The Nitty Gritty of Technical Writing
Cutting the Noise out of Your Written Communication
Why is it so important to get this right?

- Written communication comprises 40% of an engineer’s job.

- With written communication, unlike speaking face-to-face, you can’t check to see if your reader understands you correctly.

- You have to choose your words carefully so that there is no room for misinterpretation or misunderstanding.
You can think of mistakes in grammar, spelling, and punctuation as “noise” interfering with “the signal” – what you want to communicate.
Surface treatments are currently used all over the world, in numerous industries for a number of wide reasons. Theses finishing processes or surface treatments help improve material characteristics in many different way. They could change the color the material and improve the corrosion resistivity to make it more suitable for the environment it will be in. Depending on the type of surface treatment it will improve the turnstile strength of material making it stronger, and longer lasting. Here you will find that some are good at conductin electricity and some will have low co-efficient of friction. There are types of surface treatments out there that will do a countless variety of things to improve the performance the material. Some processes require more time than others. This paper was written to let me know how each surface treatment improve the material and the process of coating that material.
Mistakes in basic spelling, grammar, and punctuation can:

- distract the reader from your actual content;
- make the reader think you aren’t very good at your job;
- make your writing unclear, causing readers to become confused.
# Verb Tense Agreement

## What is it?

- Correct verb tense agreement is when all the clauses (parts) of a sentence are in temporal harmony: the tense each uses (such as past, present and future) is accurate.

- The way that a process unfolds in time is very specific, and expressing the correct relationship between steps is crucial.

## Correct Verb Tense Agreement

- After the solution *hardened*, it *was transferred* to a storage facility.

- As the mass *approaches* the elevator’s stated maximum capacity, the gears and levers *will begin* to exhibit strain.

- Before the concrete *sets* it *is possible* to create an impression, such as a hand or paw print, that *will harden* into a permanent feature.
Verb Tense Practice

Correct the following:

1. The ship flew before the wind, while the sailors grin and dance.

2. He had never saw such a beautiful car.

3. They buy their Christmas tree already.

4. She learned how to drive by played video games.
Subject-Verb Agreement

What is it?

- When the subject is singular, its corresponding verb should also be singular.
- A plural subject requires a plural verb.

Correct Examples

- She **waits** at the bus station for hours every day.
- They often **play** football in the park near school.
- The **machine** can only **run** for an hour at a time before it **overheats**.
Subject-Verb practice

Correct the following:

1. This combination of electrical components constitute a single-pole RC filter.

2. A 35 mm film of some high buildings are strongly recommended.

3. Only one of the pre-1925 high-rise structures were damaged in the quake.
Faulty parallelisms

**What are they?**

- Parallel here means “grammatically similar in form”
- When you have two or more parts of a sentence that should be parallel but are not.
- To correct these: match nouns with nouns, verbs with verbs, phrases and clauses with similarly constructed phrases and clauses.

**Example**

- The back-up system should be efficient, should meet safety specifications, and have complete reliability.

*Revision possibilities:*

- The back-up system *should be* efficient, *should meet* safety specifications, and *should be* completely reliable.
- The back-up system *should be* efficient, *meet* safety specifications, and *be* completely reliable.
1. Your professor spends every night grading and plan the lesson.

2. Sir Humphry Davy, the celebrated English chemist, was an excellent literary critic as well as being a great scientist.

3. In his farewell address to the army, the general praised his soldiers for their unsurpassed courage and gave thanks because of their devotion.
What is a comma splice?

- When you try to link two independent clauses with a comma but without a coordinator (FANBOY).
- To fix a comma splice, you have to choose first whether you want to join the independent clauses or separate them.
  - Separate: any form of end-stop punctuation (., !?, ;)
  - Join: FANBOY/coordinator

Some examples

How would you correct these run-on sentences?

- The sun is strong today, put on some sun block.
- This next chapter has a lot of difficult information in it, you should start studying today.
- I can’t figure out how the machine works, it came without a manual.
What are they?

- This kind of mistake is the most likely to confuse your reader
- A modifier can be a single word or a phrase that modifies something else.
- A MISPLACED modifier is modifying something other than what you intended it to modify.

What’s the difference?

- I almost failed every art class I took.
- I failed almost every art class I took.

(Note: the modifier here is “almost”)

The teacher said on Monday she would return our essays.
Correct the following (the subject and modifier are highlighted in the first and third questions):

1. After testing the mechanism, the theory behind it was easily understood.

2. Once having completed needed modifications and adjustments, the equipment operated correctly and met all specifications.

3. By the age of 4, her father knew that she would be an engineer.
Punctuation:
semi-colon use; colon use; comma use
What’s it good for?

- Connecting two complete and closely related sentences.
- You choose whether to use a semi-colon or a full stop based on the rhythm and how closely you want the two ideas to be linked in your reader’s mind.
- Separating items in a complex list.
- Note: weak period, not a strong comma.

Proper use

- Running the country must be a lot of work; President Obama seems to have aged ten years in the last five.
- Using a semi-colon isn’t hard; I once saw a party gorilla do it.*
- When dinosaurs agree on something, they’ll often high five one another; dinosaurs are all about high fives.*

*Awesome cartoon about semi-colons here: theoatmeal.com/comics/semicolon
What’s it good for?

- Setting lists off from the main sentence.
- Setting an explanation (or other dependent clause) off from the main sentence.

Proper use

- There are three things you should never do in front of your grandmother: swear, shout, or defecate.
- Sherlock Holmes could only think of one thing now: whether the laundry cycle was done.
Commas and Apostrophes

What’s it good for?

- **Commas:**
  - Organization - used to set off phrases and clauses from the main sentence.
  - Pacing – commas can show the reader how to read the sentence, where to place the emphasis.

- **Apostrophes:**
  - Possessives
  - Contractions (informal writing only)

Proper use

- As you come into the classroom, please sit down, take out your homework, a pen and a pencil.
- How’s Thomas’s project coming along?
- All along the riverbank, sparrows flew between their nests and the surrounding trees.

Awesome cartoon about apostrophes here: http://theoatmeal.com/comics/apostrophe
Take 5 minutes now to revisit the writing sample we saw at the beginning (part C of your worksheet). Using the tools you’ve learned today, find and correct any issues with:

- Verb tense agreement
- Subject-verb agreement
- Faulty parallelisms
- Misplaced modifiers
- Incorrect punctuation
The fully corrected version should look like this. Circle any corrections you may have missed, so you can be sure to look for them next time.

- Words highlighted in green should be deleted.

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Additional Resources

- Purdue Owl Grammar YouTube videos: https://www.youtube.com/user/OWLPurdue/feature

- Writing Guidelines for Engineering and Science Students. Some practice exercises and explanations for all common grammar and punctuation mistakes: http://www.writing.engr.psu.edu/exercises/

- Awesome comic about common spelling mistakes: http://theoatmeal.com/comics/misspelling