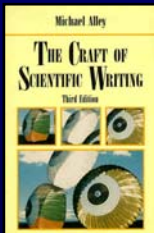
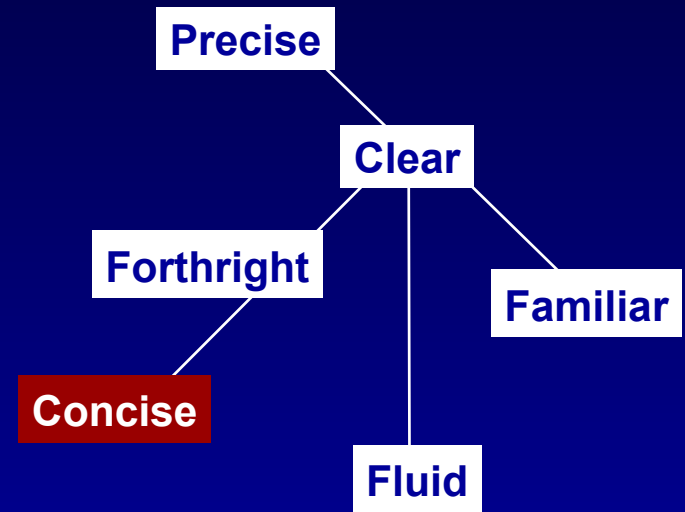


Being Concise

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).

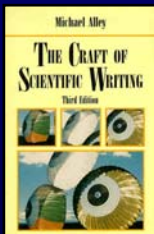


Being Concise



More is in vain when less will serve.

Sir Issac Newton



A redundancy is a needless repetition of words

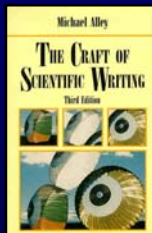
absolute guarantee
my personal opinion
blended together
bright green in color

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**

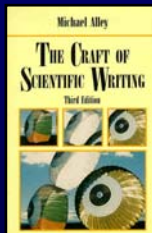
private industry

separate entities

start **out**

still persists

whether **or not**



Writing zeroes are empty phrases that fatten sentences

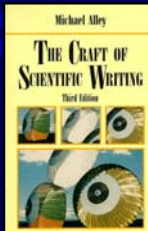
it is my intent to show that = 0

as a matter of fact = 0

as is well known = 0

it is noteworthy = 0

the presence of = 0



Many phrases are near zeroes

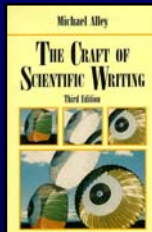
at this point in time	=	now
at that point in time	=	then
has the ability to	=	can
has the potential to	=	can
in the event that	=	if
in the vicinity of	=	near
owing to the fact that	=	because
the question as to whether	=	whether
there is no doubt but that	=	no doubt

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.

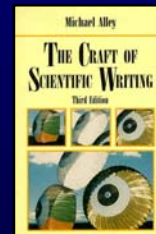


Needless adjectives often hide behind vague nouns

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

rather unique

slows down

well proven



rather unique

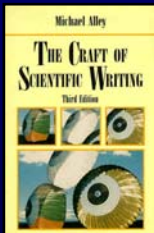
slows **down**

well proven

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.



Needless passives attract long phrases and words

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.

syllable count

83

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.

syllable count

60

