IEEE TRANSACTIONS, JOURNALS, AND LETTERS

Guidelines
for Author Supplied Electronic Text and Graphics

◆IEEE

REV. 5/02

Guidelines for
electronic text files

To: All IEEE Authors

The Institute of Electrical and Electronics Engineers electronically processes all its Transactions, Journals, and Letters. To complete the production and final printing of your paper, the Transactions Department will need to receive your electronic file (and two paper copies) in the format described below. The following set of guidelines should be followed to ensure a smooth transition and subsequent upload to the IEEE electronic publishing environment.

General Instructions

1) Files should be submitted via 3 1/2" disk. We also accept CD-ROM, zip disk, e-mail, and 640 MB magneto-optical disk.

2) Note the operating system, software, and version number used to create your disk (e.g., DOS/Word97). Write this information on the disk label with a felt pen. When using UNIX, note method of extraction.

3) Please note that graphic files must be submitted on separate disks. We do not process graphics files from text files. If there are graphics in your file, please submit them separately and according to the Guidelines for Electronic Graphics Files.

4) Make sure your files are self contained, i.e., that there are no pointers to your system setup.

5) Check that your file is complete. Please submit one file that contains abstract, index terms, text, references, footnotes, biographies, and figure captions.

6) Package diskettes to protect them in the mail.

7) Please include all necessary contact information, including e-mail address, phone number, fax number, and mailing address where proofs may be sent.

Software

For the most accurate and efficient transfer of your manuscript, especially if it contains extensive mathematics, use T_EX or L^AT_EX programs. Include macros used with your files. If possible, set manuscript column size to 21 picas (3.5" wide). IEEE L^AT_EX style files and TRANS-JOUR.DOC, an author template and user's guide for Microsoft Word, are available at: http://www.ieee.org/organizations/pubs/transactions/stylesheets. htm. When using Word, please use the equation editor for equations or symbols.

Manuscripts developed using other software, such as Word-Perfect, are acceptable, but the mathematics may be rekeyed into a T_EX format. If none of these programs is available, send all text aspects of the manuscript in ASCII format.

Things Not to Do:

- Please do not send PostScript or Acrobat PDF files of the text. Files must be in a word processing format or ASCII in order to be published.
- If there are graphics in your word processor file, you must also include the graphics separately according to the Guidelines for Electronic Graphics Files.
- Files submitted in a page layout software (such as FrameMaker) will have the math rekeyed.

Text Via E-Mail

1) Files should not be e-mailed to the IEEE Staff Editor without the prior knowledge and approval of the Transactions Editor-in-Chief.

2) The transmitted file should reflect the exact content of the final manuscript, including captions, abstracts, references, and biographies, and contain all pieces of the manuscript in one file.

3) Header information should accompany the transmitted files, clearly identifying the following:
   a) the name of the transactions;
   b) author's name;
   c) software used to format manuscript, e.g., T_EX, L^AT_EX, etc.

4) No encoding is necessary to accommodate the size of files.

5) When e-mailing T_EX, L^AT_EX, etc., always remember to also e-mail any macros (\defs) used to create your manuscript.

6) Two paper copies of the e-mailed file, along with original figures and photos, should be sent to the IEEE Staff Editor.

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Guidelines for
electronic graphics files

Introduction

In order to facilitate the accurate handling of your graphics, the IEEE Transactions/Journals department has developed the following guidelines. For production purposes any line art, graphs, charts, drawings, tables, and photographs may be treated as a graphic.

Acceptable File Formats

All charts, graphs, tables or photographs may be submitted electronically in PostScript (PS) and Encapsulated PostScript (EPS) Tagged Image File Format (TIFF). As part of the production process PS and EPS files are converted to TIFF format. Graphics submitted in other formats may be rejected and will need to be scanned.

Authors are requested to supply reproduction quality hard copy prints along with the electronic files. They should be good clean sharp prints free of dirt and other marks, printed using dark ink on opaque paper. Poor quality laser prints or graphics cut out from a printed publication will reproduce poorly, and should be avoided. Laser prints or photo copies are not acceptable in place of original photographs, or where grayscale images are involved, as the print quality will be substandard. If we feel that we cannot achieve a satisfactory match using the electronic version of your files, we may have to scan your hard copy.

We cannot accept application files that contain graphics i.e., Corel Draw, Microsoft Word.

Image Quality of TIFF Files

In order to achieve the highest quality of reproduction, we recommend resolutions of 600 dpi (1 bit/sample) at final printed size for line art (graphs, charts, drawing or tables) and 220 dpi (8 bits/sample) at final printed size for photographs and other gray scale images. Most charts graphs and tables are one column wide (3 1/2 inches or 21 picas) or two-column width (7-1/16 inches, 43 picas wide). The exceptions are for graphics submitted for publication in The Proceedings of the IEEE and IEEE Transactions on Professional Communications. We recommend that you avoid sizing figures less than one column wide, as extreme enlargements may distort your images and result in poor reproduction. Therefore, it is better if the image is slightly larger, as a minor reduction in size should not have an adverse affect the quality of the image.

Using a lower than recommended resolution setting may result in degradation of the printed image. Images prepared for web use with resolution of 72 dpi or lower, will not reproduce correctly and will be rejected. Conversely, saving an image at a resolution higher than the recommended settings will not improve the image quality.

- Save line art images art (graphs, charts, drawing or tables) as black & white bitmap and not grayscale.
- Save halftones or photographs and graphics that have combinations of line and tone or shading as grayscale, and not as black & white bitmap.

What does DPI stand for and what does it mean?

DPI is an acronym for Dots Per Inch or the density of the dots, and is also known as the resolution or simply the number of rows and columns; it determines how sharply the image is represented. If a printer specifies 300 DPI, it means that for every inch of image there are 300 color dots (or pixels).

When preparing your graphics in TIF, PS or EPS formats please keep the following in mind. If a graphic calls for fonts directly, we suggest that you use of one of the following Adobe Type 1 fonts: Times Roman, Helvetica, Helvetica Narrow, Courier, Symbol, Palatino, Avant Garde, Bookman, Zapf Chancery, Zapf Dingbats, New Century Schoolbook.

Non-Acceptable file formats

Files prepared as GIF, JPEG, and BMP or in any other file formats not listed, are not acceptable and cannot be processed. Also, please do not embed images in MS Word, since they cannot be extracted.

Sizing of Graphics

Font sizes for supplied graphics must be legible if the graphic is reduced in size to one column (3 1/2 inches or 21 picas wide) or two-column width (7-1/16 inches or 43 picas wide) or as much as a 4:1 reduction from the original. The size of all original material should not be larger than 8-1/2 x 11 inches. Avoid sizing figures to less than one column wide (3 1/2 inches), as extreme enlargements may distort your images.

Size of Author Photographs

The final printed size of an author photograph is fixed at exactly 1 inch wide by 1 1/4 inches long (6 picas x 7 1/2 picas). Please ensure that the author photographs you submit are proportioned similarly. If the author's photograph does not appear at the end of the paper, then please size it so that it is proportional to the standard size of 1 9/16 inches wide by 2 inches long (9 1/2 picas x 12 picas).

Color Graphics Requirements for all Graphics Formats

At present only RGB TIFF format is accepted. You may be more familiar with this format as either a "color map" or "color index" file. The advantage of using a RGB color TIFF file is that a higher quality image may be obtained when compared to a scanned version.

If you provide a color PS or EPS file it will be converted to RGB color TIFF. The resolution of a RGB color TIFF file should be 400 dpi.

When supplying color graphics, please supply a high quality hard copy proof of each image. If we cannot achieve a satisfactory color match using the electronic version of your files, we will have to scan your hard copy.

Preparing Electronic Graphics for Submission
Naming your graphics

Please use lower case letters when naming figures, tables, and author photographs. Figures should contain only the image and not the caption text. If your figure has multiple parts, please embed callouts to identify parts of figures, i.e., (a), (b), (c), within the figure. Callouts should be in a Times Roman font with a consistent point size, avoid mixing point sizes in your graphics.

Below you will find the naming convention for these kinds of images.

Figures (line artwork or photographs)-should be named fig1.tif, fig2.eps, fig3.ps, and so forth. Please do not give them descriptive names.

Tables should contain only the body of the table and should be named table1.tif, table2.ps, table3.eps, and so forth.

Author photographs-should be named using the first five characters of the author's last name, followed by the type of file TIF, EPS or PS with the resolution at 220 dpi, 8 bits/sample. For example, four author photographs for a paper may be named: smith.ps, jones.tif, lee.eps, and moshf.ps (for moshfefhi's author photograph).

Accurate Preparation of Graphics

Please submit your graphics on disks separate from your manuscript, since they cannot be extracted. Format and save your graphic images using a suitable graphics processing program, that will allow you to create the images as TIF, PS or EPS, size them, and adjust the resolution settings.

Examples of suitable graphics programs are:

Corel Photo Paint, Microsoft Photo Editor or Adobe Photo-Shop. However, we highly recommend the Adobe PhotoShop program for its versatility and powerful features.

Note: that both students and teachers may purchase such graphics programs via the web, from vendors at considerable discounts over regular prices. (See Next Page).

Remember that whatever method you use, please include a high quality scannable proof. If there is a problem with your initial submission, a Transactions / Journals staff editor will contact you for a revised electronic graphic. If the revised graphic is unusable, we will need to scan your proof.

- Revised or corrected graphics should always have the same name as the original graphic.
- If a graphic is to appear in print as black and white, it should be saved and submitted as a black and white file. If a Graphic is to appear in color, it should be submitted as a RGB color TIFF file. If the file is unusable, the hard copy of the color graphic may be scanned.
- If you are creating your graphics using a Macintosh and are submitting the graphics on disk, please send PC formatted floppy disks.
- A column-wide graphic can be no wider than 3 1/2 inches or 21 picas. A page-wide figure can be no larger than 7 1/6 inches or 43 picas wide. The maximum depth of a graphic is 9 3/4 inches or 58 picas. Please allow space for the caption.
- Please use consistent typefaces and type sizes in all your figures and tables. Please choose type sizes that will allow the type to be scaled to 8 points at final printed size.

Naming Multiple-Part Figures

It may be necessary for you to combine your figures so that they may be presented in the way that you prefer. The reason for this is that the page composition software we use stacks graphics one above another. Thus, if you want to have an "a part" above a "b part" (as shown below) you should submit two separate graphics files. Please place the callouts in the figure parts.
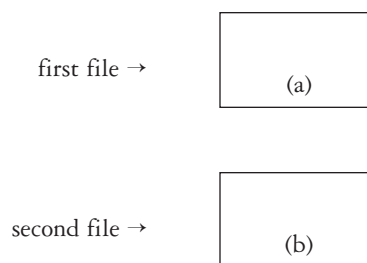

Figure 1 Caption Here

If you want to have an "a part" next to a "b part" and then a "c part" next to a "d part" then you should submit two figures. The first graphic will contain parts a and b, and the second graphic will contain parts c and d (as shown below). If this were to be figure 1 then you would name them fig1ab.TIF and fig1cd. Please place the callouts in the figure parts.
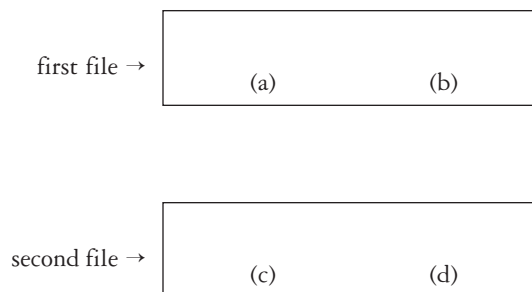

Figure 2 Caption Here

Transmitting your graphic files

Files should be submitted via 3 1/2inch disk, CD-ROM, zip disk, e-mail, and 640 MB magneto-optical disk.

When submitting your graphics by e-mail, send them as separate attachments and please use a supported encoding method.

- Note the operating system, software, and version number used to create your disk (e.g., DOS/Word97). Write this information on the disk label with a felt pen. When using UNIX, note method of extraction.
- Check that your file is complete
- Package diskettes to protect them in the mail.
- Please include all necessary contact information, including e-mail address, phone number, fax number, and mailing address.

Encoding Methods

To process your graphics more efficiently, it is best if you can encode the files prior to submitting them. If you do not encode, the IEEE will encode the files during processing.

Please use one of the listed encoding methods if you are sending your graphics by e-mail or disk.

1) MIME base64   2) uuencode   3) Bin Hex 4

Compression Methods

In order to save disk space or to fit a graphic on a disk, please use the following compression methods.

1) compress   2) pkzip   3) stuffit   4) gzip

Things that you should not do!

- Do not embed your images in MS Word, as we cannot extract them
- Do not save you images as GIF or JPEG
- Do not send images with resolution settings at 72 dpi or lower

What you should do!

- Be sure to size you images correctly.
- Use the correct image resolution. 600 dpi (1 bit/sample) at final printed size for line art (graphs, charts, drawing or tables) and 220 dpi (8 bits/sample) at final printed size for photographs and other gray scale images
- Supply a high quality hard copy proof of each image

Students & Teachers can Purchase Graphics software at a discount

The following are possible resources, which you may want to investigate.

http://www.campustech.com
http://www.micromaster.com/
http://www.gradware.com/
http://www.studentdiscounts.com

For More Information Contact:

Graphics H-E-L-P Desk graphics@ep.ieee.org

Examples of BAD Line Art Images
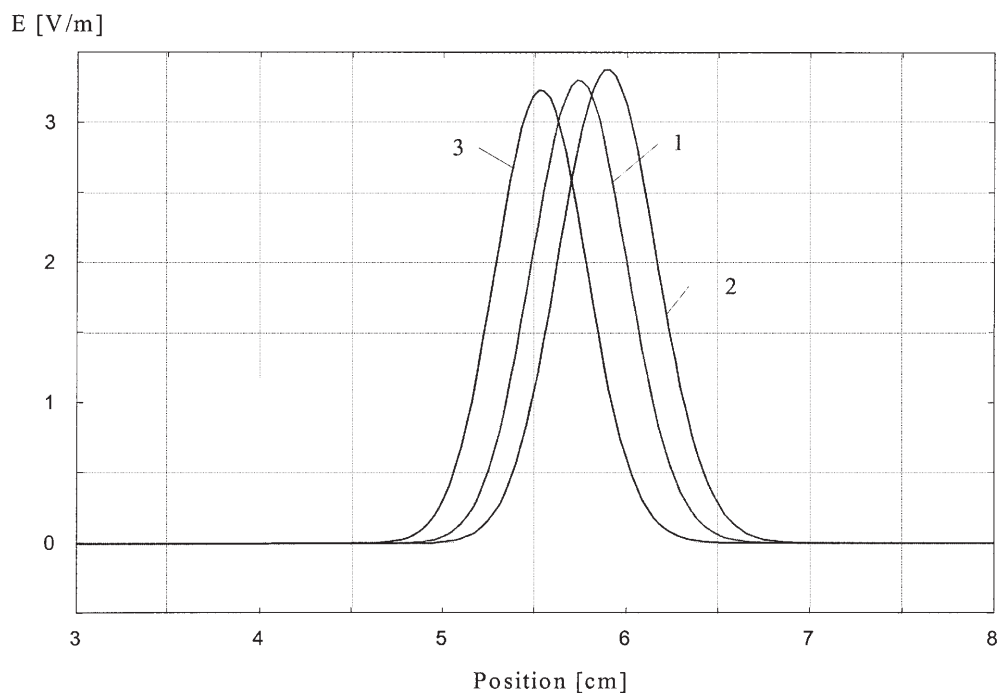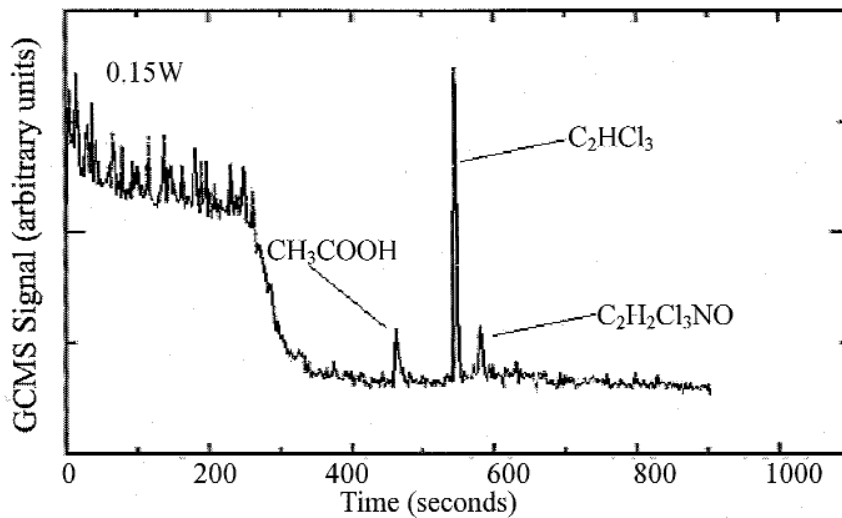

Some of the lines in the graph are dropping away.

JET Data Display Program Version 6.3

mm

Avg. Rocking Motion

KN E+3

MVP Total Support Force

Time (s)

55.4   55.6   55.8   56.0   56.2
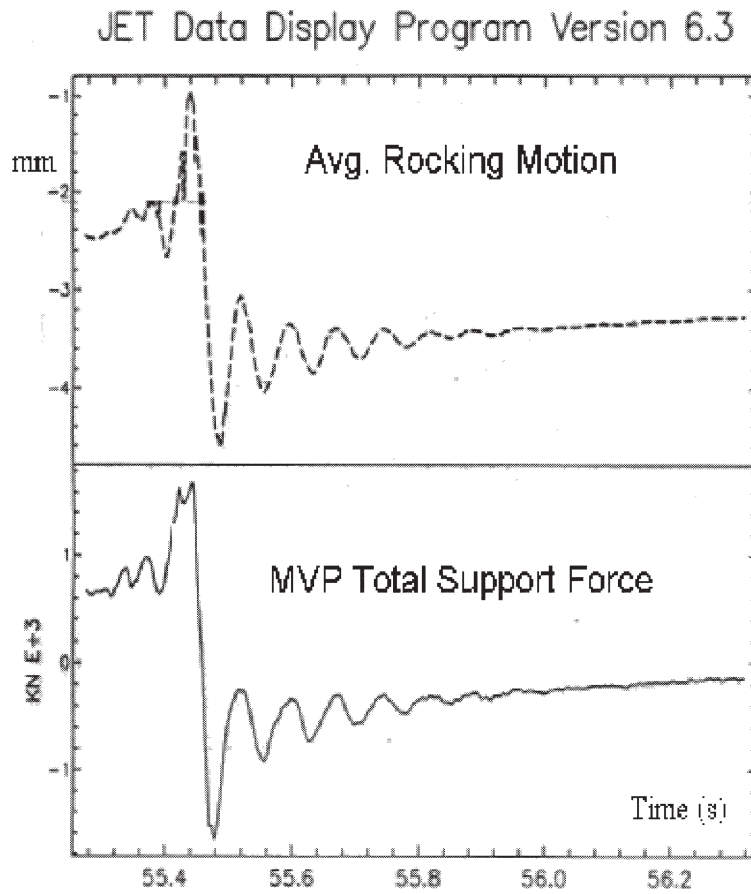
The lines in this graph are fuzzy and the type looks unclear and not sharp.

GCMS Signal (arbitrary units)

0.15W

C_2HCl_3

CH_3COOH

$C_2H_2Cl_3NO$

0   200   400   600   800   1000

Time (seconds)

The lines in this graph are fuzzy and seem to blur together making it difficult to decipher.
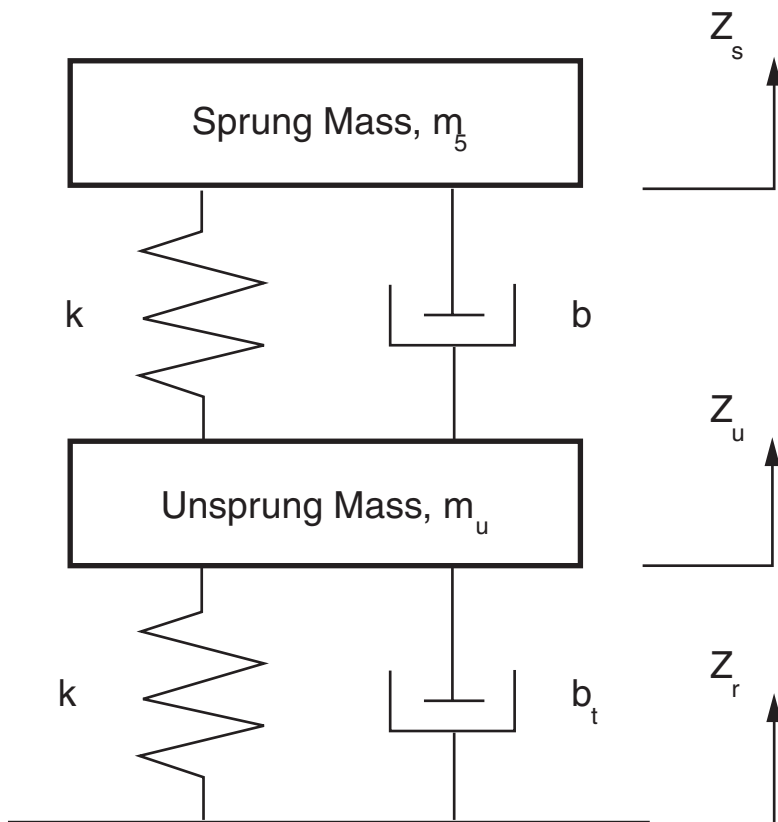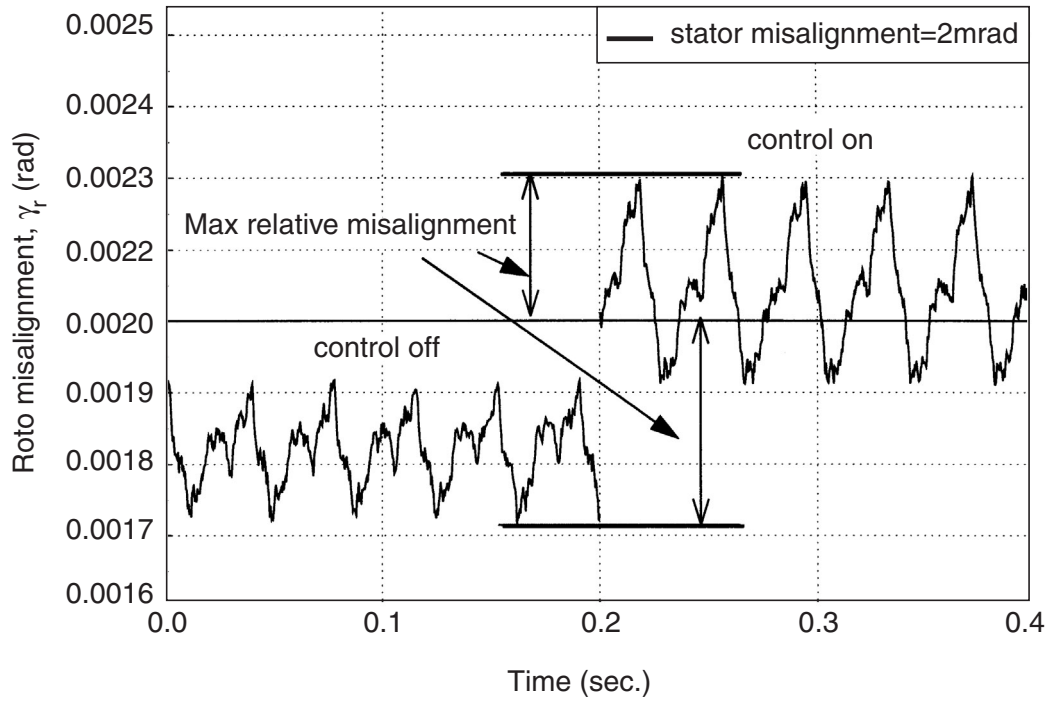
The text in both graphs is easy to read and the lines are clear and sharp.
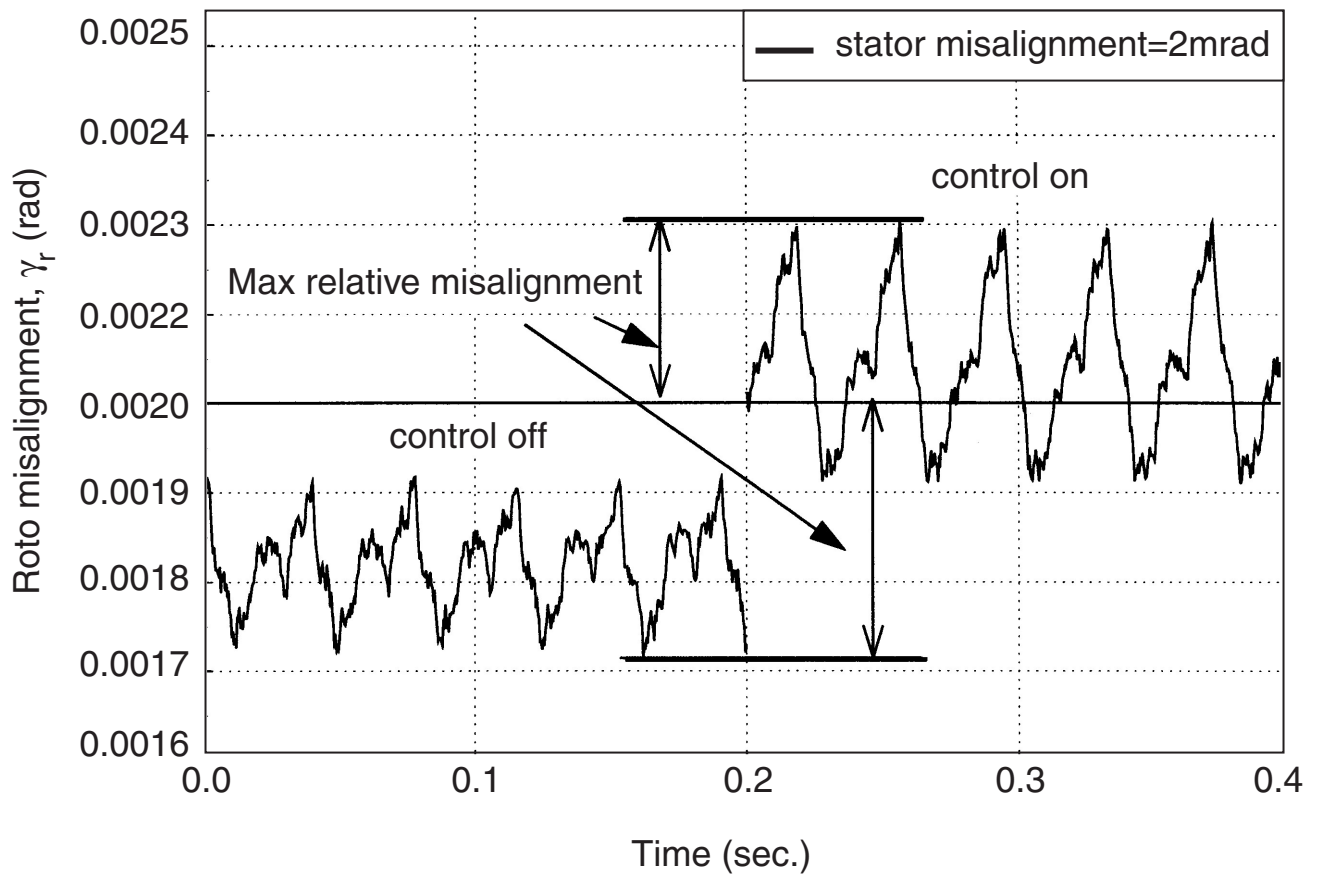
The text is easy to read and the lines are clear and sharp on this graph.

Enlarged Author Photographs Showing Examples of Both BAD and GOOD Quality

BAD Quality Image
Photo is blurry and out of focus
Low resolution file
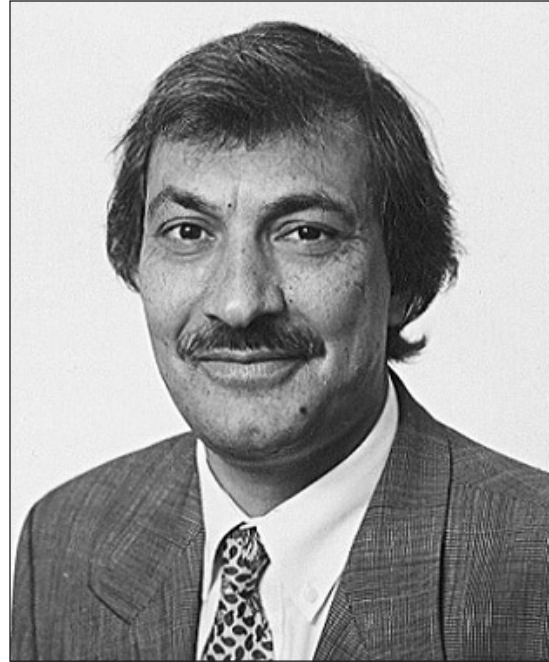
GOOD Quality Image
Photo has detail and is in focus
High resolution file (300 dpi)

BAD Quality Image
Photo is blurry and out of focus
Low resolution file

GOOD Quality Image
Photo has detail and is in focus
High resolution file (300 dpi)

Initial File SetUp:

1. To create a graphic file, go to the **FILE** menu and click on **NEW**.

2. Name the file...Choose width, height, and resolution.

Resolutions to Use		
Lineart (Bitmap)	Grayscale	RGB/CMYK
600 dpi	220 dpi	400 dpi

> NOTE: If you chose RGB or CMYK as your color mode, go to the **IMAGE** menu, choose **Mode**, and then select **Indexed Color**. This will allow usable colors to convert to CMYK without loss of shading or gamut warning.
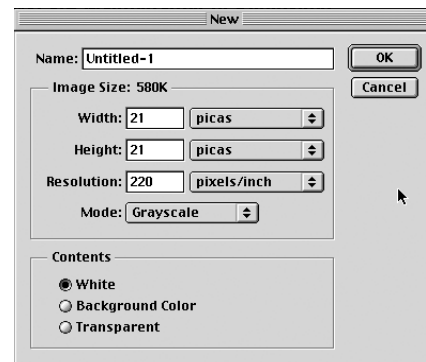
3. When saving graphics, under the **FILE** menu, choose, **SAVE AS** and name your file. Use only tiff or photoshop eps format. If you used layers, please flatten all layers and discard all alpha channels. **DO NOT** save embedded color profiles.

Image Adjustments Using Levels

Using this command allows for the gradual adjustments to the brightness, contrast, and mid-tones in an image.

1. With your image open, under the **IMAGE** menu, choose **ADJUST**, and then choose **LEVELS**.
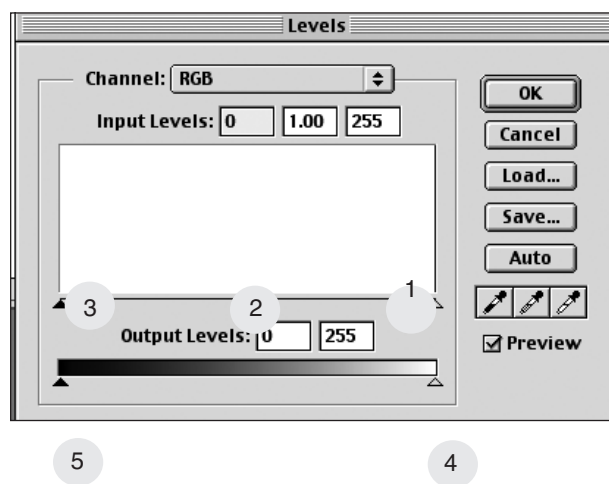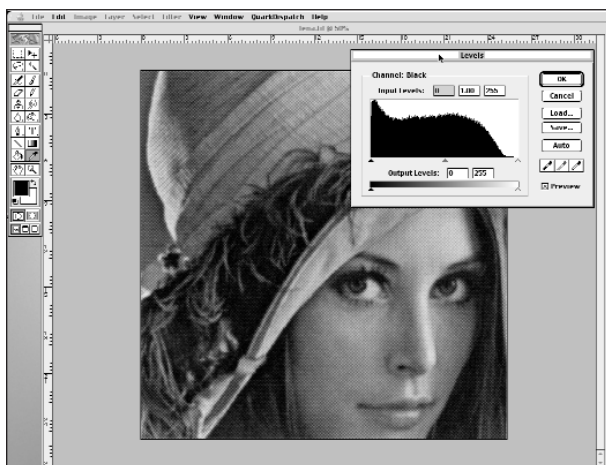
2. Using the chart to the right, locate the numbers corresponding to the sliders.

> **Highlight adjustment:** Slider 1 will lighten your photo.
> Slider 4 will darken your photo.

> **Mid-tone Adjustment:** Slider 2 when moved to the left will lighten your photo.
> Slider 2 when moved to the right will darken your photo.

> **Shadow Adjustment:** Slider 5 will lighten your photo.
> Slider 3 will darken your photo.

3. When you are done, click OK.

Image Adjustments Using Brightness and Contrast

Using this command is the easiest way to make simple adjustments to the overall tonal range of the image.

1. With your image open, under the **IMAGE** menu, choose **ADJUST**, and then choose **BRIGHTNESS/CONTRAST**.
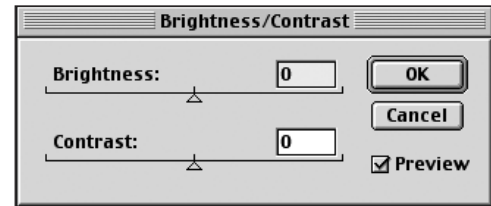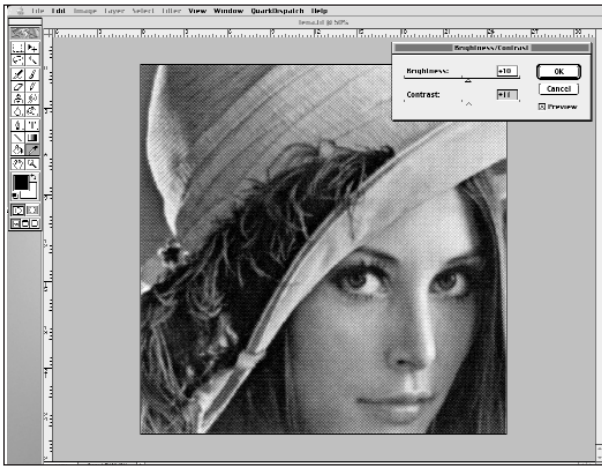

2. Dragging the slider to the left decreases the level; dragging to the right increases it.

3. When you are done, click OK.

Image Adjustments Using Curves

Using this command, like levels, lets you adjust the tonal range of an image. However, you can adjust any point along the 0-255 scale while keeping up to 15 other values constant.

1. With your image open, under the **IMAGE** menu, choose **ADJUST**, and then choose **CURVES**.
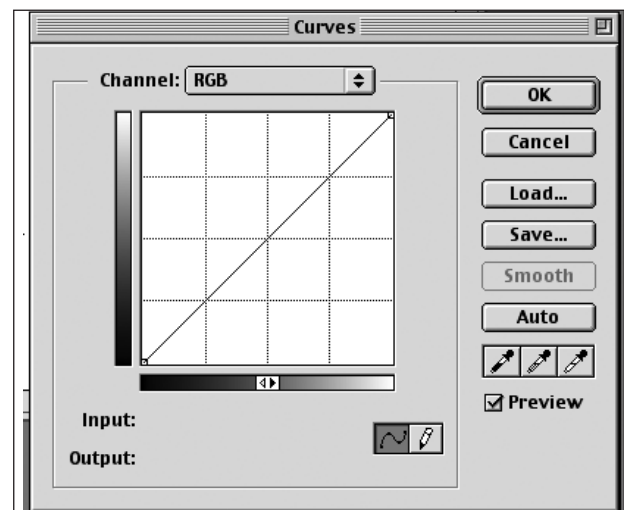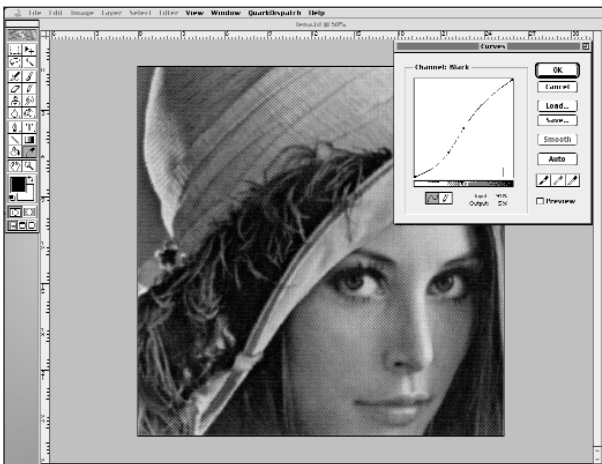
2. Click any point on the curve that you want to remain fixed. You can add up to 15 points to the curve to lock those values as you make adjustments. To remove a point from the curve, drag it off the graph.

3. Drag the curve until the image looks as you want it.

4. When you are done, click OK.