

Porting the SFTE Reference Handbook into the 21st Century

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22 October 2020

0. Introduction

0.1 Situation: You Need a Mach/Altitude Chart

What do you do?

- Recreate tools from scratch
- Import/scan pictures
- Recreate pictures with digital drawings

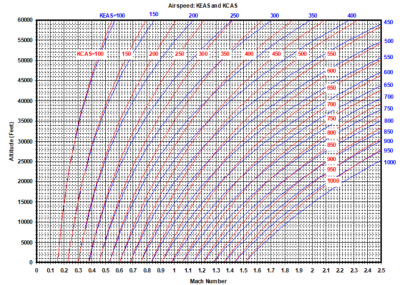


Figure 1: Mach-Altitude-Airspeed Plot

0.2 What If Instead You Had...

- The highest quality VECTOR (zoomable) graphics
- Reproducible examples in multiple languages and formats
- Universally available content

1. What it was

1.1 Handbook History

- A book...
- ...that fit in your hand (debatable... see CRC)
- Quick reference for common facts/figures

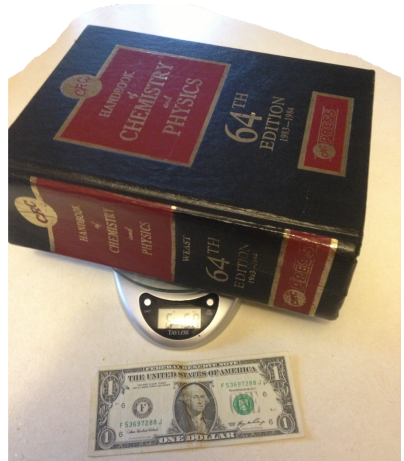


Figure 2: The CRC: One of the most famous “handbooks” in history

- 2001: First edition
- 2013: Most recent major revision
- 2019: 2 Addenda

Source - Microsoft Word® -

Microsoft Publisher®

Production - PDF - Hardcopy

Issues

- Images of various format, resolution, and quality
- Maintenance
 - Life cycle costs
 - Closed v open architecture
- No clear procedure for amendments and revisions

2. What it is

/pôrt/

verb

verb: port; 3rd person present: ports; past tense: ported; past participle: ported; gerund or present participle: porting

COMPUTING

transfer (software) from one system or machine to another.

“the software can be ported to an IBM RS/6000”

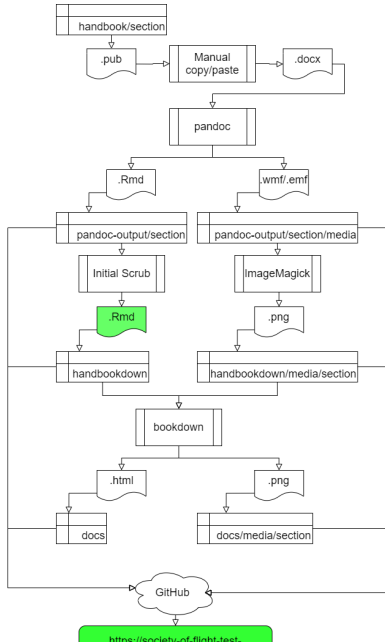
2.2 Porting the Handbook

Source

- Unicode Text (Rmarkdown)

Production

- HTML



Required Tools

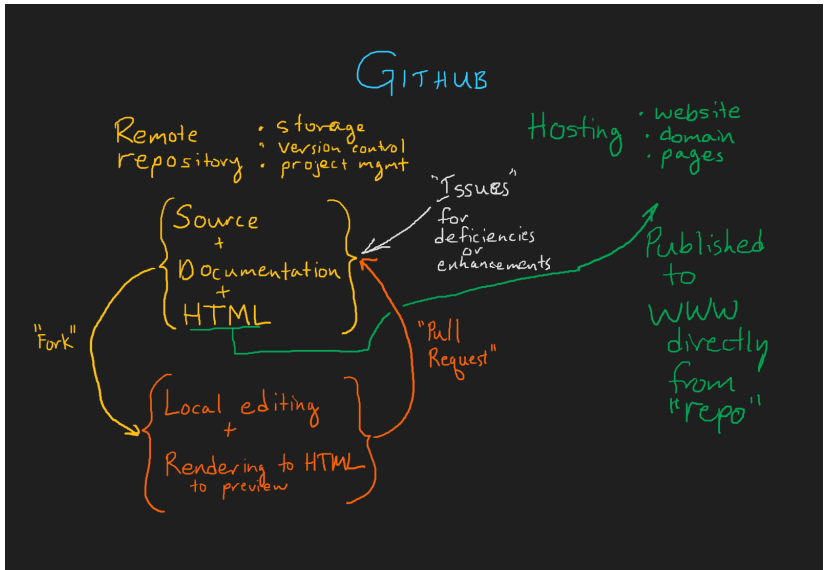
- git
- R
- bookdown
- text editor
- command line
- web browser
- GitHub account

Optional Tools

- An Integrated Development Environment such as...
 - VS Code
 - RStudio

Figure 4: <https://github.com/Society-of-Flight-Test-Engineers/handbook-2013>

2.3.2 GitHub concept map



3. What it shall be

Now: Complete HTML

Next: Complete PDF

Next²:

- Code to...
 - generate every plot
 - implement every function
- Dynamic Handbook with...
 - interactive visualizations
 - interactive calculations

Next³: “Refactor” entirely → Handbook 2.0

A means of organizing and making accessible FTE knowledge, practices, and standards

There's a lot to know

Modern tools allow for

- more ready access
- engagement with knowledge
- reproducibility
- fine-grained version control

Things of value require **cultivation**

- growth environment
- weeding
- pruning
- support
- attention

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GitHub Logo, <https://github.com/logos>