

# Porting the SFTE Reference Handbook into the 21<sup>st</sup> Century

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## 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

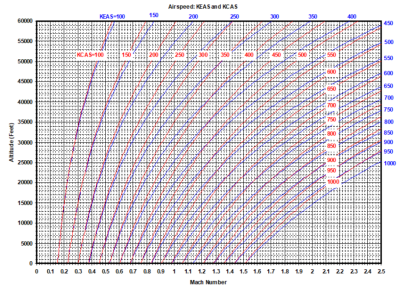


Figure 1: Mach-Altitude-Airspeed Plot

## 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

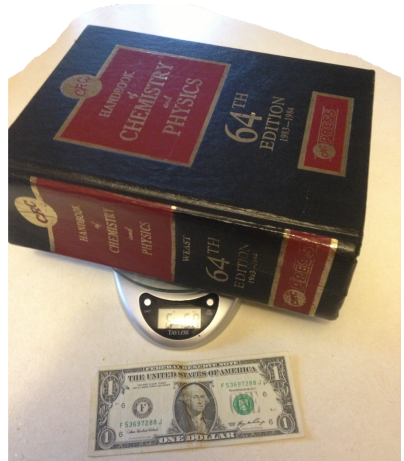


Figure 2: The CRC: One of the most famous “handbooks” in history

- 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”*

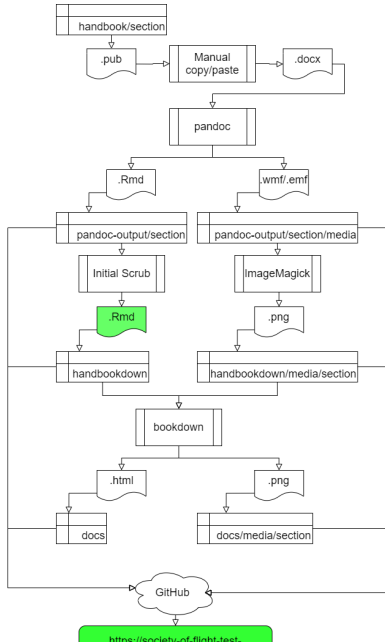
## 2.2 Porting the Handbook

### Source

- Unicode Text (Rmarkdown)

### Production

- HTML



### Required Tools

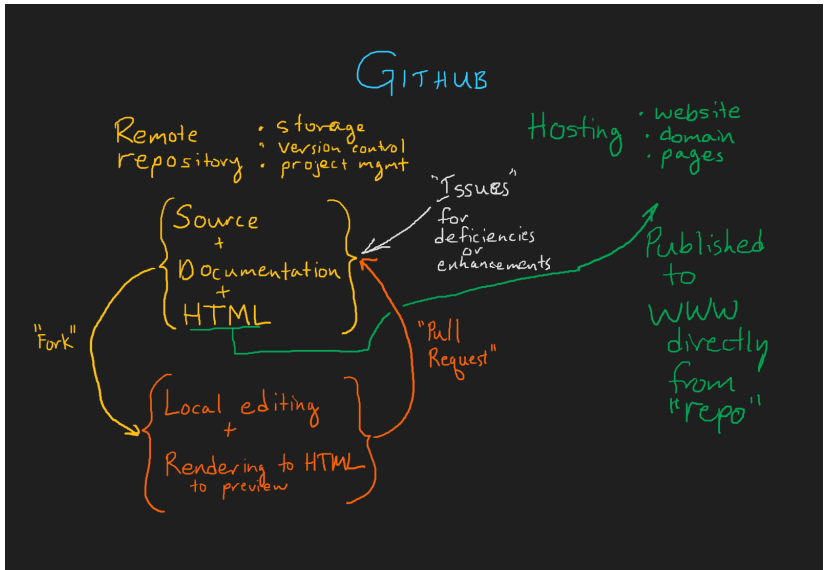
- git
- R
- bookdown
- text editor
- command line
- web browser
- GitHub account

### 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

Next<sup>2</sup>:

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

Next<sup>3</sup>: “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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- ② GitHub Logo, <https://github.com/logos>