Being Concise

These slides, which are used in graduate and undergraduate engineering courses at Virginia Tech, come from Chapter 8 in *The Craft of Scientific Writing* (3rd ed., Springer-Verlag).
Being Concise

More is in vain when less will serve.

Sir Issac Newton
A redundancy is a needless repetition of words

absolute guarantee
my personal opinion
blended together
bright green in color

guarantee
my opinion
blended
bright green
There are many redundancies in engineering writing.

- already existing
- alternative choices
- at the present time
- basic fundamentals
- currently under way
- completely eliminate
- continue to remain
- currently being
- empty space
- first began
- had done previously
- introduced a new
- mix together
- never before
- none at all
- now at this time
- period of time
- private industry
- separate entities
- start out
- still persists
- whether or not
Writing zeroes are empty phrases that fatten sentences

- it is my intent to show that $= 0$
- as a matter of fact $= 0$
- as is well known $= 0$
- it is noteworthy $= 0$
- the presence of $= 0$
Many phrases are near zeroes

<table>
<thead>
<tr>
<th>Phrase</th>
<th>Equivalent</th>
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<tbody>
<tr>
<td>at this point in time</td>
<td>now</td>
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<tr>
<td>at that point in time</td>
<td>then</td>
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<tr>
<td>has the ability to</td>
<td>can</td>
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<tr>
<td>has the potential to</td>
<td>can</td>
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<tr>
<td>in the event that</td>
<td>if</td>
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<tr>
<td>in the vicinity of</td>
<td>near</td>
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<tr>
<td>owing to the fact that</td>
<td>because</td>
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<tr>
<td>the question as to whether</td>
<td>whether</td>
</tr>
<tr>
<td>there is no doubt but that</td>
<td>no doubt</td>
</tr>
</tbody>
</table>
When searching for writing zeroes, use your eraser

Vibration measurements made in the course of the Titan flight test program were complicated by the presence of intense high-frequency excitation of the vehicle shell structure during the re-entry phase of the flight.

Vibration measurements made in the Titan flight were complicated by intense high-frequency excitation of the vehicle shell during re-entry.
Needless adjectives often hide behind vague nouns

The objective of our work is to obtain experimental data that can be used in conjunction with a comprehensive chemical kinetics modeling study to generate a detailed understanding of the fundamental processes that lead to engine knock.

Our goal is to obtain experimental data that can be used with a chemical kinetics model to explain the processes that lead to engine knock.
Many adverbs are unnecessary

The achievement of our success relies very heavily on a rather detailed understanding of the somewhat complex processes that govern the gas velocities.

Our success relies on understanding the complex processes that govern the gas velocities.
It was then concluded that a second complete solar mirror field corrosion survey should be conducted in July to determine whether the tenfold annual corrosion rate projection was valid and to allow determination whether subsequent corrective measures would be effective in retarding corrosion propagation.

We decided to survey the solar mirror field a second time in July to see whether the corrosion rate would increase tenfold as projected and to see whether stowing the mirrors in a vertical position would slow the rate.