

**Re-imagining Textbooks for  
Surveying and Geomatics  
Programs**

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**John sends you  
his best wishes!**



# The Problem — 1

- Textbooks have increased in cost faster than tuition, 1978-2013:
  - CPI 250%                      2.65% p.a.
  - New homes 325%                3.42% p.a.
  - Tuition 559%                    5.04% p.a.
  - Medical services 575%        5.15% p.a.
  - Education books 812%        6.17% p.a.
- Much faster than inflation!

# The Problem — 2

- Publishers and distributors get the lion's share of the purchase price
- The retailer, often a campus bookstore, gets a retail percentage
- The printer gets something, but printing is a commodity today
- Finally, something makes it to the author...
- Amazon is a good deal, only taking 55% of the purchase price!

# The Problem — 3

- Because the retailer feels hard done by, they can sell and resell the book until a new edition comes out
- Example: Fluid Mechanics textbook, \$172 new
  - New edition every three years, over at least 4 previous editions
  - Bookstore sells for \$172, buys it back at the end of the semester for \$20
  - Bookstore sells it 'Used' for \$114, and buys it back for \$20, another five times: \$662 in sales, less their wholesale price to purchase the book
  - Note that the author apparently gets none of the reselling income and only one of the students end up with the book

# The Problem – 4

- The rapid cycle of editions means that the previous edition can be regarded as 'worthless' and disposed of
- Forces the purchase of new books, often with relatively minor changes, for people to stay 'current'
- This breeds the idea of the textbook as (a) disposable, (b) worth far less than the purchase price, and (c) only useful to get through the course
- Works against students retaining textbooks as a professional library and resource

# The Problem — 5

- Who pays for all this?
  - The student!
  - And student debt now exceeds credit card debt and \$1 trillion
- No wonder textbooks are considered a rip-off!
- Leasing textbooks is an option, but not much less than the buy-sell idea, and reinforces the idea of the textbook as disposable, a one-course bauble

# The Problem – 6

- With rapid change in technology, techniques and theory, it can take several years to get the information into a textbook
- Journal articles are costing more and more as publishers try to get more income from the academic sector, which has adopted a 'publish or perish' model
- Yet there is a great deal of knowledge in Wikipedia and many out-of-print textbooks are partly available on Google Books

# The Problem – 7

- Many new faculty come into the geospatial discipline from almost anywhere, get a PhD, go to a surveying or geomatics department, and get blindsided by having to teach basic surveying courses
- Someone teaching the fundamentals without a practical grasp of them, and an understanding of how they related to the rest of the discipline, is not a recipe for long-term student success
- How can the overloaded faculty support these new faculty?

# The Problem – 8

- Even as ever more new material rushes in, the old material takes a long time to drop out the other end:
  - NGS dropped 'south' azimuths decades ago, but it was still on the FS a few years ago
- So the textbooks keep expanding, at the same time as it is running behind the times
- As students need to learn more, we can't fit it into the textbook or the time available

# The Problem – 9

- Libraries are moving to more digital content as a means to reduce their costs
- More information is becoming available on-line
- Libraries may lend out tablets for student use to access this
- Many students have tablets and equivalent small devices and regard books as *SO* 20th century
- Students from lower socio-economic situations often have no experience of books as an integral part of one's learning and profession

# Possible Solutions

- Self-publish!
  - Cut out the publisher and do your own distribution:
    - We know all the surveying/geomatics and CE programs!
  - Avoid the 'vanity press' and use the resources available
  - Printing is relatively cheap
  - Larger percentage for the author/publisher

# Possible Solutions

- **Digital publishing: make an electronic book!**
  - There are four primary formats, and dozens of others...
  - No real consistency, because different objectives for each format:
    - PDF for consistent printing and presentation: not flexible
    - Kindle formats: a bit behind the times and scrambling
    - ePUB, an open standard, designed for display on almost any device, so reflowable text; problems with equations
    - Apple iBooks, based on ePUB with extensions and extensibility by HTML5

# Possible Solutions

- An advantage of the iBooks format is that you can have either consistent text or one long stream of text, like a long web page
- Various 'widgets' can be included, and anything that can be written in HTML5 can be included
- Multiple copies can be run on a buyer's compatible devices
- Books on the iBook store can be updated like software
- Disadvantage is that it is tied to iPads (fairly common) and Macs

# Possible Solutions

- Advantages of the electronic book (regardless of format):
  - Light and less concerned with size of the book
  - Updatable
  - Should be lower cost (not guaranteed!)
  - With linking between books, can offer a different way to divide the material between books

# Proposal

- We propose the development of a series of electronic books to cover the material in Moffitt and Bossler's *Surveying* textbook
- No point re-issuing a 1990s text: a complete re-write and update
- As there is no clear 'winner' among the formats, use the one that gives there most extensibility (future protection) and a distribution ecosystem, plus the most consistent readability and appearance, which is iBooks
- It is also able to support free upgrades to the users and active links between a buyer's copies on different devices in the same account

# Proposal

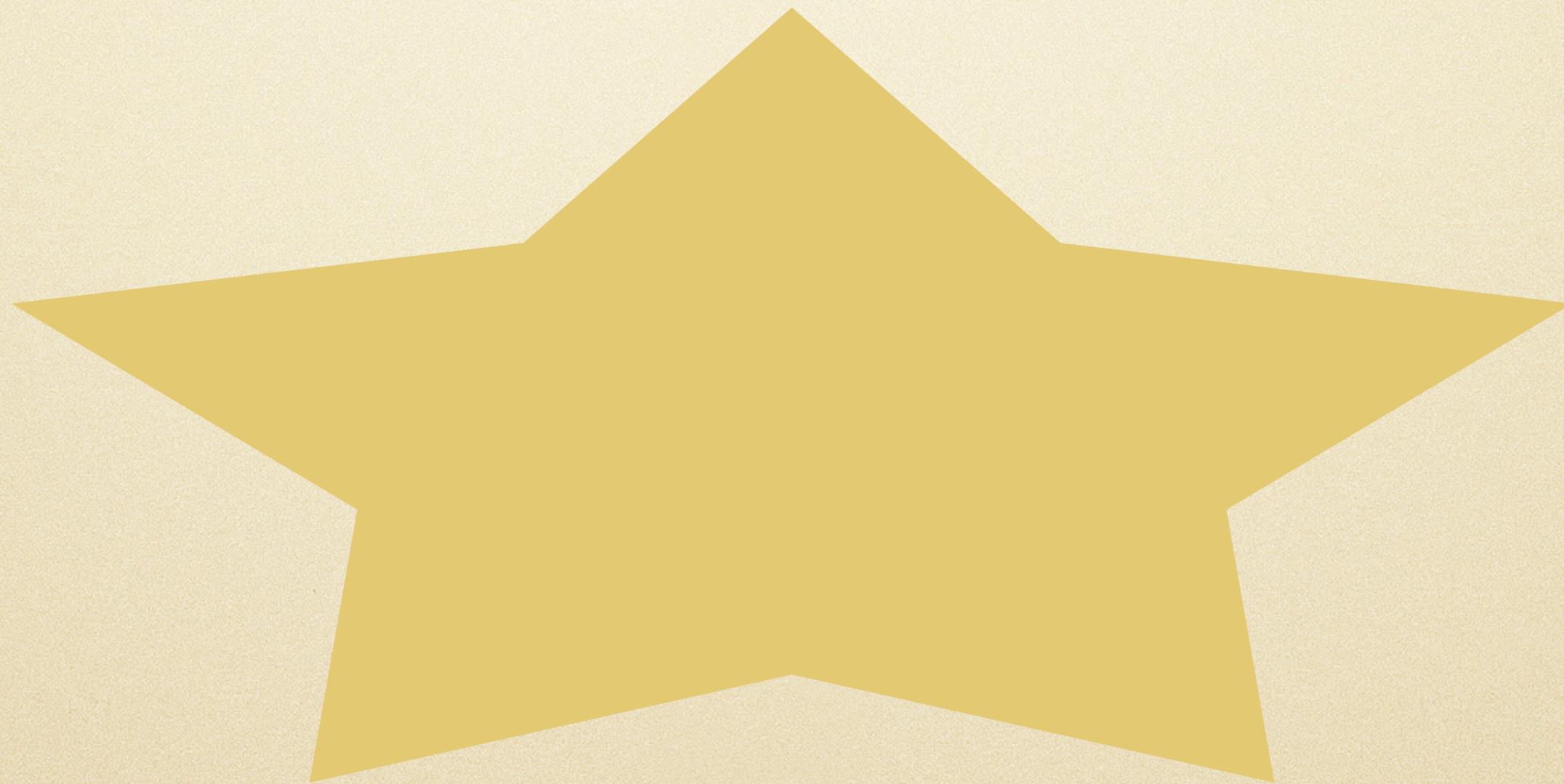
- This approach clearly has the potential to reduce costs and provide a better solution for students:
  - Faster updates to the book: currency
  - Free downloads across multiple devices: flexibility
  - Notes, bookmarks, highlights: transfer between devices and return to the same place in an updated copy
  - Extensible using HTML5 code

# Proposal

- With all these advantages, all that remains is implementation...



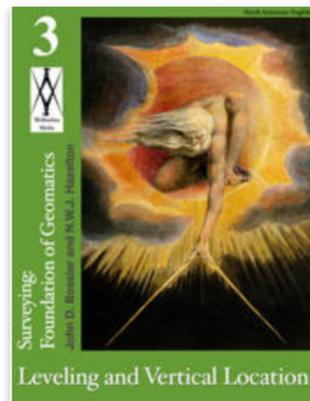
**How Much Would You Pay  
For This Book?**



## Leveling and Vertical Location

John D. Bossler & N.W.J. Hazelton

This book is available for download with iBooks on your Mac or iPad, and with iTunes on your computer. Multi-touch books can be read with iBooks on your Mac or iPad. Books with interactive features may work best on an iPad. iBooks on your Mac requires OS X 10.9 or later.



[View in iTunes](#)

\$9.99

Available on iPad and Mac.

Category: Textbooks

Published: Jun 20, 2015

Publisher: Wollindina Media

Seller: Wollindina Media

Print Length: 575 Pages

Language: English

Version: 1.0.3

Requirements: To view this book, you must have an iPad with iBooks 3 or later and iOS 5.1 or later, or a Mac with iBooks 1.0 or later and OS X 10.9 or later.

### Customer Ratings

We have not received enough ratings to display an average for this textbook.

### Description

This new textbook series for surveying and geomatics programs builds on the venerable *Surveying* text by Harry Bouchard, Frank Moffitt and John Bossler. It is a complete revision and restructuring of that book to take advantage of the latest textbook technology, and the latest advances in surveying and geomatics. Presented as an iBooks Textbook, it includes video, animations, slideshows, interactive illustrations, full color text and figures (as appropriate), and hyperlinked text. This volume, *Leveling and Vertical Location*, is a stand-alone textbook on its subject, but also fits into the series to provide a comprehensive overview of the discipline.

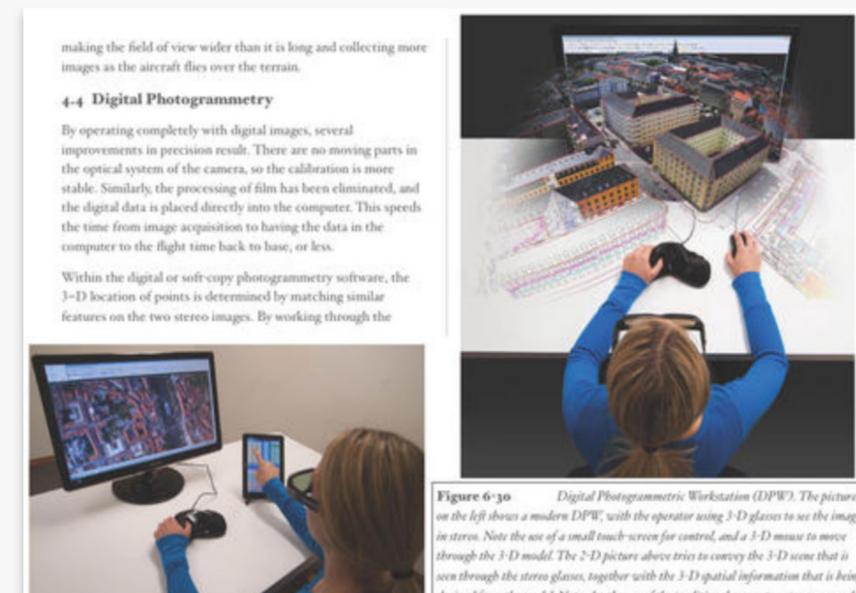
Primarily for students in surveying, geomatics, and engineering, at 2-year and 4-year programs, it is also a suitable reference for educators, working professionals, and anyone who needs to understand vertical location. Designed to be easily read and understood, it has a strong practical orientation, while also including advanced topics. Videos show how to do field work; text and illustrations work through field work in detail; field note recording is covered, step by step, in slideshows that the reader paces. Readers can also add highlights, notes and bookmarks to the text, which will propagate across all their devices where their book is held.

While covering leading-edge topics and their association with vertical location (e.g., LiDAR, UAVs, Locata, digital photogrammetry, IFSAR), the historical foundation of current methods is included, together with the rationale for certain methodologies.

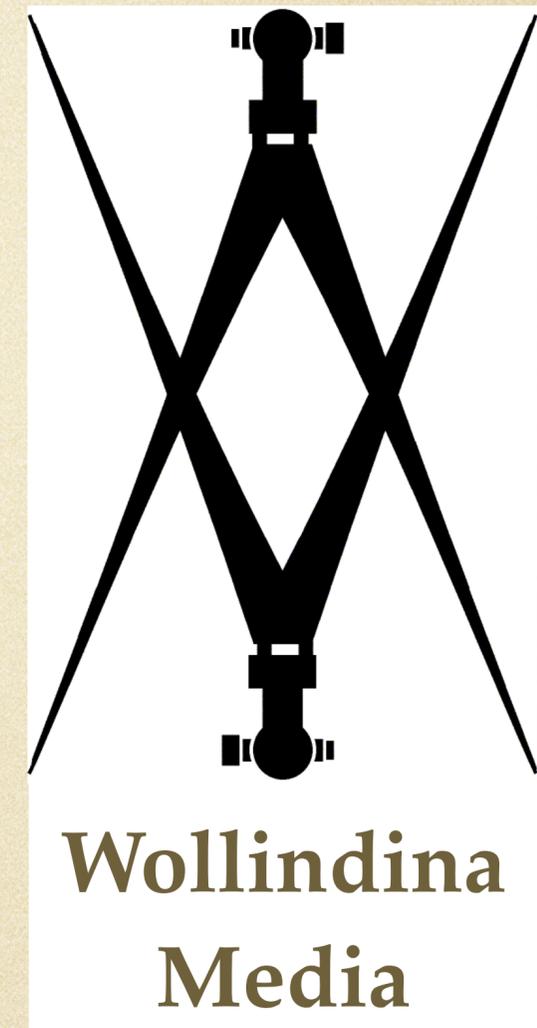
### What's New in Version 1.0.3

Adjustments to slideshows and animated GIFs. Miscellaneous corrections.

### Screenshots



**Figure 6-30** Digital Photogrammetric Workstation (DPW). The picture on the left shows a modern DPW, with the operator using 3-D glasses to see the image in stereo. Note the use of a small touch-screen for control, and a 3-D mouse to move through the 3-D model. The 2-D picture above tries to convey the 3-D scene that is seen through the stereo glasses, together with the 3-D spatial information that is being derived from the model. Note also the use of the traditional mouse to enter commands.



# Where Can You Get It?

[https://itunes.apple.com/us/book/leveling-vertical-location/  
id1008088554?ls=1&mt=13](https://itunes.apple.com/us/book/leveling-vertical-location/id1008088554?ls=1&mt=13)

In the iBooks application, search for “bossler leveling”