

Improvements to v5.008 from v5.007

1. Improved memory allocation to prevent allocation failure (causing program crashes) while scanning in certain computers with very fragmented memory (RAM and disk).
2. Increased robustness to data file corruption which causes program crashes.
3. Improved user interface which prevents user clicks in cases when they are not allowed:
 - Prevents undefined behavior by disabling thumbnail buttons and right-click functions during finger removal/re-processing pages
 - Prevents undefined behavior by disabling user interface while saving pages as a PDF file to clipboard
4. Removed bug which causes app to remain in “scan book cover” mode even after switching operation from book to sheet/card mode
5. Removed bug which causes app to display corner indicators (manual page detection) when in document camera (fullscreen) mode

Changes to v5.007 from v5.006

1. Fixed a memory overflow issue when the total number of scans within a session exceeds 1000 pages (including deleted pages). This memory overflow will cause the corruption of a saved session resulting in lost pages.

Changes to v5.006 from v5.005

1. Improved the robustness of ABBYY OCR engine installation - in case ABBYY installation fails in its initial attempt (due to Windows Group Policy settings of computers controlled by certain organizations), Perfecapture's installer will attempt to re-install using alternative folders.

Changes to v5.005 from v5.004

1. Implemented automatic data recovery in case abnormality happens while saving/loading sessions
2. Fixed bug which causes occasional program crash when saving as JPG, BMP, TIF or PNG files.
3. Fixed failure and error message appearing when attaching pages as a PDF file to clipboard while in single page contiguous mode

Changes to v5.004 from v5.003

1. Fixed software crash when "loading session" with no session selected on the thumbnail
2. Fixed software crash after clicking the "Perfecapture" logo or the "Help" button while "Preview orientation" is selected to be either "facing left" or "facing right".

Changes to v5.003 from v5.002

1. Fixed false detection of “USB connector unplugged” when launching Perfecapture too quickly after connecting the USB
2. Fixed bug of enabling save and export buttons after finger removal/re-process/crop processes even when page processing is still undergoing (saving of pages undergoing processing may result in abnormality or software crash).
3. “Attach pages to email as files” is replaced with the “Attach as files to clipboard” function which allows direct pasting of JPG or PDF files in folders or emails. Multiple pages are attached as one multi-page PDF instead of multiple single-page PDFs. Increased maximum page limit from 10 to 20 pages.
4. Checks disk space before every page capture – disallow further scanning and advise user if free space drops below a limit

Changes to v5.002 from v5.001

1. Fixed bug which causes session saving failure (displays “Error renaming folder” message) during closing Perfecapture after saving multiple scans as single pages (JPG, BMP, TIFF, PNG) and cancelling the saving process half way through.
2. Fixed bug which causes display of error messages when right-clicking the thumbnail or preview window when running under Windows 7 with the “Classic” or “Basic” theme chosen under Windows “Personalize”.
3. Prevents saturation (i.e. white-out of certain areas) of the preview video when ambient lighting is strong which indirectly causes laser calibration (i.e. laser spot flashing on scan pad or scan material) to continue indefinitely after launching Perfecapture.
4. Prevents software crash when saving as PDF files by ensuring that ABBYY OCR Engine is installed – advises user and exit in case not installed (e.g. due to user’s Windows Security/Policy settings).

Changes to v5.001 from v5.000

1. Prevents hang during capture when using certain USB cable extenders or hubs – Perfecapture 5.001 will predict if these extenders/hubs are used and prompt a warning dialog before resuming scan with a lowered capture speed until Perfecapture is restarted.
2. Prevents entirely black scans when using certain USB cable extenders or hubs.

perfcapture V for the xcanex bookscanner ver 5.000 release notes (released 4th Jan 2018)

piQx

The screenshot displays the perfcapture V software interface. On the left, a vertical sidebar shows a list of scanned pages, with page 3 highlighted. The main window displays page 77 of the book 'A Monster Calls' by Patrick Ness. The page content is as follows:

A MONSTER CALLS

(He said enough to bring me walking, the monster said. I know injustice when I see it.)

The prince ran towards the approaching villagers. "The queen has murdered my bride!" he shouted. "The queen must be stopped!"

The rumours of the queen's witchery had been circulating long enough and the young prince was so beloved of the people that it took very little for them to see the obvious truth. It took even less time when they saw the great Green Man walking behind him, high as the hills, coming for vengeance.

(Conor glanced again at the monster's massive arms and legs, at its raggedy, toothy mouth, at its overwhelming monstrousness. He imagined what the queen must have thought when she saw it coming.)

(He smiled.)

The subjects stormed the queen's castle with such fury that the stones of its very walls tumbled. Fortifications fell and ceilings collapsed and when the queen was found in her chambers, the mob seized her and dragged her to the stake right then to burn her alive.

("Good," Conor said, smiling. "She deserved it.")

77

The interface includes a top menu bar with 'perfcapture V' and 'A Monster Calls - Patrick Ness'. A right-hand toolbar contains various icons for file operations, search, and help. At the bottom left, there are icons for trash and document management.

What's new in the perfecapture V (v5.000)

1. New user interface

Full screen display with larger preview and edit window. Larger and more intuitive button icons.

2. New page manager

- Allows user to perform page delete, move, insertion at any time (even while image processing is ongoing)
- Thumbnail supports page indexing and allows page number definition – user can define page number according to actual physical page number (allows easy page navigation and detection of missing or mixed-up pages)
- In addition to page drag & drop, user can move a page to any other position by keying in destination page position
- Improved robustness and usability in Single-page contiguous mode

3. Multiple scan sessions can be saved for future resumption. Saved sessions are displayed on the thumbnail when Perfecapture is launched. Users can re-open any saved session by right-clicking on any session.

- Scan sessions can be closed and at any time – even when image processing is still ongoing

What's new in the perfecapture V (v5.000)

4. Instantaneous automatic capture

- Supports both flash-shutter and flash-less mode (can be switched at any time by right-clicking preview window)
- Flashless mode has an ultra-fast capture time of less than 1 second and can be used in the libraries or archives which prohibits flashlights
- Flash-shutter mode can be turned on at any time when scanning graphics or glossy pages or, when higher image quality is required

5. Scan book covers

- Allows user to scan front and back covers of book and integrate together with other book pages in one single PDF file
- Book cover mode can be turned on at any time by right-clicking the preview window
- Users just place the whole book on the scan pad to scan – book covers need not be removed

6. Integrated document camera mode within any scan mode (sheet, book or card)

- Users can switch back and forth between scan mode and visualizer mode (for projection purposes) by just clicking a button during scanning of book, sheet or card.
- Improved image quality - brighter and better brightness uniformity

7. Increased maximum limit of scan pages from 500 to 1000 pages

- Users can now scan up to 1000 pages and directly create a 1000-page PDF file

xcanex perfecapture3
ver 3.200 release notes (released 3rd July 2015)



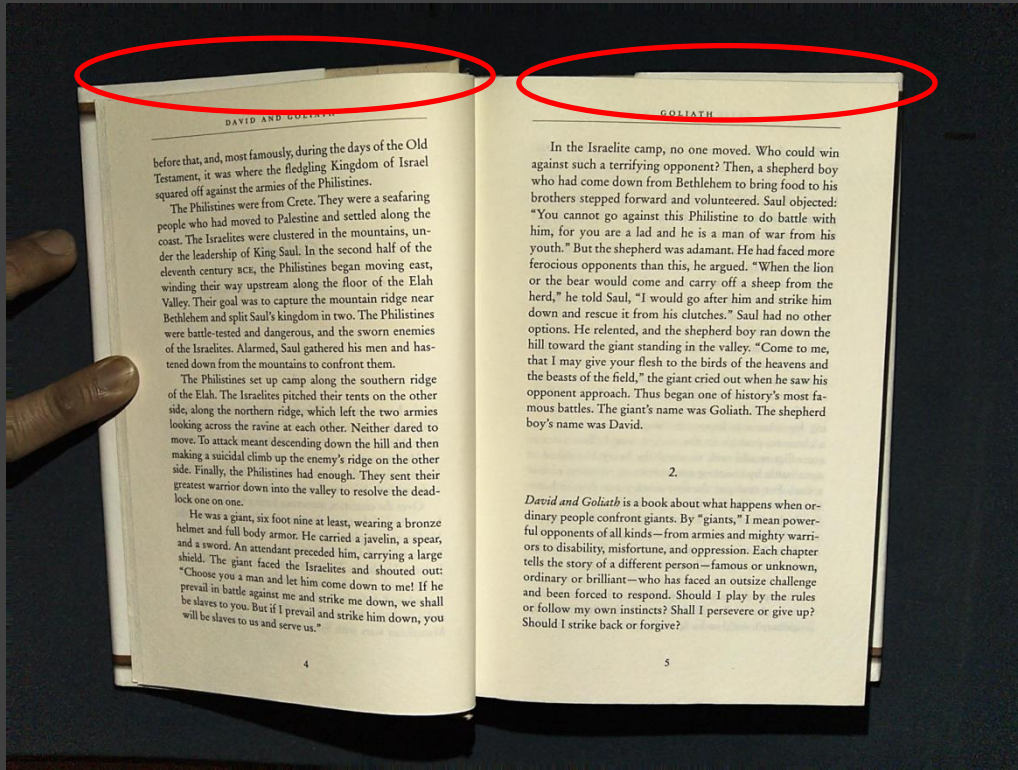
Improvements to perfecapture³ (v3.200)

1. Hardcover book mode: Ability to scan any hardcover book without manual adjustments or the use of “book inserts”
2. FlatPage Pro Technology: Automatically performs content centering, straightening of curved paragraph edges and graphic frames to produce perfect scans for professional use
3. Ten times reduction in hard disk usage allows smaller SSD drives to accommodate large volume scanning at one go (a 500-page scan session now requires less than 5GB free hard disk space)
4. Auto saving as PNG file format is now supported (in addition to JPEG, TIFF and PDF OCR)

Hardcover book mode

The problem with hardcovers (hardbacks)

1. Unlike softcovers (paperbacks), hardcovers may cause incorrect page contour definition required for digital page curve correction

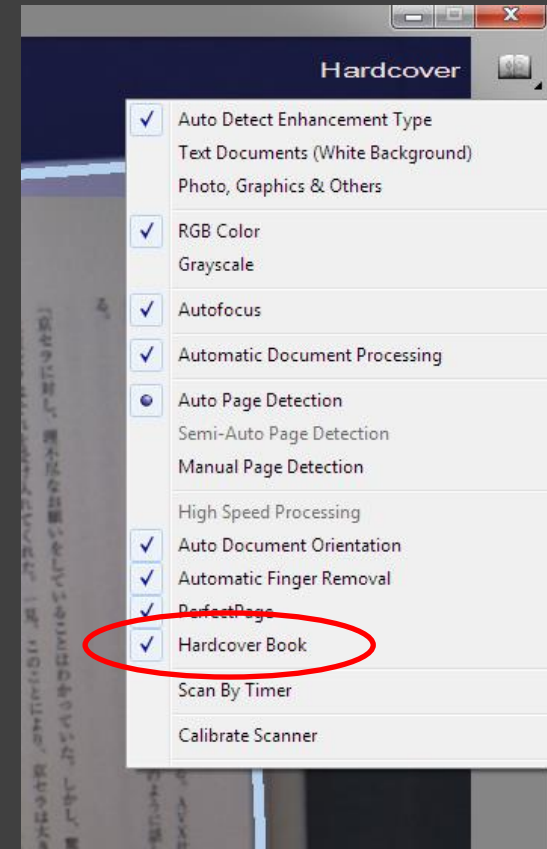


Covers with similar colors as internal pages result in lack of contrast between page contours and their background. Incorrect contour definitions produce distorted scans after digital page flattening.

Hardcover book mode

Conventional solutions

- Most book scanners and scanning apps require manual re-adjustments/correction of page contour definitions for every page
- As an alternative to manual work, we had instead recommended book inserts:
 - <https://www.youtube.com/watch?v=AAEuD5GIRKs>
- Perfecapture v3.2 removes the need for manual adjustments or book inserts by introducing Enhanced Edge Detection Technology to automatically produce flawless scans with all types of hardcovers



Select "Hardcover Book" to activate Enhanced Edge Detection

Hardcover book mode

Without
Enhanced
Edge
Detection

GOLIATH

timony to his courage but to make another point as well: that he intends to fight Goliath the same way he has learned to fight wild animals—as a projectile warrior.

He *runs* toward Goliath, because without armor he has speed and maneuverability. He puts a rock into his sling, and whips it around and around, faster and faster at six or seven revolutions per second, aiming his projectile at Goliath's forehead—the giant's only point of vulnerability. Eitan Hirsch, a ballistics expert with the Israeli Defense Forces, recently did a series of calculations showing that a typical-size stone hurled by an expert slinger at a distance of thirty-five meters would have hit Goliath's head with a velocity of thirty-four meters per second—more than enough to penetrate his skull and render him unconscious or dead. In terms of stopping power, that is equivalent to a fair-size modern handgun. "We find," Hirsch writes, "that David could have slung and hit Goliath in little more than one second—a time so brief that Goliath would not have been able to protect himself and during which he would be stationary for all practical purposes."

What could Goliath do? He was carrying over a hundred pounds of armor. He was prepared for a battle at close range, where he could stand, immobile, warding off blows with his armor and delivering a mighty thrust of his spear. He watched David approach, first with scorn, then with surprise, and then with what can only have been horror—as it dawned on him that the battle he was expecting had suddenly changed shape.

"You come against me with sword and spear and javelin," David said to Goliath, "but I come against you in the name of the Lord Almighty, the God of the armies of

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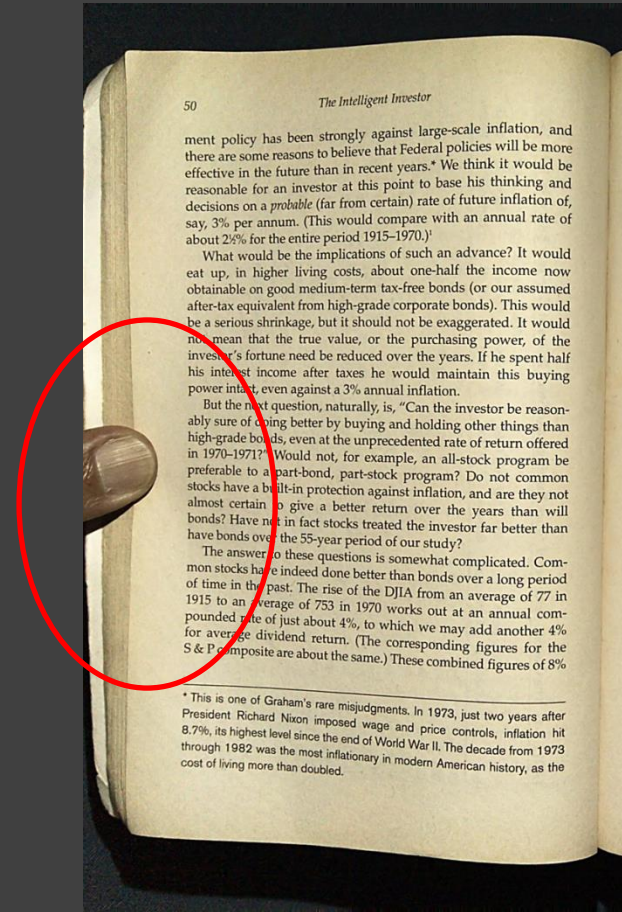
With
Enhanced
Edge
Detection

(Hardcover
mode)

FlatPage Pro Technology

piQx

- Pressure from fingers may create “page dents” resulting in vertically curved paragraph edges or lines
- Heavily slanted pages (when scanning the thin-side pages of a thick book) may cause content shift to the left or right
- FlatPage Pro corrects for page dents and perform content centering to give perfectly scanned pages



Finger pressure causing “page dent”

FlatPage Pro Technology

FlatPage Pro OFF

- Curved paragraph edge
- Content shift (to the right in this case)

Paragraph curve due to page dent



ment policy has been strongly against large-scale inflation, and there are some reasons to believe that Federal policies will be more effective in the future than in recent years.* We think it would be reasonable for an investor at this point to base his thinking and decisions on a *probable* (far from certain) rate of future inflation of, say, 3% per annum. (This would compare with an annual rate of about 2½% for the entire period 1915–1970.)

What would be the implications of such an advance? It would eat up, in higher living costs, about one-half the income now obtainable on good medium-term tax-free bonds (or our assumed after-tax equivalent from high-grade corporate bonds). This would be a serious shrinkage, but it should not be exaggerated. It would not mean that the true value, or the purchasing power, of the investor's fortune need be reduced over the years. If he spent half his interest income after taxes he would maintain this buying power intact, even against a 3% annual inflation.

But the next question, naturally, is, "Can the investor be reasonably sure of doing better by buying and holding other things than high-grade bonds, even at the unprecedented rate of return offered in 1970–1971?" Would not, for example, an all-stock program be preferable to a part-bond, part-stock program? Do not common stocks have a built-in protection against inflation, and are they not almost certain to give a better return over the years than will bonds? Have not in fact stocks treated the investor far better than have bonds over the 55-year period of our study?

The answer to these questions is somewhat complicated. Common stocks have indeed done better than bonds over a long period of time in the past. The rise of the DJIA from an average of 77 in 1915 to an average of 753 in 1970 works out at an annual compounded rate of just about 4%, to which we may add another 4% for average dividend return. (The corresponding figures for the S & P composite are about the same.) These combined figures of 8%

* This is one of Graham's rare misjudgments. In 1973, just two years after President Richard Nixon imposed wage and price controls, inflation hit 8.7%, its highest level since the end of World War II. The decade from 1973 through 1982 was the most inflationary in modern American history, as the cost of living more than doubled.

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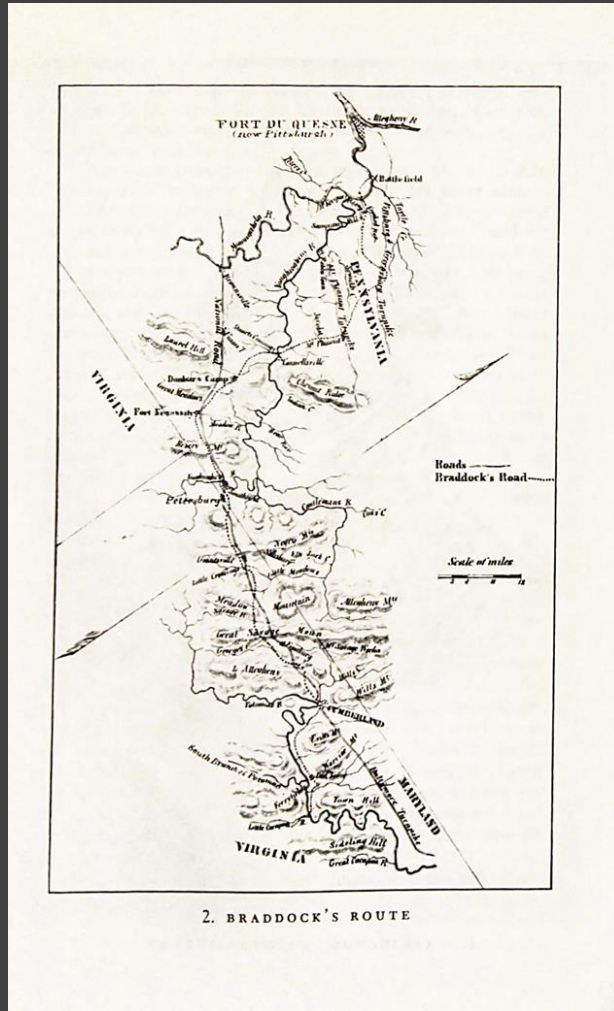
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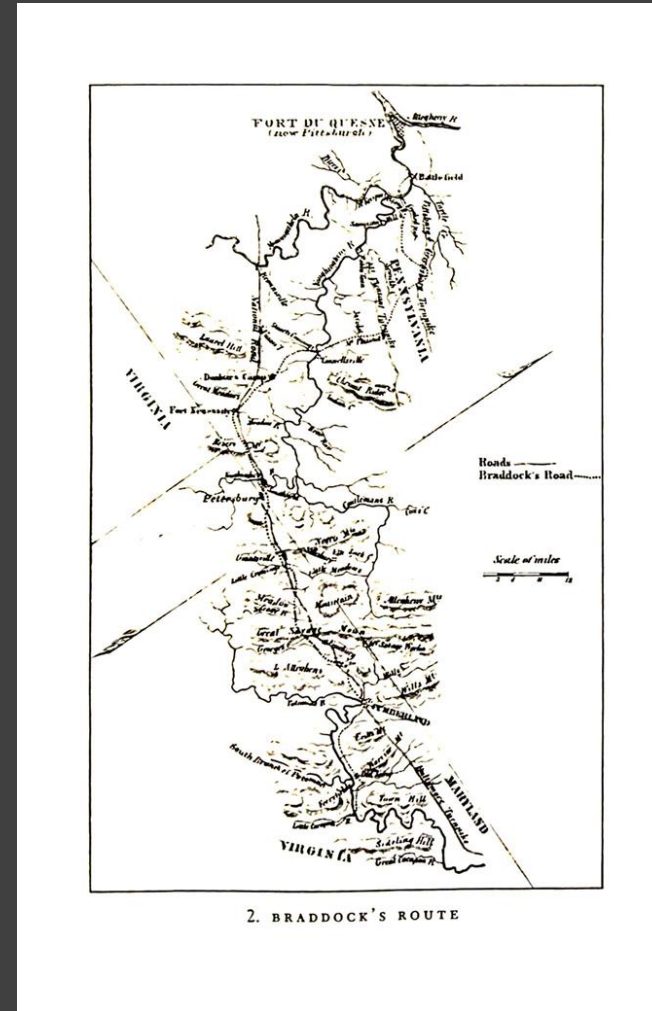
FlatPage Pro ON

FlatPage Pro OFF

- Graphic borders curved/slanted
- Content shift (to the left in this case)

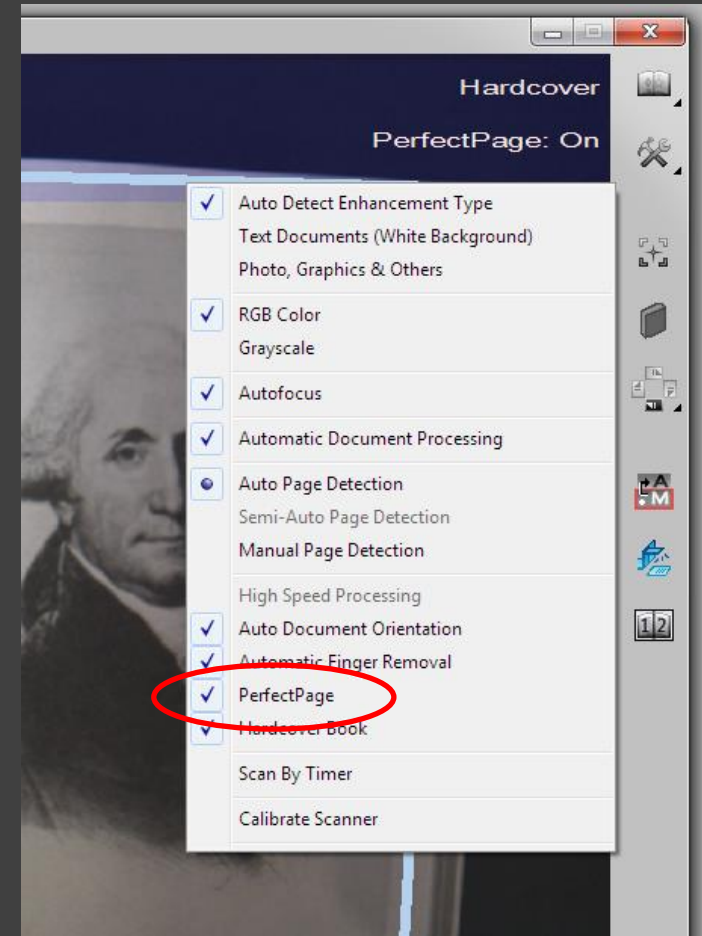


FlatPage Pro ON



FlatPage Pro Technology

- FlatPage Pro can be turned ON or OFF in both “quick settings” and “settings”
- In cases where processing speed is of higher priority than page perfection, turn FlatPage Pro OFF
 - FlatPage Pro increases post-capture processing time by about 10%

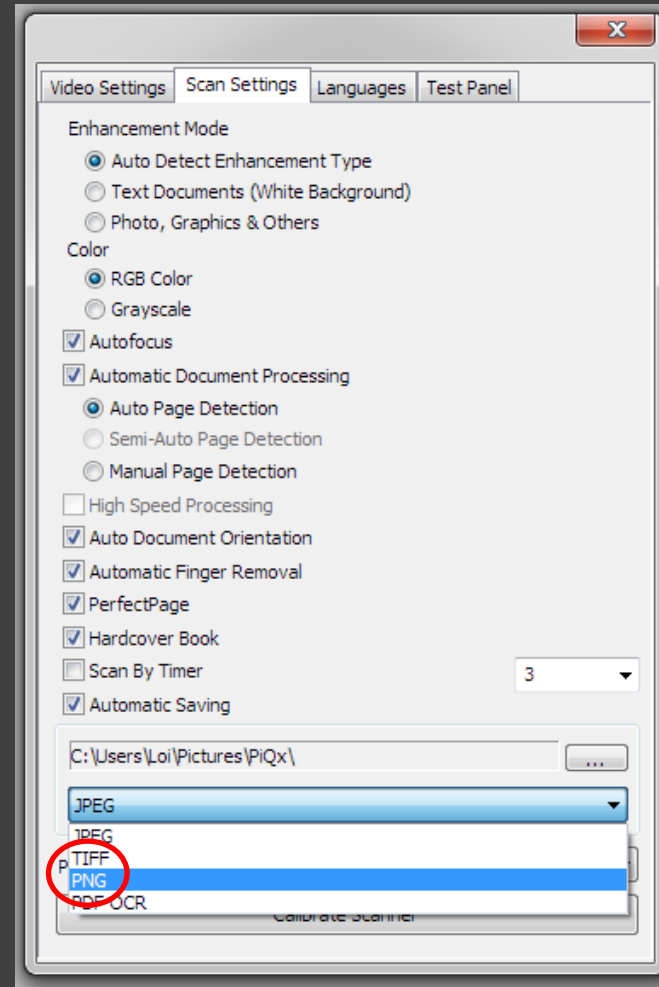


Reduction in hard disk space requirement

- v3.1 and prior versions require about 50 GB of free hard disk space if the maximum of 500 pages were to be scanned in a single session
 - Disk space is required to keep temporary images in high quality raw format to support redo processes and instant toggle between enhancement modes (document / pro-photo)
- v3.2 incorporated advanced data compression methods and successfully reduced disk space requirement by more than 10x, while keeping image quality and processing speed intact
- Scanning 500 pages in a single session now requires less than 5 GB, allowing computers with smaller Solid State Drives (SSD) to scan in much higher volumes

Support for PNG file format in auto-save

- Due to requests from xcanex users, v3.2 now allows saving in PNG format during automatic saving mode, in addition to JPG, TIFF and PDF OCR



Release Notes for previous versions

xcanex perfecapture3
ver 3.000 release notes (released 10th Dec 2014)



What you get with the new perfecapture3

1. Twice the capture speed with intelligent auto-focusing
 - a) Fast timer mode for continuous whole book scans
 - b) Auto-burst mode for quick scans of sections/chapters from multiple books
2. Flatpage 3.0 now gives “super-flat” scans by removing even the slightest remnant of waviness in text sentences
3. New visual aids to guide users during high speed scanning conditions
4. More vivid colors of book graphics when “photo” mode is selected
5. Overhauled software structure to provide consistently smooth, crash-free and hang-free operation when scanning high volumes
6. Further increased reliability when driven by USB3.0 ports

Twice the capture speed with intelligent auto-focusing

- a) “Capture time” (time from page setting until page can be flipped/removed) reduced from 6 to 3 sec (average)
- b) “Cycle time” (time from one scan until the subsequent scan) reduced from 15 to 8 sec (average)
- c) Fast timer mode for continuous whole book scans
 - Enables fastest scan when scanning contiguous pages from the same book (900 pages/hour in dual-page mode)
- d) Auto-burst mode for quick scans of sections/chapters from multiple books
 - Automatically captures only when opened book pages are detected
 - Intelligently uses “quick focus” if book pages are flipped quickly right after capture without shifting/removing book
 - Uses conventional autofocus only when necessary (e.g. camera height shifted or book is changed)

Flatpage 3.0 now gives “super-flat” scans by removing even the slightest remnant of waviness in text sentences

way. On Wall Street, money was plentiful and life was lived at whatever speed bandwidth could currently supply. People left their homes at five a.m. daily and returned at nine or ten at night. Their employers showered them with money for doing that but in return wanted every waking second of their time and supplied certain services to keep them working at a treadmill pace. Buffett as a child had been impressed by the Stock Exchange employee who rolled custom-made cigars, but now found this astonishing.

“They had a barbershop downstairs, and they didn’t even tell me about it. They were afraid of what would happen when I found out. And they had a guy who came around and shined your shoes, and you didn’t pay him.”

The executives of Salomon had previously felt, as one underling put it, that “God forbid they should ever lift anything but a fork.” Behavior by their new billionaire chairman that would seem normal on Main Street shocked Salomon’s employees. On the way to play bridge one night, Buffett asked his Salomon driver to stop the car. He climbed out and walked into a nearby store, then returned a few minutes later as the driver watched, mouth agape. The chairman was carrying huge bags full of ham sandwiches and Coca-Cola.³⁰ This was the new Salomon.

But it was the battle over pay that became the watershed. Early in the fall, Buffett had told the staff that he would be slashing \$110 million from the year-end bonus pool. “Employees producing mediocre returns for their owners should expect their pay to reflect this shortfall,” he wrote.³¹ That seemed simple and obvious to him. Businesses and people that were producing should be paid. Those that weren’t should not. Maughan agreed with Buffett that the culture of entitlement had to go. ~~People were not entitled to millions just because they~~ owned three houses and were supporting two ex-wives.³² But for once Buffett had miscalculated the limits of human nature. The formerly enriched employees, used to being showered with money on bonus day, now knew that they were about to be gouged.

Buffett’s reasoning that employees should not take home all the spoils and the shareholders none was lost on them. Indeed, they believed the opposite, since they had been taking home the spoils for years. A decrease from last year was outrageous. They felt that Buffett was trying to transfer some of the guilt from Mozer’s misdeeds to them by making an issue out of the bonuses. They had not caused Salomon’s woes. Rather, they had stayed out of loyalty and were enduring humiliation and misery in its aftermath. They were sweeping up

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See enlarged comparison on next page

Flatpage 3.0 now gives “super-flat” scans by removing even the slightest remnant of waviness in text sentences

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v2.114

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perfecapture 3

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Flatpage 3.0 now gives “super-flat” scans by removing even the slightest remnant of waviness in text sentences (vertical)

距離にたとえると、ちょうど先頭集団が十四キロ地点を走っているということである。そのときに京セラはスタートしたのだ。十四キロも離されて、四十二・一九五キロを走らなければならない。ただでさえ十四キロも離されているのに、一流でもない選手がチンタラチンタラ走っているのは勝負にもならない。それでは経営をする意味がない。だから、とにかく全力疾走で走ってみようではないか」

そのように話していた創業のときから、わずか十年ほどで、大阪証券取引所二部に上場することができた。二部上場ということは、十四キロ先を走っていたマラソンの第二集団を凌駕する勢いで追いついて視界にとらえ、そのなかに入ってしまったということである。

忘れもしないが、その夜、滋賀県にあった工場のグラウンドに全社員を集めた。松の丸太で櫓を組んで篝火を焚き、二部上場ということがどういう意味をもつか、みんなに話をした。そのとき、すでに何百人という従業員規模になっていたが、篝火を背景に、わたしは彼らに向かって話した。

「皆さんの、いままでの苦勞に感謝する。会社をつくった当初から、必死の努力で頑距離にたとえると、ちょうど先頭集団が十四キロ地点を走っているということである。そのときに京セラはスタートしたのだ。十四キロも離されて、四十二・一九五キロを走らなければならない。ただでさえ十四キロも離されているのに、一流でもない選手がチンタラチンタラ走っているのは勝負にもならない。それでは経営をする意味がない。だから、とにかく全力疾走で走ってみようではないか」

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「皆さんの、いままでの苦勞に感謝する。会社をつくった当初から、必死の努力で頑

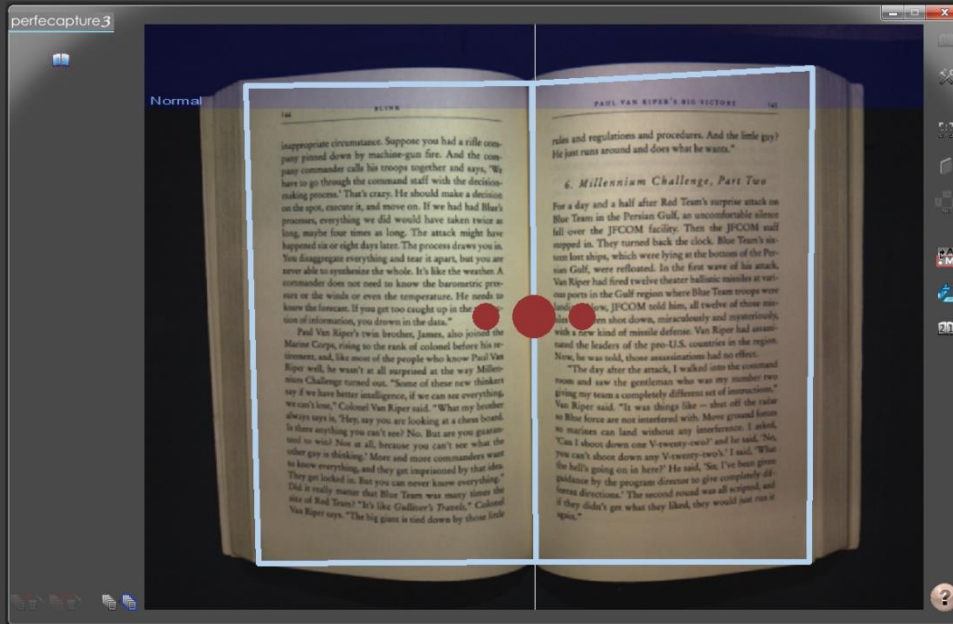
More vivid colors of book graphics when “photo” mode is selected

Use “photo” enhancement mode in “settings” when more color vividness is preferred during book scan



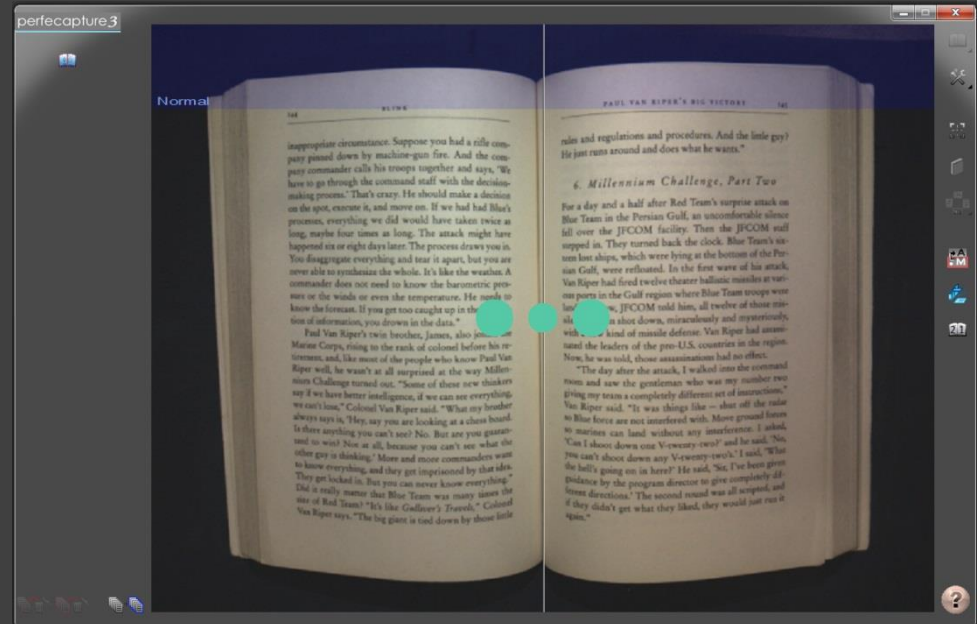
New visual aids to guide users during high speed scanning conditions

piQx



Page frame clearly shows auto-detected pages

Red dots signify that capture shall occur soon
- Do not shift or flip book pages



Green dots signify that capture is complete
- Book page can now be flipped for next scan

xcanex perfecapture ver 2.111 release notes (released 16th June 2014)



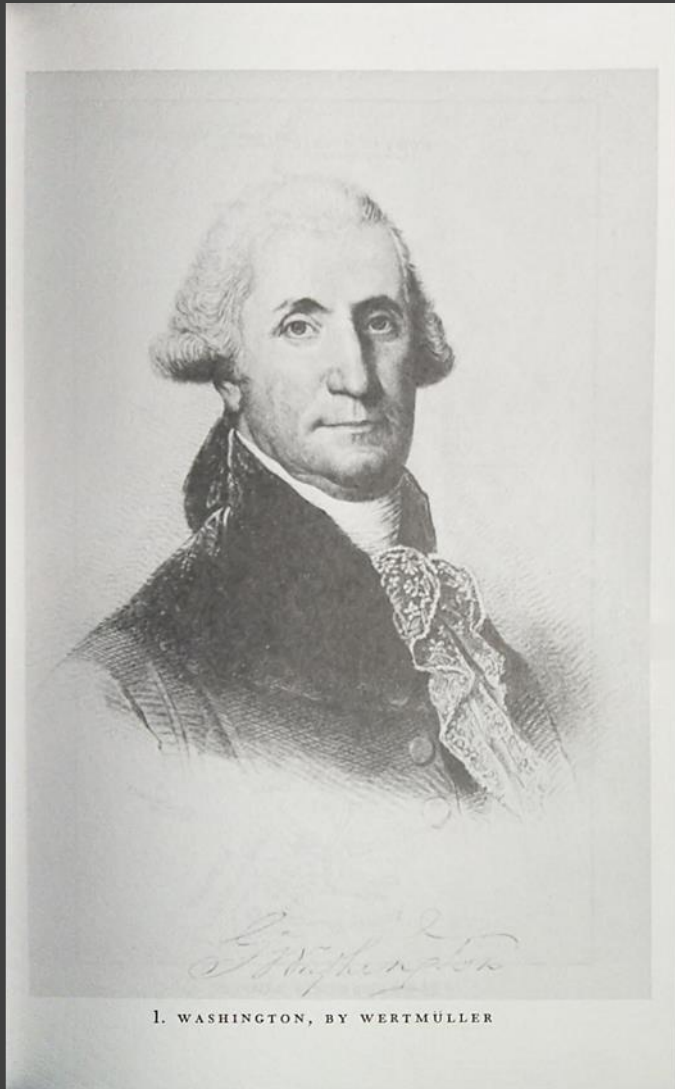
What's new in v2.111

1. New **Pro-photo** enhancement mode:
 - Improved shadow removal and flattening effect
 - Enhanced text for better OCR accuracy
2. Improved **Document** enhancement mode:
 - Faint shadings in graphics are preserved
 - More vivid and realistic colors for graphics
3. More accurate cropping & text alignment when scanning thicker books (> 1 inch thickness)
4. Appendix A: Miscellaneous bug fixes and minor amendments to software defaults & behaviour
5. Appendix B: Scan quality comparison with a reputable overhead contactless scanner by a world-leading brand

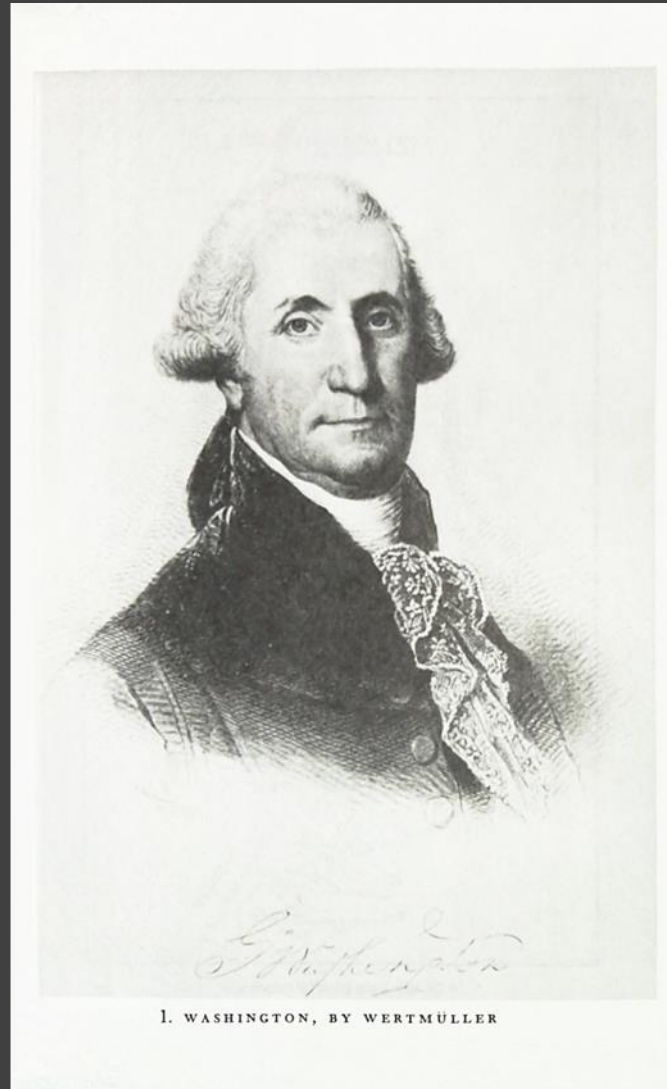
New Pro-photo mode

Improved shadow removal and flattening effect

piQx



Old V2.108



New V2.111

Cleaner background
free of book shadows

Deeper contrast in
graphics

Note:

To switch
between
Document and
Pro-photo mode
modes, just click the
'Enhancement
mode' button



New Pro-photo mode

Enhanced text for better OCR accuracy

The Independent Guide to the Mac 017



The aluminium case introduced in 2009 hasn't changed, with its edge to edge glass front masking the black bezel that surrounds the screen. The rear panel is sensuously curved, rather like a scaled up version of the iPad, and the overall impression is of extreme solidity and nanometre-precise engineering. The internal standard provides a useful range of tilt, but no height adjustment. With the mouse and, by default, the keyboard using Bluetooth, the only

cable required for the whole system is the mains power lead. This plugs in at the bottom centre of the rear panel, with the cable exiting through a circular cutout in the stand, which can also be used to support any peripheral cables to keep things tidy.

There's a built-in infrared sensor for the optional Apple Remote which controls iTunes, Front Row and other apps; or you can use the free Remote app for iOS, and similar apps for other Mac

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Old V2.108

New V2.111

Improved Document enhancement mode

Faint shadings in graphics are preserved

Shaded areas are preserved

4

Stress, Axial Loads, and Safety Concepts

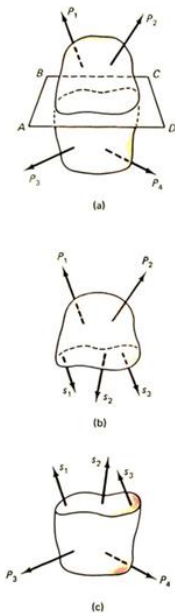


Fig. 1-1 Sectioning of a body.

supports and the weight² of the body itself, are considered external forces. Moreover, since a stable body at rest is in equilibrium, the forces acting on it satisfy the equations of static equilibrium. Thus, if the forces acting on a body such as shown in Fig. 1-1(a) satisfy the equations of static equilibrium and are all shown acting on it, the sketch represents a free-body diagram. Next, since a determination of the internal forces caused by the external ones is one of the principal concerns of this subject, an arbitrary section is passed through the body, completely separating it into two parts. The result of such a process can be seen in Figs. 1-1(b) and (c), where an arbitrary plane *ABCD* separates the original solid body of Fig. 1-1(a) into two *distinct* parts. This process will be referred to as the *method of sections*. Then, if the body as a whole is in equilibrium, any part of it must also be in equilibrium. For such parts of a body, however, some of the forces necessary to maintain equilibrium must act at the cut section. These considerations lead to the following fundamental conclusion: *the externally applied forces to one side of an arbitrary cut must be balanced by the internal forces developed at the cut*, or, briefly, the external forces are balanced by the internal forces. Later it will be seen that the cutting planes will be oriented in particular directions to fit special requirements. However, the method of sections will be relied upon as a first step in solving *all* problems where internal forces are being investigated.

In discussing the method of sections, it is significant to note that some moving bodies, although not in static equilibrium, are in dynamic equilibrium. These problems can be reduced to problems of static equilibrium. First, the acceleration *a* of the part in question is computed; then it is multiplied by the mass *m* of the body, giving a force $F = ma$. If the force so computed is applied to the body at its mass center in a direction opposite to the acceleration, the dynamic problem is reduced to one of statics. This is the so-called *d'Alembert principle*. With this point of view, all bodies can be thought of as being instantaneously in a state of static equilibrium. Hence, for any body, whether in static or dynamic equilibrium, a free-body diagram can be prepared on which the necessary forces to maintain the body as a whole in equilibrium can be shown. From then on, the problem is the same as discussed before.

1-3. Definition of Stress

In general, the internal forces acting on infinitesimal areas of a cut are of varying magnitudes and directions, as was shown earlier in Figs. 1-1(b) and (c), and as is again shown in Fig. 1-2(a). These forces are vectorial

² Strictly speaking, the weight of the body, or, more generally, the inertial forces due to acceleration, etc., are "body forces," and act throughout the body in a manner associated with the units of volume of the body. However, in most instances, these body forces can be considered as external loads acting through the body's center of mass.

4

Stress, Axial Loads, and Safety Concepts

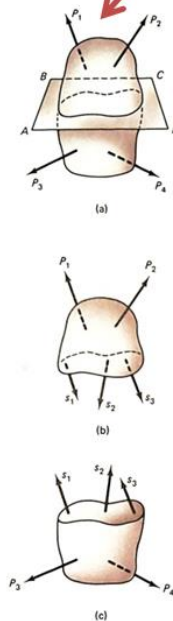


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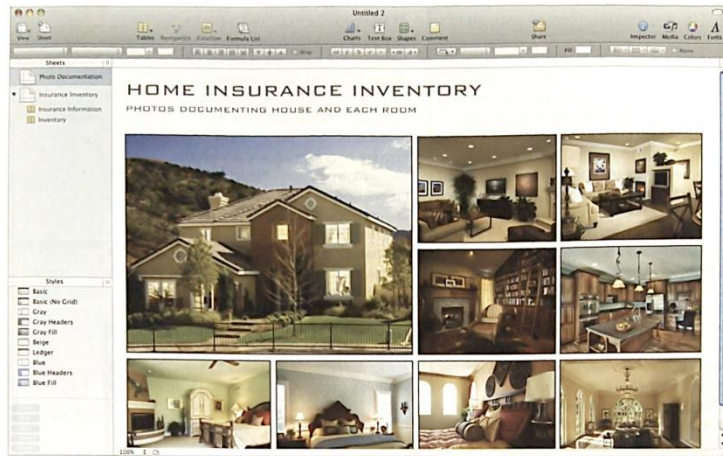
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Improved Document enhancement mode

More vivid and realistic colors



The easiest way to understand the relationship between sheets and tables is to right click on Table 1 in the sidebar and select delete. The cells will disappear, but you'll see that Sheet 1 stays active in the sidebar. Click on the Tables button in the toolbar and select Basic to insert a new table into the sheet. By default it will have 10 rows and four columns, but you can make it larger or smaller by dragging the fat corner handles at the bottom right. Click on Tables again and select Sums Checklist. A new table will appear in the same sheet, this time with check boxes that let you mark off different items in a list. Note how both tables can exist side-by-side and you can work on them both at once. You can't do this in Excel.

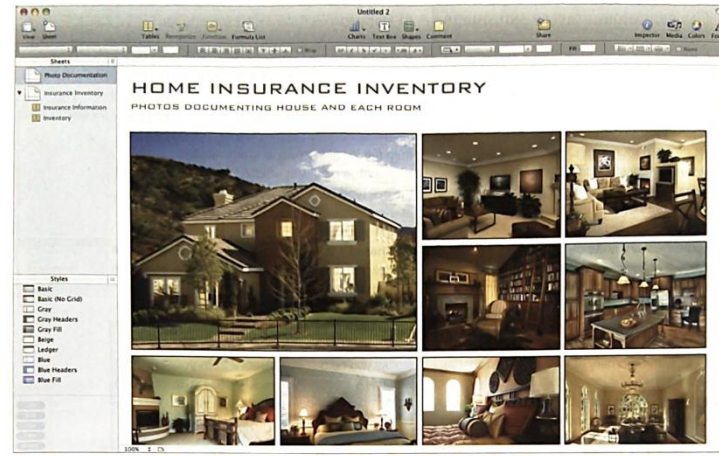
Add some details to columns B and C in your new spreadsheet, and then check a few boxes to the left. Note how the total at the bottom of column C doesn't start to rack up until you check boxes in column A. This is an example of the predefined functions Apple has built into Numbers.

Try moving your tables round by dragging the dimpled area above row 1 and to the left of

column A. Notice how guidelines appear to help you line up with other elements on the sheet, making Numbers one of the best spreadsheet applications for laying out pages of data.

To add new tables on a separate page you need a new sheet. Right click in the top half of the sidebar and select New Sheet to create one.

Elsewhere, Numbers works in a similar way to Excel, and if you have any familiarity with Excel's formulas, you should have no problem making the switch. `=SUM(D3:D9)` would add together all of the cells between D3 and D9. `=SQRT(C2)` gives you the square root of the value in cell C2, while `=AVERAGE(B1:B4)` will give you the average of those same cells. A quick way to check the validity of your functions as you type them is to always use lowercase, and watch how the case changes as you type your opening bracket. Thus `=average()` will jump to upper case, showing you that the function is correct, while `=avg()` will remain in lower case, indicating a problem you need to resolve.



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More accurate cropping & text alignment when scanning thicker books (> 1 inch thickness)

the absolute disposition of the governor. A committee was appointed with whom he was to confer as to its appropriation.

This precaution Dinwiddie considered an insulting invasion of the right he possessed as governor to control the purse as well as the sword, and he complained bitterly of the Assembly as deeply tinctured with a republican way of thinking and disposed to encroach on the prerogative of the crown, "which he feared would render them more and more difficult to be *brought to order*."

Ways and means being provided, Governor Dinwiddie augmented the number of troops to be enlisted to three hundred, divided into six companies. The command of the whole, as before, was offered to Washington, but he shrank from it as a charge too great for his youth and inexperience. It was given therefore to Colonel Joshua Fry, an English gentleman of worth and education, and Washington was made second in command, with the rank of lieutenant-colonel.

The recruiting at first went on slowly. Those who offered to enlist, says Washington, were for the most part loose, idle persons without house or home, some without shoes or stockings, some shirtless and many without coat or waistcoat.

He was young in the recruiting service or he would have known that such is generally the stuff of which armies are made. In this country especially it has always been difficult to enlist the active yeomanry by holding out merely the pay of a soldier. The means of subsistence are too easily obtained by the industrious for them to give up home and personal independence for a mere daily support. Some may be tempted by a love of adventure, but in general they require some prospect of ultimate advantage that may "better their condition."

Governor Dinwiddie became sensible of this and resorted to an expedient rising out of the natural resources of the country, which has since been frequently adopted and always with efficacy. He proclaimed a bounty of two hundred thousand acres of land on the Ohio River, to be divided among the officers and soldiers who should engage in this expedition, one thousand to be laid off contiguous to the fort on the Fork for the use of the garrison. This was a tempting bait to the sons of farmers, who readily enlisted in the hope of having at the end of a short campaign a snug farm of their own in this land of promise.

It was a more difficult matter to get officers than soldiers. Very

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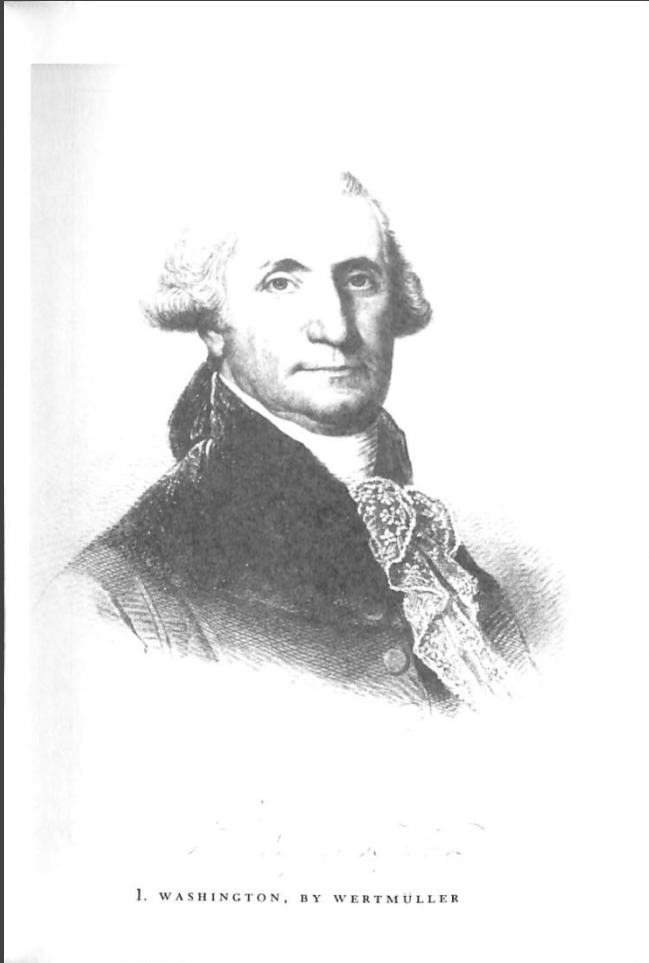
Appendix A:

Miscellaneous bug fixes and minor amendments to software defaults & behaviour

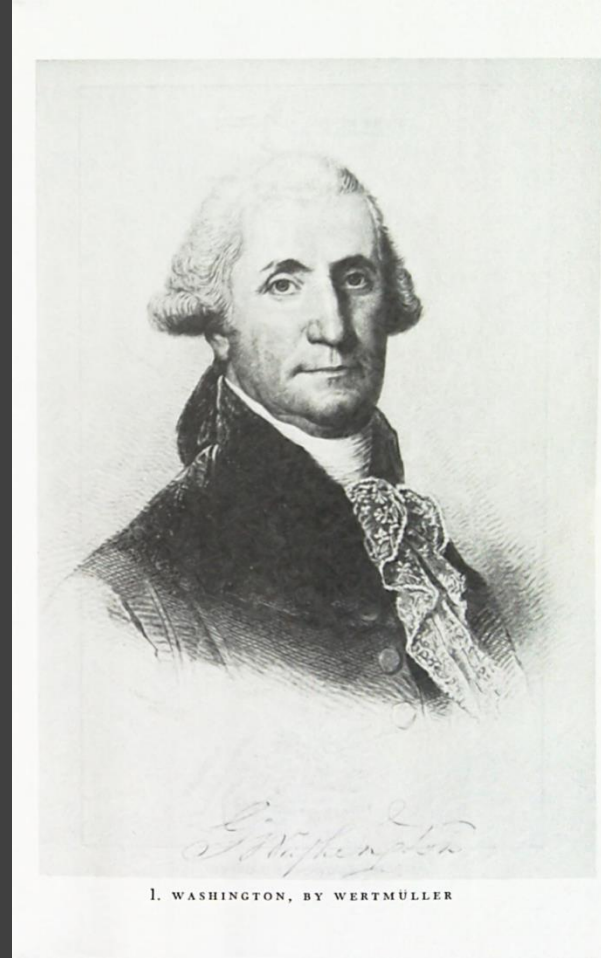
1. Implemented measures to prevent software crashes (“Perfecapture has stopped working”) when xcanex is driven by USB 3.0 ports (marked with “SS” near the port) of some PCs.
2. Fixed a bug which wrongly encodes auto-saved JPEG files with a resolution of 96 dpi even though actual image resolutions are in between 250-350dpi – this causes problems when users feed the JPEGs into external standalone OCR software.
3. Fixed a bug which saves the wrong pages during a multi-page PDF save that does not include the 1st page (e.g. when user saves pages # 3,4,5, saved PDF file contains images # 1,2,3 instead, always starting from the 1st page).
4. Fixed a bug which always turns OFF the auto-save mode wth PDF format upon exiting Perfecapture (users have to turn it ON again every time after re-launching Perfecapture).
5. Fixed a bug that causes the right side pages to be always less sharp than the left when in “2 | 1” dual-page book scanning mode.
6. Changed default preview orientation for book mode from “scanner facing right” to “scanner facing user”.
7. Changed default book scanning mode from “multiple books” to “single book”. In single-book mode, multiple pages saved are always re-sized to be the same.

Appendix B:

Scan quality comparison: xcanex vs a reputable overhead scanner of a leading brand (Brand F)



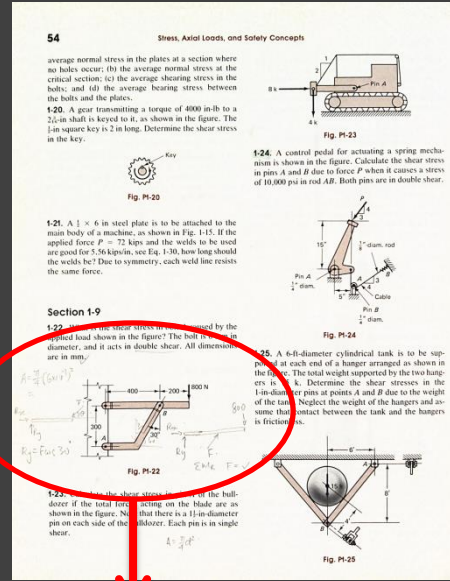
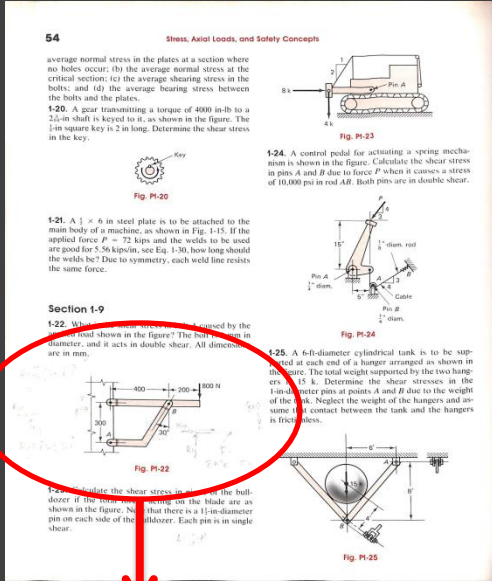
Brand F



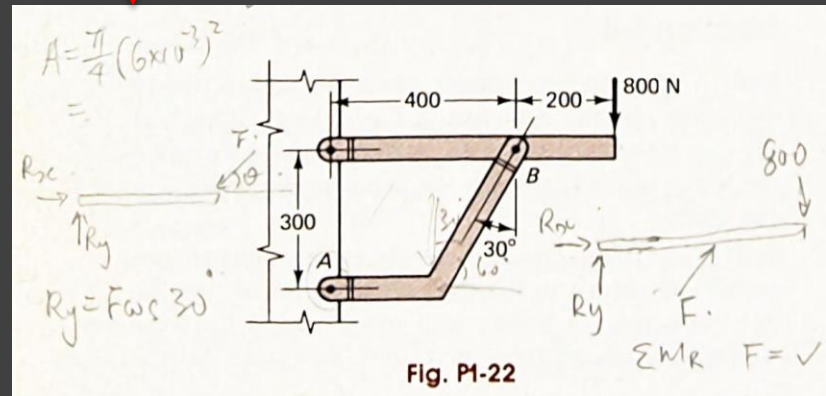
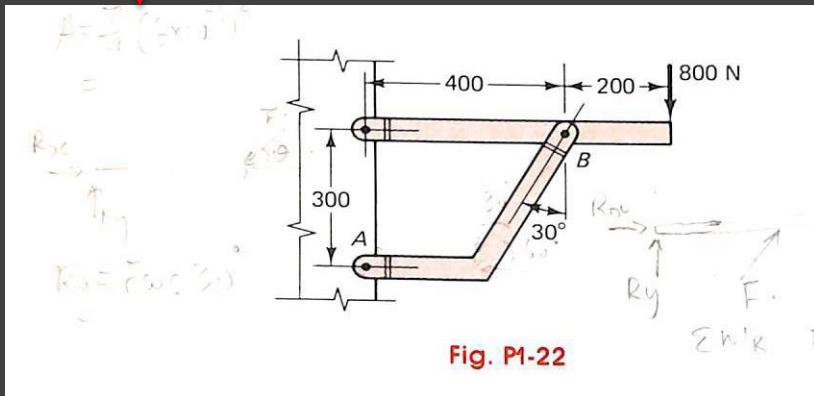
xcanex V2.111 Pro-photo mode

- a) No remnant shadows
- b) Faint graphic content is preserved
- c) Graphic contrast is more accurate and natural
- d) No aspect ratio error (brand F's scan is wider than the original)

Appendix B: Scan quality comparison: xcanex vs a reputable overhead scanner of a leading brand (Brand F)

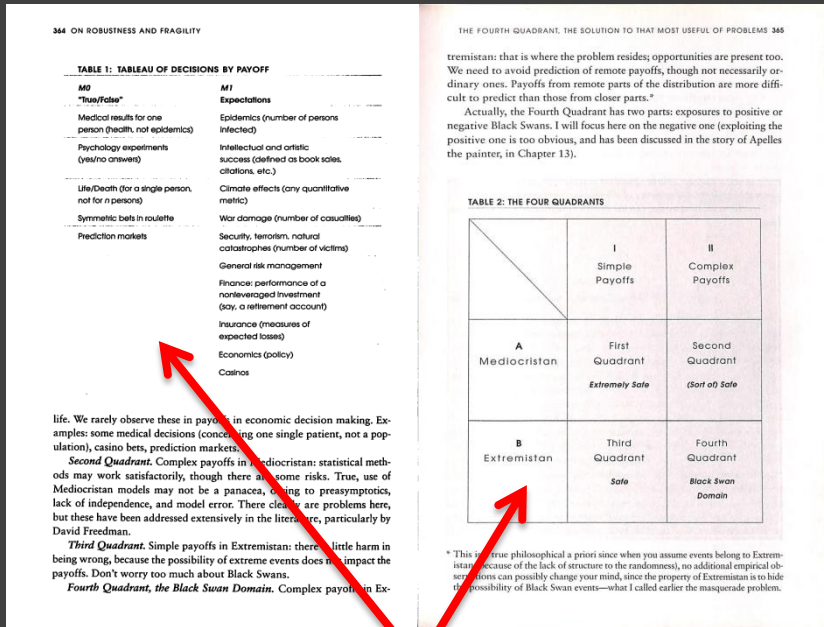


Faint handwritten notes are preserved



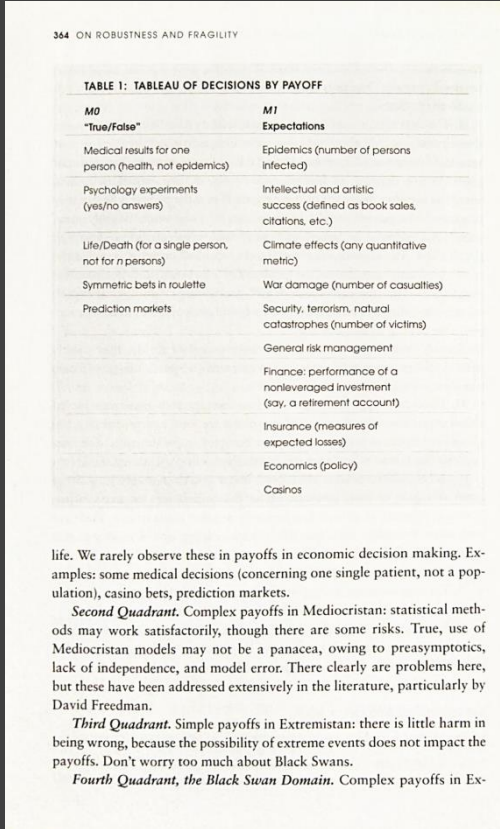
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Remnant shadow



Washed out content

Brand F



xcanex V2.111 Pro-photo mode

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V2.111 minimizes content wash-out even in document mode

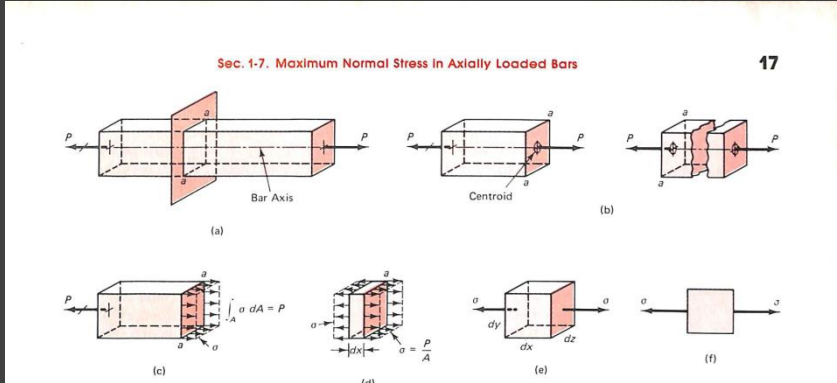


Fig. 1-9 Successive steps in determining the largest normal stress in an axially loaded bar.

1-9(e). However, a simplified diagram such as shown in Fig. 1-9(f) is commonly used.

For future reference, the relevant Eq. 1-8 for determining directly the maximum normal stress in an axially loaded bar is restated in customary form without any subscript on σ . Subscripts, however, are frequently added to indicate the direction of the bar axis. This equation gives the largest normal stress at a section taken perpendicular to the axis of a member. Thus,

$$\sigma = \frac{\text{force}}{\text{area}} = \frac{P}{A} \quad \left[\frac{\text{N}}{\text{m}^2} \right] \text{ or } \left[\frac{\text{lb}}{\text{in}^2} \right] \quad (1-13)$$

where, as before, P is the applied axial force, and A is the cross-sectional area of the member. In calculations, it is often convenient to use $\text{N/mm}^2 = \text{MPa}$ in the SI system of units and ksi in the U.S. customary system.

It is instructive to note that the normal stress σ given by Eq. 1-13, and schematically represented in Fig. 1-9(e), is a complete description of the state of stress in an axially loaded bar. Therefore, only one diagonal term remains in the matrix representation of the stress tensor given by Eq. 1-1b. This remaining term is associated with the direction of the bar axis. If different axes are chosen for isolating an element, as in Fig. 1-8(g), the stress tensor would resemble Eq. 1-3. A detailed study of this topic will be pursued in Chapter 8.

Equation 1-13 strictly applies only to prismatic bars, i.e., to bars having a constant cross-sectional area. However, the equation is reasonably ac-

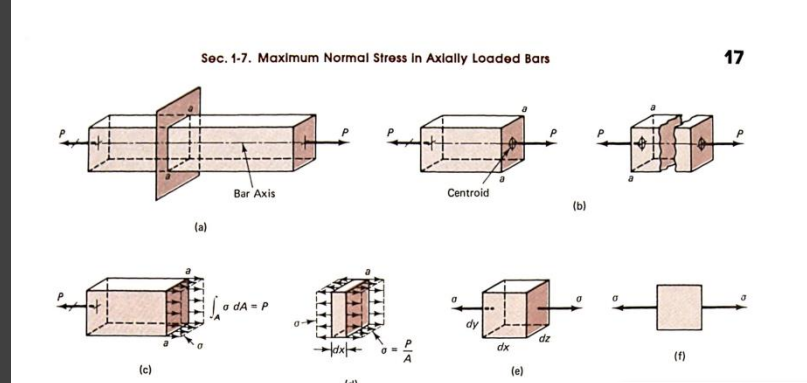


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Faint reader-made highlight is preserved

Appendix B:

Scan quality comparison: xcanex vs a reputable overhead scanner of a leading brand (Brand F)

tillery, "for that is General Washington." The aspect of the man changed in an instant. Raising his hands to heaven, "God bless and prosper you!" cried he. "The picket is in that house, and the sentry stands near that tree."⁶

The advance guard was led by a brave young officer, Captain William A. Washington, seconded by Lieutenant James Monroe (in after years President of the United States). They received orders to dislodge the picket. Here happened to be stationed the very lieutenant whose censures of the negligence of Colonel Rahl we have just quoted. By his own account, he was very near being entrapped in the guard-house. His sentries, he says, were not alert enough, and had he not stepped out of the picket house himself and discovered the enemy, they would have been upon him before his men could scramble to their arms. "Der feind! Der feind! Heraus! Heraus!" (The enemy! The enemy! Turn out! Turn out!) was now the cry. He at first, he says, made a stand, thinking he had a mere marauding party to deal with; but seeing heavy battalions at hand, gave way and fell back upon a company stationed to support the picket, but which appears to have been no better prepared against surprise.

By this time the American artillery was unlimbered. Washington kept beside it, and the column proceeded. The report of fire-arms told that Sullivan was at the lower end of the town. Colonel Stark led his advance guard and did it in gallant style. The attacks, as concerted, were simultaneous. The outposts were driven in. They retreated, firing from behind houses. The Hessian drums beat to arms. The trumpets of the light horse sounded the alarm. The whole place was in an uproar. Some of the enemy made a wild and undirected fire from the windows of their quarters. Others rushed forth in disorder and attempted to form in the main street, while dragoons hastily mounted, and, galloping about, added to the confusion. Washington advanced with his column to the head of King Street, riding beside Captain Forest of the artillery. When Forest's battery of six guns was opened the general kept on the left and advanced with it, giving directions to the fire. His position was an exposed one and he was repeatedly entreated to fall back, but all such entreaties were useless when once he became heated in action.

The enemy were training a couple of cannon in the main street

⁶ Wilkinson's *Memoirs*, vol. i., p. 129.

tillery, "for that is General Washington." The aspect of the man changed in an instant. Raising his hands to heaven, "God bless and prosper you!" cried he. "The picket is in that house, and the sentry stands near that tree."⁶

The advance guard was led by a brave young officer, Captain William A. Washington, seconded by Lieutenant James Monroe (in after years President of the United States). They received orders to dislodge the picket. Here happened to be stationed the very lieutenant whose censures of the negligence of Colonel Rahl we have just quoted. By his own account, he was very near being entrapped in the guard-house. His sentries, he says, were not alert enough, and had he not stepped out of the picket house himself and discovered the enemy, they would have been upon him before his men could scramble to their arms. "Der feind! Der feind! Heraus! Heraus!" (The enemy! The enemy! Turn out! Turn out!) was now the cry. He at first, he says, made a stand, thinking he had a mere marauding party to deal with; but seeing heavy battalions at hand, gave way and fell back upon a company stationed to support the picket, but which appears to have been no better prepared against surprise.

By this time the American artillery was unlimbered. Washington kept beside it, and the column proceeded. The report of fire-arms told that Sullivan was at the lower end of the town. Colonel Stark led his advance guard and did it in gallant style. The attacks, as concerted, were simultaneous. The outposts were driven in. They retreated, firing from behind houses. The Hessian drums beat to arms. The trumpets of the light horse sounded the alarm. The whole place was in an uproar. Some of the enemy made a wild and undirected fire from the windows of their quarters. Others rushed forth in disorder and attempted to form in the main street, while dragoons hastily mounted, and, galloping about, added to the confusion. Washington advanced with his column to the head of King Street, riding beside Captain Forest of the artillery. When Forest's battery of six guns was opened the general kept on the left and advanced with it, giving directions to the fire. His position was an exposed one and he was repeatedly entreated to fall back, but all such entreaties were useless when once he became heated in action.

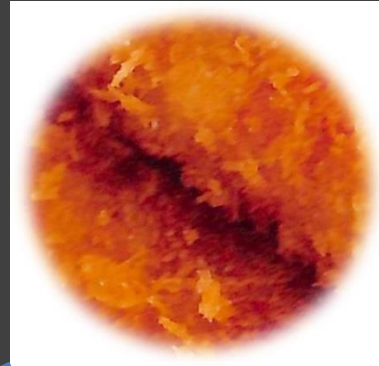
The enemy were training a couple of cannon in the main street

⁶ Wilkinson's *Memoirs*, vol. i., p. 129.

- a) Better alignment of text with page edge
- b) Crisp and contrasty text

Appendix B:

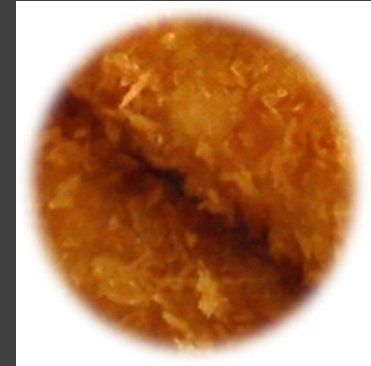
Scan quality comparison: xcanex vs a reputable overhead scanner of a leading brand (Brand F)



Over saturated reds in shadows



Too much yellow in greens



Natural and balanced colors