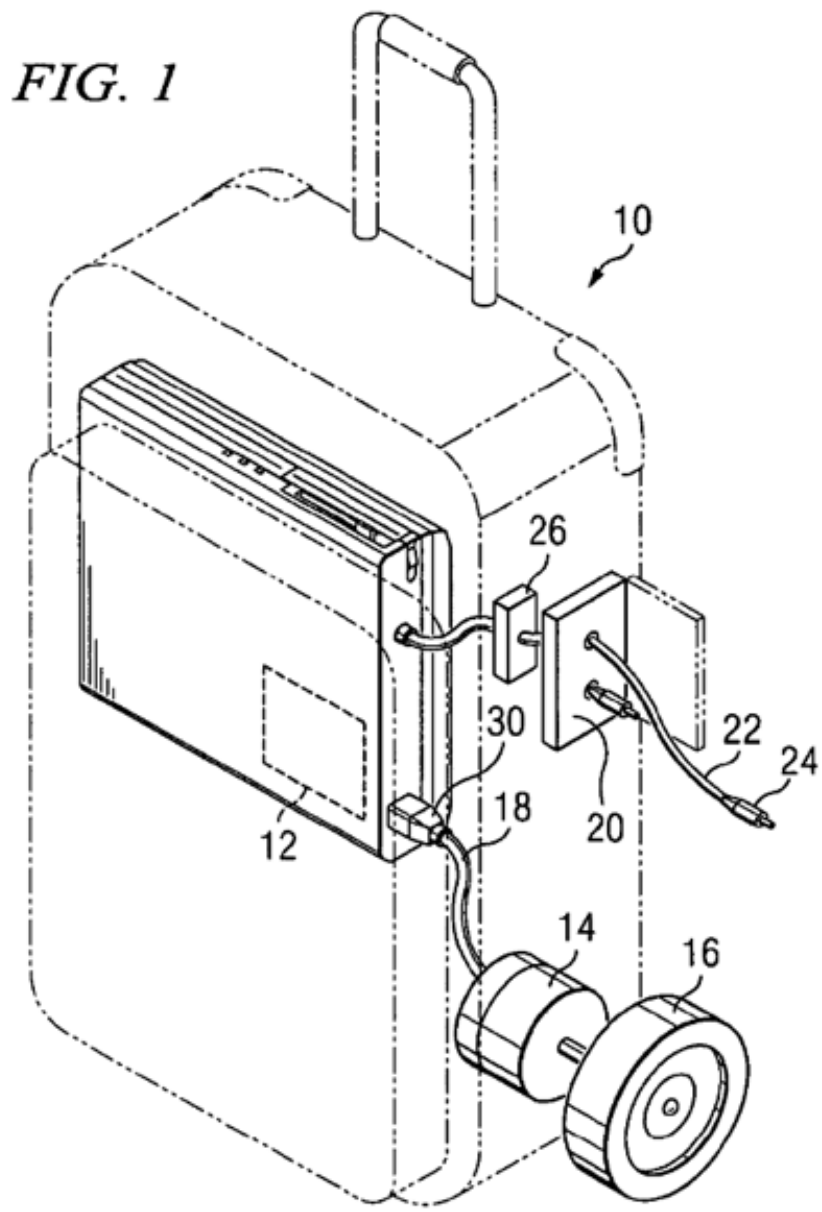


Fig. 1 from Recharging Rolling Laptop Bag (U.S. Patent No. 20070052388, U.S. Patent and Trademark Office) by John W. Wilson et al. included on the basis of fair use.

overpriced. This device would ensure that travelers always have a power source by their side no matter their location.

Publication Number: US 20070052388 A1 Application Number:US 11/204,807 Inventor: John Wilson

How Could the Sample Rough Draft Be Improved?

In terms of content and how well the rough draft summarizes the original patent for a broader audience, let’s begin by looking at the title because titles are very important to the audience. In this case, the title that the rough draft uses, “Luggage Bag with Internal Power Source,” omits the fact that the power source is rechargeable, and that information would be very important to the audience.

In terms of the rough draft’s abstract, the heading for the abstract was taken directly from the patent. For a general audience, "Abstract” may not be the best

choice because it sounds overly formal, and a more direct heading such as “Overview” would be more helpful.

In the paragraph that goes with the sample rough draft abstract, we find out the bag is rechargeable, but that comes in the last sentence. It should be closer to the beginning of the paragraph. The opening sentence is a little hard to follow, and making it more simple would make it easier to help readers. One key piece of technical information in this paragraph is that the device relies on an alternator. While much of the audience may be familiar with that term from their cars, some will still need to see a definition. However, the alternator is a key piece of how the device functions, so it fits better in the paragraph detailing the invention’s function.

In the sample rough draft "Details" paragraph that explains how the invention works, the logos contained in this paragraph is important. Readers will want to know the rechargeable battery will not weigh too much, especially in a context where every pound counts. Another key piece of information is how long the power source might last, 45 hours. That number is very high and covers not only domestic flights but even the longest international flights with modest layovers. However, note how the specifics vary based on what devices need to be charged. Readers were told the device can charge “laptops or any other electronic device” in the first paragraph, but this paragraph says the 45 hour range can be even longer for “small electronic devices like smartphones and tablets.” Moreover, the information itself was not inside the patent and came from a different source. Sometimes technical writers may need to integrate something outside of the source material to help a summary make sense, but the lack of specificity about charging in this example raises questions for the readers even though the goal of the summary should be to answer them. Since most passengers would only be allowed to bring (and would most likely only want to bring) small personal electronic devices like laptops, smartphones, and tablets, what are the charging differences among those devices? The original patent includes tables demonstrating different charge times for small electronic devices, and the author could include some of that information to help the audience understand the invention’s charging capabilities.

Out of the three images in the original patent, Figure 1 helps to illustrate the overall concept best. Unless the writer can create a new image melding this image with a rolling laptop bag to show a bag in use, freely available photos of rolling bags wouldn’t be able to show the functionality of the device as this cross-section does.

For the last paragraph of the rough draft summary, "Conclusion" may not be the best heading for such a short summary. Also, note how the focus shifts to international travelers in this paragraph. Consistency is key to summarizing information, so this paragraph should mirror the first one in terms of focus and scope. The way the sentence about hotel rooms is phrased sounds like more of a personal opinion that may not be shared by their audience. What is not arguable is how the device provides flexibility for the traveler: If travelers have their own rechargeable station, they don't have to worry whether ones provided by the airports are full, and they don't have to walk all over the airport looking for alternatives.

All told, some key information that needs to be included is how long the bags need to be rolling to be able to provide a charge. Potential users will need to know whether they have to walk a few hundred yards or wander aimlessly for hours throughout an airport in order to generate power.

While the rough draft does include the patent number and the inventor, it would be more helpful to the audience if a direct link to the patent was included as well.

Before we examine the summary rough draft deeper in terms of design and layout, it is helpful to include some terms to apply to the design discussion. While there are many schools of thought for understanding and applying design principles, this textbook will focus on how to apply the **C.R.A.P. principles** from Robin Williams's (2014) *The Non-Designer's Design Book.* These principles are a foundational set of design guidelines that can help make any piece of technical writing more effective and aesthetically pleasing. In each chapter, the sample assignment will deepen the reader's understanding of how to apply the C.R.A.P. principles.

The C.R.A.P. Design Principles Explained

C: Contrast

Definition: Contrast is what allows us to see. It draws attention and creates visual interest. Contrast helps readers distinguish different elements on the page and allows important information to grab readers' attention. (This is the only definition of the four terms that does not begin with a verb in a present participle form—I think that's what it's called)

- **Good uses of contrast in technical writing:** Black text on white backgrounds allows for easy readability; using bold type and larger font size in headings helps distinguish them from body text

- **Bad uses of contrast in technical writing:** using the same font size, typeface, and color in a large user manual for body text and headings; using colors that don’t contrast in body text and in visuals such as charts and graphs

R: Repetition

Definition: Repeating visual elements such as fonts, colors, and shapes throughout a piece of technical writing to create consistency and unity. Maintaining general consistency in layout and presentation for the readers.

- **Good uses of repetition in technical writing:** Using the same style for headings, bullet points, body text, and font color for directions in a user manual while using a different but similar set for other elements such as tips and FAQ; using the same font sizes and colors for titles and body text on every slide of a presentation

- **Bad uses of repetition in technical writing:** Switching fonts and styles so often that it makes a document seem random; switching visual styles such as representational photos to clipart and back again, causing visual chaos

A: Alignment

Definition: Aligning elements along a shared edge or line to help create order and cohesive structure. Alignment helps guide readers around the page and discern where their attention should focus while reading a document.

- **Good uses of alignment in technical writing:** Left-aligning all headings, body text, and images to create one clean alignment; aligning all visuals such as screenshots on the left and centering captions underneath each one

- **Bad uses of alignment in technical writing:** Having too many alignments in a document can make it seem unorganized and unprofessional; accidentally forgetting to make one paragraph or page share the same alignment as the rest of a document

P: Proximity

Definition: Placing related items together to show their relationship. This helps organize information and reduces visual clutter.

- **Good uses of proximity in technical writing:** Placing headings next to the paragraphs they belong to; putting captions next to the images they describe

- **Bad uses of proximity in technical writing:** Floating headings between paragraphs with equal spacing before and after; spacing related items far apart, which can confuse the viewer about which elements belong together

Applying the C.R.A.P. Principles to the Summary Rough Draft

To help understand the C.R.A.P. principles, let's apply them to the sample student patent summary. In looking at just the first two paragraphs of the sample summary, we can identify several issues that the C.R.A.P. principles would help us address.

First, look at the headings. In terms of **Contrast**, the original headings were bolded. However, they now use a larger font size than the body text to help distinguish themselves from the regular text and grab readers' attention.

In terms of **Proximity**, the headings were floating with equal space before and after; moving the header so it is next to the paragraph it goes with will help readers.

For **Alignment**, everything was centered. Document design, just like all aspects of art and design, goes through different eras, and documents with everything centered often seem old-fashioned compared to the more modern style of leaning on left-aligned text to help speed up readability and to make sure the readers' eyes don't have to travel around the page and in and out of indents.

Repetition may not be seen to a huge degree in this summary rough draft, but making sure the headings and paragraphs follow a consistent style in the final draft would qualify. While the rough draft of the patent summary has a lot of positives, the more revision a document undergoes, the better it can get it.

Here is the original draft with the initial summary revision suggestions and C.R.A.P. design revision ideas applied:

Luggage with Rechargeable Power Source

Overview

This patent provides a solution for travelers who cannot keep their electronic devices consistently charged on airplanes or at airports: a carry-on bag that charges an internal battery when the luggage is rolled. The bag includes both internal and external charging ports and, based on the specifications of current lithium-ion batteries, could charge multiple small electronic devices such as laptops, cell phones, and tablets, for as long as 40 hours.

How It Works

The roller bag has a small alternator attached to the wheels that provides power to a battery (see Figure 1 to the right). An alternator is a device that generates alternating current (AC) or direct current (DC) electricity and can distribute that power to another device. In this case, the alternator is powered by rolling at least one wheel of the bag, and it distributes power to the rechargeable battery integrated into the bag. Walking at normal speeds, a traveler can charge the battery up to 100% efficiency in an hour. Figure 1 illustrates how the wheel connects to the alternator, which then connects to, and charges, the rechargeable battery.

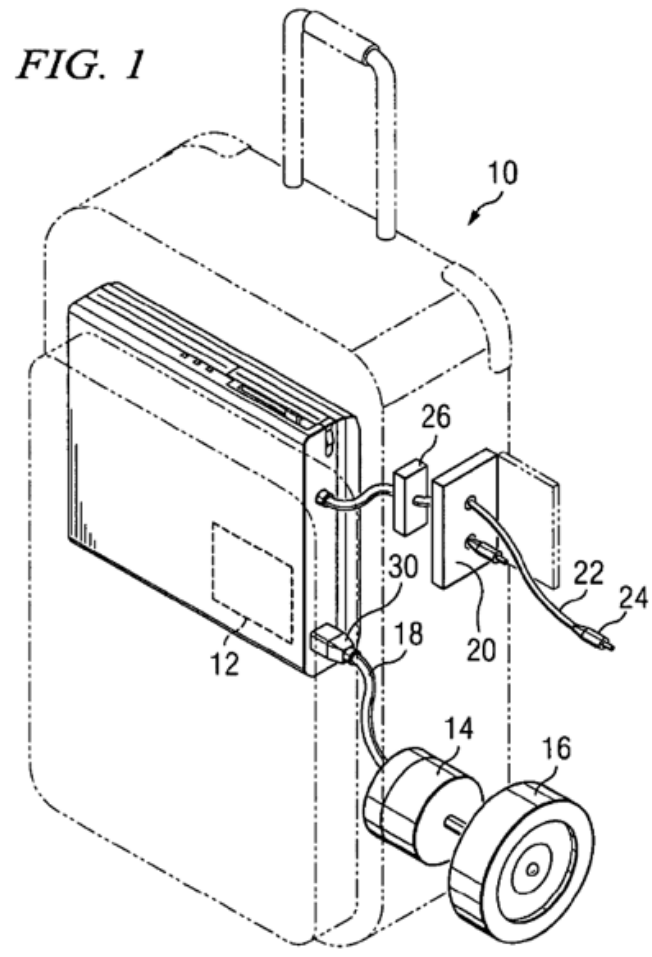


Fig. 1 from Recharging Rolling Laptop Bag (U.S. Patent No. 20070052388, U.S. Patent and Trademark Office) by John W. Wilson et al. included on the basis of fair use.

Conclusions

Even when airports provide freely available charging spaces, today's travelers often face problems accessing them because of crowds, limited charging time due to tight layover windows, or due to cost. This rolling carry-on bag ensures travelers have a power source by their side no matter where they are or how much time they have.

Publication Number: US 20070052388 A1 Application Number: US 11/204,807 Inventor: John Wilson

After applying the revisions to content and design, the patent summary has a better chance of connecting with its targeted audience and, therefore, piquing their interest in the rolling bag. Of course, the audience would want more specifics before fully committing to investing in the technology, but the original patent supplies the information that would be considered in any "next steps" and is included in the document. The one-page patent summary can now stand alone and answer questions about the patent for a general audience. Certain members of the audience will always want more from a summary (in this case, more detailed information on the charging efficiency of certain small electronic devices was abundant in the patent), but being able to write a summary that connects with as wide an audience as possible is a key skill in technical writing.

2.4: Other Patents for Class Discussion

The following patents are good samples to discuss in class. Access the patents through the links provided, then write a one-paragraph overview of the invention for a general audience.

Dynamic Allocation of Split Control in a Video Game (2023)
Patent Number: US 2023/0166183 A1

Motion Stabilizing Device for a Cosmetic Applicator (2022)
Patent Number: US 11,458,062 B2

Mouth Guard for Sensing Body Overheating (2013)
Patent Number: US 2013/0312655 A1

2.5: References

Williams, R. (2014). The non-designer's design book (4th ed.). Peachpit Press.

Chapter 3 | Visualizing: Warning Sign Assignment

Being able to send a message visually is an important skill that all technical writers should develop. As discussed in Chapter 1, we live in a society where we rely on images to make meaning, and if we think of technical writing as primarily words and technical communication as primarily images, the ability to visualize messages has the potential to reach wider audiences than ever before via digital media. Even in the real world, beyond the scope of digital environments, technical communication relies on images to make meaning and connect with audiences—navigation would be impossible without road signs, and reports and presentations would be much harder to understand without charts and graphs to make sense of data, just to name a few examples. Chapter 3 focuses on why and how to visualize messages, culminating in you developing your own visualizing skills by creating a warning sign.

3.1: Why Is the Ability To Visualize Information So Important for Technical Writers?

Technical writers need to be able to visualize information because doing so enables them to connect with end users in a more powerful way. Visualizing information also provides many benefits for end users, allowing pieces of technical communication to accomplish what they set out to do relative to their intended audience.

1. Increased Clarity

Technical writing often deals with complex subjects, and using only text to make meaning can be harder to process, especially for those who may be visual learners. Moreover, audiences who see only giant blocks of text awaiting them on the page may feel intimidated or less motivated to engage with the material on hand. Visual elements such as diagrams, flowcharts, graphs, tables, and annotated screenshots can help users understand technical writing more clearly

2. Increased Efficiency

Visuals can speed up both the reading and the learning process. Less text allows users to read documents at a faster rate. Also, many users retain visual information better than text alone, especially when it helps make texts more concise because there is less material (i.e., fewer words/paragraphs) to remember. When images help to shrink texts, they are easier to parse, especially

when dealing with unfamiliar or relatively new topics. For example, think about how much easier it is to diagnose an electrical issue for the first time by following a visual wiring diagram than a long, text-only explanation of the same wiring diagram.

3. Enhanced Adoption

Visuals help bridge language gaps end users might have, thereby increasing the potential reach a piece of technical communication can have: Images can turn a small, local audience into a global one. A well-labeled diagram or step-by-step visual guide (such as the image-only directions IKEA provides for its furniture) can be almost universally understood, which reduces the need for perfect translation that was previously a hallmark for technical writing in different languages to gain wider adoption.

4. Increased Engagement

Visual content can engage viewers and break up walls of text. Gone are the days when users would willingly pick up an instruction manual that looks and reads more like a 300-page novel. Well-chosen and well-placed visuals make pieces of technical communication more inviting, which can help users get started on using a piece of technical communication, as well as seeing the process through to the end to accomplish what they need to do.

5. Enhanced Accuracy

Visuals can be used to help users cut down on errors while using technical communication. For example, using a screenshot of a computer interface that shows the user where to click with a red arrow is much clearer and less open to interpretation than only using words to describe steps.

6. Efficient Troubleshooting

The troubleshooting areas of complex websites and instruction manuals (such as frequently asked questions, aka FAQ) can expand into pages and pages of text that users must sift through, therefore making it more tedious for users to find what they need. Images can play a helpful role in troubleshooting docs because visual cues like error screenshots, signal flow diagrams, parts/pieces visuals, or device layouts allow readers to figure out what they’re seeking more easily, thereby speeding up diagnosis and solutions.

3.2: Using Warning Signs To Understand How To Visualize Information

Chapter 2 discusses why the ability to summarize is so important to technical writers and why the ability to design information is also important for end users. Chapter 2 introduced Robin Williams' C.R.A.P. design principles and demonstrated how they can be applied to help written documents connect with their audiences better. Chapter 3 focuses on discussing how to visualize information through the lens of warning signs. To begin, the chapter will concentrate on analyzing the specific genre of warning signs to determine the qualities that differentiate more effective visualizations than others.

We are surrounded by warning signs, but we often don't stop to think why they're effective and why they're even necessary in the first place. Warning signs are an interesting genre to examine because they need to compress important information into a visual-heavy format that conveys important information to a broad audience. As such, warning signs offer technical communicators a good way to think about the rhetorical situation of audience, purpose, and context, as well as how to craft a credible ethos, how to harness logos to connect with an audience, and how to use pathos to get attention.

First, the qualities of a successful warning sign need to be addressed. Note how many of the qualities listed below are taken up during the conception phase. A successful warning sign relies just as much on mechanical decisions (e.g., where the sign itself should be placed, how large it should be, what material it should be made of), if not more than the actual contents of the warning sign. Before a successful warning sign can be deployed, the technical communicator needs a thorough understanding of the audience to develop the conceptual properties of the sign needed for it to connect with its audience:

1. Audience Awareness

A warning sign must consider who's reading it and adjust wording and images accordingly. For example, what language(s) will be used? How much pathos can be used to get the audience's attention without alienating them due to strong images? Were too many words used to get the message across, possibly confusing the intended audience?

2. Proper Placement

The warning sign needs to be located where people will see it before they encounter the hazard. For example, signs about the hazards of diving need to be

close to the areas of a pool kids or adults might consider diving in. The sign also needs to consider placement in the sense of height. For example, putting something aimed for adults at a toddler’s height means many adults could walk straight past the sign.

3. High Visibility

The warning sign should use bright colors (such as yellows, reds, and oranges) with high contrast (usually black text or symbols on lighter backgrounds) so it catches the audience’s attention immediately. The message also needs to be large enough to be seen from an appropriate distance relative to the danger.

4. Clear Symbolism

The warning sign should use clearly rendered, easily understandable images or symbols that can communicate danger or caution (e.g., red for danger, yellow bolts for electric shock). The images will need to make sense within the cultural contexts of the intended audience, and creators should try to find images that are direct and not metaphorical in nature.

5. Simple Wording

The warning sign should use direct language that's easy to understand, and it should use as few words as possible to communicate its meaning. . It should make sure the words can’t be misinterpreted due to multiple meanings/readings (e.g., "DANGER: High Voltage" or "WARNING: Wet Floor" are simple and clear messages).

6. Urgent (but Appropriate) Tone

The warning sign should use language that corresponds to the potential danger for the audience. In some instances, there are legal requirements for which words should be used (a section below details how "Danger," "Warning," and "Caution" are legally defined). The tone of the warning sign should also be appropriate relative to the danger. An overwrought tone can be just as confusing for the audience as an understated one. For example, posting a sign in an office stating, “Beware of stapler!!!!!!!!!!!!!!!!!!!” would be as bad as posting a sign near a campsite that says, “There might have been some grizzly bears seen around here in the last few years or so.”

7. Consistent Format

The warning sign should exhibit repetition, the "R" in Williams' C.R.A.P. principles. A warning sign that exhibits uniformity in its words, images, and overall design is better able to amplify its message. For example, the audience can process the sign faster if it's instantly clear the main message is in the same font, the same color, and contained in a certain area within the sign.

3.3: Warning Sign Language

What are some of the most commonly used terms on warning signs, and what are the differences in meaning among them? These differences in meaning go beyond simple dictionary definitions—they have legal ramifications based on whether they are accurately tied to the type of danger they are alerting their audience about.

Anyone who has ever seen warning signs will notice that certain words are used on almost every sign—"Danger," "Warning," and "Caution" probably come to mind. These three words also have specific, standardized meanings in government, legal, and industry regulations, especially in safety communications. In the United States, the meanings of "Danger," "Warning," and "Caution" within safety communications are defined by federal entities such as Occupational Safety and Health Administration (OSHA) and public non-profits such as American National Standards Institute (ANSI).

Using the correct terms on a warning sign isn't just a matter of good technical communication—it is also a legal matter of compliance and liability. Here's how OSHA and ANSI direct the words "Danger," "Warning," and "Caution" to be used:

DANGER

Danger is the most serious word that can be used on a warning sign. Danger means that not abiding by what the sign tells you will cause death or serious injury if not avoided. Think of danger as a red traffic light at a busy intersection during rush hour: If you go through the red light, you will most likely be in a serious accident that will cause death or serious injury. In the example below, anybody who ignores the sign and touches the wires (or whatever else may lie behind the sign) will be electrocuted, resulting in either death or serious bodily harm that will probably require extensive hospitalization.

Figure 1: Danger Sign

Example of danger sign adhering to legal standards. "White and Red No Smoking Sign" by J Dean from Unsplash.

- **Summary**: Danger indicates a hazardous situation that *will* cause death or serious injury if not avoided.
- **Severity**: Highest level.
- **Audience Message**: You must avoid an immediate and life-threatening risk nearby.
- **Design**: Red background with white text, capital letters.

WARNING

Warning is the second most serious word to be found on a sign. Warning means that not heeding what the sign tells you **could** cause death or serious injury. In other words, there is a potentially hazardous situation that needs to be avoided. Think of a warning sign as a blinking red traffic light: You need to follow traffic rules and stop and look in all directions before proceeding or else you might end up in a deadly accident if you just go right through the intersection. In the example below, walking below a skyscraper while workers are repairing

something on the 14th floor does not mean you will automatically get hit by debris causing death or severe injury, but there is a chance that something could fall at any point throughout the day, so pedestrians need to be watchful.

Figure 2: Warning Sign

Example of warning sign adhering to legal standards. "A Warning Sign on the Side of a Building" by Levi Meir Clancy from Unsplash.

- **Summary**: Warning indicates a hazardous situation that *could* cause death or serious injury (should this part be in bold?) if the message of the sign is not heeded.
- **Severity:** Mid-level, but still very serious.
- **Audience Message:** Pay close attention because a potentially lethal or extremely harmful situation could occur.
- **Color Code:** Orange background with black text.

CAUTION

Caution is another commonly used warning sign label. Caution means that if the precautions on the sign are not taken, minor or moderate injury may result. It can also refer to property damage (e.g., not heeding a sign could result in damage to your car, such as driving through a parking garage gate without paying attention). Caution may also be used to alert against unsafe practices such as walking too close to a door that could open abruptly. In other words, there is a potentially harmful situation that needs to be acknowledged and avoided. Think of a caution sign as a yellow light: You need to pay attention to your surroundings and look around before proceeding to make sure you avoid a situation that could result in injury.

Figure 3: Caution Sign

Example of caution sign adhering to legal standards. "A Caution Sign on a Pole with a Blue Sky in the Background" by Emily Huismann from Unsplash.

- **Summary:** Indicates a **hazardous situation that *could* cause minor or moderate injury** if not avoided. It may be used for warnings pertaining to property damage, too.
- **Severity:** Lowest, but still relatively serious in some cases.

- **Audience Message:** Although you won't die, there is a good chance you could get injured or property damage might occur due to the conditions outlined on the sign.
- **Color Code:** Yellow background with black text.

Check to see if your country has specific guidelines for warning signs. For more information on legal warning sign standards for the United States, see the following:

- The ANSI Z535 set of safety standards that includes seven standards governing warning signs are particularly helpful.
- In the United States, Occupational Safety and Health Administration (OSHA) also includes several helpful resources on warning signs. The OSHA 1910.145 page includes specifications for accident prevention signs and tags.

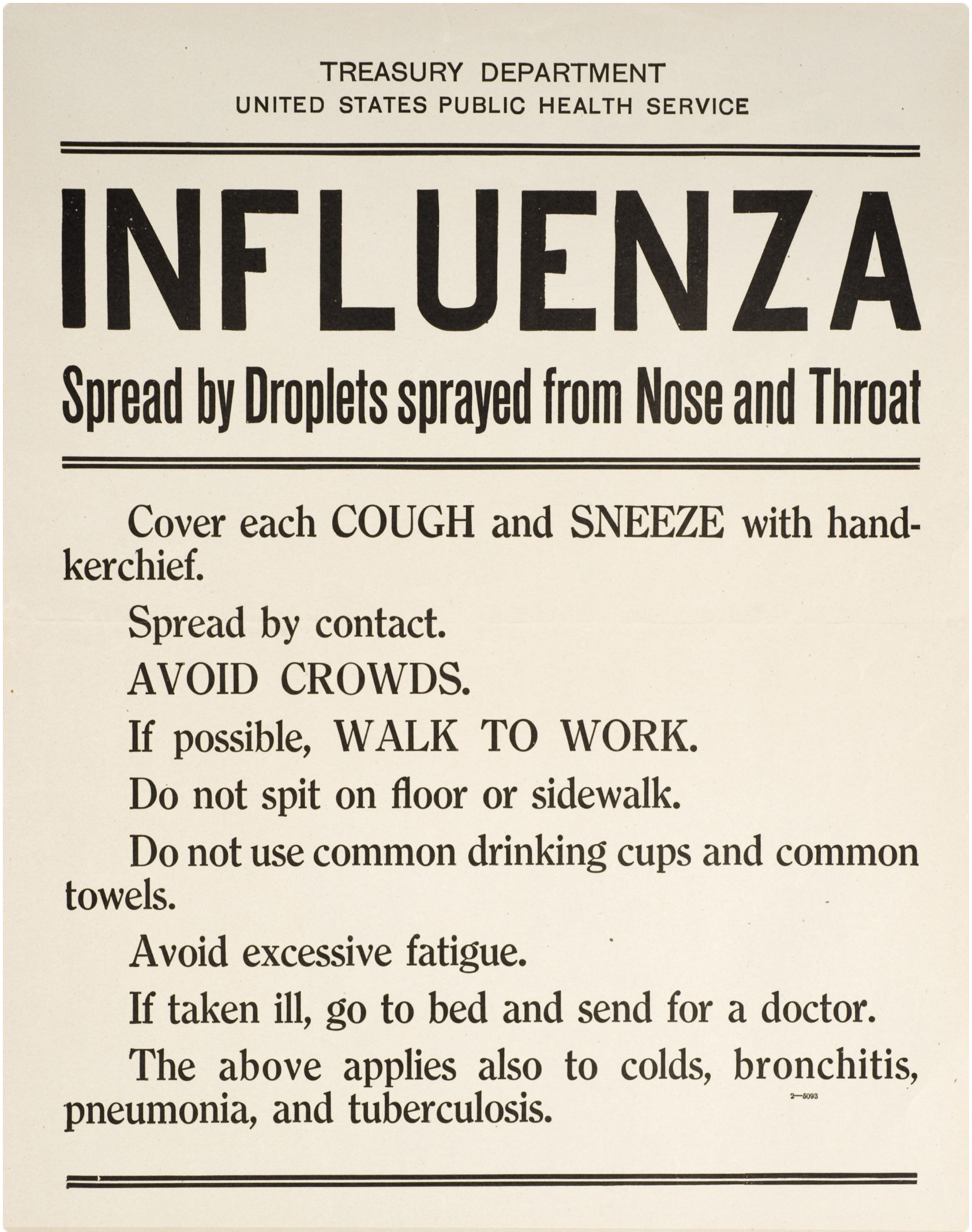
3.4: Case Study in Effective Warning Signs: COVID-19 Examples

During the worldwide outbreak of COVID-19 in 2020, warning signs were an important part of how local communities and various forms of government communicated important messages to their constituents to help them stay safe. The COVID-19 outbreak (hereafter referred to just as COVID) posed significant challenges in technical communication messaging because nobody was sure how COVID spread between people, and many people infected with COVID carried no outward symptoms of having the disease. It was also unclear how deadly the disease was or what factors made people more susceptible to severe outcomes such as death or prolonged hospitalization. Therefore, it wasn't clear what type of legal wording, such as "Danger" or "Warning," if any, should be included on signs. In other words, developing an effective warning sign for COVID wasn't as easy as requiring a high-voltage substation to use the word "Danger" on its warning sign. As a result, it seemed almost every group, business, locale, and country came up with their own messaging to warn others about COVID and social distancing.

Before examining some sample COVID warning signs, it is helpful to take a quick detour and look at what might be considered COVID's closest predecessor in modern memory, the influenza outbreak of 1918. While the influenza outbreak was also quite mysterious at first, people soon understood how it spread. However, in looking at warning signs from that era, it's important to see how

technical communication responded to the attitudes, abilities, and attentions of its audience, as well as legal requirements, even back then. The signs hung in 1918 pre-date the legal definitions of danger, warning, and caution as set by entities such as OSHA and ANSI. Additionally, society at the time was largely dominated by print discourse (a time period well before the widespread visual influence of television, film, the Internet, and social media). Given how these conditions differ markedly from our current time period, you'll notice how wordy the sign from 1918 is compared to what a modern audience in 2020 might expect of a warning sign. Both pandemics were similar in that they killed tens of millions of people around the world, but each sign differs because it is designed to best meet the expectations of audience members walking past it in a certain year.

Figure 4: 1918 Influenza Warning Sign



Public health poster from 1918 with instructions for presenting the spread of influenza. "Influenza Spread by Droplets Sprayed from Nose and Throat" by the United States Public Health Service from the National Library of Medicine Digital Collections (Public Domain)

(Note: The transcript of the 1918 Influenza poster is included in the chapter appendix.) For the 1918 influenza sign above, much of the wording centers on influencing the behavior of the audience. Seven distinct commands are given, such as what to avoid and what to do if infected. Also, note the lack of images and color for such an important sign. Nonetheless, like all good technical communication consisting mostly of words, the sign still makes important/ sufficient use of some elements of Robin Williams's C.R.A.P. principles discussed in Chapter 2. The sign employs good use of contrast both in the size and bolding of the main heading and the all-caps used to emphasize actions the audience should take. The double line that separates the heading information from the body text is an example of enhancing proximity, which helps to underscore for the audience how influenza is spread. It uses different alignments in a way we probably wouldn't use today, calling unnecessary attention to the words "kerchief," "towels," and "pneumonia" that follow the left-alignment of the heading. In terms of repetition, the same font and color help to provide a sense of uniformity.

As we move into the COVID warning sign examples in this section, note the differences in overall execution. Today, there is a reliance on color and visuals to create messages. As you look at the sample warning signs, think about putting yourself in the shoes of the average person encountering these signs during the initial, highly uncertain times when the pandemic began in spring 2020. At that time, nobody was sure about the details of the disease. The average audience member probably had some nervousness relating to the entire situation and may have been looking for the signs to help restore a sense of normalcy, or at least project an air of competence, calmness, and credibility.

As you encounter the sample signs below, pay attention to what grabs your eye first, where your gaze falls on the sign, whether the message is clear immediately, and what ethos the sign aims to impart to the viewer. Let's start with one of the most general but most ubiquitous signs, one that informs users about social distancing:

COVID Sample Warning Sign 1: Street Sign

Figure 5: Covid Street Sign

Example of warning sign for COVID hanging on a street pole. "Red and White Stop Sign" by Phil Hearing from Unsplash.

Although the message is carried primarily by words, note how few words are used compared to the influenza warning sign of 1918. In terms of some of the hallmarks of effective warning sign design, this COVID example has a strong placement—high up on a pole to engage pedestrians—and high contrast to be

seen easily. But does it meet all the hallmarks of the best qualities of warning signs?

In terms of the C.R.A.P. principles from Williams, the sign does meet those principles quite well. As mentioned previously, the contrast is strong and helpful for viewers. The alignment is centered, which ends up drawing your eye down to the arrow meant to symbolize the larger-than-normal distance people should stay away from each other in congested spaces. In terms of proximity, the sign makes good use of the horizontal line to separate the heading and message, much like the influenza warning sign. In terms of repetition (uniformity), the all caps of the title is offset by the regular capitalization of the body, and the two human figures are in the same style and balance each other out, allowing the viewer to focus on the distance between them.

In terms of clarity, the lack of specific detail about how far to keep apart from one another could be seen as a problem, especially in the early days of the pandemic. While the sign has clear wording and a clear message to separate, it isn’t crystal clear how far apart the actual optimum distance is, and if the goal of the sign is to stop the spread of COVID, that lack of clarity could be seen as a significant shortcoming for those hoping the sign will achieve its purpose: To help stop the disease from spreading.

COVID Warning Sign Sample 1 Discussion Question

Does the above street sign embody clarity, one of the most important aspects of effective pieces of visual technical communication? (Note: Try to focus on how clear it would have been to a pedestrian in the early stages of the pandemic.)

COVID Sample Warning Sign 2: New York Park Sign

Figure 6: New York Park COVID Sign

Example of warning sign for COVID in a New York State park. "Black and White Keep Calm and Drink and Be Happy Signage" by Jon Tyson from Unsplash.

The message in COVID Warning Sign Sample 2 is carried only by words (and one number), which is very similar to the influenza warning sign of 1918 from above. In terms of some of the hallmarks of effective warning sign design, this COVID example has a strong placement—mounted on a stake so hikers and bikers in the park could see it easily—and a high contrast of white letters on green to enable it to be seen easily. However, does it meet all the hallmarks of the best qualities of warning signs?

In terms of the C.R.A.P. principals from Williams, the sign meets most of the principles. As mentioned previously, the contrast of green and white is strong and helpful for viewers. The alignment is centered, similar to Sample 1, but in this case, the centered text makes it a little harder to read due to some of the other design choices in the sign. For example, proximity is employed mainly by using font size to keep like items together, but no part of the message stands out since each sentence is given equal weight (and “Be Smart” is at the top and probably gets seen first by most people). Repetition (uniformity) is employed in the consistent font and color, but also by not punctuating the sentences, which causes the text to run together a bit, thereby affecting clarity and the ability for some of its audience to grasp it instantaneously. In addition, while it may be inferred that all people know what six feet is, certainly some members of the audience wouldn’t have a great understanding of six feet without a metric equivalent or even some visual element to help estimate what six feet looks like on a horizontal plane between people. In some ways, the sign seems to rely on a rhyme to help make it stick, but a warning sign would be better off relying on a strong visual to help make it stick.

COVID Warning Sign Sample 2 Discussion Question

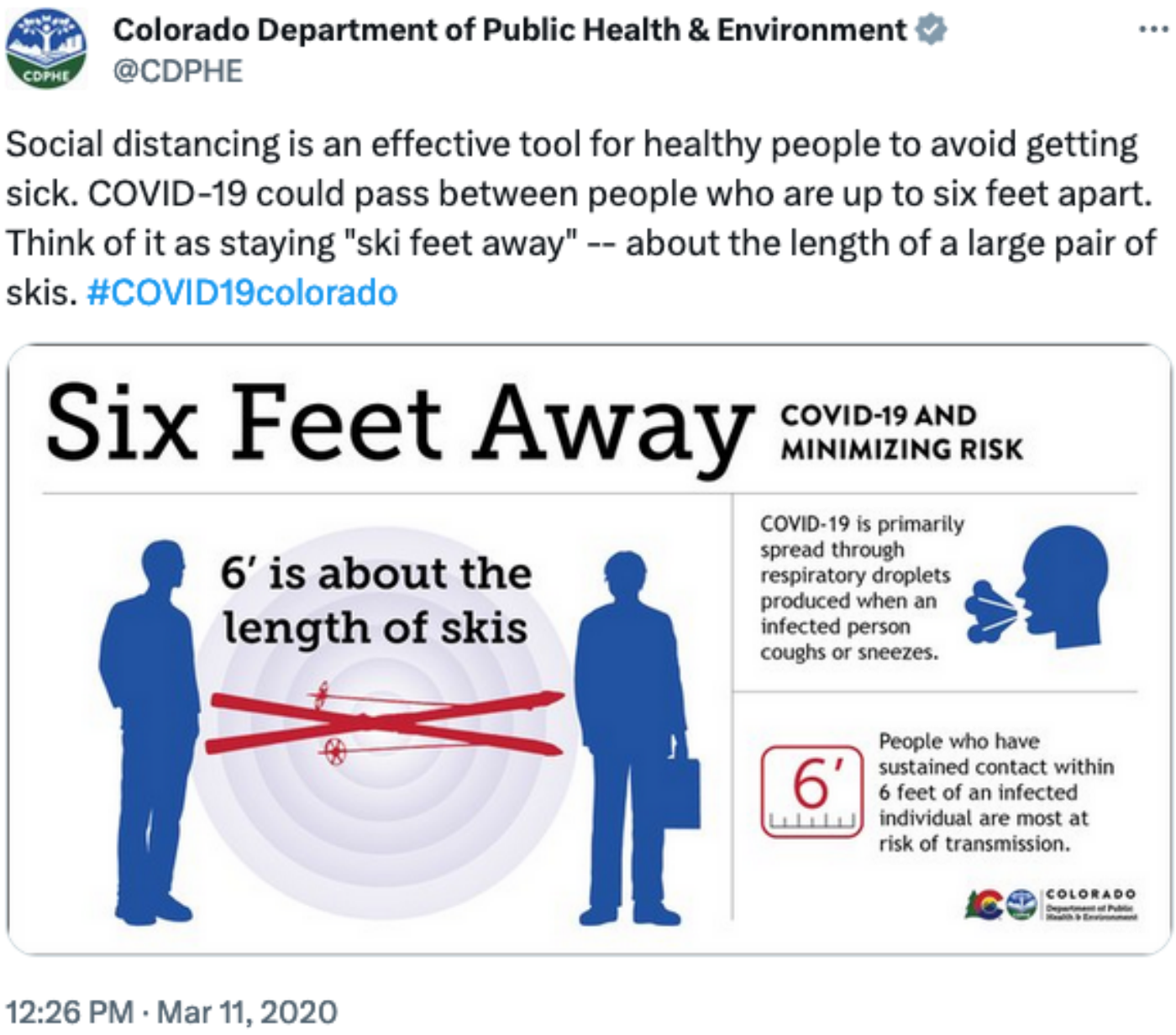
Does the above sign get its message across clearly and quickly enough? (Note: Try to focus on how clear it would have been to park users in the early stages of the pandemic.)

COVID Sample Warning Sign 3: Colorado Department of Public Health & Environment

Many communities and locales tried to use images to appeal to a more geographically concentrated user audience in the early stages of the pandemic. The conceptual approach behind such warning signs appeared to center on making the generic “six feet” of social distancing come alive with a hyperfocused example their targeted users might be able to understand better. Many signs also began to use more information to guide the end users, similar to the 1918

influenza sign discussed above. More information is provided on such signs, which helps to educate more people, even if it risks confusing viewers about the main message of the warning sign. Here's an early example announced on social media by the Colorado Department of Public Health & Environment:

Figure 7: COVID Warning from the Colorado Department of Public Health



A COVID warning Tweet from the Colorado Department of Public Health and Environment.

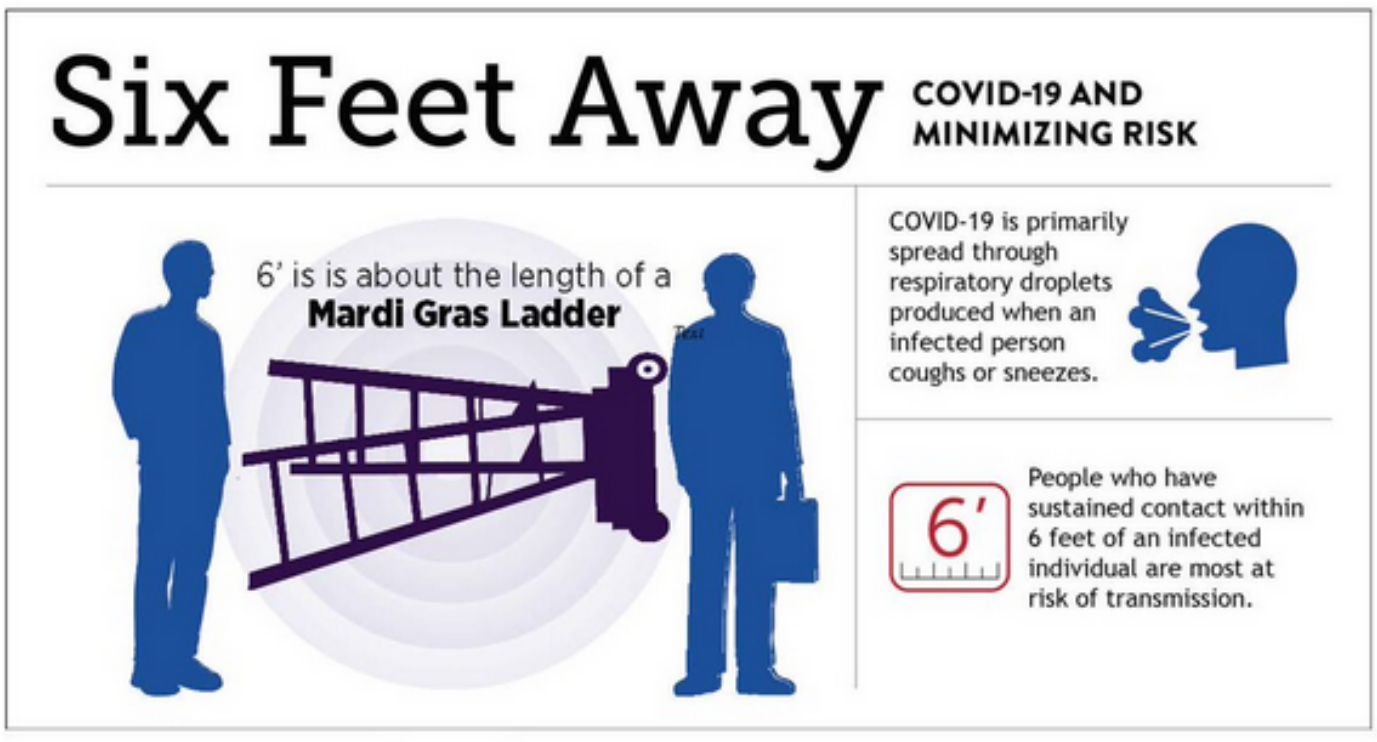
In terms of the C.R.A.P. principles from Williams, the sign meets most of the principles. The contrast of black and white for the text is strong and helpful for viewers, and the colors of blue and red help to draw viewers into the visual symbol for six feet. The alignment is more complex and cluttered given the different regions of the sign, so this aspect is definitely not as clear in this principle as some of the previous samples that only had one alignment in use. Proximity is also strong because the light gray lines help to delineate the different sections of text, as does the white space of the design. Repetition (uniformity) is strong and also responsible for clarity: "6 feet" and "6′" are

repeated a total of four times in the text. The color of the images helps to provide uniformity as well. While this sign has more text and would take more time for end users to go through and understand than the previous examples, the repetition of six feet in four different places helps to make sure the main idea is not missed and can be seen almost instantly no matter where the viewer starts reading.

In terms of clarity, the attempt to have the audience comprehend six feet by picturing a ski is different from previous examples and tries to increase understanding by providing a different pathway to help visualize six feet of space between people. While not all of Colorado's ~6 million people ski, the image still gives some shape to six feet of space, even if the skis pictured are cross-country skis, which has even fewer practitioners than downhill skiing. Overall, it would be a fair criticism that a majority of Coloradoans would not be intimately familiar with the visual symbol the sign is relying on to make meaning. Nonetheless, using the image of skis and repeating "six feet" multiple times can still be seen as more helpful than just using text (as in the New York Park example) or using an arrow and the text "stay apart" (as in the Street Sign example).

Although COVID Warning Sign Sample 3 might be considered an outlier because it first appeared on social media (even though it could have been downloaded and printed out, as some people and organizations did), it still represents a template of sorts that other states, cities, towns, municipalities, and organizations were able to access and spread. For example, here is the University of New Orleans using the same template as Sample 3:

Figure 8: COVID Warning from the University of New Orleans



A COVID warning post on Facebook from the University of New Orleans.

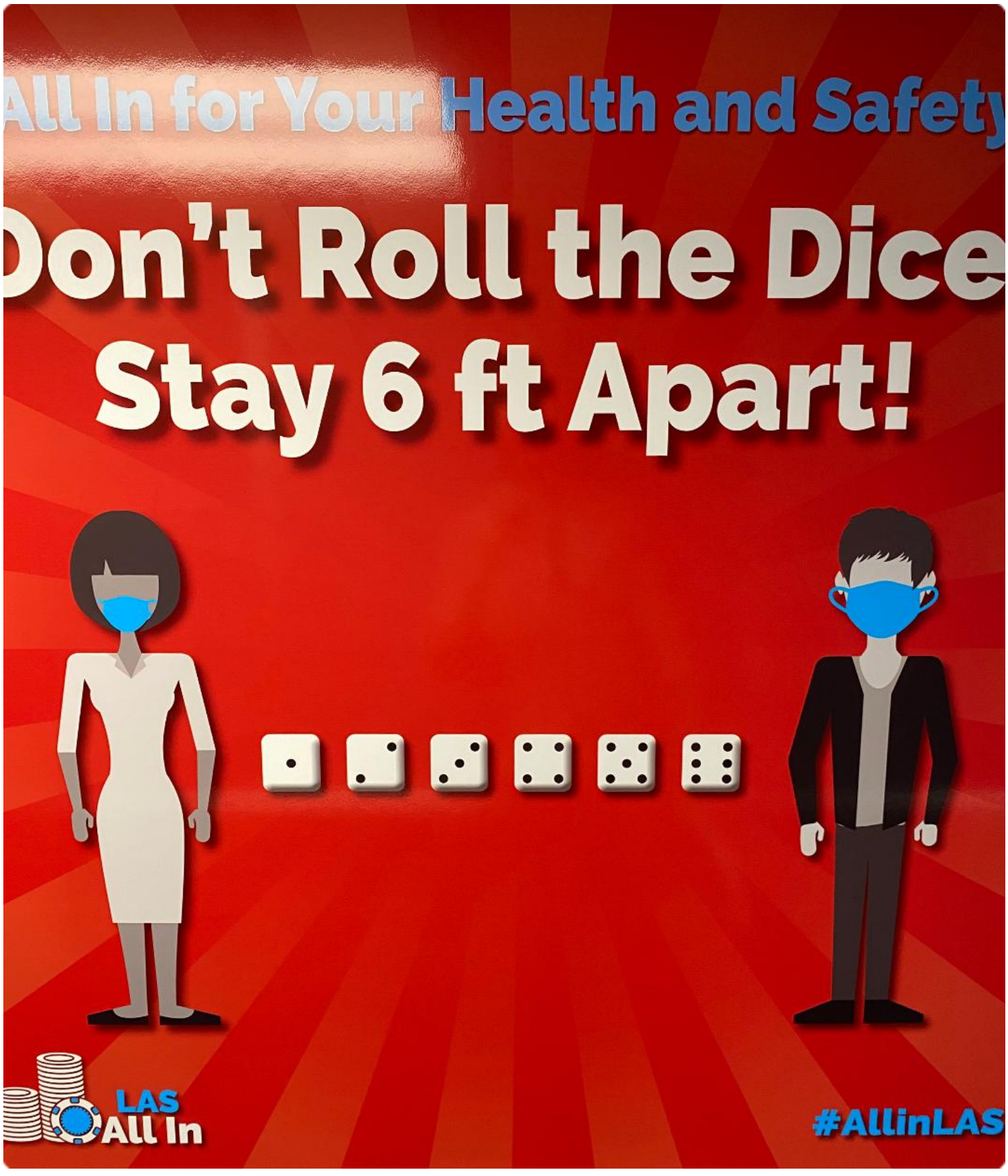
COVID Warning Sign Sample 3 Discussion Questions

Do you think the warning sign produced by the Colorado Department of Public Health & Environment is more or less effective than the previous two examples? Also, do you think the use of skis as a marker of six feet is a choice that translates to increased clarity for its ostensible audience of ~6 million Coloradoans? (Note: Try to focus on how clear it would have been to park users in the early stages of the pandemic.)

Is the University of New Orleans COVID warning sign a better use of the template than the one from the Colorado Department of Public Health & Information? Would its targeted audience of university students have a better understanding of the visual symbol for six feet, a sideways Mardi Gras ladder, than the average Coloradan would have from the image of cross-country skis?

COVID Sample Warning Sign 4: Las Vegas Airport

Figure 9: COVID Warning Sign from the Las Vegas Airport



A COVID warning sign from the Las Vegas Airport telling viewers "Don't roll the dice. Stay 6 feet apart" and using six dice to represent the space between two people (July 2020). Photo courtesy of Moe Folk.

COVID Warning Sign Sample 4 is another example of a warning sign meant for a local audience, although this sign's placement in Las Vegas International Airport meant that it was still used by a large amount of people who did not live locally. Las Vegas, even during the pandemic, welcomed a lot of foreign visitors, so the wording of gambling phrases with double meanings (e.g., all in, roll the dice),

plus the lack of size context for visitors, could be barriers to understanding. After all, even the wording and distance of six feet may only be intimately familiar to citizens of the countries who use the United States customary system of measurement—the U.S., Liberia, and Myanmar. Including the metric equivalent of six feet on the Las Vegas sign (or in any of the other samples) could help broaden understanding. When considering that this sign is in an airport and that Las Vegas attracts visitors from all over the world, including “2m” with “6 ft” would help get the message across to many more people. Although the use of “Don’t roll the dice” in the main heading can be seen as embodying the ethos of Las Vegas as a fun, carefree city, it could be difficult to access for much of its target audience coming through the airport because metaphors are very difficult to translate across cultures. Just as not every Coloradan skis despite living in a state with so many mountains, not every person coming to Las Vegas is a hardcore gambler who knows every gambling figure of speech. The next line, “Stay 6 ft. apart!” is more clear and more directive, which is helpful for general audiences, and also helps to take some of the reliance off what might be considered hard to follow both above it (the gambling metaphor) and below it: the representation of six feet of space with six dice. In recalling Sample 3 from Colorado, that sign included “six feet” four times, while the Las Vegas sample does not offer as much repetition, which makes the audience rely on the visual information of six dice even more.

In terms of the C.R.A.P. principles from Williams, the sign meets many of the principles quite well. The red and white provide contrast, and the red even invokes the increased attention associated with “Danger” in warning signs. Just like the street sign example in sample 1, the alignment is centered, which ends up taking your eye down to the visual meant to symbolize the distance people should keep between each other in congested spaces, which the streets and casinos of Las Vegas definitely provide. In terms of proximity, the sign makes good use of the top third to keep the heading together, and the bottom of the sign keeps the promotional area and the hashtags together. In terms of repetition (uniformity), the colors of the design help to keep the information clear and help the viewer’s eyes move around the sign to find pertinent information, even if the main alignment takes readers down to focus on the dice.

In terms of clarity, the gap between the visual symbols used to signify six feet and six actual feet is large, larger than the previous samples and perhaps only slightly less nebulous than the first sample that did not provide any measurement image beyond an arrow. While the sign has some clear wording to help people separate, it still isn’t clear what the optimum space should be. This is

a problem because if the goal of the sign is to stop the spread of COVID to keep people safe and keep the tourism industry of Las Vegas functioning, then visualizing six feet for an audience of people from all over the globe is extremely important.

COVID Warning Sign Sample 4 Discussion Questions

For a COVID warning sign, does it matter how real or representational the image or symbol used to depict six feet is? Six dice together, for example, aren't even one foot, let alone six. How else might you represent six feet of space for a sign in the Las Vegas airport?

COVID Sample Warning Sign 5: Harrisburg Airport

Figure 10: COVID Warning Sign from Harrisburg Airport

A COVID warning sign in the Harrisburg Airport telling viewers to stay 6 feet away, or 72 Kisses chocolate, from other passengers (June 2020). Photo courtesy of Moe Folk.

This example also comes from an airport—Harrisburg Airport in Pennsylvania. In that way, it aims to engage a similar audience as the sample from Las Vegas International Airport, although the Harrisburg airport is much smaller and does not process thousands of global travelers every day. Sample Warning Sign 5 is

very hyperlocal—the main attraction the sign refers to, Hersheypark, is not named (though its local audience would recognize the connection immediately), and the visual measuring mechanism, Hershey's Kisses, is tied to that main attraction as well. This sign, much like the social media examples from Colorado and the University of New Orleans in Sample 3, uses a different way of engaging the audience: Rather than being elevated like the street sign to engage pedestrians in Sample 1 or at eye level to engage airline passengers as in Sample 4, the Harrisburg Airport sample was pasted on the ground.

The sign centers on products from the Hershey Company, and many people traveling through the airport may be in the area to visit the company's headquarters and its assorted attractions, including the Hersheypark Amusement Park. While the sign would be understandable to most local people passing through Harrisburg Airport who are familiar with Hersheypark and the namesake Hershey's Kisses , it makes a rather large assumption that the majority of its audience will easily understand the design and visual measurement reference. Hersheypark may be known rather well regionally, but the park does not have the international recognition of a similar park such as Disney World. However, the chocolate the Hershey Corporation is known for producing has a much longer history and wider cultural spread, and the small Hershey's Kisses the sign uses as a measuring stick may benefit from that long exposure. However, it's doubtful that even if 72 Hershey's Kisses does equal six feet exactly, most audience members wouldn't have much of a conception of what 72 Hershey's Kisses looks like end to end (although I would imagine this sign inspired some inquisitive airline passengers to perform their own calculations once they returned home).

In terms of the C.R.A.P. principles from Williams, the sign meets some of the principles quite well. The silver and brown provide contrast, and the white and yellow are used to help highlight important parts (not to mention how the colors help to market Hershey bars and other Hershey products by mimicking their design): Note how yellow is used to help draw focus to "72 KISSES CHOCOLATES" (and a trademark notice, too). Just like many of the other samples, the alignment is centered, which ends up taking your eye down to the center of the warning sign to the kisses, framed with extra white and yellow that stand out among the brown and silver. The bottom includes a slogan from the airport at the time, "ALTOGETHER AGAIN." White space—perhaps more aptly called brown space here—is used well and the color helps the audience to recall Hershey's chocolate. In terms of proximity, the sign makes good use of color and order to tie like messages together, such as how the message included in the outer circle ties to the messages included in the inner circle. In terms of

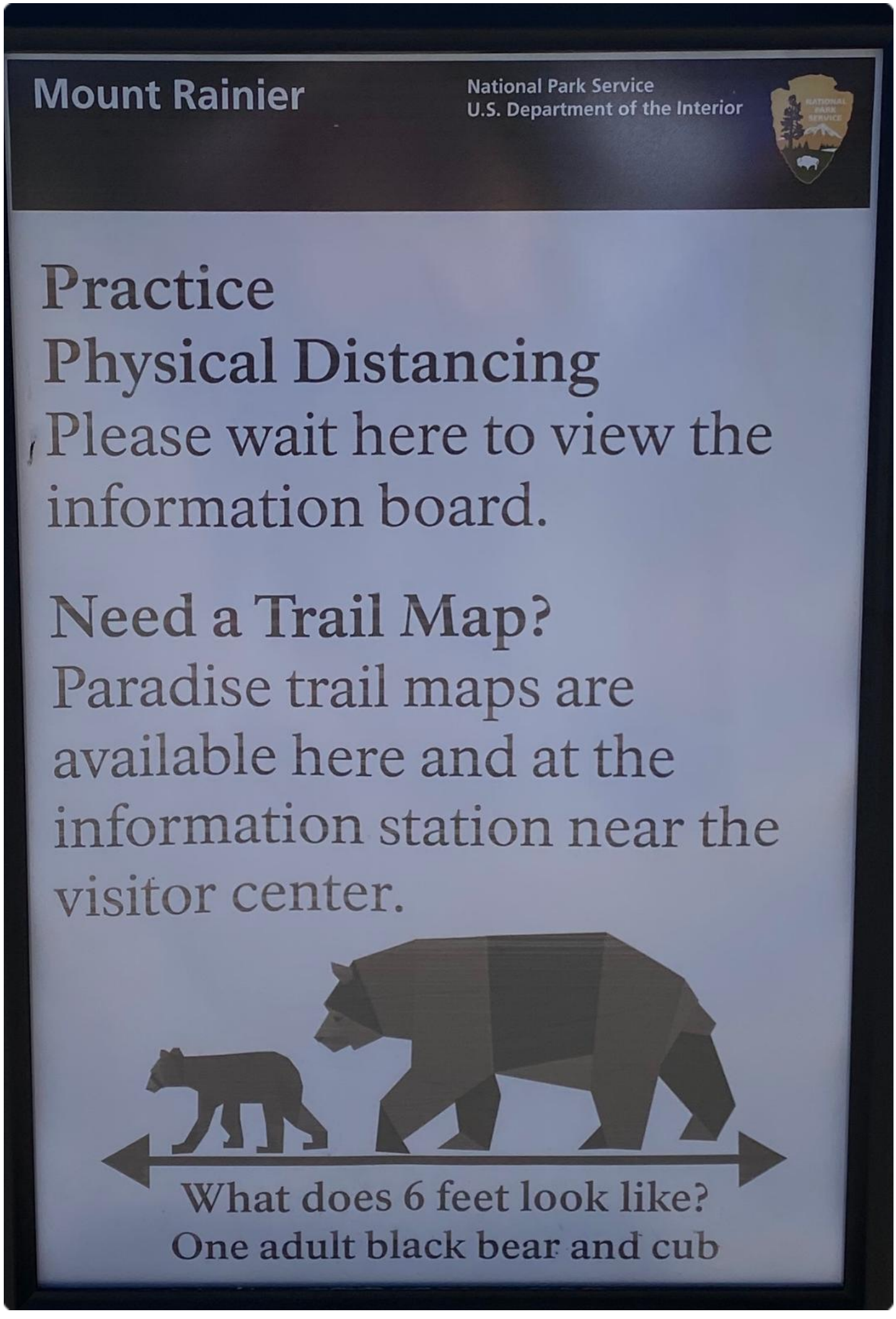
repetition (uniformity), all words are in caps, which can be hard for readers if too many words are vying for a reader’s attention, but the size of the words and phrases are differentiated enough so that it doesn’t muddy the message. All in all, the warning sign is balanced and designed well, but the main unit of information—how to visualize six feet of separation—could be replaced by something much clearer.

COVID Warning Sign Sample 5 Discussion Questions

Which example helps a general audience approximate a distance of six feet better—six dice or 72 Hershey’s kisses? Why? How else could the Harrisburg Airport visualize six feet instead of using a product from the Hershey Company or their nearby amusement park (Hersheypark) instead?

COVID Sample Warning Sign 6: Mount Rainier National Park

Figure 11: COVID Warning Sign from Mount Rainier



A COVID warning sign on a placard from Mount Rainier National Park in June 2020. Photo courtesy of Moe Folk.

The above warning sign is from Mount Rainier National Park. Note how much text is used, and how the important information is separated by other, less important information about where to get a trail map. In terms of context, it might stand to reason that a huge national park full of open spaces may not be as concerned with communicating the social distancing message. Additionally, perhaps people constantly approaching tour guides and employees for maps constituted an issue where COVID could easily spread. However, even national parks experience logjams at indoor places, outdoor vistas, and restrooms, so the sign still has the same urgency to get its warning message across to a large audience of people, many of whom travel from other countries to visit the parks.

In terms of the C.R.A.P. principles from Williams, the sign meets some principles well but could use more revision to meet all the principles well. The black text on a white background provides contrast, but the size of the heading text is not markedly larger than the body text, which does not provide enough contrast and therefore makes the sign harder to read because the headings and body text melt together, especially at a distance. The alignment on this sign is also jumbled, especially when compared to previous samples that featured one main alignment. The Mount Rainier warning sign includes a left alignment for the main text; then the visual measurement is centered at the bottom of the sign; then the badge on the upper right creates a right alignment that feels broken because of the jagged right alignment of the paragraphs due to line breaks caused by large words in the text. Proximity could be improved by keeping the social distancing information together, and fixing the heading/text ratio could help proximity by letting the reader see more quickly what information belongs together. In terms of repetition (uniformity), one heading is on a single line while another is on two lines, which adds to the sign's jumbled appearance. Uniformity is also off because two sections start with questions, while the first one does not. All in all, of the samples we've seen so far, this sign could benefit the most from applying the C.R.A.P. principles to revise the design.

In terms of clarity, a black bear and its cub are used to visualize six feet. For one, most people probably have not seen such a combination in real life before, and this visualization is different because most people are well aware that if you do see an adult bear and its cub, you should stay away and not examine them closely. This might be the equivalent of using a great white shark or a bunch of jellyfish to denote six feet of space on a beach sign about social distancing. While the park may see nature lovers as its main audience, that main audience would also know that a mother bear and cub are a dangerous sight to be avoided, so it

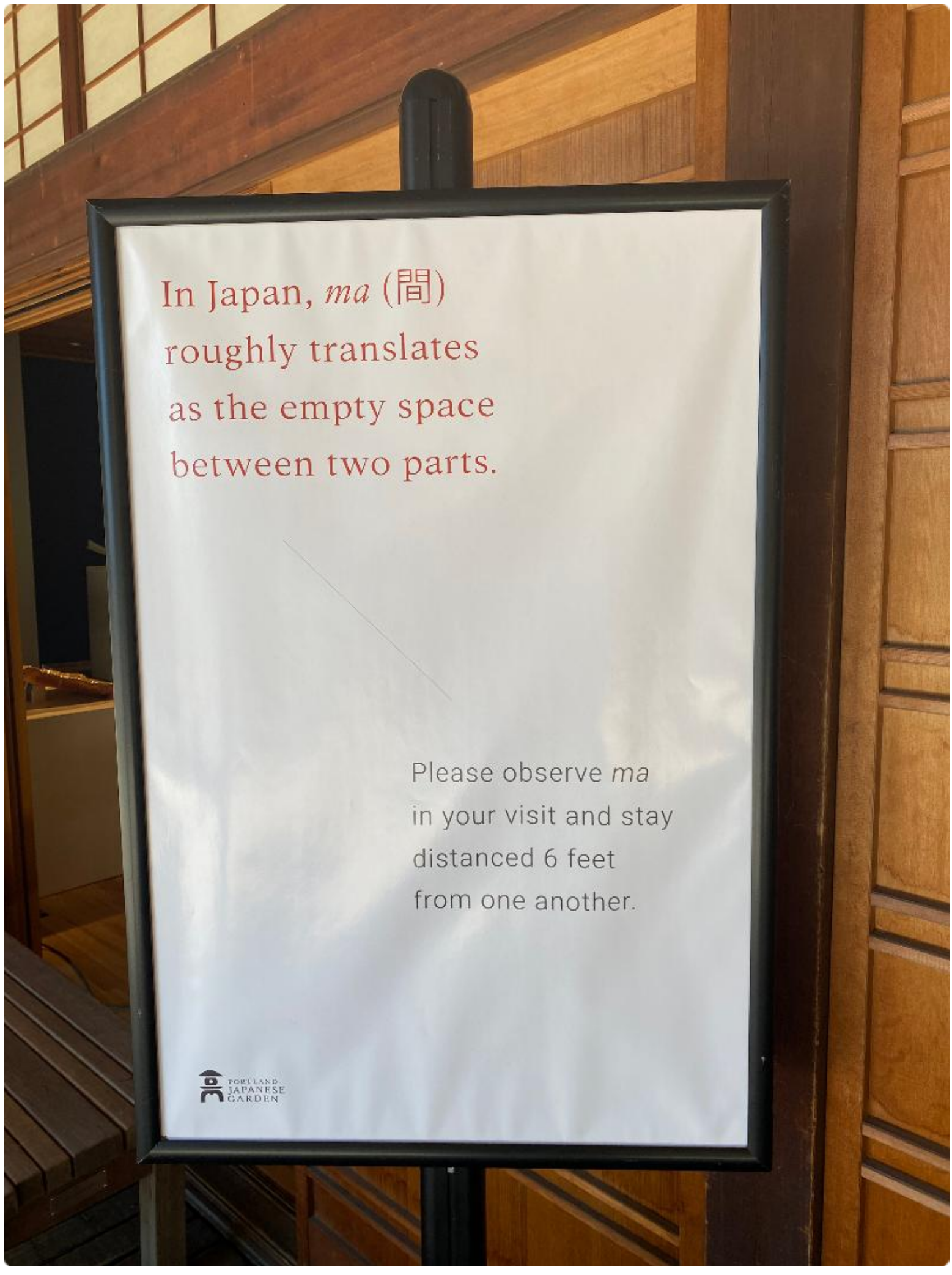
may in fact raise the tension in the viewers, which is something the COVID signs at the time should not have been doing.

COVID Warning Sign Sample 6 Discussion Questions

Can you think of a better—and safer—way to represent six feet with a natural visual reference for their audience than the one Mount Rainer National Park used?

COVID Sample Warning Sign 7: Portland Japanese Garden

Figure 12: COVID Warning Sign from the Portland Japanese Garden



A COVID warning sign from the Portland Japanese Garden telling viewers to observe the Japanese concept of ma and stay 6 feet away from each other (June 2020). Photo courtesy of Moe Folk.

The above example is from the Portland (Oregon) Japanese Garden. In similar fashion to the New York parks sign and the influenza sign, it relies solely on text; however, in this case, the placement of the text provides a visual for the warning sign to get its message across subtly. The white space between (and surrounding) the two text blocks serves as the measurement visualization to help show the space people should observe between each other to slow the spread of COVID.

In terms of the C.R.A.P. principles from Williams, the sign meets some principles while purposefully violating others to make its meaning clear. The dark gray and red text on white background provide clear contrast between the paragraphs, contrast that is further aided by the space between them. The sign uses two different left alignments, which some might consider cleaner if the sign shifted to one, but the staggered left alignments further implies the meaning of staying apart from one another (and the logo at the bottom ties them together literally and figuratively in the sense they are sharing that actual space). Proximity is violated in some ways, but it is violated creatively to help make the meaning of the sign clear. In terms of repetition (uniformity), this warning sign relies on the uniformity of the white space. The paragraphs exhibit more contrast than uniformity—the font, font size, and color is different for each. Yet, if the white space were collapsed, the sign would exhibit a chaotic ethos instead of a peaceful one. Compare the calm ethos of the Japanese Garden sign to the ethos of the Mount Rainier sign. Of the samples we've seen so far, this sign violates many of the C.R.A.P. principles, but it features a strong concept that focuses on getting its meaning across in a novel, artful way. While the sign does choose to forego a clear visualization for six feet, it doesn't muddy the six-feet message by using an overly specific example as some of the other sample warning signs did. This sign may not be the most immediately understood of the sample warning signs in this chapter, but it still possesses some of the major hallmarks of visual technical communication, including clarity, concision, and efficiency.

COVID Warning Sign Sample 7 Discussion Questions

If you were to visualize six feet of space on the Portland Japanese Garden sign with real images, how would you do it?

COVID Sample Warning Sign 8: Hood River, Oregon

Figure 13: COVID Warning Sign from Hood River, Oregon

A COVID warning sign from the Portland Japanese Garden in June 2020. Photo courtesy of Moe Folk.

The final COVID warning sign sample comes from the small city of Hood River, Oregon. The sign was placed around communal outdoor spots in the town, such as parks and docks. Many of the parks offered areas for people to sit and cook food on grills. Note how this sign builds upon the plain signs from our earlier examples, especially the samples from other outdoor spaces, such as the New York parks example. This sign adds information the others didn't, and it presents it using approaches nobody else used, as well. For example, the sign uses Spanish to mirror all pertinent information presented in English (the exceptions being the town and business logos). Including Spanish undoubtedly broadens its potential to connect with a wider audience.

This sign was placed in parks, and it uses an image of something from the parks to visualize the distance, an approach similar to that of Las Vegas airport (dice), Harrisburg Airport (Hershey's Kisses), and Mount Rainier National Park (a bear and cub). However, the Hood River sign chooses something that is not only found in their parks, but something familiar enough that most people would know anyway. Adding people around the item helps to give it scale, and the body language of the people is noteworthy: They are relaxed and seemingly talking

with each other, providing the sense of normalcy mentioned as a goal of early COVID warning signs.

In terms of the C.R.A.P. principles from Williams, the sign meets most principles well. Contrast is solid throughout. It does use a multitude of alignments, so streamlining those could help the overall balance of the sign and allow readers to focus more on the visualization. For example, right-aligning the paragraphs would frame the image more. Proximity is strong overall, but the lines between paragraphs indicate a difference in idea instead of a translation of the same material. In terms of repetition (uniformity), this warning sign relies on color to help its message get across: The color of the main paragraph of information aligns with the arrows denoting six feet between people, and the main title in white, “A Little Space,” also corresponds with the white space between the people, just like the Japanese Garden one. Of the samples we’ve seen so far, this sign contains the most information and may feel a little cluttered at first, but it uses design and conception to help it cast a wide net and provide important information to its audience. While it may not be immediately clear due to its wording (e.g., the omitted article “a” in “length of park table”) and the multiple logos, it nonetheless provides the information and design punch it needs to help its audience withstand COVID.

COVID Warning Sign Sample 8 Discussion Questions

If you were to add anything to this sign, what would it be? If you were to cut something from the sign, what would it be?

3.5: Warning Sign Assignment

To develop your own warning sign, think of a situation on your campus, hometown, or workplace that could be helped by making a warning sign. Be sure to spend time thinking about your sign before making it. The more time spent on the planning stages of the sign, the better the final product will be. Pay close attention to the language choices, and make sure they correspond to the right level of danger as discussed in the chapter. Finally, make sure your images can help your audience visualize the right message so they can alter their behavior accordingly.

Warning Sign Assignment

Overview

For this assignment, we will again practice some core elements of technical communication—information architecture, clarity, and visual rhetoric—that will be needed in future projects. It is worth 100 points of your overall grade.

Details

Create a warning sign for something that needs to be addressed at KU (if you can’t find anything at KU, you could also develop something for your hometown or workplace). The sign should rely on visual elements to convey its meaning: Ideally, you wouldn’t need many (if any) words beyond legal terms such as danger, warning, or caution in order to make your message clear to viewers.

Grading

My evaluation will consider how your message connects with your chosen audience to achieve purpose. It will also focus on how the visuals convey meaning to the audience. Your designs should adhere to the C.R.A.P. principles discussed in class and no typos should be present. See the Warning Sign Assignment Rubric for more detailed information.

Important Dates

- Week 1: Topic Ideas due
- Week 2: Usability test of rough draft
- Week 3: Final draft and rhetorical reflection due

3.6: Warning Sign Rubric

Warning Sign Rubric

Warning Sign Rubric

Criteria	Description	Points
Overall Meaning	The overall meaning of the sign is clear and can be comprehended quickly.	30 pts.
Visual Communication	The sign relies on visuals to connect with audience and convey message.	20 pts.
Design Choices	Design choices could not be improved (e.g., information hierarchy, contrast, alignment, proximity, repetition, typeface, color).	20 pts.
Warning Language	The correct choice of warning language (and corresponding color, if necessary) is used (e.g., caution, warning, danger).	20 pts.
Mechanics and Image Quality	There are no grammatical, punctuation, or spelling errors; images are not pixelated or watermarked.	10 pts.
Total Points	100 pts.	

3.7: Appendix

1918 Public Health Influenza Poster Transcript

Treasury Department. United States Public Health Service. Influenza. Spread by droplets sprayed from the nose and throat. Cover each cough and sneeze with handkerchief. Spread by contact. Avoid crowds. If possible, walk to work. Do not spit on floor or sidewalk. Do not use common drinking cups and common towels. Avoid excessive fatigue. If taken ill, go to bed and send for a doctor. The above applies also to colds, bronchitis, pneumonia, and tuberculosis.

[Return to the Influenza Poster].

Chapter 4 | Persuading: Recommendation Report Assignment

While the majority of technical writing may exist to inform, there are also many forms of technical writing that exist to persuade. When thinking about writing to persuade, students will invariably think of the essay writing they have done, most of which relies on using the author's thoughts and drawing on outside sources to persuade readers about a topic or viewpoint. In technical writing, persuasion centers less on the author's unique insights and more on how the writer summarizes, describes, suggests, and connects technical information to a given topic. Readers are often left to draw their own conclusions, and persuasion occurs because they see the efficacy of the technologies being described. This chapter focuses on how writers can develop persuasive skills through technical writing by marshaling **tone**, **summary**, and **thoroughness** to help an organization such as a business to address an issue. This chapter focuses on a particular type of genre of persuasion—the recommendation report.

4.1: What Is a Recommendation Report, and Why Is It Important for Technical Writers To Master?

A recommendation report is a type of formal technical writing that examines a problem and provides evidence-based advice to guide decision-making. Recommendation reports are used by businesses and organizations to inform and guide stakeholders about the best course of action for moving forward when faced with an important decision. The reports are also used in many other professional contexts such as determining government policy and engineering contexts.

Key Elements of a Recommendation Report

- An objective analysis of a problem, situation, or issue
- A comparison of possible solutions or options
- A list of criteria to assess alternatives
- A clear recommendation backed by data and logic
- A professional structure that can meet the needs of various audience members based on their knowledge of—and proximity to—the problem being addressed

Recommendation reports can be difficult to write because the author must understand the past (how something became a problem that needs to be addressed), the present (how current contexts such as financial realities affect the problem) and the future (how well and for how long the proposed solution will meet the needs of the business or organization moving forward). As such, recommendation reports require technical writers who are motivated to solve the issue, diligent in researching the problem, and adept at weighing the pros and cons needed for decision-making. Authors also need to separate their own feelings and emotions about the problem to focus on writing a technical report that can persuade people through logos (facts, data, statistics) instead of pathos.

Why Being Able To Write Recommendation Reports Is a Valuable Skill for Technical Writers

- **High Demand**: Businesses and organizations are constantly facing important decisions about what they should do, and even what technologies they should adopt and streamline.
- **Cross-Functional Experience**: Writers often need to collaborate with engineers, product managers, administrators, and executives to find information and then work through proposed solutions, thereby building effective communication skills across different teams and disciplines.
- **Career Growth**: Successful recommendation reports, especially when the proposed solutions turn out to be extremely beneficial to the greater good of a business or organization, can have a huge impact on a worker's trajectory within a company or organization.
- **Analytical and Organizational Skills**: Recommendation reports improve an author's ability to synthesize a lot of complex information and present it logically, rationally, and persuasively.
- **Communication Clarity**: Recommendation reports develop skills in writing concisely and clearly for diverse audiences, including non-technical stakeholders who will be involved in decision-making and implementation moving forward.

4.2: Recommendation Report Assignment

Unlike previous chapters, I'll provide the assignment sheet up front because writing a successful report depends on understanding all the pieces such a report entails.

Assignment: Recommendation Report

Overview

For this sequence, you will continue honing technical communication skills such as summary, visualizing information, and audience analysis. In addition, this project will develop your research skills and your ability to use technical writing for problem-solving and persuasion. You will begin with a proposal and problem statement and then produce a recommendation report. You can work alone or in groups for this project, depending on the complexity of the problem being addressed. If you are stuck for ideas, just talk to me and I'll help you brainstorm.

Details

1. Recommendation Report

A longer document (~10 to 15 single-spaced pages, including images) that attempts to "solve" a problem facing the university or the local community by relying on technical communication and argumentation. The goal is to deliver your final report to people who could actually act upon it and implement your recommended solution(s). In addition to reasoning that hinges on solid research and technological/logical arguments, each report must use at least three outside sources (and can use primary research, as well). Reports will contain the following sections: executive summary, problem statement, background, evaluation criteria, option analysis, conclusions, final recommendation(s), and references page. A budget and some visual aspects to the argument (e.g., charts or graphs, in addition to the overall design of the report) should also be included. Citations should follow APA format.

2. Rhetorical Reflection

An analysis/reflection of the choices made in your recommendation report.

Important Dates

- First Week of Project: Topic ideas due for discussion (D2L post).
- Fourth Week of Project: Rough draft of Recommendation Report due.
- Sixth Week of Project: Final draft of Recommendation Report and Reflection due.

Grading

This project is worth 300 points of your grade, broken down as follows:

1. Recommendation Report: 250 pts.
2. Rhetorical Memo: 20 pts.
3. Presentation: 30 pts.

4.3: Overview of Recommendation Report Sections

Recommendation reports use a variety of sections to convey their points to an audience. The overview of sections below is not meant to be followed dogmatically. Writers should add, remove, combine, and re-order sections as necessary depending on what they think is best rhetorically for their targeted organizations and audiences. However, I am providing a framework that helps students manage the many pieces that go into a recommendation report, and I have found that these sections can accommodate a wide variety of topics within the recommendation report genre. In addition, I stipulate in my assignment that you must identify at least three feasible solutions in the options section, and you must incorporate three outside sources, including at least one academic source. Although outside sources may not be strictly necessary in all recommendation reports, I have found that requiring outside sources helps students go deeper in their work and give their reports a better chance of being persuasive.

One aspect of recommendation reports that students will note is quite different from their non-technical writing experiences (e.g., essay writing) is that these reports have repetition purposely built into them. I'm sure many students have had writing instructors scrawl "Repetition!" in red ink on their essays at some point, but repetition plays an important rhetorical function within recommendation reports. For example, the actual recommendation may be repeated in multiple areas of the report. Such repetition may not be necessary if, say, the report is meant for only one person (e.g., a hands-on boss of a very tiny company), but for larger organizations, the number of people who may be tasked with reading and discussing the recommendation report could stretch into the hundreds or even thousands. Some people may be relatively tangential to the process and invited late, so they may only have time to read the executive summary before a meeting. In other cases, some reports become long, and some of the most important information, such as the final recommendation, can get obscured by other sections; therefore, the final recommendation will need to pop up in various sections for clarity. Just as with any other piece of technical

writing, the writer can't assume that everyone reading a recommendation report brings the same interest, technical knowledge, passion, and goodwill to reviewing it, so it needs to be able to connect with a wide audience. Also, the recommendation report can serve as a de facto record: If, for example, a business were looking at the best way to fix a crumbling entryway and that entryway collapsed and resulted in injured customers, a recommendation report that was commissioned to fix it but never adopted could play a role in any legal struggle that may play out over the injuries.

Overview of Recommendation Report Sections

Sections	Description	Rhetorical Purpose
Cover Page	One designed page meant to engage the reader and define the topic, author(s), and audience	Design demonstrates an initial sense of ethos for how much work was put into the report, and the title shows the scope of the work. It also marks the primary audience (i.e., usually the people or group who would have the authority to address the issue being discussed).
Executive Summary	Brief summary of entire report (including final recommendation) with keywords	If audiences only read the executive summary, they would understand the report in a broad sense, even the recommendation.
Problem Statement	Identifies the topic/ problem and explains urgency	Answers the question: What is the problem, and why does it need to be solved? Includes the final recommendation so that readers keep it in mind as they read.

Sections	Description	Rhetorical Purpose
Background	Shows the history of the problem	Answers the following questions: Where did the problem come from? How did the problem get to the current point? How has it been addressed previously, if at all? What technical hurdles/realities exist that impact solving the problem?
Criteria	Establishes parameters and defines goals necessary to attempt to fix the problem	Answers the question: What criteria must be met in order to successfully address the problem? (e.g., cost, durability, satisfaction, etc.)
Options	Explains how the author identified possible solutions to the problem and examines three options in depth	This section examines possible solutions to the problem. Each option should get the same amount of attention and analytical emphasis (or it risks looking like you weren't able to identify three feasible options or that you are biased towards pushing forth the solution that's way longer).
Conclusions	Explains how the author identified possible solutions to the problem and examines three options in depth	In part a summary of the conclusions reached by comparing the possible solutions analyzed in the options section. This section goes deeper in helping the audience understand the pertinent details from the options section by sometimes providing primary and secondary conclusions. The final recommendation is often included in this section.

Sections	Description	Rhetorical Purpose
Final Recommendation	Provides readers your option(s) for addressing the issue and moving forward with it	This section states your final recommendation by reiterating (and sometimes expanding on) the reasoning from previous sections. More importantly, it provides a pathway for moving forward so the stakeholders can begin the process of working to implement the new idea.
References	The page that lists all in-text citations in APA style	Provides readers a means to access all reference materials for in-text citations. Everything in the References page needs a corresponding APA in-text citation and vice-versa.
Appendix	Adds supplementary information if needed to aid understanding	This section could include sources, images from the history of the problem, mock-ups related to solutions, etc. It consists of information that might be helpful for understanding context but isn't needed to fully understand the approach.

4.4: Starting the Report

Although the cover page and abstract are the first parts the audience will see when reading the report, those sections are best to create when close to finishing the assignment. For example, the executive summary is a brief encapsulation of the entire report, and it includes the final recommendation, so writers won't be able to do the executive summary unless they have done the research necessary to know possible options and select one that is the final recommendation. While some people may find it helpful to try and sketch out an executive summary first to provide shape to the report, others may find that doing so restricts their openness to approaching the topic and it may steer them toward a pre-destined

final recommendation before doing research. Most students will find it more helpful to begin the heart of the report by identifying the topic and articulating the problem first. This approach helps students understand the problem thoroughly and identify the audience who can help implement solutions. With that advice in mind, we start writing the recommendation report by writing the problem statement.

4.5: Writing the Problem Statement

This section may be the most important part of the recommendation report. The problem statement identifies the issue that needs to be addressed, with what urgency it needs to be addressed, and it answers the question: **What** is the problem, and **why** does it need to be solved? In short, time and attention are at a premium for each person and each organization. This section needs to quickly define what the problem is and persuade the readers it is worth their time and attention to address the problem because doing so will have a great impact on their business/organization. The problem statement is the first major section the audience might read, and it sets the stakes and establishes the author's ethos right away. In many ways, the problem statement functions like the introduction in a piece of personal writing such as an essay: it engages the audience, sets the topic, and encourages the audience to read further. In the case of a recommendation report, though, the readers need to focus on something negative, so the author needs to rely on the important, positive benefits of addressing the problem for the organization.

The problem statement includes the final recommendation as a way of foreshadowing the rest of the report. However, anyone who only reads the problem statement won't be persuaded to adopt the recommendation and may stop reading the rest of the report to go and work on implementing the proposed recommendation. This section does not contain enough technical information or insight to explain why the final recommendation is the best way forward; instead, it lays the seeds for what comes next. Readers can then pay closer attention to how the final recommendation emerges more completely throughout the report. Including the final recommendation in the problem statement (as well as other places in the report) is a way of making sure the reader can't miss—or isn't surprised by—only one mention late in the report. Including only one mention of the recommendation at the conclusion of the report would mean readers would have to go back and try to connect the recommendation back to large amounts of information that has already been presented, which would lessen the reports' chances of persuading the audience.

Overview of Problem Statement

- Introduces the overall topic identifies the problem at the heart of the report
- Answers the question, “What exactly is the problem, and why does it need to be solved?”
- Explains methods, scope, and adds recommendation(s) upfront

In terms of format, when this chapter discusses approximate lengths for each section, it assumes the form of single-spaced paragraphs with no indents but with spaces between each paragraph. A problem statement should be less than a single-spaced page (unless the problem is so complex that it requires more space to cover), but the author needs to be as succinct as possible in addressing the problem. The reports can be relatively short when addressing something physical such as computer hardware (e.g., “Which computer monitor should we purchase to replace our current monitors?”), but this chapter focuses on crafting recommendation reports tied to more open-ended problems that may take a lot of work to resolve.

Problem statements are important in establishing ethos because the tone and approach the author will take are on full display. A measured, professional tone is a necessary component of recommendation reports. Depending on a student’s connection to the chosen topic, it can be hard to approach the subject rationally and objectively. Oftentimes, students will address a topic that is tied to them in some way, so it is difficult to stay objective. Nonetheless, providing too much pathos is a hallmark of rough drafts, as is tarring an organization’s leadership, and these approaches must be avoided at all costs in the final drafts because they have little chance at succeeding in persuading the audience.

The following example centers on a topic that many students select, and it exemplifies the approaches of blaming the organization involved and using an unprofessional tone.

Problem Statement Rough Draft: Improving Student Parking

The parking situation at our university is, in a word, ridiculous. It is a travesty that many students need to park way out in in the middle of nowhere in an unpaved lot where cars routinely get damaged and is unsafe in many other ways. Worse yet, by the time we finally trudge to class from way out there, we see acres and acres of empty faculty parking lot spaces. We pay way too much

money to attend this university and to buy parking permits, so this situation needs to be remedied. We need to build two brand new parking garages, now.

While the rough draft of a problem statement above might be exactly what the author wants to say regarding parking, it certainly does not use a tone that has any chance of establishing a professional ethos that can end up persuading its audience. For one, the tone creates a "student vs. faculty and administration" dynamic when it would be more effective to show how parking problems relate to elements of student life that the administration cares about, such as issues with student safety and parking issues that cause students to be continually late to class, which can translate into missing exams and ultimately impact student retention.

To help authors avoid falling into the pit of pathos and blaming people higher up in the organization, it can be helpful to start writing the problem statement with established building blocks. A traditional structure for problem statements includes the following elements to help provide scaffolding for writers as they flesh out the problem:

1. **Vision** (the ultimate goal that, if achieved, would solve the issue)
2. **Specific Issue Statement** (overall problem definition and context/facts that identify problems)
3. **Relevance** (why is it important to solve the issue?)
4. **Proposed Method and Recommendation** (how you will go about determining how to fix the problem, what options you will investigate, and what your final recommendation is)

Problem Statement Example: Improving Student Parking (Revised)

Vision: All students at Kutztown University should have access to affordable, safe, and convenient parking.

Specific Issue Statement: Right now, student parking choices are lacking because more than half of the student population does not have access to paved lots, and these unpaved lots are far away from classroom buildings and fill up regularly. Because the lots are far away and there is no way for students to check whether a lot is full before arriving, many students are routinely late to class. Additionally, the unpaved lots do not have security guards, and many students' cars have been damaged by people speeding and driving recklessly in the lots. The lots also do not have adequate lighting, and there have been several

robberies in the lots, which has resulted in many students avoiding required classes that end in darkness. This issue has caused some students to take longer to graduate, which in turn increases their student debt.

Relevance: Because so many students are late for class, this has resulted in some students missing important quizzes and tests that have impacted their ability to pass classes. Some students (as evidenced in a survey conducted for this report and presented in its entirety in the background section) have transferred, or know others who have transferred, because of the parking situation.

Proposed Method and Recommendation: In this report, I examine ways to improve the parking situation at the university. I surveyed 200 students about their parking experiences and interviewed the head of public safety to ascertain the number of permits issued relative to the number of spaces available. I investigated multiple options to address the issue, including altering the rules for those who live on campus to use parking lots by academic buildings, paving the current dirt lots, adding security, and adding a new parking garage. Ultimately, I recommend paving the current dirt lots and adding security due to affordability issues.

Here's another example to see how the traditional structure can help to give structure to the problem statement.

Problem Statement Example: University Dining Halls

Vision: All students at Kutztown University should have access to healthy, affordable, and convenient food choices.

Specific Issue Statement: Right now, student food choices are lacking because most do not have access to enough healthy options, the cost and payment systems are too limited and confusing, and many food places are inaccessible during peak lunch times between classes.

Relevance: Studies show that a healthy body impacts the mind, and students who eat well are more likely to do better in school (Smith, 2015, p.10). Currently, students often find themselves skipping meals to attend classes or skipping classes to get food, all of which affects the ability of students to achieve the best education they can, and which sometimes even results in students failing classes.

Proposed Method and Recommendation: In this report, I examine ways to improve the food situation at Kutztown. I surveyed 200 students about their dining preferences, interviewed the head of dining services, and conducted research into the importance of the mind-body connection on student outcomes. I investigated multiple options to address the issue, including altering hours, altering payment systems, and adding new dining options. Ultimately, I recommend adopting facets of each, with a focus on altering hours.

As noted before, the problem statement is not the end of persuasion, but the beginning. Some claims within the problem statement will need more verification and support to connect with audience members, and the next section, the background, provides the space to illustrate the problem in greater depth.

4.6: Writing the Background Section

The background section allows the author to expand on the problem and show the reader more fully **what** the problem is and **why** it needs to be addressed. It also shows the audience **how** the problem got to this point by examining the issue's genesis and other approaches that might have already been taken to mitigate the problem. As such, this will be one of the longer sections of the report because it may end up looking at years or even decades of past practices. Moreover, this section can be one of the most time-intensive because it will require significant research to uncover how the problem was handled by the organization in the past or **even how similar organizations have handled the problem before**. In other words, students may need to conduct primary research, such as interviews with people who know the history of the problem within the organization and surveys to gauge the extent of the problem facing people across the organization. In addition, it is important to find high-quality published research that helps to corroborate points about why the problem needs to be addressed urgently.

For the recommendation report assignment shared in this chapter, students often conduct at least one interview for the historical context of the problem and one survey to gain insights on how other students are affected by the problem. Overall, the background provides authors an opportunity to achieve persuasion by developing logos Setting the stage with facts, data, and statistics to understand the problem more deeply in this section allows subsequent sections to build on the logic established in the background and home in on how to fix the problem. For example, the criteria for success and which options should be considered are all rooted in the takeaways from this section.

Why the Background Section Is Included

It elaborates on the problem by showing its history, and it lays the groundwork for how the problem should be approached in order to fix it.

Questions To Consider in the Background Section

- How (and when) did the problem start? When did the organization realize there was a problem? (* addressing the past)
- How did the organization get to the current situation? What attempts have been made to address the problem before, and why didn't they work? (* addressing the more recent past)
- What general financial, social, political, legal, and/or ethical implications exist that affect the organization's ability to respond to the problem? (* addressing the present)
- How will the current trajectory the organization is on affect its ability to address the problem in the future (e.g., funding, demographics, enrollment, budgets)? (* addressing the future)
- What technical hurdles/realities exist that could impact the ability to address the problem in the most beneficial way moving forward? (* addressing the future)

Other Aspects To Consider

Persuasion is a key aspect of the background section. You have a chance to reiterate the scope and impact of the problem in a much deeper way, so if people are not convinced by your problem statement, then the background section gives you the space to go deeper to convince them.

This section will require a significant amount of work. Not only does it provide a basis for the rest of the report, but it also establishes your ethos by showing readers how invested you are in solving the problem. Thus, your commitment to this section will be evident based on the amount of work readers perceive you devoted to developing this section.

The success of this section often relies on outside information that you uncover during the research process. Devise a plan before starting this section, and identify which people in your organization are the ones with the best institutional memory or proper administrative oversight to get the right information about it.

That also means reaching out to potential interview subjects early, especially if their knowledge will be difficult, if not impossible, to find elsewhere. A report that has huge information gaps in the background section does not have a great chance of success.

If you need help starting this section, begin a rough draft with three headings and start adding notes and information to each: The History of the Problem; Current Realities Affecting the Problem; Future Issues That Could Affect the Problem.

4.7: Writing the Criteria Section

The criteria section (sometimes known as the requirements or evaluative criteria section) is used to define standards or benchmarks to evaluate possible solutions for the problem. This section is critical to the success of a recommendation report because if an author can't develop feasible criteria to successfully address it, then it may not be possible to recommend a successful solution. Criteria are used to compare and contrast the options in the next report section, and that evaluation is essential for making sure the options are evaluated fairly, consistently, and objectively. Well-written criteria can provide the audience with easy-to-follow qualities (and sometimes quantities) that allow the audience to understand how the success of various solutions can be measured.

Before look at how to write criteria, it's important to take a step back and acknowledge how the different parts of the report connect and why the criteria section has a special function. At this point, you may think your writing is disjointed because you have three different sections that don't flow together the same way paragraphs in a personal essay do. However, it's important to note that each section of a recommendation report has an important connection to other sections, and each section fulfills a distinct purpose for the various audience members. For example, some readers may be well aware of the problem and have no need to read the background section, while others may not be aware of the problem and be unconvinced by the general nature of the problem statement. Therefore, the background section is paramount in persuading them that the problem exists and needs to be remedied. Similarly, the criteria section only resonates with readers if the problem statement and background section are clear, thorough, and specific. It helps to think of the criteria section as the bridge between explaining the problem and solving the problem. You will use the criteria in this section as a lens to evaluate the options presented in the next section, which allows you to select the most feasible option for the audience. The problems facing organizations can be so complex that a

perfect solution rarely exists, so think of the criteria section as setting the parameters for what constitutes the most suitable option for addressing the problem at this juncture in time.

Key Elements of Good Criteria

1. Good Criteria Are Clear

- Each criterion should be written in a way that is understandable to the wide variety of audience members who may use the document.
- Each criterion should try to be as short as possible (just a sentence is fine).
- If it’s not clear from other sections where the criterion came from, you may need to flesh it out more in this section.
    - ✓ For example, in a recommendation report that examines how to increase computer security for a company, how much the current budget is discussed in the background—and how much the primary audience may be familiar with the budget—would explain whether the author writes the following criterion as "The cost of the security software must be less than $10,000” versus “The cost of the security software must be less than $10,000, which is the budget amount allotted to computer security in fiscal year 2030.”

2. Good Criteria Are Relevant

- Criteria should align with the report’s purpose(s) identified in the previous sections (problem statement and background).
- Criteria should align with the audience’s (and the organization’s) priorities. Note that this means they should identify pertinent factors relative to achieving a common purpose in an ethical way. They should not be bent to appeal to what stakeholders want to hear or used by authors to push their favored options and agendas through.
- Do not write overly broad criteria that can easily be dismissed as irrelevant.

3. Good Criteria Are Measurable

- Criteria must be as specific as possible so they can be measured and assessed.

- Criteria should be quantifiable (e.g., cost, savings, time to implement, percent of adoption by users).
- If no quantifiable criteria can be developed, include other important factors that can be measured or assessed (e.g., user-friendliness, compatibility, customer satisfaction).

4. Good Criteria Are Balanced

- Avoid having criteria focus on one factor—develop criteria that can address a mix of factors instead.
    - ✓ For example, if a recommendation report on software adoption only focuses on economic factors such as software cost and training cost, other important factors can be disregarded (e.g., user-friendliness, ease of multi-system integration, security, customer service reputation).

5. Good Clarity Are Prioritized

- Put the most important criterion first.
- Organize the criteria in a way that make sense (e.g., keep cost-related criteria together).
- Separate the criteria by importance level if necessary.
    - ✓ If you have a lot of criteria, it can be helpful to include levels of importance to help guide the audience. For example, the criteria listed under “Primary Criteria” can be the essential qualities a successful option must meet, while “Secondary Criteria” could denote the “nice to have” qualities an option might meet but would not be disqualifying.

For many student writers, this will be your first time writing criteria. Overall, the key is making sure each criterion satisfies the questions below, because doing so can ensure you have created worthwhile criteria.

Is It Necessary?

What would happen if the requirement were not met? Why is it needed? (If the answer is unimportant, then it’s not needed.)

Is It Verifiable?

How will you know when you achieved the requirement? Will you be able to assess the requirement? (If you can't verify that it has been achieved, then you won't be able to tell if you're fixing the problem.)

Is It Attainable?

Is the requirement technically and financially feasible given the background and current context of the organization? If it's not feasible now but might be in the future, be clear that it is a goal more benefitting the status of a primary requirement instead.

Tips for Writing the Criteria Section

- Number each criterion (or at least bullet point them and start with the most important aspects first).
- Include only one requirement for each number/bullet point.
- Provide at most two sentences per requirement: Paragraphs trying to explain criteria invite ambiguity and confusion.
- Separate requirements by priority when necessary (e.g., if you have more than five criteria and they seem similar, it would be best to help the readers prioritize their importance).
    - ✓ Primary criteria are "the must haves" a recommendation must meet, while the secondary criteria are "the nice to have" features a recommendation might meet.
- Avoid vague language. Try to make the criteria as specific as possible using the following techniques:
    - ✓ **Numerical values**. Numbers, especially those that can outline ranges such as minimums and maximums, are helpful tools. For example, "The new monitors should not cost more than $250 each."
    - ✓ **Yes/No values**. A criterion that can be assessed through a simple yes or no answer relative to the potential options can be very helpful. This is often used to help establish what features potential options should have. For example, "The new computers must have HDMI ports."

- ✓ **Ratings values**. In cases where key factors cannot be expressed with clear numerical or yes/no values, ratings can be used to anchor qualitative opinions. For example, rather than relying on the author's opinion in the criteria and options sections, you could rely on ratings from a nationally known ratings group for something like usability or security features. If ratings can't be accessed from a reliable group, then it may prove useful to generate ratings from actual user tests on things like usability, accessibility, and satisfaction.

Students who experience trouble getting started with writing criteria might find it helpful to follow the traditional format for writing criteria. This traditional format is easy to follow because it consists of one sentence that is very specific and uses this formula where writers can fill in the blanks:

The **[thing]** shall provide **[something]** to achieve **[this]**.

As you can tell from the use of "shall" in the sentence, this traditional formula is a more formal style that can be perceived as rather stiff in tone. Nonetheless, the format can be helpful for student writers who need help getting started because they only need to add a few items to create a measurable criterion that also adheres to the one-sentence length most criteria should have. Once student writers create criteria using this formula, they can always edit them to be less rigid and more rhetorically flexible to ensure they produce criteria that will connect with their intended audience. Here's an example of how a student might write a criterion on the first pass without the formula versus using the formula:

Unclear without the criteria formula: The new laptops must include sufficient storage.

More clear with the criteria formula: The new laptops shall provide 1TB of storage to achieve the goal of having all employees archive all company video content.

Note that the first example is so general it is neither measurable nor assessable, while the second example provides a parameter (1 TB) that can be used to assess possible options, as well as a number of employees (all, or 100%) that can measured later to indicate whether the chosen option was successful or not. Following the traditional formula doesn't mean that student writers will automatically produce perfect criteria, but doing so does provide guardrails to help students write more specific criteria that could be used successfully in subsequent sections.

Examples of Criteria for Discussion

Read the following criteria sections from recommendation reports and discuss whether each criterion meets the requirements for successful criteria outlined in this section. Also, discuss whether the criteria should be broken up into primary and secondary criteria, whether they are in the best order for readers, and whether each criterion is accessible or not.

Recommendation Report Topic: Improving Food Options for Students

1. Fried and unhealthy foods must be removed from all dining halls around campus.

2. Any remaining unhealthy foods must be moved to less convenient areas within the dining halls to discourage students from selecting them first.

3. Within the next year, the food choices at the dining halls shall achieve 95% student satisfaction as measured in dining hall surveys.

Recommendation Report Topic: Lowering Car-Deer Collisions in Local Community

1. Yearly deaths due to deer collision must be reduced by 75%.

2. Yearly hospitalizations due to deer collision must be reduced by 75%.
   The number of reported vehicle accidents involving deer must be reduced by at least 50%.

3. The number of reported deer roadkill must be reduced by at least 50%.

Recommendation Report Topic: Replacing Employee Laptops

1. The laptop must cost under $1,500 each.

2. The laptop screen size must not exceed 15 inches.

3. The laptop storage must exceed 500MB.

4. The laptop must use AMD Ryzen chips.

5. The laptop must be able to run all Microsoft Office programs.

6. The laptop must come with two different antivirus programs pre-installed.

7. The laptop must weigh less than eight pounds.

8. The laptop must last at least six hours on a charge.
9. The laptop vendor must have exceptional customer service review.
10. The laptop must be touchscreen.

4.8: Writing the Options Section

The options section relies heavily on the criteria section that immediately precedes it. The goal of this section is to analyze options through the lens of the criteria to uncover which option would make the best recommendation to address the problem moving forward. In the options section, the author identifies possible solutions to the problem by analyzing a manageable number of options in depth. In the recommendation report writing assignment for this chapter, I ask students to identify and analyze three feasible options. Each option should get the same amount of attention and analytical emphasis from the author, or else the author risks making it look as if they are biased towards one solution or they didn't put enough effort into identifying feasible options, both of which negatively affect ethos.

While the criteria section is likely the shortest section of the recommendation report, the options section will be one of the largest sections, if not the largest section depending on how much time the background section needs to cover. Because there is a lot of information to manage in the options section, it is important to devise a plan that allows you to present this section in an organized way and then allows your audience to not only understand it but also to engage with it. As a result, this section may need some visual elements to help readers such as charts, graphs, and tables. To decide what kind of visual elements your options section needs, it may help to picture your audience discussing this section at a meeting. What references would help them focus on comparing the positives and negatives of each option included in this section?

Tips for Writing the Options Section

- To begin, provide a brief rationale about how and why you limited the upcoming discussion to these particular options (~a paragraph). In some instances, there may be 20 possible options to consider that might meet the criteria very well, but that could stretch out to hundreds of pages, so it is best to decide on a feasible number of best options that readers can digest.

  - ✓ If you can’t identify any feasible options, then you will have to revisit the criteria and maybe even re-examine the problem statement.

- Decide on a format to present the options to the audience. For example, you may choose to use a whole-by-whole or point-by-point approach (see the next page for a more detailed description of these approaches).

  - ✓ In general, a well-designed whole-by-whole approach will be best for reports relying on criteria that don’t break down into specific points easily, while a report with very specific criteria would benefit from the point-by-point approach.

- No matter the approach you use, the traditional method presents the strongest option first because it is easier for the audience to remember that one as more and more information is revealed about the other options.

- Provide a general description of each option first for readers who may be unfamiliar with it.

- Go in depth about what the option does best relative to the criteria (pros).

- Go in depth about what the option does not do well relative to the criteria (cons).

- Costs are almost always a factor, so be sure to include a discussion about them (and if you didn’t include costs, you will have to explain why costs did not merit consideration).

- Be sure to give each option sufficient consideration and similar coverage.

  - ✓ If, for example, you dedicate two pages to Option 1 and only a small paragraph to Options 2 and 3, it can diminish your ethos by making it look as if you are biased toward Option 1 or that you didn’t do adequate research to come up with more than one viable option.

- Provide some sort of visual summary (e.g., table or chart) towards the end so there is a stand-alone option comparison for audience members.

  - ✓ This can help involve audience members more than just reading many pages about the optionswho did not read every page about the options. It can also facilitate discussion during meetings by providing a focal point for the group.

- Provide your recommendation as to which option to adopt (or maybe even a mixture of options) at the end of this section.

    ✓ A recommendation report is not mystery fiction, so there's no need for the audience to guess the best option by reading subsequent sections to find it. Adding the final recommendation at the end of the options section provides a "hook" for the readers to keep in mind as they read the next sections.

- In some cases, it may turn out that not adopting any of the options is the best course of action at the current time. If this is the case, you will need to briefly explain why (time, money constraints, awaiting a developing technology, etc.).

Formats for Providing Option Analysis

Begin with the paragraph explaining how you found options and narrowed your selections down to the ones you will be covering. This format works best with more open-ended qualitative criteria, such as criteria related to elements like security, satisfaction, and accessibility.

Whole-by-Whole Approach

i. Option 1 Explained in Whole

i.i. Criterion A

i.ii. Criterion B

i.iii. Criterion C

i.iv. Etc.

ii. Option 2 Explained in Whole

ii.i. Criterion A

ii.ii. Criterion B

ii.iii. Criterion C

ii.iv. Etc.

iii. Option 3 Explained in Whole

iii.i. Criterion A

iii.ii. Criterion B

iii.iii. Criterion C

iii.iv. Etc.

Final Recommendation Given to Readers

In the whole-by-whole format, each option is examined in its entirety through the lens of each criterion and presented to readers one at a time. Because this may take several pages, the writer really needs to make sense of that preceding analysis for readers because readers may forget important elements by the end

of it, which is why a visual comparison such as a table will often be necessary before providing the final recommendation.

Part-by-Part Approach

Begin with a paragraph explaining how you found options and narrowed your selections down to the ones you will be covering. The overview of options should be clear about the ones on which you will focus because each criterion may take up several pages and readers may lose focus of the overall options. In this format, the criteria take center stage, so be sure to start with the most important criterion first. This format works best for reports where very specific quantitative criteria have been developed (such as cost, size, weight, etc.).

Part-by-Part Approach

- Successful Criterion 1
    - Option 1 and how it related to that criterion
    - Option 2 and how it related to that criterion
    - Option 3 and how it related to that criterion
- Successful Criterion 2
    - Option 1 and how it related to that criterion
    - Option 2 and how it related to that criterion
    - Option 3 and how it related to that criterion
- Successful Criterion 3
    - Option 1 and how it related to that criterion
    - Option 2 and how it related to that criterion
    - Option 3 and how it related to that criterion

Final Recommendation

In this part-by-part approach, the criteria are foregrounded and therefore readers may have trouble remembering certain aspects of the options. A visual comparison, such as a table, will often be necessary before moving on to the

final recommendation so readers can see more clearly how each option stacks up to the criteria.

Building Visual Comparisons for Options

To help you and your readers compare options, a decision matrix can be very beneficial. A decision matrix is a type of table where readers can compare and contrast the most salient features of the option, and by doing so, they can also see what the recommendation might be. The following example shows how a decision matrix can be used to summarize an options section about which new van a moving company should consider to replace its current fleet. (Note: a score of 5/5 is the highest mark for meeting a certain criterion.)

Example of a Decision Matrix

Criteria	Option 1: Van A	Option 2: Van B	Option 3: Van C
Affordability	3	5	2
Durability	5	2	5
Mileage	2	3	4
Storage	3	5	2
Drivability	2	3	4
TOTALS	**15**	**18**	**17**

In the example above, the decision matrix uses criteria that are important to the moving company and to its customers. In this case, the moving company would like to purchase something that is affordable but will last a long time. The moving company also wishes to appeal to its customers by offering a vehicle that is easy to drive, has adequate storage, and gets good gas mileage. All of the criteria are equal in that each one is worth a maximum of five points, so it seems clear that Van B scored the most points and would thus be considered the top recommendation. However, some of the audience members of the moving company who read the report will note that it might be the most cost-effective to buy up front, scoring a 5/5 on affordability, but it scored the lowest (2/5) on durability. In other words, it might be more affordable to implement now, but it could cost the company more than the other options down the road in terms of repairs and addressing refunds due to customer breakdowns. In such a case, the written portion of that section should help to make sense of those differences, but if you know your audience considers some criteria more important than others, then the author should provide a weighted decision matrix.

Example of a Weighted Decision Matrix

Criteria	Weighting	Option 1: Van A	Option 2: Van B	Option 3: Van C
Affordability	5	15	25	10
Durability	4	20	8	20
Mileage	2	4	6	10
Storage	3	9	15	6
Drivability	4	8	12	16
TOTALS		**56**	**66**	**62**

In the weighted decision matrix, Van B still comes out on top (but the choice is clearer than in the simple decision matrix above), primarily because affordability is weighed as the most important criterion. However, if mileage and durability were afforded more points in the weighting, another option would have come out on top because those criteria represent Van B's poorest aspect.

While visuals such as a decision matrix and a weighted decision matrix can help the audience by providing a quick summary, they won't be able to persuade an audience on their own. If, for example, someone is a supporter of Van C, they would most likely want to see how the values were decided, and that would involve the written portion of the options section that can demonstrate the depth behind evaluating the vans through the selected criteria. The next section also helps to underscore the depth in the options section, further helping the audience understand why a certain option was chosen.

4.9 Writing the Conclusions Section

The conclusions section provides the key findings and takeaways from the options section. In essence, this section is a summary of the conclusions reached by comparing the possible solutions to the established criteria in the options section. Because the options section is long and can sometimes obscure the details of the options, this section is short and helps the audience focus on the pertinent details from the options section. It often mirrors the criteria section because it may consist of only a few numbered sentences, and it may divide conclusions into primary and secondary conclusions. The conclusions section also ends with the final recommendation. By doing so, it sets up the transition into the final section, the final recommendation.

For example, conclusions drawn from the weighted decision matrix above might look something like this.

Conclusions

1. Van A should not be considered.
2. Van B is the most affordable option.
3. Van C is the most durable, but Van B is the least durable.
4. Van B has the best storage capability and is of average drivability.
5. Van C has poor storage capability.
6. The current budget situation indicates that the company needs to keep costs as low as possible next year, but the financial picture over the next 5 to10 year horizon is much more optimistic.
7. Van B is the best choice because it has the lowest initial costs and offers features customers require.

4.10: Writing the Final Recommendation Section

This section, the last section of the recommendation report, allows the writer to focus solely on the final recommendation, including some ideas about how to move forward with implementing that recommendation. This section states your final recommendation by reiterating (and sometimes even expanding on) the reasoning from previous sections. More importantly, it provides a pathway for moving forward so the stakeholders can begin the process of working to implement the new idea. This process does not need to be a meticulous working plan for moving forward, but it might suggest the next steps that should be taken to keep the momentum going behind the final recommendation, such as a meeting of stakeholders whose department might house the solution put forth in the recommendation.

Because the final recommendation has been provided to readers elsewhere in the report, this section does not have to be overly long. It often mirrors the problem statement in length (less than a page). The author should anticipate that some readers may skip right to this section to see the reasoning behind the choice, so think of this section as one that could stand alone if needed.

If no option (or mixture of options) emerged as a clear decision, then the author will need to explain why and discuss what should happen next with regard to moving forward to address the problem. If, indeed, the problem outlined in the problem statement demands urgent attention, then this section should lay out what to do next to begin addressing it. For example, if the options that were evaluated were abandoned due to high costs, then the company may need to take time to re-allocate resources over the next few months, and the report authors will then have time to research more options and perhaps consider a more fitting option that was not previously considered due to high costs.

4.11: Writing the Executive Summary

Now that the recommendation report is finished, and you have worked through the problem, its history, and the criteria that allowed you to evaluate and advocate for a particular recommendation, it's time to write the executive summary. An executive summary is a brief encapsulation of the entire report. (Note: If you are more familiar with abstracts in academic articles, it helps to think of the executive summary functioning in the same way abstracts work for academic writing.)

The length of an executive summary is determined by the complexity of the entire report, but the goal is to keep it as short as possible and still provide the key takeaways from the entire report. It's good to think of it as one long paragraph, and for an estimate, try to keep it less than 250 words total. Sometimes, the executive summary includes keywords at the end, which is another way of denoting what the report focuses on. The keywords can be used by the stakeholders to help classify which areas or divisions within a company or organization should be responsible for acting on the recommendation and putting it into place. It helps them route the report to where it needs to go for action to occur.

Overall, the executive summary should help readers understand the issue in a global sense, as well as the approach you took in addressing it and your overall conclusions. It helps people determine the relevance of the greater work that follows relative to their skills, interests, position, and expertise. Even if they only read the executive summary, they would have a general idea of the entire report and be able to talk in a general sense with others about it.

After the cover page and table of contents, the executive summary is the first thing readers will encounter. In terms of tone and style, then, the executive summary might sound a little different from the rest of the report depending on

its audience. It may be a little more informal/user-friendly if it is written for a large organization where it might be passed on (sometimes even by itself) to a wider audience who are asked to weigh in on whether they could contribute to addressing the problem or attend a meeting about it. On the other hand, for a smaller organization whose few workers may possess similar expertise, especially on technical matters, you will be writing to a small, specific audience who may be expecting a certain level of formality and specificity in order to save time.

Sections of an Executive Summary

1. Problem Statement Overview:

- ✓ What problem are you trying to solve? (Be careful not to use too much jargon or go too deep. Try for 1-3 (should you just say 1 to 3, because below you write 5 to 10 keywords) solid sentences that can explain it clearly and leave an impression.)

2. Motivation

- ✓ Why should the readers care about the problem and address it? (This section may come first depending on how "solvable" or general the problem is.)

3. Approach

- ✓ How did you go about addressing the problem? What options were considered? How did they meet some of the most important criteria?

4. Recommendation

- ✓ Which option(s) do you recommend and why?

5. Conclusions

- ✓ What are the implications of your results? What should happen now with regard to addressing the topic?

6. Keywords

- ✓ It can help to provide 5 to10 keywords for your report. If people only read your keywords, they should get a good sense of the scope of the project.

- ✓ Keywords can be used to assign reports to particular departments/ people, so pay close attention to the words being used. Some keywords

may not be used often in the report itself, but they may be important in showing who needs to pay attention to the report and why. For example, the name of a certain area or department might show up in keywords even though it may not be explicitly stated in the report itself.

Here's an example of an executive summary with the five areas and keywords outlined:

Example Executive Summary for a Recommendation Report on Improving Worker Safety

Over the past two years, accidents requiring hospitalization at the Widget Factory, LLC have increased 78% over the preceding two-year period. In 2020, the preventive maintenance program at the Widget Factory was scaled back due to budget issues stemming from COVID. Accordingly, several plant activities, including production line repair, testing, and calibration, have not been routinely carried out as in previous factory eras. **[The first three sentences are an overview of the problem statement and background.]** The company needs to address the number of accidents due to the high costs of workers' compensation paid out ($6 million) and the bad press the accidents have generated (sales down 19% last year). **[This sentence provides the motivation to fix the problem.]** This report explores ways to fix these problems, including video-based monitoring to identify problems before they start, embedding preventative maintenance workers in each production line, and resurrecting the maintenance program that was scrapped due to COVID. **[The approach is covered here.]** The final recommendation is to embed maintenance workers on each line on a six-month trial basis because they will be able to identify issues immediately and mitigate safety hazards. In addition, embedding the maintenance workers does not add additional costs since they are already on payroll, and it also demonstrates to customers and shareholders that we have taken the injuries seriously and added a new way to address it. **[The recommendation is given.]** If the trial proves successful, the program can be implemented for a longer period and applied to other factories in the Widget Factory, LLC ecosystem. **[The conclusions are given with an eye to the future.]**

Keywords: preventive maintenance; system maintenance; operations; human resources; media relations

The executive summary is an important step in demonstrating your entire approach to the problem and the results of your report; it plays an enormous role in establishing your ethos as a writer because it covers a lot of ground and is

often the first section readers will experience. When you are finished with the body of the recommendation report, be sure to devote enough time to draft and revise a strong executive summary. A poor executive summary could risk your audience disregarding or even abandoning your work before they read the actual report.

4.12: Designing the Cover Page and Front Matter

The final step for the recommendation report is designing the cover page and front matter. The cover page should include the title, the authors, and the primary audience. Adding design elements tied to the content of the report that work to connect the authors and audience of the report or that hint at the company's shared mission can be helpful. In addition to the cover page, a table of contents is very useful for readers, especially for reports of more than ten pages. For the title, it helps to include the genre somewhere on the cover page and explicitly state that it is a recommendation report. The title then implies a recommendation will be given—that this is not just an informational report full of summary, but a report with a persuasive element. For example, a title might be "Addressing Ways to Increase Student Library Usage; A Recommendation Report."

The table of contents can be hard to format correctly, so rather than trying to space everything out yourself, use resources tied to whatever word processing program you are using. For example, Microsoft provides examples of how to format the table of contents in Word.

In terms of design, let your audience be your guide as to which elements to use. For example, using a company logo or identifying image can help show that everybody is connected to a company with a shared identity and vision relative to the business goals.

4.13: Final Thoughts on Recommendation Reports

Persuasion happens in recommendation reports thanks to the skill and diligence of the technical writers who produce them. A haphazardly written recommendation report, or one that foregrounds pathos at the expense of logos, does more harm than good. Instead, the technical writer who provides a clear, thorough look at a problem, its background, and its possible remedies has the ability to change businesses and organizations, and therefore many other people's lives, in beneficial ways.

4.14: Recommendation Report Rubric

Recommendation Report 250 Pts.

Recommendation Report Rubric

Criteria	Description	Points
Format and Design	Overall format and design of report (including title page and table of contents) engage audience and help them find and discuss relevant information. No formatting mistakes are present.	10 pts
Abstract	Abstract is concise yet explains the problem, benefits, and solution(s) clearly; keywords are chosen well.	10 pts
Problem Statement	Clearly identifies the issue being targeted and why it needs to be addressed.	20 pts
Background	Provides necessary historical context for understanding genesis of issue, as well as its current state, without overwhelming the reader.	20 pts
Research Sources	Sources are credible and useful for understanding recommendations; at least one academic source is used.	20 pts
Budget and Visuals	Includes graphs, charts, or other visuals to help audience connect with relevant facts and statistics.	20 pts
Recommendations/Options	Identifies at least three possible recommendations or options and examines each in sufficient depth.	20 pts
Criteria for Success	Identifies the criteria for success and systematically examines how each option meets (or does not meet) those criteria.	20 pts
Conclusions	Conclusions are based on solid research, observation, and argument; they are clear and meaningful.	20 pts

Criteria	Description	Points
Preferred Recommendation	Report identifies a preferred recommendation and proposes concrete ways of implementing it moving forward.	30 pts
Professional Tone	Tone is professional throughout the entire document.	20 pts
Grammar and Mechanics	No grammatical, punctuation, or spelling errors.	20 pts
In-text Citations (APA)	In-text citations follow correct APA format. Uncited sources will result in a grade of 0/250.	10 pts
References Page (APA)	References page follows correct APA format. Uncited sources will result in a grade of 0/250.	10 pts
Total		250 pts

Presentation 30 Pts.

Presentation Rubric

Criteria	Description	Points
Problem and Background	Presentation identifies problem and provides enough background context without overwhelming audience.	5 pts
Solutions and Persuasion	Presentation identifies potential solutions to the problem, examines them in sufficient depth relative to selected criteria, and persuades audience of chosen solution.	10 pts
Visuals and Timing	Presentation employs visual means to connect content with audience and does not markedly go over allotted time.	10 pts

Criteria	Description	Points
Slide and Delivery Quality	Presentation is free from written/punctuation errors on slides; delivery is clear and avoids needless repetition such as “umm.”	5 pts
	Total	30 pts

Rhetorical Reflection 20 Pts.

Rhetorical Reflection Rubric

Criteria	Description	Points
Content Depth	Examines choice of topic, sources, and overall development of report in depth.	10 pts
Structure and Rhetorical Analysis	Examines how report was structured to connect with users and achieve purpose ethically. Also examines how rhetorical aspects such as ethos, logos, and pathos were used to identify with audience and achieve purpose.	10 pts
	Total	20 pts

4.15: Student Sample Recommendation Report

Accessibility on the Kutztown University Campus: Recommendations for Improving Access in Old Main

Beau deForest

Executive Summary

Although Kutztown University is compliant with the Americans with Disabilities Act and meets the criteria for legal accessibility, much of campus is difficult for disabled students to navigate without assistance. Old Main, the oldest and most iconic building on campus, is especially difficult to navigate due to its complex floor plan and many interior doors that are left closed during active hours. Adding powered door openers to any doors that must remain closed for privacy, safety, or energy efficiency reasons, while leaving any remaining doors open, would allow wheelchair users to navigate Old Main much more easily without relying on daily assistance from faculty or staff, using less than 0.1% of KU's average yearly operations and maintenance budget.

Keywords: disability, access and inclusion, higher education, student support, facilities and maintenance.

Problem Statement

In the Accessibility Statement available on its website, Kutztown University expresses its commitment to "ensuring that [its] campus is inclusive and accessible to all students, staff, faculty, and visitors," and that the University and its Disability Services Office "strive to eliminate barriers and provide equal access" to campus life (Accessibility Statement—Disability Services Office, 2025). While the KU campus meets the legal definition of accessibility as defined in the Americans with Disabilities Act, many buildings on campus are difficult for people with physical disabilities to navigate without assistance. By focusing on practical accessibility and inclusion, above and beyond legal ADA compliance, KU can support the needs of disabled community members, which will allow for increased performance, retention, and persistence for disabled students.

While accessibility needs vary widely between types and levels of ability, this report will focus on students with limited mobility, especially manual wheelchair users. A persistent barrier to access on campus is interior doors in many buildings on campus which, while meeting ADA standards for accessible routes, are difficult for wheelchair users to navigate unassisted. Recommendations in this

report focus on Old Main, which has been chosen because it is the most visible and iconic building on campus; because its age and history pose unique accessibility challenges that likely make it the most difficult building to update; and because, as other buildings on campus close for renovations or are permanently decommissioned, classroom space and faculty offices have become increasingly concentrated in Old Main, which increases the impact of any accessibility challenges.

Currently, many of the ADA-compliant accessible routes in Old Main are interrupted by doors that remain shut during peak traffic hours. Although these doors do not represent “architectural barriers,” as defined by the ADA, they do require wheelchair users to take longer, more circuitous routes to their classes than their non-disabled peers, or to wait to be let through doorways that non-disabled students can enter unassisted. As a personal example, in Fall 2024, in order to reach one of my classes on the second floor of Old Main in my wheelchair, I relied on another student to open one of the always-closed doors between B- and D-Wing. On days when he was out sick, I entered through the accessible entrance, took the B-Wing elevator to the first floor, wheeled through D-Wing on the first floor, and took a second elevator up to the second floor to my class in E-Wing. Since I had so much farther to go, I had to arrive at Old Main much earlier than my classmates, who could come in whatever door they wanted and take the stairs.

Throughout KU’s history, care has been taken and resources spent to ensure compliance with legal standards for accessibility, at both the state and federal level. While legal accessibility is important, investment of additional resources into accessibility and inclusion on campus benefits not only disabled students, faculty, staff, and visitors—both current and future—but the campus community as a whole. Mobility aids like wheelchairs have overwhelmingly positive effects on the physical health of students who need them, but stigma surrounding the use of mobility aids can leave disabled students feeling isolated and vulnerable (Fishleigh et al., 2024). The removal of physical barriers to access and accompanying support from community stakeholders are incredibly important in allowing mobility aids to be seen by both users and their non-disabled peers as sources of empowerment and independence rather than shame and isolation (McNicholl et al., 2023).

Background

Standards for Legal Accessibility

As part of the Pennsylvania State System of Higher Education, KU is subject to Title II of the Americans with Disabilities Act, which states, "newly designed and constructed or altered State and local government facilities, public accommodations, and commercial facilities [must] be readily accessible to and usable by individuals with disabilities" (Americans with Disabilities Act Title II Regulations, 2024).

Chapter 4 of the 2010 Standards for Title II and Title II Facilities details the requirements for "accessible routes," which public facilities must provide between accessible entrances and areas where programs take place. In order to be considered accessible, doors along an accessible route must meet these requirements:

- *Door hardware*: doors must be openable with one hand, and handles, crash bars, and other moving parts "shall not require tight grasping, pinching, or twisting of the wrist."
- *Clear width*: doorways must be at least 32 inches wide, and no hardware or fixtures can protrude into the doorway.
- *Opening force*: doors must require no more than 5 pounds of continuous force to open.

As mentioned, Kutztown University is already compliant with these guidelines, as they represent the minimum accessibility required by federal law. It is worth noting that the ADA guidelines focus on broadly applicable and enforceable policies, rather than the maximum accessibility that can be achieved in a given facility. For example, in the case of door-opening force, the 2010 Standards specifically state that the five-pound limit applies only to "the continuous application of force necessary to fully open a door," and not to the initial force needed to begin the motion of opening the door, or to the amount of force needed to undo bolts or other devices holding the door closed. Even though they are not regulated by the ADA, these forces may still make doors difficult for disabled users to open without assistance.

History of Old Main

According to the University's Campus Architect (personal communication, March 24, 2025), Old Main has undergone three major renovations since the 1990s:

- A “multi-phased” update from 1995-1998
- The early-2000s conversion of the building’s A-Wing from residence halls to faculty offices. This included the addition of an elevator in A-Wing, as well as a Campus Security office in B-Wing, which remained a residence hall. Access between A-Wing and the rest of the business was limited to certain halls to avoid the locked and secured residence hall in B-Wing.
- Conversion of B-Wing from residence halls to faculty offices between 2016 and 2020. This renovation also included the addition of accessible single-user restrooms on the upper floors.

The relatively recent use of Old Main as student housing has resulted in a complex floor plan, including doors between each wing. These doors are artifacts of the security needs of a building containing both classroom/office space and student residences, and the majority remain unlocked during the day since they are no longer needed for security. However, doors between wings are typically left closed during the day, including those located directly beside elevators.

Criteria

The feasibility of the options is evaluated based on three primary criteria: access, cost, and reliability.

Criterion 1: Access

As mentioned above, Old Main already meets the legal definition of accessibility and is in compliance with the ADA. The goal of each option is to increase the ease with which wheelchair users can navigate Old Main to bring it closer to the “inclusive, equal access” described by KU’s Accessibility Statement. Therefore, options will be judged on a sliding scale, where one end of the scale is the current level of accessibility, without improvement, and the other end is full, equal, inclusive access.

Multiple factors will be considered when evaluating the improved access delivered by each option. Since the goal is equal access, each factor will be judged based on how much a wheelchair user’s experience differs from that of a non-disabled student. These factors include:

- *Autonomy:* Can a wheelchair user access this area with the same level of assistance as a non-disabled person? Does a wheelchair user have to ask for assistance when a non-disabled student does not?

- *Privacy*: Is a wheelchair user more visible while performing this action than a non-disabled student would be? Can a non-disabled student be in this area alone, but a wheelchair user cannot?

- *Flexibility*: Are there times of day in which a non-disabled person can access this area, but a wheelchair user cannot? Do architectural barriers cause a wheelchair user to need much more time to navigate this space or perform this action than a non-disabled student needs? Does a wheelchair user need to build their schedule around architectural barriers and the systems available to navigate them?

Based on these factors, each option will receive an accessibility rating from 1 to 5, with 1 representing no increase in accessibility and 5 representing full equal access.

Criterion 2: Cost

The financial cost of each option is evaluated based on the budgets of similar renovations in the past. These include the addition of an updated HVAC system to Lytle Hall in 2017, costing about $2 million, and a system of updates throughout campus in 2018, totaling about $2.5 million (Hawkinson, message published in The Reading Eagle, 2018). The average total budget for operations and maintenance at KU between 2018 and 2024 was $27,748,070 (Department of Institutional Research, 2024), so these renovations and maintenance projects each represent between 7% and 9% of KU's total maintenance budget. When evaluating the cost of each option, the up-front materials and installation costs, as well as the estimated ongoing maintenance costs, will be considered.

In addition to financial costs, time costs (in the case of significant construction restricting access to high traffic areas), and personnel costs (including hiring new employees or training current staff to use new accessibility features) will also be considered as part of this criteria.

Because these proposed accessibility features are quality-of-life additions, above and beyond legal requirements, priority will be given to affordable options with a budget of $1.5 million or less, about 5% of the average operations and maintenance budget for one year.

Each option will receive a cost rating from 1 to 5, with 1 representing the highest cost (and therefore least favorable outcome) and 5 representing the lowest cost.

Criterion 3: Reliability

A major flaw in numerous accessibility systems currently in place at KU is the lack of clear steps to take in the event of those systems failing. The responsibility for identifying the correct department, or even the individual staff person, who has the ability to fix a given problem falls disproportionately on the student who needs the accessibility feature. Therefore, reliability will be measured based on three factors:

- Predicted frequency of failure, based on both mechanical and personnel components. How easily is this feature broken or forgotten? How many people are involved in the day-to-day usability of this feature? If one of those people is away, is the feature still usable?
- Predicted repair speed. If this feature fails or breaks down, how long will it take to be back up and running? How much specialized knowledge is required to fix it? How many people on campus have that knowledge?
- Friction. How much effort is required from faculty/staff/peers in daily operation of this accessibility feature? Mechanical features require maintenance and upkeep, but don't depend on daily effort and attention from staff. More personnel-dependent options must rely more heavily on ongoing commitment from multiple levels of administration and staff to function, which can make them less reliable in the long term.

Metrics for Success

Following the implementation of any of these options, new data will be needed in order to measure their success. Currently, while KU's Office of Institutional Research tracks the diversity of KU's staff, faculty, and student population by several metrics, the KU Factbook contains no data on physical disability. This makes it difficult to track metrics like retention and persistence for disabled students. The impact of any added accessibility systems could be tracked through collaboration between the Office of Institutional Research and the KU Disability Services Office, which could provide anonymized statistics on enrollment and performance, as well as administering surveys to disabled students.

Options

Many options were considered and evaluated. The options listed here are those that could feasibly be completed in a reasonable time frame while preserving the floorplan and structure of Old Main. Each of these options focuses on interior

doors that currently pose accessibility challenges, including doors between wings and doors to otherwise accessible restrooms, and excluding doors to individual classrooms and faculty offices, for an estimated total of 50 doors.

Option 1: Doorbells

Add battery powered doorbells on either side of all doors along accessible routes.

Access

- Minimal improvements to accessibility. Improves ease of asking for assistance but does not allow unassisted access.
- Limits access hours, as doorbells are only useful when someone is in the area to respond and open the door.
- Limits privacy, making them unsuitable for bathrooms.
- Accessibility score: 2/5

Cost

- Based on prices for battery-powered doorbells on Amazon, a simple doorbell and receiver (without additional features such as intercom, camera, or smartphone integration) costs between $12 and $50 dollars. A reliable mid-range model costing $20 per set could be added to 50 doors for $1,000. (Higher-quality, more expensive models may decrease future expenses by needing to be replaced less often.)
- Installation is simple enough to be performed by existing maintenance and facilities staff without hiring contractors and would require little or no downtime.
- Small personnel cost, as someone needs to recognize the sound of the doorbell and respond to it. Little to no training would be needed, but any room intended to be accessible would need an attendant during open hours.
- Cost score: 4/5

Reliability

- Doorbells introduce multiple points of failure. Each doorbell is a separate system with its own battery, which communicates wirelessly with a specific

receiver. Problems could arise from the battery, within any individual doorbell or receiver, or from the communication between doorbell and receiver.

- A wheelchair user on one side of a closed door has no way of knowing whether the doorbell has worked and would be unable to identify any problems that arrive, making it difficult to report, explain, or solve problems.
- This system depends on participation of staff, volunteers, or passersby in order to function. Would rely either on luck/high traffic (and only function when people happen to be passing and recognize the doorbell sign) or require specifically assigned staff, in which case schedule changes or staff absences would render the system nonfunctional.
- Reliability score: 2/5

Doorbells are attractive due to their low cost, and might improve accessibility in some areas, but quickly become impractical at scale due to their low reliability. Additionally, while they increase physical access, they do nothing to break down barriers between wheelchair users and their peers, and leave disabled students dependent on assistance to navigate Old Main.

Option 1: Doorbells Total: 8/15

Option 2: Open Hour

Prop doors open during specific hours on specific days.

Access

- Greatly increase access during open hours, allowing wheelchair-users to navigate much of Old Main unassisted. Does not improve access at all outside of open hours, however.
- Possible problems with any doors that, while open, block walkways or other doorways.
- Some doors, especially bathroom doors, may not be appropriate to prop open due to privacy concerns.
- Accessibility score: 3/5

Cost

- No material or construction costs.
- Limited personnel costs, as existing staff would need to open doors at beginning of open hours and close them again at the end.
- Cost score: 5/5

Reliability

- In addition to staff tasked with opening and closing doors, students would need to be made aware of open hours in order to schedule around them. Depending on the number of wheelchair users on campus, open hours could be adjusted based on students' course schedules, but this would add additional points of failure as it would require coordination among students, the Disability Services Office, and the facilities/maintenance staff responsible for opening doors.
- For students to rely on doors being open, they would need to be provided with clear, reliable instructions for reporting problems. This could be accomplished by posting a phone number on doors with open hours, which students could call or text to report a door that is not open when it should be. In order for open hours to successfully increase access, that number would need to be reliable, and a staff member would need to be available to respond throughout open hours.
- Reliability score: 3/5

This solution is attractive as a way of greatly increasing access and inclusion with minimal expense. However, this option is only feasible with continued attention and effort from administration and staff and will be greatly affected by factors such as overwhelmed facilities staff, which makes it less reliable than solutions that are more costly but don't depend on ongoing effort.

Option 2: Open Hour Total: 11/15

Option 3: Targeted Power Doors

Addition of powered door-openers to specific doors and using Option 1 or Option 2 for other doors. This would involve an information-gathering period, ideally in collaboration with disabled students, to identify doors that are barriers to access but must remain closed when not in use. This would likely include bathroom

doors, as well as any doors that are left closed for heating, cooling, or fire safety reasons. Other doors could then be left propped open without needing to be closed again at the end of each day.

Access

- Powered openers on bathrooms doors would allow wheelchair users to use restrooms easily, without assistance, at any time that Old Main is open and the power is on, without decreased privacy.
- Powered openers on fire doors, as well as doors identified by facilities staff as important for heating or cooling costs, would allow wheelchair users to easily pass through without the additional heating or cooling costs associated with leaving those doors open.
- Many doors in Old Main are left closed by default without a reason specified by either the Campus Architect or KU Public Safety. These could presumably be left open or even removed from their frames, allowing full access without cost.
- Accessibility Score: 5/5

Cost

- The most affordable type of powered opener is generally a swing opener with a push-button sensor. The weight, material, and size of doors on which the opener is being installed will affect the price, as a heavier door will need a more powerful opener. Since the doors discussed here are along the ADA-accessible route and meet its weight restrictions, a mid-range opener, costing between $715 and $1000 per door, should provide enough power (C&I Hardware, 2024). Openers costing $1000 installed on 20 doors would cost approximately $20,000.
- Installation typically takes 1 to 3 hours per door and may require hiring outside contractors. Outside labor is estimated at between $400 and $1000 per door (Auto Door and Hardware, 2024). At $700, installation on 20 doors would cost $14,000 and take approximately 40 total hours.
- These door openers are wired, and do not require batteries, but do require maintenance and upkeep. Because these are interior doors, they would likely require less frequent maintenance than the exterior power-assisted doors already present on campus.

- As a rough estimate, the cost of materials and installation for 20 doors would be approximately $34,000, which is just under 0.1% of the total operations and maintenance budget for KU.
- Cost Score: 3/5

Reliability

- Powered doors require regular maintenance and upkeep, in line with the other power-assisted doors on campus. Failures can be reported like any other maintenance issue on campus.
- Power-assisted doors do not depend on additional ongoing efforts to maintain accessibility, as staff will not have to monitor them on a daily basis. If the unmodified doors are opened and closed regularly, they will be subject to the same reliability issues as outlined in Option 2, but doors left permanently open will remain reliably accessible regardless of staff or scheduling changes.
- Reliability Score: 5/5

While costlier than Options 1 and 2, this option is still significantly less expensive than other recent campus renovations, taking up a tiny fraction of the operations and management budget. In addition, once powered openers have been added, this option does not rely on daily staff participation, so its reliability is not as variable as that of previous options.

Option 3: Targeted Door Replacement Total: 13/15

Option 4: Comprehensive Door Replacement

Add powered door openers to all doors along accessible routes through Old Main.

Access

- Powered openers would virtually eliminate architectural barriers throughout Old Main, making its accessible routes as easy to navigate for wheelchair users as for their non-disabled peers.
- Access Score: 5/5

Cost

- Using the same estimates for materials and installation costs as laid out in Option 3, adding powered openers to 50 doors in Old Main would cost roughly $85,000, and take about 100 total hours.
- Although this is the most expensive option listed in this report, it still represents less than 0.5% of KU's average yearly operations and management budget.
- Cost Score: 1/5

Reliability

- With regular maintenance on a similar schedule as the power-assisted doors already present throughout campus, this option would be extremely reliable for the foreseeable future, and would not be significantly affected by future staff or administration changes.
- Because it would involve more wiring and mechanical systems, additional powered doors would introduce more points of failure than Option 3.
- Reliability Score: 4/5

This option would allow full, equal, autonomous accessibility throughout Old Main, without ongoing daily effort from staff, and it would allow doors to continue to remain closed by default and only open when in use. However, because of its high up-front costs, it is a bigger investment than the previous options.

Option 4: Comprehensive Door Replacement Total: 10/15

Decision Matrix

Criteria	Option 1 (Doorbells)	Option 2 (Open Hours)	Option 3 (Targeted Power Doors)	Option 4 (All Power Doors)
Accessibility	2/5	3/5	5/5	5/5
Cost	4/5	5/5	3/5	1/5
Reliability	2/5	3/5	5/5	4/5
Total Scores	**8**	**11**	**13**	**10**

Conclusions

The Kutztown University campus presents many accessibility challenges. Some, caused by the geography of the landscape and the layout of historically significant buildings, would be difficult to solve even with unlimited resources. The options listed here would have an enormous effect on accessibility on campus, and could be implemented with only a tiny fraction of the resources KU spends on regular maintenance every year. The same criteria used in this report could be used to find similarly cost-effective, relatively low-effort accessibility updates to many other buildings on campus.

Studies suggest that the number of disabled students in higher education is increasing, slowly but steadily (McNicholl, et al., 2023). Even on accessible campuses, disabled students face physical, medical, architectural, and social barriers that their non-disabled students do not. Tangible evidence of intentional support and investment, beyond what is required by law, communicates to disabled students and to those in the wider community shows that the university and its administration believe they are worth investing in and supporting.

Final Recommendation

Of the options evaluated, **Option 3, the targeted addition of power-assisted doors, is the best balance of increased access, reasonable cost, and ongoing reliability**. Some interior doors in Old Main, such as the doors to its accessible restrooms and some computer labs, are left closed for privacy, safety, or security reasons. The addition of powered openers to these doors will allow wheelchair users to access basic necessities with comfort and privacy, as well as to participate in programs and use services with the same ease as their non-disabled peers, without compromising anyone’s safety, security, or privacy.

Many other doors were originally placed to meet security needs that no longer exist from Old Main’s history as a mixed residence hall and classroom space. They remain closed by default, but no longer serve a practical purpose. By leaving these doors open, KU has the opportunity to remove multiple barriers to access with no significant cost.

A re-evaluation of the accessible routes through Old Main would allow facilities staff to identify which doors along that path are closed for a current, practical reason, and which no longer have a reason to remain closed, to ensure that the use of resources is efficient and responsible.

Any accessibility update on campus would benefit from input from disabled students. Surveys or listening sessions, in collaboration with the Disability Services Office, would provide opportunities for students to identify the greatest barriers to full inclusion and participation in campus life.

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4.16: Discussion Questions for the Sample Student Recommendation Report

- How does the problem statement make a compelling case for why this issue is important and needs to be addressed?
- What parts of the background section help to provide more context for the problem?
- The criteria section in this report is quite long. Based on the discussion of the criteria section provided in this chapter, is there anything you would change about how the report shares its criteria? For example, are there areas where trimming or adding visuals would help the audience?
- Does the options section persuade you that the selected recommendation is best? Why or why not?
- Overall, if you were the target audience for this recommendation report, what sections and what information would be most powerful in persuading you?